APPENDIX A

DEVELOPMENT SERVICES
DEPARTMENT

CITY OF SACRAMENTO
CALIFORNIA

2101 ARENA BLVD. SUITE 200
SACRAMENTO, CA 95834
916-808-7856
FAX: 916-264-7185

DATE: April 28, 2006

TO: Interested Persons

FROM: Michael Parker, Assistant Planner

SUBJECT: **Notice of Preparation (NOP) to prepare a Draft Environmental Impact Report for the Cathedral Square Project (P05-161).**

Introduction

The City of Sacramento is the lead agency for the preparation of an Environmental Impact Report (EIR) for the Cathedral Square project located within the City of Sacramento. The document is being prepared in compliance with the California Environmental Quality Act (CEQA).

CEQA Section 15082 states that once a decision is made to prepare an EIR, the lead agency (the City of Sacramento) must prepare a Notice of Preparation (NOP) to inform all responsible agencies that an EIR will be prepared. The purpose of the NOP is to provide sufficient information describing the project and the potential environmental effects to enable responsible agencies to make a meaningful response regarding the scope and content of the information that should be included in the EIR. Comments are also being solicited from the public.

Project Location

The project site is located at southwest corner of 11th and J Streets in the downtown area of the City of Sacramento and is currently occupied by four buildings ranging from one to three stories. The buildings are primarily vacant, but contain some existing restaurant, retail, and office uses. The properties surrounding the site include an office building and Elks Lodge building to the north (across J Street), commercial to the west, and an office building and the Cathedral of the Blessed Sacrament to east (across 11th Street). An art gallery and restaurant/brewery, as well as the Crest Theater exist to the south, across the alley. All surrounding properties are within the Central Business District Zone—Special Planning District (C-3 SPD). The Sacramento General Plan Update (SGPU) designates the site Community Neighborhood Commercial and Offices, and the Central City Community Plan designates the site Multi Use. The property consists of Assessor Parcel Numbers 006-0103-007, 006-0103-008, 006-0103-009 and 006-0103-015.

Project Description

The proposed Cathedral Square project includes the demolition of the existing on-site structures and the construction of a 25-story, 472,020 square foot (sq. ft.) building located on 0.67 acres. The proposed project includes 233 residential units, approximately 10,100 sq. ft. of ground floor

retail, and 326 parking stalls (see figure included below).

The proposed building would be 25 stories high (approximately 250 feet in height). The building would have a 30-foot step-back along 11th Street above the 5th floor (at approximately 70 feet high). The Lobby would be located on 11th Street to create a more pedestrian friendly entrance. The building would have six general floor plate components: below ground level, the first floor, the second through the fourth floor, the fifth floor, the residential tower, and penthouse levels. Parking would be located on both basement levels, as well as the first through fourth floors. Vehicular access to the proposed parking areas would be provided on the alley.

Entitlements Required

The required entitlements for the project include:

- Certification of Environmental Impact Report;
- A Tentative Map to subdivide the site into 233 condominium units;
- A Special Permit for a Major Project in order to construct the 472,020 sq. ft. 25-story building in the Central Business District—Special Planning District (C-3-SPD) zone;
- A Special Permit for condominium development;
- Design Review;

Anticipated Environmental Effects

At this time, it is anticipated that the environmental analysis for the proposed project will focus on the following issue areas: aesthetics, air quality, cultural/historic resources, noise and vibration, public services and utilities, and transportation and circulation. Some refinement to these issues may be required based on the comments letters that will be received during the NOP process.

Submitting Comments

To ensure that the full range of project issues and alternatives related to the proposed project are addressed and that all significant issues are identified, comments and suggestions are invited from all interested parties. Written comments or questions concerning the EIR for the project should be directed to the following address by **5:00 p.m. on Tuesday, May 30, 2006.** All comments must include full name and address in order for staff to respond appropriately.

City of Sacramento Environmental Planning Services
ATTN: Michael Parker
2101 Arena Blvd., Suit 200
Sacramento, CA 95834
(916) 808-7483
mparker@cityofsacramento.org

Exhibit 1
Vicinity Map

Exhibit 2
11th Street and J Street Elevations

11TH STREET ELEVATION

J STREET ELEVATION

0 20' 40' 80'

KwanHenmi
ARCHITECTURE/PLANNING

Owner	**St. Anton Investors, LLC** 1801 I Street Suite 202 Sacramento, CA 95814 T: (916) 444-9906 F: (916) 444-9643 Contact: Steven Eggert
Developer	**11th and J Corporation** 1801 I Street Suite 202 Sacramento, CA 95814 T: (916) 444-9906 F: (916) 444-9643
Architect	**Kwan Henmi** 1 Beach Street Suite 103 San Francisco, CA 94133 T: (415) 777-4770 F: (415) 777-5102 Contact: Dana Henmi
Landscape Architect	**Land Architecture Inc.** 231 Vernon Street Roseville, CA 95678 T: (916) 780-2658 F: (916) 786-2662 Contact: Kevin Leamy
Civil Engineer	**Psomas** 1075 Creekside Ridge Dr. Suite 200 Roseville, CA 95678 (916) 788-8122 (916) 788-0602 Contact: Lynn A. Toth

Cathedral Square
Condominiums
11th and J Street
1010 11th Street
Sacramento, CA 95814

NOTE: If this drawing is not 11"x17" it has been revised from the original size. Scale noted on drawing/details are no longer applicable.

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Rev. Date Remarks

PLANNING REVIEW SUBMITTAL

Date: 03.15.2006
Scale: 1" = 40'-0"
Project Name: 11th and J Street Sacramento, CA
Project No: 0515.00

Drawing Title:
BUILDING ELEVATIONS

Sheet No.
A3.02

APPENDIX B

SRCSD

Wastewater Treatment

10545 Armstrong Avenue
Mather, CA 95655
Tele: [916] 876-6000
Fax: [916] 876-6160
Website: www.srcsd.com

Board of Directors
Representing:

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County of Yolo
City of Citrus Heights
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City of Sacramento
City of West Sacramento

Mary K. Snyder
District Engineer

Stan R. Dean
Plant Manager

Wendell H. Kido
District Manager

Marcia Maurer
Chief Financial Officer

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JUN - 6 2006

May 31, 2006
E225.000

Michael Parker
City of Sacramento
Development Services Department
2101 Arena Boulevard, Suite 200
Sacramento, CA 95834

Subject: Notice of Preparation (NOP) to Prepare a Draft Environmental Impact Report for the Cathedral Square Project
APN: 006-0103-007, 008, 009 & 015
Control No. P05-161

Dear Mr. Parker:

County Sanitation District 1 (CSD-1) and Sacramento Regional County Sanitation District (SRCSD) have reviewed the Notice of Preparation for the subject project. The project is within the boundary limits of SRCSD and the Urban Services Boundary (USB). The project is outside the boundary of CSD-1. SRCSD facilities do not exist within the project area and the master plan does not propose any projects within the area. Therefore, we do not foresee any impact to the SRCSD facilities.

If you have any questions regarding these comments, please call Stephen Moore at (916) 876-6296 or me at (916) 876-6094.

Sincerely,

Wendy Haggard, P.E.
Department of Water Quality
Development Services

WH/JRO: cc

cc: Melenie Spahn
Amber Schalansky
Dave Ocenosak

parker053106.ltr.doc

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 -- SACRAMENTO AREA OFFICE
VENTURE OAKS – MS 15
P.O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 274-0614
FAX (916) 274-0648
TTY (530) 741-4509

Flex your power!
Be energy efficient!

May 25, 2006

06SAC0066
03-SAC-005 PM 23.511
Cathedral Square High Rise (P05-161)
Notice of Preparation
SCH# 2006042162

Mr. Mike Parker
City of Sacramento
2101 Arena Boulevard, Suite 200
Sacramento, CA 95834

Dear Mr. Parker:

Thank you for the opportunity to review and comment on the Notice of Preparation for a Draft Environmental Impact Report for the Cathedral Square High Rise project. The project at 11th & J Streets proposes construction of a 472,020 sq. ft., 25 story residential mixed-use building with 233 residential units, 10,100 sq. ft. of ground floor retail, and 326 parking stalls. Our comments are as follows:

- The City is incorporating this project's trip generation numbers into the Downtown Traffic Study which will identify cumulative impacts to the State Highway System from development in downtown Sacramento. The study will help determine appropriate, feasible mitigation measures and proportional funding levels for this project. Caltrans looks forward to reviewing the Traffic Study.

- Any significant traffic impacts will require mitigation. Feasible mitigation measures are available including proportional mitigation funding for future improvements such as ramp widening, ramp intersection improvements, signalization modification, auxiliary lanes, or mainline improvements such as the Interstate 5 Bus/Carpool Lanes project (EA 3C000).

If you have any questions about these comments please contact Alyssa Begley at (916) 274-0635.

Sincerely,

BRUCE DE TERRA, Chief
Office of Transportation Planning—South

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Larry Greene
AIR POLLUTION CONTROL OFFICER

RECEIVED
MAY 31 2006

May 26, 2006

Mr. Michael Parker
City of Sacramento
Environmental Planning Services
2101 Arena Blvd, Suite 200
Sacramento, CA 95834

RE: Cathedral Square, P05-161, NOP for an EIR
SAC200500867B

Dear Mr. Parker:

Thank you for the opportunity to comment on the Cathedral Square project. Due to the size of the proposed project, we believe the potential air quality impacts may be significant. Project air quality emissions for construction and operations should be analyzed in conjunction with the environmental document. Other staff comments follow:

1. SMAQMD recommends that the URBEMIS 2002 model be used for analysis of the operational and construction related ozone precursor (ROG and NOx) emissions from the project.

2. SMAQMD expects that construction related NOx emissions may exceed the adopted CEQA threshold of significance. Analysis of construction emissions associated with the demolition phase should be included n the URBEMIS modeling. Significant emissions are expected in phase 2 (Building construction) of the URBEMIS construction analysis. Equipment inputs for the phase 2 analysis will be particularly important. If you find the emissions to be significant, we recommend that the SMAQMD standard construction mitigation be included as a mitigation measure in the DEIR. Recommended mitigation language can be found at www.airquality.org. If the emissions are still significant after the on-site mitigation, we recommend the inclusion an off-site mitigation fee to reduce construction emissions to less than significant.

3. If the operational aspects of the project are found to exceed the adopted CEQA threshold of significance, we recommend that the project applicant prepare an air quality mitigation plan designed to reduce operational emissions by a minimum of 15 percent as a feasible mitigation measure. We would be happy to assist the proponent in choosing appropriate measures for the plan. Preparation of the plan as early as

777 12th Street, 3rd Floor ▮ Sacramento, CA 95814-1908
916/874-4800 ▮ 916/874-4899 fax
www.airquality.org

possible is essential to provide the maximum flexibility in the potential measures available for implementation. We recommend that the plan be endorsed by us prior to the publication of the environmental document. In that way, it can be included in the document as it circulates.

This is the kind of project that we hope encourages the use of alternative transportation to the maximum. Discounted or subsidized transit passes for residents, reduced parking and bicycle storage are examples of measures appropriate for a project like this which is so closely located to light rail.

All projects are subject to SMAQMD rules and regulations in effect at the time of construction. Please see the attached document describing SMAQMD Rules which may apply to this project.

Thank you for the opportunity to comment on this project. If you have any questions regarding these comments, please contact me at 916.874.4885 or jborkenhagen@airquality.org.

Sincerely,

Jeane Borkenhagen
Strategic Planning Division

cc: Larry Robinson
Rachel Green St Anton Partners

ENC: SMAQMD Rules and Regulations Statement

SMAQMD Rules & Regulations Statement

*The following statement is recommended as standard condition of approval or construction document language for **all** construction projects within the Sacramento Metropolitan Air Quality Management District (SMAQMD):*

All projects are subject to SMAQMD rules and regulations in effect at the time of construction. A complete listing of current rules is available at www.airquality.org or by calling 916.874.4800. Specific rules that may relate to construction activities may include, but are not limited to:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the District early to determine if a permit is required, and to begin the permit application process. Portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment, etc) with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a California Air Resources Board portable equipment registration.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities or any other construction activity to prevent airborne dust from leaving the project site.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 902: Asbestos. The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos containing material.

Other general types of uses that require a permit include dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions.

May 25, 2006

RECEIVED
MAY 30 2006

Mr. Michael Parker
Environmental Planning Services
City of Sacramento
2102 Arena Blvd Suite 200
Sacramento, CA 95834

RE: Cathedral Square Project
PO 5-161

Dear Mr. Parker,

We would like to give our input on the discussions concerning the construction and operation of the Cathedral Square Project (PO 5-161) as it would relate to the Crest Theatre. The Crest Theatre is a three auditorium complex consisting of a 975 seat historic auditorium which abuts to the alley directly across from the proposed project site and two below grade 180 seat theatres. We operate a seven day a week movie theatre program in our two smaller theatres and we use the historic auditorium for day and evening events including concerts, children's theater, comedy shows, governmental meetings, lectures and a variety of corporate events. The hours of use vary but generally include early morning and late night occupancy. We have existing contracts for events throughout 2006 and 2007.

While we are pleased to see another big project proposed for downtown we are concerned about the impact construction and operation of the project will have on our business. We have outlined the following concerns:

During Construction -

1. Pile driving / excavation - Please address concerns regarding noise and possible damage to the historic building from the vibration caused by pile driving. We would imagine that pile driving will preclude use of all three auditoriums during that procedure and we would like assurances that pile driving will occur at time when the building is not in use. In addition, we would request a survey of our building before construction starts to provide a baseline for assessment of any damage to it caused by the construction.

2. General construction noise - The noise from excavation, concrete work, steel erection, cladding etc will also impact event presentations. We would like to hear how the project will mitigate interruptions to our operations.

3. Plans for the alley traffic – The alley access is a vital part of the operation of the Crest. We use it for loading equipment for touring shows, catering and personnel for events at the Crest and need access to it. The trash dumpsters for all of the Crest businesses and in fact all the dumpsters for the entire block bounded by 10th 11th and J and K are located on the south side of the alley and the trash companies will need access to them . In addition, there are Fire Department standpipe connections for our building and the Pyramid Building in this alley. This alley is also is part of our exiting plan representing exiting for 50% of our 1335 seats combined amongst three theatres. We need assurances that the alley will be kept clear and accessible during construction.

CREST THEATRE

1013 K Street Downtown Sacramento CA 95814
phone 916-442-5189 fax 916-442-5939 show info 916-442-7378 www.thecrest email manager@thecrest.com

4. Utilities - We recognize that with a project this size the alley and the utilities that are required (gas, sewer, water, telco, fiber) will need to be reworked which might include an interruption to service to surrounding businesses. How will this work be accomplished in order to allow the Crest complex and surrounding businesses to remain open?

Design and Operation issues

1. Alley - The alley is currently very busy – This includes the Crest Theatre uses, Pyramid Brewery deliveries and vehicle access for the underground parking for the California Restaurant building. As part of our operations, we coordinate with Sacramento Traffic Engineering, Fire Dept. and Police Dept. to close the alley to through traffic for loading in equipment for larger touring shows. It is noted that vehicular access for the proposed project will be through the alley. Where exactly in the alley will the parking entrance be and will it be for both tenants and service vehicles? How will this impact current uses of the alley by existing businesses?

2. Garbage service, meters and utility services - The width of the alley should not be diminished at all - as noted above, currently all the garbage bins for the whole block reside on the south side of the alley against our property. We would ask that all garbage bins, meters and utility services for the new building be within the footprint of the building.

We appreciate your attention and look forward to working with you to address these concerns,

Sid Garcia-Heberger
CSLM Inc dba Crest Theatre

Cc: Gerald Shupe, Wells Fargo Bank Trust Real Estate (property manager)
Michael Ault, Downtown Sacramento Partnership
Ray Kerridge, City Manager
Leslie Fritzsche, Economic Development Department

CREST THEATRE

1013 K Street Downtown Sacramento CA 95814
phone 916-442-5189 fax 916-442-5939 show info 916-442-7378 www.thecrest email manager@thecrest.com

PCS Trust Real Estate
400 Capitol Mall, Suite 702
Sacramento, CA 95814
916 440 4940
916 442-5518 Fax

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MAY 2 [illegible]

May 23, 2006

Mr. Michael Parker
City of Sacramento
Environmental Planning Services
2101 Arena Boulevard, Suite 200
Sacramento, CA 95834

RE: Notice of Prepartion for EIR for the Metropolitan Project (P05-205)
Briggs Family Trust

Dear Mr. Parker:

Wells Fargo Bank as Trustee of the Briggs Family Trusts owns 1011-1025 K Street Mall consisting of four retail/restaurant units, a ground level movie theater with two underground theaters and a second floor office unit. We have reviewed your Notice of Preparation and wish to express our concerns. While we support the project, we are concerned about the effects of construction.

The movie theater does a significant business during the day and any pile driving and similar construction activities will most likely make watching a movie and other daytime theater activities unbearable. I also have concerns for our office and restaurant tenants conducting business with a pile driver next door. Our theater building is an older building with two story high walls that could be damaged by the pounding. I request mitigation measures for both possible damage to our buildings and loss of business.

The alleyway between 10th and 11th Street is vital to the conduct of the theater and retail/restaurant businesses. Since they front K Street Mall, all deliveries are from the alley, so the alley must remain unblocked to deliveries at all times. Uninterrupted food deliveries, equipment and trash service are vital to our tenants. Construction deliveries and removals for the subject construction must be on streets other than the alley.

Also of concern is utility interruption to our tenants. Any disruptions need to be well coordinated and limited to the hours of midnight to 8:00am.

The Landlord lost tenants and suffered major disruptions during the construction of light rail on K Street Mall. Lingering construction related problems still affect our property. While we support these projects, we have major reservations about the construction process and it impact on our tenants and buildings. Careful coordination by the City and the developer with existing property owners and tenants is a must. We look forward to the opportunity to express these concerns. Without these requirements and concerns being met, we must object to the project.

Cordially,

Gerald A. Shupe
Vice President
(916) 440-4940 ▪ (916) 442-5518 Fax

GAS/lcl

cc: Michael Ault

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Sean Walsh
Director

Notice of Preparation

RECEIVED
MAY - 5 2006

April 28, 2006

To: Reviewing Agencies

Re: Cathedral Square High Rise (P05-161)
SCH# 2006042162

Attached for your review and comment is the Notice of Preparation (NOP) for the Cathedral Square High Rise (P05-161) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Mike Parker
City of Sacramento
2101 Arena Boulevard, Suite 200
Sacramento, CA 95834

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006042162
Project Title Cathedral Square High Rise (P05-161)
Lead Agency Sacramento, City of

Type NOP Notice of Preparation

Description The proposed project includes the demolition of the existing on-site structures and the construction of a 25-story, 472,020 square foot (sq. ft.) building located on 0.67 acres. The proposed project includes 233 residential units, approximately 10,100 sq. ft. of ground floor retail, and 326 parking stalls. The required entitlements for the project include: Certification of Environmental Impact Report; A Tentative Map to subdivide the site into 233 condominium units; A Special Permit for a Major Project in order to construct the 472,020 sq. ft. 25-story building in the Central Business District - Special Planning District (C-3-SPD) zone; A Special Permit for condominium development; and Design Review.

Lead Agency Contact

Name Mike Parker
Agency City of Sacramento
Phone (916) 808-7483 **Fax**
email
Address 2101 Arena Boulevard, Suite 200
City Sacramento **State** CA **Zip** 95834

Project Location

County Sacramento
City Sacramento
Region
Cross Streets 11th Street and J Street
Parcel No. 006-0103-007,008,009,006-0103-015
Township **Range** **Section** **Base**

Proximity to:

Highways I-5
Airports
Railways
Waterways Sacramento River, American River
Schools
Land Use The project site is currently occupied by four buildings, which are primarily vacant, but contain some existing restaurant, retail, and office uses. The site is within the Special Planning District (C-3 SPD) Zone. The Sacramento General Plan Update (SGPU) designates the site Community Neighborhood Commercial and Offices, and the Central City Community Plan designates the site Multi-Use.

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Drainage/Absorption; Economics/Jobs; Fiscal Impacts; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Forestry and Fire Protection; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 2; Department of Health Services; Native American Heritage Commission; California Highway Patrol; Caltrans, District 3; Integrated Waste Management Board; State Water Resources Control Board, Clean Water Program; Department of Toxic Substances Control; Regional Water Quality Control Bd., Region 5 (Sacramento)

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 04/28/2006 ***Start of Review*** 04/28/2006 ***End of Review*** 05/30/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Sacramento

SCH# [illegible]

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Roseanne Taylor
- [ ] **California Energy Commission**
  Paul Richins
- [x] **Dept. of Forestry & Fire Protection**
  Allen Robertson
- [x] **Office of Historic Preservation**
  Wayne Donaldson
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Reclamation Board**
  DeeDee Jones
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [x] **Fish & Game Region 2**
  Banky Curtis
- [ ] **Fish & Game Region 3**
  Robert Floerke
- [ ] **Fish & Game Region 4**
  Julie Vance
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Tammy Allen
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Robert Slappy
  Environmental Services Section
- [x] **Dept. of Health Services**
  Veronica Malloy
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **State Lands Commission**
  Jeen Sarino
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Shirley Kelly
  Office of Special Projects
- [ ] **Housing & Community Development**
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [x] **Caltrans, District 3**
  Jeff Pulverman
- [ ] **Caltrans, District 4**
  Tim Sable
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Marc Birnbaum
- [ ] **Caltrans, District 7**
  Cheryl J. Powell
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, Di strict 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Mario Orso
- [ ] **Caltrans, District 12**
  Bob Joseph

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Kurt Karperos
  - [ ] Industrial Projects
    Mike Tollstrup
- [x] **California Integrated Waste Management Board**
  Sue O'Leary
- [x] **State Water Resources Control Board**
  Jim Hockenberry
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [x] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 04/25/06

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

RECEIVED
JUN 12 2006

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Mike Parker
City of Sacramento
2101 Arena Boulevard, Suite 200
Sacramento, California 95834

Cathedral Square High Rise (P05-161)
State Clearinghouse (SCH) Number: 2006042162

Staff for the Department of Water Resources has reviewed the subject document and provides the following comments:

Portions of the proposed project may be located within a regulated stream over which The Reclamation Board has jurisdiction and exercises authority. If the project includes any "channel reconfiguration" that was not previously permitted, new plans must be submitted. Section 8710 of the California Water Code requires that a Board permit must be obtained prior to start of any work, including excavation and construction activities, within floodways, levees, and 10 feet landward of the landside levee toes. A list of streams regulated by the Board is contained in the California Code of Regulations, Title 23, Section 112. The application and Title 23 regulations can be found on the Reclamation Board's website at www.recbd.ca.gov.

Section 8(b)(2) of the Regulations states that applications for permits submitted to the Board must include a completed environmental questionnaire that accompanies the application and a copy of any environmental documents if they are prepared for the project. For any foreseeable significant environmental impacts, mitigation for such impacts shall be proposed. Applications are reviewed for compliance with the California Environmental Quality Act.

Section 8(b)(4) of the Regulations states that additional information, such as geotechnical exploration, soil testing, hydraulic or sediment transport studies, biological surveys, environmental surveys and other analyses may be required at any time prior to Board action on the application.

You may disregard this notice if your project is outside of the Board jurisdiction. For further information, please contact me at (916) 574-1249.

Sincerely,

For

Mike Mirmazaheri, Chief
Floodway Protection Section

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

APPENDIX C

CITY OF SACRAMENTO
DEVELOPMENT SERVICES DEPARTMENT
PLANNING DIVISION

INITIAL STUDY

This Initial Study has been required and prepared by Environmental Planning Services, 2101 Arena Blvd., Suite 200, Sacramento, CA 95834, pursuant to California Environmental Quality Act Guidelines, Section 15063.

I. PROJECT INFORMATION

1. File Number/Project Name:

   P05-161/Cathedral Square Project

2. Project Location/APN:

   The project site is located at the southwest corner of 11th and J Streets in the downtown area of the City of Sacramento. The property consists of Assessor Parcel Numbers 006-0103-007, 006-0103-008, 006-0103-009 and 006-0103-015.

3. Applicant:

   St. Anton Partners
   Steven Eggert
   1801 I Street, Suite 202
   Sacramento, CA 95814

4. Environmental Project Manager:

   City of Sacramento, Planning Division
   2101 Arena Blvd., Suite 200
   Sacramento, CA 95834

   Project Planner:
   Evan Compton
   (916) 808-5260

   Contact:
   Michael Parker
   Assistant Planner
   (916) 808-7483

5. Date Environmental Checklist Completed:

   February 2007

II. PROJECT DESCRIPTION

Please refer to the Cathedral Square Draft EIR, Chapter 3.

III. ENVIRONMENTAL DOCUMENT BACKGROUND

This Initial Study of Environmental Effects contains an analysis of the environmental effects of the proposed project. The project environmental document incorporates, by reference, information from the City of Sacramento General Plan Update (SGPU) EIR in order to assess project-specific issues. Therefore, this Initial Study should be viewed in conjunction with the SGPU EIR.

The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed project with respect to the SGPU EIR to determine what level of additional environmental review, if any, is appropriate. Mitigation measures identified in the SGPU EIR that apply to the proposed project would be required to be implemented as part of the project. In the SGPU EIR the mitigation measures that are appropriate to be implemented as part of the project are identified and discussed in Section VII.

IV. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

X Aesthetics	**☐ Agriculture**	**X Air Quality**
☐ Biological Resources	**X Cultural Resources**	**☐ Geology/Soils**
☐ Hazards & Hazardous Materials	**☐ Hydrology/Water Quality**	**☐ Land Use/Planning**
☐ Mineral Resources	**X Noise**	**X Population and Housing**
X Public Services	**☐ Recreation**	**X Transportation / Traffic**
X Utilities/Service Systems	**☐ Mandatory Findings of Significance**	

V. DETERMINATION

On the basis of this Initial Study:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

X I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a potentially-significant-impact or potentially significant impact unless mitigated on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

VI. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the Proposed Project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Potentially Significant Unless Mitigated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
I. AESTHETICS. *Would the project:*			
A. Have a substantial adverse effect on a scenic vista?	**X**	☐	☐
B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	**X**	☐	☐
C. Substantially degrade the existing visual character or quality of the site and its surroundings?	**X**	☐	☐
D. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	**X**	☐	☐

Environmental Setting

The project site is located in downtown Sacramento on the southwest corner of 11th and J Streets. The current development on the site includes four buildings ranging from one to three stories. The buildings are primarily vacant, but contain a small amount of retail. Adjacent land uses include an office building and Elks Lodge to the north, commercial to the west, an office building and Cathedral to the east, and an art gallery and Crest Theatre to the south.

Standards of Significance

For the purposes of this analysis, an impact to aesthetics would be considered significant if the proposed project would:

- Visually obstruct a scenic vista and/or degrade the existing visual character or quality of the site and its surroundings;
- Substantially damage trees, rocks, and outcroppings; or
- Create a new source of substantial light or glare cast in such a way as to cause public hazard or annoyance for a sustained period of time.

Answers to Checklist Questions

Question A, B, C

Four buildings ranging in height from one to three stories currently occupy the project site. The proposed project would involve the demolition of existing structures and the construction of a 25-story, 472,020 sq. ft. building. The demolition of the existing structures and the construction of the 25-story proposed project would alter the existing views of the project area and downtown Sacramento and result in a change to the visual character of the proposed project site. Additionally, at this time, a detailed study has not been conducted as to the historic significance of the existing structures on the project site.

Therefore, because the proposed project would alter the visual character of the project site and result in a change to existing views in downtown Sacramento, and because existing structures may hold some historic significance, the development of the proposed project would result in a ***potentially significant*** impact.

Mitigation Measures

These impacts will be fully addressed in the Aesthetics chapter of the Cathedral Square EIR.

Question D

The City of Sacramento's Zoning Ordinance 330-96 requires that off-street parking lighting be arranged and shielded to prevent glare, reflection, or nuisance to surrounding properties and streets. The Proposed Project must comply with this ordinance; however, the project would result in the construction of a 25-story building, which would result in a potential increase in light and glare. Therefore, the proposed project is expected to have a ***potentially significant*** impact.

Mitigation Measures

This impact will be fully addressed in the Aesthetics chapter of the Cathedral Square EIR.

Findings

The proposed project would result in ***potentially significant*** impacts to aesthetics, which will be further discussed in the Aesthetics section of the Cathedral Square EIR.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
II. AGRICULTURE RESOURCES. *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1977) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:*			
A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency, to non-agricultural use?	☐	☐	**X**
B. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	**X**
C. Involve other changes in the existing environment, which due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	☐	☐	**X**

Environmental Setting

The proposed project site is currently developed and located within downtown Sacramento. Agricultural land does not exist on the project site. The SGPU EIR (Exhibit T-17) confirms the project area is to be located outside the designated Prime Agricultural lands. In addition, the project site is not subject to a Williamson Act contract.

Standards of Significance

For the purposes of this analysis, an impact to agricultural resources would be considered significant if the proposed project would:

- Convert protected farmland(s) to non-agricultural use(s);
- Result in zoning conflicts related to agricultural uses or Williamson Act; or
- Cause individual or cumulative loss of farmland to non-agricultural use(s).

Answers to Checklist Questions

Question A

The project site is located within an urbanized area, which includes existing commercial development. Agricultural activities do not currently occur within the project site and the area does not include designated Prime Farmland. Therefore, the impact on the conversion of prime farmland would be considered ***less-than-significant*.**

Mitigation Measures
Mitigation is not required.

Question B

Agricultural activities do not currently occur within the project site, and the site is not currently zoned for agriculture or under a Williamson Act contract. Therefore, conversion of the existing land use would result in a ***less-than-significant*** impact**.**

Mitigation Measures
Mitigation is not required.

Question C

The project site is zoned commercial and is within the Central Business District Special Planning District (C-3-SPD), which also designates the project site for urban uses. Because the project is located in an urbanized area, development of the project site would not individually or cumulatively result in the loss of farmland. Therefore, the impact would be considered ***less-than-significant*****.**

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***less-than-significant*** impacts to agricultural resources.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
III. AIR QUALITY. *Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:*			
a. Conflict with or obstruct implementation of the applicable air quality plan?	X	☐	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	X	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	X

Environmental Setting

The project site lies at the southern end of the Sacramento Valley, a broad, flat valley bounded by the coastal ranges to the west and the Sierra Nevada to the east. The Carquinez Strait is located approximately 50 miles southwest and the intervening terrain is very flat. The prevailing wind direction is southwesterly, which occurs when marine breezes flow through the Carquinez Strait. Marine breezes dominate during the spring and summer months, and show strong daily variations. Highest average wind speeds occur in the afternoon and evening hours; lightest winds occur in the night and morning hours. During fall and winter, when the sea breeze diminishes, northerly winds occur more frequently, but southwesterly winds still predominate.

The project site is within the Sacramento Metropolitan Air Quality Management District, which is part of the Sacramento Valley Air Basin. The Sacramento Valley Air Basin has been further divided into Planning Areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region, designated by the U.S. Environmental Protection Agency (EPA) as the Sacramento Federal Ozone non-attainment area. The non-attainment area consists of all of Sacramento and Yolo counties and parts of El Dorado, Solano, Placer, and Sutter counties.

The SVAB is subject to federal, state, and local regulations. Both the federal Environmental Protection Agency and the California Air Resources Board classify the SVAB as non-attainment for ozone and PM_{10} (particulate matter less than 10 microns in diameter). Carbon monoxide (CO) is designated as unclassified/attainment (California Air Resources Board, 1998). The project area is located in the City of Sacramento, Sacramento County, under the jurisdiction of the Sacramento

Metropolitan Air Quality Management District (SMAQMD). The SMAQMD is responsible for implementing emissions standards and other requirements of federal and state laws.

Standards of Significance

The SMAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that includes thresholds of significance to be used in evaluating land use proposals. For the purposes of this analysis, an impact to air quality would be considered significant if the proposed project would:

- **Ozone Precursors Significance Thresholds** - The District considers increases in emissions of nitrogen oxides (NO_x) greater than 85 pounds per day as significant during construction. For operation of a project, the District's threshold of significance is 65 pounds per day of either NO_x or Reactive Organic Gases (ROG).

- **Carbon Monoxide Significance Thresholds** – The pollutant of concern for sensitive receptors is carbon monoxide (CO). Motor vehicle emissions of environmental analysis, sensitive receptor locations generally include parks, sidewalks, transit stops, hospitals, rest homes, schools, playgrounds and residences. Commercial buildings are generally not considered significant if they exceed the 1-hour state ambient air quality standard of 20.0 parts per million (ppm) or the 8-hour state ambient standard of 9.0 ppm (state ambient air quality standards are more stringent than their federal counterparts).

- **Toxic Air Contaminants Significance Thresholds -** The recommended significance thresholds for TACs are a lifetime probability of contracting cancer greater than 10 in one million.

Answers to Checklist Questions

Questions A - D

The project site is within the Sacramento Valley Air Basin and is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). According to SMAQMD, State and federal air quality standards for ozone, carbon monoxide, and particulate matter have been exceeded several times per year in the Sacramento region.

The project site is currently developed, with four buildings ranging from one to three stories. The development of the proposed project would require the demolition of these existing structures as well as clearing and cutting activities associated with the construction of the proposed development. Demolition and construction activities would generate dust as well as vehicle emissions from equipment on-site, vehicles transporting building supplies, and equipment to and from the project site. Vehicle emissions would contribute to existing ozone, CO, and PM_{10} pollutant levels.

Additionally, several public roadways are located in the vicinity of the site carrying a significant number of vehicles within downtown Sacramento. The Cathedral Square project would result in an increase in traffic-related emissions during the construction and operational phase. Traffic generated emissions, wind flow, and dust associated with the project could result in substantial contributions to an existing or projected violation of an ambient air quality standard by exceeding the SMAQD Standards for NOx and PM 10 construction emissions, or expose sensitive receptors (e.g., children, elderly, sick) to substantial pollutant concentrations. Therefore, impacts related to air

quality would be considered ***potentially-significant*.**

Mitigation Measures
This impact will be fully addressed in the Air Quality chapter of the Cathedral Square EIR.

Question E

The proposed project consists of constructing a 472,020 sq. ft., 25-story residential/retail building. Odors are not typical of condos, retail or office facilities. In addition, the proposed project would not include industrial or intensive agricultural use. Therefore, objectionable odors affecting a substantial number of people would not be expected to occur, and a ***less-than-significant*** impact would result.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***potentially significant*** impacts to air quality, which will be further discussed in the Air Quality section of the Cathedral Square EIR.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
IV. BIOLOGICAL RESOURCES. *Would the project:*			
A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	**X**
B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	**X**
C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	**X**
D. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	**X**
E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	**X**	☐
F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	**X**

Environmental Setting

The project site is located within an urbanized area of downtown Sacramento, within the Central City Community Plan. The site is located in an area considered as an Urban Lands Habitat, which is habitat that is mostly not vegetated (SGPU, DEIR U-14). One tree is present along 11th Street in front of the site.

Standards of Significance

For purposes of this environmental document, an impact would be significant if any of the following conditions, or potential thereof, would result with implementation of the proposed project:

- Creation of a potential health hazard, or use, production or disposal of materials that would pose a hazard to plant or animal populations in the area affected;
- Substantial degradation of the quality of the environment, reduction of the habitat, reduction of population below self-sustaining levels of threatened or endangered species of fish, plant or wildlife;
- Affect other species of special concern to agencies or natural resource organizations (such as regulatory waters and wetlands); or
- Violate the Heritage Tree Ordinance (City Code 12:64.040).

For purposes of this report, "special-status" has been defined to include those species which are:

- Listed as endangered or threatened under the federal Endangered Species Act (or formally proposed for, or are candidates for, listing);
- Listed as endangered or threatened under the California Endangered Species Act (or are proposed for listing);
- Designated as endangered or rare, pursuant to California Fish and Game Code (Section 1901);
- Designated as fully protected, pursuant to California Fish and Game Code (Section 3511, 4700, or 5050);
- Designated as species of concern by U.S. Fish and Wildlife Service (USFWS), or as species of special concern to California Department of Fish and Game (CDFG); or
- Plants or animals that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA).

Answers to Checklist Questions

Questions A and B

The project site does not contain known habitats, which would be endangered by the proposed project. A map of known significant natural communities and special-status wildlife is shown in Exhibits U-5 and U-21 in the SGPU EIR. The project site is currently developed and not located in a known significant natural community, or in a special status wildlife area. Furthermore, the site is surrounded on four sides by development, which creates a lack of habitat connectivity and further decreases the viability of the project site as habitat for special-status species. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measures
Mitigation is not required.

Question C and D

The project site does not support a wildlife corridor and does not contain any watercourses that would support migratory fish. Additionally, the proposed project is currently developed and is within the heavily urbanized downtown Sacramento area. The development of the proposed project would not impact any wetlands or other federally protected habitats. Therefore, the development of the project site would result in a ***less-than-significant*** impact.

Mitigation Measures
Mitigation is not required.

Question E

Two trees are present on the project site. The largest on-site tree, which is located along 11th Street adjacent to the project frontage, is a tulip tree (*Liriodendron tulipifera*) with a circumference of 70 inches. The tulip tree is a City street tree and is protected under City Municipal Code 12.56. The proposed project does not include removal of the street tree. The other on-site tree, which is a camphor tree (*Cinnamomum camphora*) with a circumference of 10 inches, is located in the rear of 1018 and 1020 J Street adjacent to the parking area. The City Arborist has confirmed that mitigation is not necessary for removal of the camphor tree during construction of the proposed project. In addition, at less than 100 inches in circumference, neither of the trees is designated as heritage trees. Therefore, development of the proposed project site would have a ***less-than-significant*** impact on tree preservation.

Question F

A Habitat Conservation Plan, Natural Conservation Community Plan, or other local, regional, or State habitat conservation plans do not exist for the area. Thus, implementation of the proposed project would result in a ***less-than-significant*** impact to conservation plans.

Mitigation Measures
Mitigation is not required.

Findings

With the implementation of the mitigation measures assigned above, the proposed project would result in a ***less-than-significant*** impact to biological resources.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
V. CULTURAL RESOURCES. *Would the project:*			
A. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	**X**	☐	☐
B. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	**X**	☐	☐
C. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	**X**	☐	☐
D. Disturb any human remains, including those interred outside of formal cemeteries?	**X**	☐	☐

Environmental Setting

The project site is located at the southwest corner of 11th and J Streets in the downtown area of the City of Sacramento. The project site is located within the Central Business District Special Planning District and is a developed, urban area.

Pre-History/Ethnography
The Sacramento Valley was home to significant populations of Native Americans prior to European settlement. Two distinct language groups, the Nisenan and the Plains Miwok inhabited the lower portion of the Valley. Prehistoric cultural resources include the evidence and remains of Native American subsistence activities such as, plant collection, hunting, fishing, and the fabrication of household items. Significant cultural resources are associated with the development of Sacramento as a Euro-American settlement in the early 19th century and its subsequent role as a gold-rush era trade center and its emergence as California's state capitol. Historic cultural resources include buildings, structures, roadwork, earthwork, and artifacts dating back from these periods.

History of the Site
The project site is located in a heavily developed area in downtown Sacramento. The subject property is situated within an established commercial area of Sacramento. The property is bordered by J Street to the north, by 11th street to the east, by commercial property to the west, and by an alley to the south. An office building and the Elks Lodge Building, which is used for commercial and professional office space, are situated northerly of the property, across J Street. The Cathedral Building (office building) and the Cathedral of the Blessed Sacrament (church) are situated to the east of the project, across 11th street. The Smith Art Gallery and the Crest Theater are located to the south, across the alley.

A number of sites from the National Register of Historic Places exist in the proximity of the proposed project, including the Sacramento Masonic Temple at 1131 J Street and Sacramento Memorial Auditorium at 16th and J Streets. However, the project site itself does not contain any structures listed in the National Register of Historic Places.

Standards of Significance

Cultural resource impacts may be considered significant if the proposed project would result in one or more of the following:

- Cause a substantial change in the significance of a historical or archeological resource as defined in CEQA Guidelines Section 15064.5; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Answers to Checklist Questions

Questions A-B

The project site is not included on the National Register of Historic Places and does not contain any listed historic resource. However, the existing structures on the proposed project site are in excess of 50 years old and potential impacts to cultural resources that could result from the demolition of these structures are not known. Therefore, the proposed project would have a ***potentially significant*** impact in relation to cultural resources.

Mitigation Measures
This impact will be fully addressed in the Cultural Resources chapter of the Cathedral Square EIR.

Questions C-D

The proposed project exists in downtown Sacramento, which is a fully developed urban area. The proposed project site includes four existing on-site structures and has a history of development. Therefore, because of the site has been thoroughly developed, geologic or unique paleontological resources are not present on site. However, because of the site's history, the disruption of undiscovered human remains on the proposed project site could potentially occur. The impacts related to the disruption of geologic, unique paleontological resources and the presence of human remains on the proposed project site as a result of the development of the proposed project would be a ***potentially significant*** impact.

Mitigation Measures
This impact will be fully addressed in the Cultural Resources chapter of the Cathedral Square EIR.

Findings

The proposed project would result in ***potentially significant*** impacts to cultural and historic resources, and human remains, which will be further discussed in the Cultural and Historic Resources section of the Cathedral Square EIR.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
VI. GEOLOGY AND SOILS. *Would the project:*			
A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	**X**
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist - Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	☐	**X**
ii. Strong seismic ground shaking?	☐	☐	**X**
iii. Seismic-related ground failure, including liquefaction?	☐	☐	**X**
iv. Landslides?	☐	☐	**X**
B. Result in substantial soil erosion or the loss of topsoil?	☐	☐	**X**
C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	**X**
D. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code?	☐	☐	**X**
E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	**X**

Environmental Setting

Seismicity

The Sacramento General Plan Update (SGPU) Draft Environmental Impact Report (DEIR) identifies all of the City of Sacramento as being subject to potential damage from earthquake groundshaking at a maximum intensity of VIII of the Modified Mercali scale (SGPU DEIR, 1987, T-16). In addition, Treadwell & Rollo, Inc. prepared a geotechnical investigation for the proposed project in April 2006. The reports state that active or potentially active faults are not known to cross within close proximity to the project site. The closest potentially active faults to the project area include the Dunnigan Hills fault, approximately 30 miles northwest of the site, the Antioch fault, approximately 42 miles southwest of the site, and the Midland fault, approximately 15 miles west of the site. The Dunnigan Hills and Antioch faults are considered capable of generating earthquakes with Richter-Scale magnitudes of 6.75 and the Midland fault could generate a 7.0 magnitude earthquake. A major earthquake on any of these faults could cause strong ground shaking in the project area.

Topography
Terrain in the City of Sacramento features very little relief (SGPU DEIR, T-3). The potential for slope instability within the City of Sacramento is minor due to the relatively flat topography of the area.

Regional Geology
Surface sediments within the City of Sacramento are primarily of three kinds: the older Victor Formation, recent floodplain deposits, and recent basin deposits (SGPU DEIR, T-1). The Victor Formation is a complex mixture of consolidated, ancient riverborne sediments of all textures. Weathering during the Ice Ages, subsequent to formation, has typically caused a hardpan layer to develop near the surface, generally allowing only a moderate-to-low rate of rainwater infiltration. In contrast to the Victor Formation, the recent floodplain and basin deposits represent the depositional regime of the area immediately prior to stream flow and drainage changes brought about within the last 135 years. Floodplain deposits are unconsolidated sands, silts, and clays formed from flooding of the American and Sacramento Rivers and are generally moderately to highly permeable (SGPU DEIR, T-1).

Project Area
The project site is blanketed by fill that extends to depth of between 5 and 16 feet below the existing ground surface (bgs). The fill consists of loose to medium dense silts, sands, silty sands, and poorly graded gravels with varying amounts of sand and silt. Debris consisting of brick fragments and wood were encountered in the fill.

The fill is underlain by two distinct soil deposit zones. The upper zone is characterized by loose to medium dense silt, sandy silt, and soft clay, interbedded with lenses of loose to medium dense sand, gravel, and silty sand extending to a depth of approximately 45 feet bgs in the northwest corner of the project site and 53 feet bgs in the southern half of the project site, corresponding to approximate elevations of -17.5 to -32 feet respectively. The top of the lower zone coincides with these elevations and can generally be identified by a medium dense to very dense gravel and sand layer that ranges from 0 to 10 feet thick. Below the dense to very dense sand and gravel layer, the soil consists of medium stiff to hard silts, and clays with varying amounts of sand and gravel; these layers are interbedded with lenses of dense to very dense silty sand to the maximum depth explored (101 feet bgs) by Treadwell & Rollo, Inc. during the site specific geotechnical investigation.

Standards of Significance

For the purposes of this analysis, an impact is considered significant if it allows a project to be built that would introduce geologic or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

Answers to Checklist Questions

Questions A(i) - A(iii)

The SGPU EIR identifies the entire City of Sacramento as being subject to potential damage from earthquake ground shaking at a maximum intensity of VIII on the Modified Mercali Scale (SGPU EIR, T-16). The Sacramento General Plan (page 8-4) indicates that ground shaking has and would occur periodically in Sacramento as a result of distant earthquakes. Buildings in the City are at varying degrees of risk for damage during such earthquakes. The General Plan further states that the earthquake resistance of any building is dependent upon an interaction of seismic frequency,

intensity and duration with the structure's height, condition, and construction materials.

Although the project site is not located near any active or potentially active faults, several outlying regional faults exist. A major earthquake on any of the regional faults could cause strong ground shaking at the project site. A secondary seismic hazard that potentially could affect the site is known as liquefaction. Liquefaction is a phenomenon in which loose and saturated soils are subject to a temporary but essentially total loss of shear strength because of pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. The weight of structures on such liquefied material can precipitate structural damage. Liquefaction most commonly occurs in low-lying areas where unconsolidated, saturated, clay-free sands and silts predominate, such as those found at the project site. Excavation and grading activities are regulated by Title 8 of the California Code of Regulations and Occupational Safety and Health Act (OSHA). These regulations require that excavations must be shored or otherwise stabilized to preclude slope failure during construction. This requirement is incorporated in the Uniform Building Code (Section A33 - Excavation and Grading), which also requires shoring of trenches or other structural integrity measures be implemented, as well as erosion control measures. These regulations would apply to the excavations of the project site in preparation for construction of the proposed office building.

Cities in California are required to consider seismic safety as part of the General Plan Safety Element. The City of Sacramento General Plan, Health and Safety Element has adopted policies to address seismic hazards with the goal of protecting lives and property from unacceptable risk due to seismic and geologic activity or unstable soil conditions to the maximum extent feasible. The Sacramento City Code and the Uniform Building Code require that soils reports and geologic investigations for determining liquefaction, expansive soils, and subsidence problems be prepared for multiple-story buildings. Current construction standards in Sacramento require that all new structures be built to withstand seismic activity designated for Zone 3 of the Uniform Building Code's Seismic Zone Map (SGPU, 8-13).

In addition, issues related to fault rupture, seismic ground shaking, and seismically induced ground failures are addressed in the City's adopted *Standard Specifications for Public Works Construction* (1989), which requires construction contractors to build to City standards related to structural integrity, thus ensuring that erosion and unstable soil conditions do not occur as a result of construction. The construction specification document contains provisions that require contractors to be responsible for damage caused during construction and to be responsible for the repair of such damages (e.g., settling of adjacent land and structures). Individual components used in the construction of the project would be constructed to industry-provided design specifications and requirements, including the American Society for Testing and Materials (ASTM) standards. These existing regulations and requirements are enforced through the City's building review and inspection process and would ensure that the proposed project would not be subjected to or cause significant seismic impacts. Therefore, any impacts associated with fault rupture and seismic ground shaking would be ***less-than-significant*.**

Mitigation Measures
Mitigation is not required.

Questions A (iv), C, D

The project area is relatively flat, developed, urban land and not usually associated with landslides. In addition, a geotechnical investigation, performed by Treadwell & Rollo, Inc. in April 2006. The investigation concluded that that only an isolated area of the project site is marginally susceptible to

liquefaction during a major earthquake generating a peak ground acceleration of 0.18g zone. Boring Sample B-2 consisted of saturated, loose to medium dense silty sand encountered between the depths of 21 and 33 feet bgs. Furthermore, the results of the evaluation concluded that the potentially liquefiable soil layer appears to be isolated to the northeast portion of the site, since potentially liquefiable material was not observed in the other boring. Current construction techniques and requirements of the Uniform Building Code and site conditions ensure that the impacts associated with landslides, unstable soils, and expansive soils would be ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Question B

The project site is flat, with little or no slope, and would require minimal grading or changes in topography. Therefore, the change in topography is considered too small to be significant. The City's grading ordinance (Chapter 15.88 of Sacramento City Code) specifies construction standards to minimize erosion and run-off. The potential for erosion and/or unstable soil conditions would be minimized though provisions of the UBC and requirements of the grading ordinance. Therefore, a ***less-than-significant*** impact is expected to occur.

Mitigation Measures
Mitigation is not required.

Question E

The project would include residential, restaurant, and retail establishments. The building structure would be required to connect to the public sewer system, and therefore, septic tanks or alternative wastewater disposal systems would not be proposed. The impact would be considered ***less-than-significant.***

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***less-than-significant*** impacts from the characteristics of the site geology and soils.

Issues	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
VII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*			
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	**X**
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	**X**	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	**X**	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	**X**
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	**X**
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	**X**
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	**X**
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	**X**

Environmental Setting

The proposed project site is currently developed, containing four buildings ranging from one to three stories. The buildings are primarily vacant, but contain a small amount of retail uses. The four existing buildings on the proposed project site are in excess of 50 years old and may have been constructed using lead paint and asbestos-based building products.

Standards of Significance

For the purposes of this document, an impact is considered significant if the proposed project would:

- Expose people or the environment (e.g., residents, pedestrians, construction workers) to existing contaminated soil during construction activities;
- Expose people or the environment (e.g., residents, pedestrians, construction workers) to asbestos-containing materials; or
- Expose people or the environment (e.g., residents, pedestrians, construction workers) to existing contaminated groundwater during de-watering activities.

Answers to Checklist Questions

Question A

The project proponent proposes to demolish four existing buildings and construct a 25-story building containing a retail uses and condominiums, which would not involve the routine transport, use, or disposal of hazardous materials on -or off-site. In addition, the project site is not expected to require routine use of such materials during regular operations. Therefore, any impact from the routine transport, use, or disposal of hazardous materials would be ***less-than-significant*.**

Mitigation Measures
Mitigation is not required.

Questions B and C

The proposed project site includes structures which are in excess of 50 years old and may contain potentially hazardous building materials, such as asbestos. When highly disturbed, the fibers could become airborne. When inhaled in substantial amounts, friable particles are known carcinogens. Because existing structures on the project site were built prior to the mid-1970s, a higher incidence of asbestos-containing materials (ACMs) in the buildings is possible. These materials can include, but are not limited to, resilient floor coverings, drywall joint compounds, acoustic ceiling tiles, piping insulation, electrical insulation and fireproofing materials.

Lead-based paints could also be present in the existing structures. Typically, exposure to lead from older vintage paint is possible when the paint is in poor condition or is being removed. In construction settings, workers could be exposed to airborne lead during renovation, maintenance or removal work. Lead-based paints were phased out of production in the early 1970s, but the onsite buildings were constructed prior to the ban on lead-based paints and may therefore contain these materials.

Long-term exposure to the friable asbestos and lead particles could prove hazardous to construction workers. Therefore, impacts related to the presence of potentially hazardous substances resulting from the demolition of existing structures would be ***potentially significant***.

Mitigation Measures
Implementation of the following mitigation measures would reduce the construction-related impact to a *less-than-significant* level:

VII-1 *Prior to issuance of a demolition permit by the City for any on-site structures, the project proponent shall provide a site assessment which determines whether any structures to be demolished contain asbestos and/or lead-based paint. If any structures contain asbestos, the application shall include an asbestos abatement plan consistent with local, state, and federal standards, subject to the City Building Official approval.*

VII-2 *Prior to the issuance of demolition permits for existing onsite structures, the project proponent shall provide a site assessment, which determines whether any structures to be demolished contain lead-based paint. If such paint is found all loose and peeling paint shall be removed and disposed of by a licensed and certified lead paint removal contractor, in accordance with local, state, and federal regulations. The demolition contractor shall be informed that all paint on the buildings shall be considered as containing lead. The contractor shall take appropriate precautions to protect his/her workers, the surrounding community, and to dispose of construction waste containing lead paint in accordance with local, state, and federal regulations subject to the City Building Official approval.*

Question D

The site is not listed as a hazardous materials site pursuant to Government Code Section 65962.5. Development of the project would include only minor grading and soil disturbance. Therefore, the proposed project would have a ***less-than-significant*** impact on the public or the environment.

Mitigation Measures
Mitigation is not required.

Questions E, F

The project site is not located within an airport land use plan or within two miles of an airport. Therefore, a ***less-than-significant*** impact related to airplane hazards would occur.

Mitigation Measures
Mitigation is not required.

Question G

Development of the project site would be located within an established urban area, and would not impair implementation of, or physically interfere with, an emergency response plan or emergency evacuation plan. Traffic impacts related to emergency access during construction will be addressed in the Traffic section of the Cathedral Square Initial Study. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measures
Mitigation is not required.

Question H

The project site is located within an urban area where the possibility wild land fires would be considered unlikely due to the lack of vegetation associated with urbanized areas. Therefore, a ***less-than-significant*** impact related to wildland fires would occur.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***less-than-significant*** with the implementation of mitigation measures impacts from hazards and hazardous materials.

Issues			Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
VIII.	**HYDROLOGY & WATER QUALITY.** *Would the project:*				
	a.	Violate any water quality standards or waste discharge requirements?	☐	☐	**X**
	b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	**X**
	c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	**X**
	d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	**X**
	e.	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	**X**
	f.	Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	**X**
	g.	Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	**X**
	h.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	**X**
	i.	Inundation by seiche, tsunami, or mudflow?	☐	☐	**X**

Environmental Setting

Water Quality
The American and Sacramento rivers are considered to be of very good water quality. Water quality is typically well with in State and federal guidelines for fish and aquatic life habitat, recreational uses, and for municipal, agricultural and industrial water supplies.

The Central Valley Regional Water Quality Control Board (RWQCB) regulates surface water and ground water quality in the Sacramento area. The RWQCB implements regulations through a variety of permits intended to reduce, control, or eliminate the pollutant discharges into local waterways, including the Sacramento River and its tributaries.

The City of Sacramento has obtained a National Pollution Discharge Elimination System Permit (Permit) from the RWQCB that requires the reduction of pollutant discharges from municipal drainage systems into local waterways the maximum extent practicable.

The City Stormwater Quality Improvement Program (Program) was developed to maintain the high quality of our local water resources and comply with the Permit. The comprehensive Program includes pollution reduction activities for construction sites, industrial sites, illegal discharges, illicit connections, new development, and municipal activities. In addition, the Program includes and extensive public education effort, target pollution reduction strategy, and monitoring program.

The Program requires the use of Best Management Practices (BMPs) to reduce pollutant discharges during and after construction. These practices include sediment and erosion control measures and housekeeping practices during construction and source control and/or treatment control measures to minimize the increase in urban runoff pollution caused by development of the area. Construction and post-construction BMPs minimize erosion and sedimentation and prevent pollutants such as oils and grease from entering the storm drain system. BMPs are approved by Department of Utilities before issuance of grading permit or approval of the improvement plans.

Water Supply
The groundwater aquifer system underlying the Sacramento region is part of the larger Central Valley groundwater basin. Deep percolation of precipitation and surface water applied to irrigated cropland recharges the system. Groundwater is depleted by pumped extractions of groundwater for municipal, industrial, and agricultural purposes. Groundwater levels in the region have been declining since 1940. The pattern of pumping has continued over the years and the current rate of decline is about 1.5 feet per year (SGPU EIR, w-9). Groundwater supplements municipal water supplies in areas north of the American River, but the area south of the American River is supplied by surface water.

The City of Sacramento currently provides water service from a combination of surface and groundwater sources (General Plan, page 7-2). The City has the rights to enough quality surface water to supply all planned growth within the city limits until buildout. However, evidence affirms that groundwater supplies in the Sacramento area are being depleted, often resulting in a lowering of quality. Conversely, surface water is not being fully utilized. The City of Sacramento has surface water entitlements, which exceed its current needs and possibly its future requirements (General Plan, page 7-3). Surface water is currently treated at three City treatment facilities.

Drainage
The stormwater drainage system of the City of Sacramento is a complex network of natural channels, canals, levees, subsurface drains, and pumping stations. All drainage ultimately flows to

the American and Sacramento rivers. In the older areas of the City (bounded by the Sacramento River on the west and 65th Street on the east, American River on the north and Sutterville Road on the south), the City currently has a combined stormwater and wastewater system (Sacramento General Plan, p. 7-6). The project boundaries are located within a developed urban area with existing roadways, curbs, gutters, and drainage system located in the Central City Community Plan area.

Flooding
The proposed project is not located within the 100-year floodplain according to the Federal Emergency Management Agency (FEMA) website (www.fema.gov) and General Plan (page 6-7). However, the SGPU EIR identifies the majority of the project boundaries as being within a drainage and flooding problem area, having experienced flooding and drainage problems during the February 1986 Storm Episode (Page W-6).

Standards of Significance
For purposes of this environmental document, an impact is considered significant if the proposed project would:

- Substantially degrade water quality and violate any water quality objectives set by the Regional Water Quality Control Board, due to increased sediments and other contaminants generated by the consumption and/or operation activities;
- Substantially increase exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood

Answers to Checklist Questions

Question A

Development of the proposed project site may result in an alteration of water quality during construction. Fuel, oil, grease, solvents, and other chemicals used in construction activities can create toxic problems if allowed to enter the project drainage and subsequently the Sacramento River. The applicant must comply with the City of Sacramento's Grading, Erosion, and Sediment Control Ordinances (ESC) which require that the applicant prepare erosion and sediment control plans for both during and after construction of the proposed project. The City of Sacramento also requires that post-construction storm water quality control measures be incorporated into development plans to minimize the increase of urban run-off pollution caused by development of the area. The "Guidance Manual of Standards for On-site Stormwater Quality Control Measures," January 2000, identifies appropriate source control measures.

The applicant would be required to comply with the City's Stormwater Management and Discharge Control Ordinance (Title 13). This ordinance requires that the improvement plans incorporate controls to minimize the long-term, post construction discharge of stormwater pollutants from the project. The project would include onsite source and treatment controls as required be the Stormwater Quality Standards for Development Projects (which will become effective May 18, 2006) in the *Guidance Manual for Onsite Stormwater Quality Control Measures (January 2000).*

In compliance with Grading, Erosion, and sediment Control Ordinances, the applicant must prepare and submit and Erosion and Sediment Control Plan (ESC) and a Post-construction Erosion and Sediment Control Plan (PC) for the review and approval of the City of Sacramento, which would include onsite water quality features, such as the vegetative swale currently located on the site to

drain the existing Target store pavement areas. The development of the ESC and PC would ensure the quality of stormwater runoff. Therefore, the impact on water quality for development of the proposed project would be ***less-than-significant.***

Mitigation Measures
Mitigation is not required.

Question B

The presence of groundwater can influence construction methods and materials utilized. Groundwater can be relatively shallow in the City of Sacramento. In general, groundwater levels in the vicinity of the City of Sacramento are reported to be stable, between 20 feet above and 40 below mean sea level. Due to the shallow depth of groundwater in some portions of the local area, the possibility exists for the proposed improvements to encounter groundwater and would require de-watering during construction. De-watering activities could result in a short-term change in the quantity of groundwater, and/or direction or rate of flow, and groundwater quality. De-watering activities must comply with application requirements established by the Central Valley Regional Water Quality Control Board (CVRWQB) to ensure that de-watering activities would not result in changes to groundwater quality. Because the requirements of the CVRWQB must be implemented, the impact would be ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Questions C, D

The proposed project is consistent with what is allowed, given the current General Plan designation. The project site is currently fully developed and supports four existing structures. The project site is completely developed. Development of the proposed project would not create any new impervious surfaces that would lead to increased run-off, nor would it change the drainage patterns of the area. Therefore, because the development of the proposed project would not introduce any new impervious surfaces or disrupt any existing drainage patterns, impacts related to drainage would be considered ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Question E

Demolition, construction and grading activities on the project site would involve the operation of heavy equipment. Although the project area is relatively flat and the potential for soil erosion is considered to be low, peak storm water runoff could result in sheet erosion within areas of exposed soils. The compaction of soils by heavy equipment would reduce the infiltration capacity of soils and increase runoff erosion potential, which could result in blockage of storm drain channels or sedimentation downstream. The applicant must comply with the City of Sacramento's Grading, Erosion, and Sediment Control Ordinance. This ordinance requires the applicant to show erosion and sediment control methods on the improvement plans. The improvement plans would also show the methods to control urban runoff pollution from the project site during construction. In addition, construction related activities would comply with Chapter 70 of the Uniform Building Code (UBC).

Following completion of construction activities, the proposed project would be expected to result in a similar total area of impervious surfaces as the existing land uses. Therefore, because the demolition and construction phases of the proposed project must follow the City of Sacramento's Grading, Erosion and Sediment Control Ordinance, and because the operational phase of the proposed project would not result in a substantial net increase in total impervious surfaces over the present condition, the proposed project would be expected to have a ***less-than-significant*** impact.

Mitigation Measures
Mitigation is not required.

Questions F, G, H

The proposed project includes the development of new business, residential and commercial establishments. The most recent FEMA floodplain map (July, 1998) does not identify the project site as being located within the 100-year floodplain. Therefore, the proposed project would not place any structures that would impede or redirect flood flows into such a floodplain. Thus, the proposed project would result in a ***less-than-significant*** impact.

Mitigation Measures
Mitigation is not required.

Question I

A seiche is a long wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. The project is not located near such a body of water.

As mudflows typically occur in mountainous or hilly terrain, and the project site and surrounding areas are typically flat, danger would not be presented from the likelihood of mudflow.

Tsunamis are defined as sea waves created by undersea fault movement. A tsunami poses little danger away from the shorelines; however, when it reaches shoreline, a high swell of water breaks and washes inland with great force. The proposed project site is located at a sufficient distance from the sea and thus is removed from tsunami danger.

The above analysis indicates that the project site would not be threatened by a seiche, tsunami, or mudflow; therefore***, less-than-significant*** impacts from such phenomena would occur.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project, with the included mitigation measures, would result in ***less-than-significant*** impacts to hydrology and water quality.

Issues		Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
IX.	**LAND USE AND PLANNING.** *Would the project:*			
	a. Physically divide an established community?	☐	☐	**X**
	b. Conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	**X**
	c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	**X**

Environmental Setting

Four buildings ranging from one to three stories in height currently occupy the project site. The buildings are primarily vacant, but contain a small amount of retail use. The property is designated in the General Plan Community Neighborhood Commercial & Offices, and is zoned Central Business District – Special Planning District (C-3 SPD).

Standards of Significance

For the purposes of this analysis, an impact is considered significant if the project would substantially alter an approved land use plan that would result in a physical change to the environment. Physical environmental changes resulting from the proposed project are discussed in other sections of this document.

Answers to Checklist Questions

Question A

The project site is a 0.69-acre parcel within downtown Sacramento, a heavily urbanized area. The development of the proposed project would include the demolition of four existing structures, which are primarily vacant but contain a small amount of retail uses. The mixed-use character of the general vicinity provides compatibility for the proposed building, particularly in view of the City's long-range development plans, which provide a diversity of neighborhood environments, from the traditional downtown core to a well-integrated new growth area. Development of the proposed Cathedral Square development would not physically divide an established community because the proposed project is consistent with surrounding areas. Therefore, the impact of the proposed project would be considered ***less-than-significant*.**

Mitigation Measures

Mitigation is not required.

Question B

The property is designated in the General Plan Community Neighborhood Commercial & Offices, in the Central City Community Plan as Multi-Use, and is zoned Central Business District – Special Planning District (C-3 SPD). In accordance with the multi-use designation for the Central Business District, the project applicant would be required to obtain a special permit for condominium development within the project area. The proposed project is consistent with the General Plan, the Central City Community Plan designations, and the Zoning Ordinance. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measures

Mitigation is not required.

Question C

The Sacramento General Plan Update (SGPU) discusses the possibility of establishing a Resource Conservation Zone (RCZ) Program to protect significant and sensitive natural habitats. At present, such a program has not been implemented. However, as shown in Exhibit U-5 of the SGPU, sensitive habitat and/or communities do not exist in the area of the project site. Therefore, because the proposed project would not conflict with an existing conservation plan, a ***less-than-significant*** impact would occur.

Mitigation Measures

Mitigation is not required.

Findings

The proposed project would result in ***less-than-significant*** impacts with regards to land use.

Issues			Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
X.	**MINERAL RESOURCES.** *Would the project:*				
	a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	**X**
	b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	**X**

Environmental Setting

The Sacramento General Plan Update (SGPU) identifies two Mineral Resource Zones (MRZ) within its planning area: 1) deposits along Cache Creek west of Woodland, and 2) deposits extending several miles south of the American River between Folsom and the City of Sacramento (SGPU, T-14). Nonurbanized portions of these MRZs are considered available for mining according to criteria established by the State Mining and Geology Board. These Mineral Resource Sectors are plotted on a map and included in the SGPU (T-15). Eight such sectors are catalogued; however, the sectors do not lie within the project site, and is not identified as an area containing mineral resources.

Standards of Significance
For the purposes of this analysis, an impact is considered significant if the project would:

- Interfere with existing mining operations; or
- Restrict access to known mineral operations.

Answers to Checklist Questions

Questions A, B

The proposed project site is not located within the established MRZs or the Mineral Resource Sectors identified in the SGPU EIR. Furthermore, the SGPU provides for exclusion of designated types of properties, one of which is urban residential, commercial, and industrial areas (T-14). This exclusion would apply to the project site. Accordingly, the proposed project is exempt from the consideration of mineral resources under two conditions: first, that the site is not designated as a Mineral Resource Sector, and, second, that the site is located in an urban, commercial area. Therefore, a ***less-than-significant*** impact would result.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***less-than-significant*** impacts to mineral resources.

Issues		Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XI.	**NOISE AND VIBRATION.** *Would the project result in:*			
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**X**	☐	☐
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	**X**	☐	☐
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	**X**	☐	☐
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	**X**	☐	☐
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	**X**
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	**X**

Environmental Setting

The proposed project is located within the Central City Community Area. Surface and freeway traffic are the dominant noise sources in this area (SGPU DEIR, AA-30), including Interstate 5, Interstate 80 and State Route (SR) 160. The major surface streets near the site are J Street, which forms the southern boundary and 12th Street, a half-block to the west of the project. A Sacramento Regional Transit (RT) light rail line operates on 12th Street. In addition, the I Street arterial is one block north of the project.

The Crest Theatre is a three-auditorium complex consisting of a 975-seat auditorium that abuts

adjoining alleyway and two sub grade 180 theatres. The Theatres operates 7 days a week and the auditorium is used for day and evening events, including; concerts, children theater, comedy shows, governmental meetings, lectures, and a variety of corporate events. The Cathedral of the Blessed Sacrament conducts weekday services at 12:10 p.m. Monday through Friday; 5:10 p.m. Monday through Thursday, 7p.m. on Friday and 5 p.m. on Saturday. In addition, the Sacrament of Penance is conducted for 45 minutes before each service.

Noise generated by the proposed project would be expected to resonate from associated construction and operational related activities. As specified in Section 66.201 of the City of Sacramento Noise Ordinance, construction-generated sound is exempt from limits if construction activities take place between the hours of 7:00 a.m. and 6:00 p.m., Monday-Saturday, and between 9:00 a.m. and 6:00 p.m. on Sundays.

Standards of Significance

Thresholds of significance are established by the Title 24 standards and by the City's General Plan Noise Element and the City Noise Ordinance. Noise and vibration impacts resulting from the implementation of the proposed project would be considered significant if they would cause any of the following results:

- Exterior noise levels at the proposed project which are above the upper value of the normally acceptable category for various land uses (SGPU DEIR AA-27) caused by noise level increases due to the project;
- Residential interior noise levels of 45 L_{dn} or greater caused by noise level increases due to the project;
- Construction noise levels not in compliance with the City of Sacramento Noise Ordinance; or
- Occupied existing and project residential and commercial areas are exposed to vibration peak particle velocities greater than 0.5 inches-per-second due to project construction.

Answers to Checklist Questions

Questions A, B, C and D

The City of Sacramento General Plan Noise Element establishes exterior noise level criteria for various land uses (SGPU, AA-27). The normally acceptable exterior community noise exposure standard for commercial buildings is 65 dB. The conditionally acceptable exterior noise exposure standard is 65-to-80 dB for commercial buildings.

The proposed project would involve the construction of a 470,020 sq. ft. 25-story building with 233 residential condominium units in the Central Business District Special Planning District of downtown Sacramento. The project site currently supports four structures ranging from one to three stories. The existing structures are primarily vacant with some retail uses. The proposed project would be substantially more dense and intensive than the current land uses and would result in an increase in vehicle trips to the site and would introduce a number of new sensitive receptors to the downtown area. Additionally, the proposed project would include construction noise and vibration impacts as well as operational sources of noise. Therefore, the proposed project would be expected to have a ***potentially significant*** impact.

Mitigation Measures
This impact will be fully addressed in the Noise chapter of the Cathedral Square EIR.

Questions E, F

The project site is not located near an existing airport and is not within an area covered by an existing airport land use plan. Therefore, development of the project site would result in a ***less-than-significant*** impact to airport noise generation.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***potentially significant*** impacts to noise and vibration, which will be further discussed in the Noise and Vibration section of the Cathedral Square EIR.

Issues			Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XII.	**POPULATION AND HOUSING.** *Would the project:*				
	a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	**X**	☐	☐
	b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	**X**
	c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	**X**

Environmental Setting

The proposed project is located within the Central Business District in downtown Sacramento. The project site currently supports four buildings ranging from one to three stories. These structures are primarily vacant with some retail on site.

Standards of Significance

Section 15131 of the California Environmental Quality Act (CEQA) Guidelines states that the economic or social effects of a project shall not be treated as a significant effect on the environment. According to the CEQA Guidelines, an EIR may trace a chain of cause-and-effect from a) the proposed decision on a project through b) anticipated economic or social changes resulting from the project to c) physical changes caused in turn by the economic and/or social changes.

This environmental document does not treat population/housing as an environmental impact, but rather as a socio-economic impact. If clear secondary impacts would be created by a population/housing increase generated by the project, those secondary impacts would be addressed in each affected area (e.g. transportation, air quality, etc.) of this document.

For the purposes of this analysis, an impact would be considered significant if the project would induce substantial growth inconsistent with the approved land use plan for the area, or would displace existing affordable housing.

Answers to Checklist Questions

Question A

The proposed project includes the construction of up to 233 condominium units, which would

directly result in an increased population. The population generated by the proposed project could result in physical environmental effects. This is considered to be a ***potentially significant*** impact.

Mitigation Measures
Where the increased population resulting from the proposed project has the potential to result in physical effects on the environment, those effects will be addressed in the technical chapters of the EIR. In addition, the potential growth inducing effects of the project will be addressed in the Statutorily Required chapter of the EIR.

Questions B, C

The proposed project site is primarily vacant with some retail land uses. The development of the project site would not displace existing residents, or housing, because the site is not currently residentially developed. Therefore, the impact would be considered ***less-than-significant*.**

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in ***potentially significant*** impacts related to increased population, these impacts will be fully addressed in the Intro to Analysis and Statutorily Required technical sections of the Cathedral Square EIR.

Issues		Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XIII.	**PUBLIC SERVICES.** *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*			
	a. Fire protection?	☐	☐	**X**
	b. Police protection?	☐	☐	**X**
	c. Schools?	☐	☐	**X**
	d. Parks?	☐	☐	**X**

Environmental Setting

The project site is located in downtown Sacramento, within the City of Sacramento. The City of Sacramento provides fire, police and parks and recreation services within the vicinity of the proposed project site.

Fire Protection

Fire protection for the proposed project is provided by the Sacramento Fire Department. The Sacramento Fire Department (SFD) provides fire protection services to the entire City and some small areas just outside the City boundaries within the County limits. All new buildings that have floors used for human occupancy located more than 75 feet above the lowest level of fire department access are required to comply with the City's high-rise regulations (Chapter 15.1000), which are enforced by the fire department and the building inspection division.

Under the direction of the Fire Chief, the SFD is divided into three divisions: Office of the Chief, Office of Operations, and Office of Support Services. In Fiscal Year 2005/2006, the SFD employed 587 personnel (538 sworn employees and 49 civilian employees) providing protection and response services to the City's residents and visitors. Fire stations are strategically located throughout the City to provide assistance to area residents. Each fire station operates within a specific district that comprises the immediate geographical area around the station. The nearest fire station in proximity to the proposed project site is located at 1229 I Street, which is located one city block north of the project.

An acceptable service level, defined by the SFD, requires paramedic response to an incident in eight minutes or less, 90 percent of the time. The average emergency response time for the SFD is approximately four to five minutes. Criteria for non-emergency response times do not exist.

Police Protection

Law enforcement for the proposed project is provided by the City of Sacramento Police Department (SPD). In addition to the SPD, the Sacramento County Sheriff's Department, California Highway Patrol, UC Davis Medical Center Police Department, and the Regional Transit Police Department provide police protection within the City of Sacramento.

The William J. Kinney Police facility, located at 3550 Marysville Boulevard, serves the Downtown area of Sacramento. The facility is approximately 5 miles from the project site. Specifically, the proposed project is located in Police District 3, Beat "M", which is a sub-district of District 3, Beat "A". District 3A is bounded by the Sacramento River to the west, 19th Street to the east, the American River to the north, and SR 50 to the south. The current patrol staffing for the district that would serve the proposed project would include; 2 Sergeants, 13 Officers, and 1 Community Service Officer.

The SPD does not have an adopted officer-to-resident ratio. The Department uses a variety of data that includes GIS based data, call and crime frequency information, and available personnel to rebalance the SPD deployment on an annual basis to meet the changing demands of the City. As of 2005, the SPD was funded for 1.7 officers per 1,000 residents.

Schools

The Sacramento City Unified School District (SCUSD) is the primary provider of school services within the City. SCUSD operates more than 70 schools throughout the City; the district includes traditional elementary, middle, and high schools, as well as alternative education and charter school facilities. The SCUSD area covers the Central City, east to the City Limits. Schools within approximately two miles of the project site include Success/CHESS Academy, Washington Elementary School, William Land Elementary, Kit Carson Middle School, Sutter Middle School, and Sacramento Charter School.

Standards of Significance

For the purposes of this report, an impact would be considered significant if the project resulted in the need for new or altered services related to fire protection, police protection, school facilities, or public parks.

Answers to Checklist Questions

Question A

The proposed project involves the construction of 233 residential units, which would result in a population increase in the City of Sacramento of approximately 599 (generation rate of 2.57 persons per unit). An acceptable service level, defined by the SFD, requires paramedic response to an incident in eight minutes or less, 90 percent of the time. As stated by the SFD, the average emergency response time for the Department is approximately four to five minutes. In 2002, the most recent data available for response times, the overall average response time for each fire station was 5.03 minutes for 58,538 calls.

The addition of 599 residents to the Sacramento Fire Department service area would generate the need for additional fire services regarding human occupancy in high-rises and emergency responses. However, the proposed project would include fire protection features as required in the

City Code including fire alarm systems, fire extinguisher systems and exit illumination. Due to the requirements of the City Code, the proposed project would not create an inordinate demand for fire protection services such that new or altered fire facilities would be required. Therefore, this would be considered a ***less-than-significant impact***.

Mitigation Measures
Mitigation is not required.

Question B

The proposed project involves the construction of 233 units in Downtown Sacramento, which would result in a population increase in the City of Sacramento of approximately 599 persons (generation rate of 2.57 persons per unit). The SPD does not have any currently funded projects for the remodeling or construction of facilities. New police facilities, with adequate staffing and equipment, would be required as buildout of the General Plan occurs. Adequate staffing requires not only sworn staff, but also civilian employees with technical abilities (including crime scene investigators and dispatchers) to support the SPD's services.

According to the General Plan, the SPD has indicated that although funding for sworn officers has increased over recent years, funding for civilian technical staff to support the Department has not increased proportionally. SPD staff indicates that increasing the number of sworn officers requires an associated increase in civilian employees, specifically with technical abilities (includes crime scene investigators and dispatchers), to adequately provide services. Additionally, SPD staff has also indicated that the maintenance of technology will become increasingly challenging as systems age and technology advances.

The SPD is developing a Master Plan designed to accommodate City-wide department needs until 2022. The additional facilities and personnel needed to serve the growing downtown area would be funded by tax payers (including future proposed project residents) through the City's General Fund. The SPD would add personnel on an as needed basis. Because adequate police services will be available to meet project demand this would be considered a ***less-than-significant impact***.

Mitigation Measures
Mitigation is not required.

Question C

The proposed project includes the development of 233 units, which would result in the introduction of additional students to the Sacramento Unified School District. Table 1 shows the number of students that would be expected to be generated by the Cathedral Square project.

Table 1
Student Generation Estimates for Proposed Project

Housing Type	***# of Units***	***K-6 Yield/Enrollment***	***7-9 Yield/Enrollment***	***10-12 Yield/Enrollment***	***Total Yield/Enrollment***
Single Family	233	0.418 / 97	0.150 / 35	0.130 / 30	0.698 / 162
Total	**233**	**97**	**35**	**30**	**162**

Source: Golden State Planning Group, August 2004.

As can be seen in Table 1, using City of Sacramento student generation rates, the Cathedral Square project would be expected to generate 162 additional students, the majority of who are assumed to attend the SCUSD. The project applicants would be required per SB 50 and AB 16 to pay school impact fees. In addition, the payment of SB 50 impact fees is full mitigation for school facilities. However, levels of applicant fee contribution are determined by the State Allocation Board and increase annually.

The applicant's compliance with SB 50 and AB 16 would ensure that project impacts to existing District facilities are ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Question D

The proposed project would involve the construction of approximately 233 condominium units as well as 10,000 sq. ft of ground floor retail. Thus, the proposed project would result in an increase of 599 residents in the downtown Sacramento area. Though the proposed project would include a pool and fitness area, the residents would still likely utilize City park facilities in the area. The project proponent would be required to pay in-lieu fees, in accordance with the provisions of the Quimby Act, requiring residential developers to dedicate land or in-lieu funds toward park development. While residents and guests of the project would likely use some of the park facilities in the vicinity of the project site, along with other city-wide facilities, the population generated by the proposed project would be relatively small compared to the greater downtown population. Therefore, the project populations incremental contribution to the cumulative use of the parks would not be sufficient to cause substantial physical deterioration of the park facilities, nor would the project require additional or expanded recreation facilities. Therefore, with the required payment of in-lieu fees, this impact would be considered to be ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in a ***less-than-significant*** impact to public services.

Issues		Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XIV.	**RECREATION.** *Would the project:*			
a.	Increase the demand for neighborhood or regional parks or other recreational facilities?	☐	☐	**X**
b.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	**X**

Environmental Setting

The proposed project site is located within the City of Sacramento's Central City Planning Area, which contains 20 parks with a total of over 83 developed acres and approximately 185 parks city-wide.

Standards of Significance

Recreation impacts would be considered significant if the project created a new demand for additional recreational facilities or affected existing recreational opportunities.

Answers to Checklist Questions

Questions A, B

The proposed project would involve the construction of approximately 233 condominium units as well as 10,000 sq. ft of ground floor retail. Thus, the proposed project would result in an increase of 599 residents in the downtown Sacramento area. Though the proposed project would include a pool and fitness area that would be accessible by residents, residents would likely still utilize city park facilities in the area. The project proponent would be required to pay in-lieu fees, in accordance with the provisions of the Quimby Act, requiring residential developers to dedicate land or in-lieu funds toward park development. While residents and guests of the project would likely use some of the park facilities in the vicinity of the project site, along with other city-wide facilities, the population generated by the proposed project would be relatively small compared to the greater downtown population. Therefore, the project populations incremental contribution to the cumulative use of the parks would not be sufficient to cause substantial physical deterioration of the park facilities, nor would the project require additional or expanded recreation facilities. Therefore, this impact would be considered to be ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Findings

The proposed project would result in a ***less-than-significant*** impact to recreation facilities.

Issues			Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XV.	**TRANSPORTATION/CIRCULATION.** *Would the project:*				
	a.	Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	**X**	☐	☐
	b.	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	**X**	☐	☐
	c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	**X**
	d.	Substantially increase hazards due to a design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	**X**	☐	☐
	e.	Result in inadequate emergency access?	**X**	☐	☐
	f.	Result in inadequate parking capacity?	**X**	☐	☐
	g.	Conflict with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	**X**	☐	☐

Environmental Setting

Four buildings ranging from one to three stories currently exist on the proposed project site. The corner of 12th and J Street, east of the project site is a signalized intersection and accommodates an RT light rail line. Automobile traffic could access the proposed project from an entrance on J Street and along the alleyway adjacent to 11th Street. The proposed project would include 326 parking stalls.

Standards of Significance

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies.

Intersections
In the City of Sacramento, a significant traffic impact (intersection) occurs when the traffic generated by a project degrades peak period level of service from A, B, or C (without project) to D, E, or F (with project); or the LOS (without project) is D, E, or F, and project-generated traffic increases

the peak period average vehicle delay by five seconds or more.

Bikeways
A significant bikeway impact would occur if the project hindered or eliminated an existing designated bikeway, or if the project interfered with implementation of a proposed bikeway. A significant bikeway impact could also occur if the project were to result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Pedestrian Facilities
A significant pedestrian circulation impact would occur if the project were to result in unsafe conditions for pedestrians, including unsafe increase pedestrian/bicycle or pedestrian/motor vehicle conflicts.

Transit System
A significant impact to the transit system would occur if normal operation of the project would result in blockage to transit routes. A significant impact to the transit system would also occur where project-generated ridership, when added to existing or future ridership, exceeds available or planned system capacity. Capacity is defined as the total number of passengers, which the system of busses and light rail vehicles can carry during the peak hours of operation.

Answers to Checklist Questions

Questions A, B

The proposed project would redevelop a 0.69-acre area of downtown Sacramento. Although the proposed project would be consistent with general land use designations for the Central Business District, introduction of a 472,020 sq. ft., 25-story building containing 233 condominium units and approximately 10,000 sq. ft of ground floor retail could generate enough project-specific traffic to adversely affect the local circulation. Therefore, the impact would be considered ***potentially significant*.**

Mitigation Measures
This impact will be fully addressed in the Traffic and Circulation chapter of the Cathedral Square EIR.

Question C

The proposed project would not require any changes to existing regional air traffic activity. Therefore, a ***less-than-significant*** impact would occur related to air traffic patterns.

Mitigation Measures
Mitigation is not required.

Question D

The proposed project would involve the addition of an on-site parking garage access and several alterations to the street. Further study of the proposed project design would be required to adequately address impacts related to the increase in potential hazards as a result of design features. Therefore, a ***potentially significant*** impact would be associated with the proposed development.

Mitigation Measures
This impact will be fully addressed in the Traffic and Circulation chapter of the Cathedral Square EIR.

Question E

The proposed project would be located in downtown Sacramento in the Central Business District. The public streets adhere to standards set by the City of Sacramento, and provide adequate emergency access. However, the proposed project would replace the current structures, which are primarily vacant with some retail uses, with 233 condominium units and approximately 10,000 sq. ft. of retail space as well as parking facilities. Therefore, due to the scale of the proposed project, a ***potentially significant*** impact in regard to adequate emergency access may result.

Mitigation Measures
This impact will be fully addressed in the Traffic and Circulation chapter of the Cathedral Square EIR.

Question F and G

The proposed project would include the construction of 233 condominiums and approximately 10,000 sq. ft. of retail space. This would result in an increased need for parking as well as public transportation in the vicinity of the proposed project and would result in a ***potentially significant*** impact.

Mitigation Measures
This impact will be fully addressed in the Traffic and Circulation chapter of the Cathedral Square EIR.

Findings

The proposed project would result in ***potentially significant*** impacts to transportation and circulation, which will be further discussed in the Transportation and Circulation section of the Cathedral Square EIR.

Issues		Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than-Significant Impact
XVI.	**UTILITIES AND SERVICE SYSTEMS.** *Would the project:*			
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	**X**	☐	☐
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	**X**	☐	☐
c.	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	**X**	☐	☐
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	**X**	☐	☐
e.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	**X**	☐	☐
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	**X**	☐	☐
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	**X**	☐	☐

Environmental Setting

Water service for the proposed project would be provided by the City of Sacramento. For wastewater service, the project site would be served by the City of Sacramento's Combined Sewer System (CSS) and Basin 52 for wastewater and stormwater disposal, respectively. Each individual project site within the City is responsible for local drainage and would tap into the local street drainage system, and the City assumes responsibility for solid waste removal and disposal. The Sacramento General Plan EIR indicates that the City landfills have sufficient capacity for full buildout.

Standards of Significance

For purposes of this environmental document, an impact is considered significant if the proposed

project would:

- Create a significant increase in water demand;
- Substantially degrade water quality;
- Generate a significant increase in solid waste per year; or
- Generate storm water that would exceed the capacity of the storm water system.

Answers to Checklist Questions

Questions A, C, E

The project site contains four existing buildings. The proposed project would demolish the existing structures and redevelop the entire project site, covering it entirely with impervious surfaces. Though the project site is currently covered with impervious surfaces, the construction of a 25-story structure on the proposed project site would potentially alter the existing stormwater flows on the project site. Wastewater generated by the proposed project would enter the City's combined sewer system, which is currently at capacity in the area. Any additional flows to these systems could result in overflows, which would be considered a ***potentially significant*** impact.

Mitigation Measures
This impact will be fully addressed in the Public Services and Utilities chapter of the Cathedral Square EIR.

Question B, D

See questions A, C and E for discussion of wastewater facilities. The proposed project would create a demand for water that could potentially exceed available supplies or exceed capacity of the existing infrastructure. Therefore this impact would be considered to be ***potentially significant***.

Mitigation Measures
This impact will be fully addressed in the Public Services and Utilities chapter of the Cathedral Square EIR.

Questions F, G

The proposed project would include the construction of 233 condominium units and approximately 10,000 sq. ft. of retail uses. The development of the proposed project would be expected to generate solid waste that could exceed the capacity of a landfill or existing solid waste disposal facilities. This would be considered to be a ***potentially significant*** impact.

Mitigation Measures
This impact will be fully addressed in the Public Services and Utilities chapter of the Cathedral Square EIR.

Findings

The proposed project would result in ***potentially significant*** impacts to public services, which will be further discussed in the Public Services and Utilities section of the Cathedral Square EIR.

Issues			Potentially Significant Impact	Potentially Significant Unless Mitigated	Less-Than Significant Impact
XVII.	**MANDATORY FINDINGS OF SIGNIFICANCE.**				
	a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	**X**
	b.	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	**X**	☐	☐
	c.	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	**X**	☐	☐
	d.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	**X**	☐	☐

Answers to Checklist Questions

Question A

As described in the biology and cultural resources discussion of this document, the proposed project would not reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory with the included mitigation measure. Therefore, the impact would be ***less-than-significant***.

Mitigation Measures
Mitigation is not required.

Question B, C

The proposed Cathedral Square project would result in the construction of 233 condominium units and approximately 10,000 sq. ft. of retail on a site that that is currently supports four existing structures which are primarily vacant with some retail uses. The project area is within the Central Business District (C-3-SPD). However, the proposed project does have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. The proposed project may also have impacts that are individually limited but cumulatively considerable. Therefore, impacts from the project could be ***potentially significant***.

Mitigation Measures
This impact will be fully addressed in the Cathedral Square EIR.

Question D

The addition of condominiums and approximately 10,000 sq. ft. of retail space to the project site could be considered to be a growth-inducing development and would result in increased traffic, congestion and other stresses on City infrastructure and environmental quality. Thus, the proposed project would be anticipated to have environmental effects that could cause substantial adverse effects on human beings, both directly and indirectly. Therefore, the impacts would be considered ***potentially significant***.

Mitigation Measures
This impact will be fully addressed in the Cathedral Square EIR.

Findings

The proposed project would result in ***potentially significant*** impacts to: aesthetics, air quality, traffic and circulation, cultural and historic resources, noise and vibration, and public services and utilities. These concerns will be discussed in the appropriate sections of the Cathedral Square EIR.

APPENDIX D

AIR QUALITY IMPACT ANALYSIS FOR THE PROPOSED CATHEDRAL SQUARE PROJECT, SACRAMENTO

Prepared for:

Raney Planning and Management
1401 Halyard Drive, Suite 120
West Sacramento, CA. 95691

July 2006

INTRODUCTION

The Cathedral Square project site is located at southwest corner of 11th and J Streets in the downtown area of the City of Sacramento and is currently occupied by four buildings ranging from one to three stories. The proposed Cathedral Square project includes the demolition of the existing on-site structures and the construction of a 25-story, 472,020 square foot (sq. ft.) building located on 0.67 acres. The proposed project includes 233 residential units, approximately 10,100 sq. ft. of ground floor retail, and 326 parking spaces.

This report describes the impacts of the proposed project on local and regional air quality. This report was prepared using methodologies and assumptions recommended within the air quality impact assessment recommendations of the Sacramento Metropolitan Air Quality Management District.[1] In keeping with these recommendations, the section describes existing air quality, construction-related impacts, direct and indirect emissions associated with the project, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts.

ENVIRONMENTAL SETTING

Air Basin Characteristics

Sacramento lies at the southern end of the Sacramento Valley, a broad, flat valley bounded by the coastal ranges to the west and the Sierra Nevada to the east. A sea level gap in the Coast Range (the Carquinez Strait) is located approximately 50 miles southwest and the intervening terrain is very flat. The prevailing wind direction is southwesterly, which is the wind direction when marine breezes flow through the Carquinez Strait. Marine breezes dominate during the spring and summer months, and show strong daily variations. Highest average wind speeds occur in the afternoon and evening hours; lightest winds occur in the night and morning hours. During fall and winter, when the sea breeze diminishes, northerly winds occur more frequently, but southwesterly winds still predominate the attainment area. The non-attainment area consists of all of Sacramento and Yolo counties and parts of El Dorado, Solano, Placer, and Sutter counties.

The San Francisco Bay Area Air Basin lies to the west, and the San Joaquin Valley Air Basin is located to the south of the Planning Area. Considerable transport of pollutants occurs between these air basins, so that air quality in Sacramento is partially

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[1] Sacramento Metropolitan Air Quality Management District, *Guide to Air Quality Assessment in Sacramento County*, July 2004.

determined by the release of pollutants elsewhere. In turn, pollutants generated in Sacrameot affect air quality in areas to the north and east.

Ambient Air Quality Standards

Criteria Pollutants

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and California state ambient air quality standards are summarized in Table 1.

The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulate matter (PM_{10} and $PM_{2.5}$).

Toxic Air Contaminants

Unlike criteria pollutants, no safe levels of exposure to TACs can be established. There are many different types of TACs, with varying degrees of toxicity. Sources of TAC's include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage and death.

Diesel exhaust is a TAC of growing concern in California. The California Air Resources Board in 1998 identified diesel engine particulate matter as a TAC. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic. Many of these compounds adhere to the particles, and because diesel particles are so small, they penetrate deep into the lungs. Diesel engine particulate has been identified as a human carcinogen. Mobile sources, such as trucks, buses, automobiles, trains, ships and farm equipment are by far the largest source of diesel emissions.

The project is within the Sacramento Metropolitan Air Quality Management District, which is part of the Sacramento Valley Air Basin. The Sacramento Valley Air Basin has been further divided into Planning Areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region, designated by the U.S. Environmental Protection Agency (EPA) as the Sacramento Federal Ozone non-

Table 1: Federal and State Ambient Air Quality Standards

Pollutant	**Averaging Time**	**Federal Primary Standard**	**State Standard**
Ozone	1-Hour 8-Hour	-- 0.08 PPM	0.09 PPM 0.07 PPM
Carbon Monoxide	8-Hour 1-Hour	9.0 PPM 35.0 PPM	9.0 PPM 20.0 PPM
Nitrogen Dioxide	Annual Average 1-Hour	0.05 PPM --	-- 0.25 PPM
Sulfur Dioxide	Annual Average 24-Hour 1-Hour	0.03 PPM 0.14 PPM --	-- 0.04 PPM 0.25 PPM
PM_{10}	Annual Average 24-Hour	50 $\mu g/m^3$ 150 $\mu g/m^3$	20 $\mu g/m^3$ 50 $\mu g/m^3$
$PM_{2.5}$	Annual 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	12 $\mu g/m^3$ --
Lead	Calendar Quarter 30 Day Average	1.5 $\mu g/m^3$ --	-- 1.5 $\mu g/m^3$
Sulfates	24 Hour	--	25 $\mu g/m^3$
Hydrogen Sulfide	1-Hour	--	0.03 PPM
Vinyl Chloride	24-Hour	--	0.01 PPM

PPM = Parts per Million
$\mu g/m^3$ = Micrograms per Cubic Meter

Source: California Air Resources Board, *Ambient Air Quality Standards (5/17/06)*
http://www.arb.ca.gov.aqs/aaqs2.pdf

Health Effects of Pollutants

The following is a discussion of the health effects of important pollutants in the Sacramento Valley Air Basin.

Ozone

Ozone is produced by chemical reactions, involving nitrogen oxides (NOx) and reactive organic gases (ROG), that are triggered by sunlight. Nitrogen oxides are created during combustion of fuels, while reactive organic gases are emitted during combustion and evaporation of organic solvents. Since ozone is not directly emitted to the atmosphere, but is formed as a result of photochemical reactions, it is considered a secondary pollutant. In the Sacramento Valley Air Basin ozone is a seasonal problem, occurring roughly from April through October.

Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Asthma, bronchitis and other respiratory ailments as well as cardiovascular diseases are aggravated by exposure to ozone. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest.

Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Research has shown that ozone also damages vegetation.

Suspended Particulate

Suspended particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. "Inhalable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Particles between 2.5 and 10 microns in diameter arise primarily from natural processes, such as wind-blown dust or soil.

Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}. Fine particles are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces and wood stoves produces fine particles.

The level of fine particulate matter in the air is a public health concern because it can bypass the body’s natural filtration system more easily than larger particles, and can lodge deep in the lungs. The health effects vary depending on a variety of factors, including the type and size of particles. Research has demonstrated a correlation between high PM concentrations and increased mortality rates. Elevated PM

concentrations can also aggravate chronic respiratory illnesses such as bronchitis and asthma.

Carbon Monoxide

Carbon monoxide is a local pollutant in that high concentrations are found only very near the source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Carbon monoxide concentrations are highly seasonal, with the highest concentrations occurring in the winter. This is partly due to the fact that automobiles create more carbon monoxide in colder weather and partly due to the very stable atmospheric conditions that exist on cold winter evenings when winds are calm. Concentrations typically are highest during stagnant air periods within the period November through January.

Ambient Air Quality

The Sacramento Metropolitan Air Quality Management District (SMAQMD) and California Air Resources Board (CARB) maintain several air quality monitoring sites in the Sacramento area. Table 2 shows data for the years 2003-2005 for the Sacramento T Street monitoring site, the closest monitoring site to the proposed project.

All federal ambient air quality standards are met in the project area, with the exception of ozone. Additionally, the state ambient standards of ozone and PM_{10} are regularly exceeded.

Regional Air Quality Planning

Federal Clean Air Act

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under the federal Clean Air Act, Sacramento County is a non-attainment area for ozone and PM_{10}, a maintenance area for carbon monoxide and unclassified or attainment for other federal standards. Under the California Clean Air Act Sacramento County is a non-attainment area for ozone and Particulate Matter (PM_{10} and $PM_{2.5}$).

The Federal Clean Air Act Amendments (FCAAA) of 1990 set deadlines for attaining the ozone standard. The Sacramento Area was classified as a "serious" non-attainment

Table 2: Days Exceeding Air Quality Standards at the Sacramento T Street Monitoring Site, 2003-2005

Pollutant/Standard	Year	Days Exceeding Standard:
Ozone/State 1-Hour	2003 2004 2005	4 1 4
Ozone/Fed. 1-Hour	2003 2004 2005	0 0 0
Ozone Fed. 8-Hour	2003 2004 2005	1 0 1
Nitrogen Dioxide/State 1- Hour	2003 2004 2005	0 0 0
PM_{10}/State-Hour	2003 2004 2005	1 1 4
PM_{10}/Federal 24-Hour	2003 2004 2005	0 0 0
$PM_{2.5}$/Federal 24-Hour	2003 2004 2005	0 0 0
Carbon Monoxide/Fed. And State 8-Hour	2003 2004 2005	0 0 0

Source: California Air Resources Board, *Aerometric Data Analysis and Management (ADAM)*, 2006. (http: //www.arb.ca.gov./adam/cgi-bin/adamtop/d2wstart)

area and given a date of 1999 by which to achieve attainment. Because achieving attainment by this date was later found to be infeasible, the region was “bumped up” to “severe” classification and an attainment date of 2005 was designated. The Clean Air Act Amendments also set specific planning requirements to ensure that the attainment goal would be met. In 1994, the Air Resources Board, in cooperation with the air districts of the Sacramento non-attainment area, fulfilled one of these requirements by preparing the 1994 Sacramento Area Regional Ozone Attainment Plan. The plan identified a detailed comprehensive strategy for reducing emissions to the level needed for attainment and showed how the region would make expeditious progress toward meeting this goal.

On April 15, 2004 the Environmental Protection Agency (EPA) designated the Greater Sacramento Ozone non-attainment area as a "serious" non-attainment area for the federal 8-hour ozone standard. The 8-hour ozone standard, 0.08 parts per million (ppm), averaged over eight hours, replaces the 1-hour standard that has been in place since 1979. The region has been given an attainment date of June, 2013.

California Clean Air Act

The California Clean Air Act (CCAA) of 1988 required nonattainment areas to achieve and maintain the state ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining the state ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide standards. In compliance with the CCAA, the Sacramento Metropolitan Air Quality Management District (AQMD) prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) to mainly address Sacramento County’s non-attainment status for ozone and carbon monoxide (CO), and although not required, particulate matter (PM_{10}). The 1991 AQAP was designed to make expeditious progress toward attaining the state ozone standard and contained preliminary implementation schedules for control programs on stationary sources, transportation, and indirect sources, and a vehicle/fuels program.

Sacramento County has met the ambient air quality standards for sulfur dioxide and nitrogen dioxide. The CCAA also requires that by the end of 1994 and once every three years thereafter, the districts are to assess their progress toward attaining the air quality standards. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three year period. The AQMD Board of Directors adopted the 2003 Triennial Report April 28, 2005. The report, prepared pursuant to California Health and Safety Code section 40925, identifies “all feasible measures” the AQMD will study or adopt over the next three years.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) shares responsibility with the California Air Resources Board (CARB) for ensuring that the State and national ambient air quality standards are met within Sacramento County. State law assigns local air districts the primary responsibility for control of air pollution

from stationary sources while reserving to the CARB control of mobile sources. The District is responsible for developing regulations governing emissions of air pollution, permitting and inspecting stationary sources, monitoring air quality and air quality planning activities. Under the California Environmental Quality Act (CEQA) the District may participate as a “responsible agency” or “reviewing agency” or “lead agency”. The District has adopted the document *Guide to Air Quality Assessment in Sacramento County* to provide lead agencies, consultants and project proponents with uniform procedures for assessing potential air quality impacts for proposed projects and for preparing the air quality section of environmental documents.

IMPACTS AND MITIGATIONS

Standards of Significance

The Sacramento Metropolitan AQMD has published a guidance document for the preparation of the air quality portions of environmental documents that includes thresholds of significance to be used in evaluating land use proposals Several types of thresholds are recommended:[2]

- **Ozone Precursors Significance Thresholds** - The District considers increases in emissions of nitrogen oxides (NO_x) greater than 85 pounds per day as significant during construction. For operation of a project, the District’s threshold of significance is 65 pounds per day of either NO_x or Reactive Organic Gases (ROG).

- **Other Criteria Pollutant -Significance Thresholds** - A project that may cause an exceedance of a state air quality standard, or may make a substantial contribution to an existing exceedance of an air quality standard will have a significant adverse air quality impact. "Substantial" is defined as making measurably worse, which is five percent or more of an existing exceedance of a state ambient air quality standard.

- **Offensive Odors Significance Threshold** - A qualitative assessment indicating that a project may reasonably be expected to generate odorous emissions in such quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property will have a significant adverse air quality impact.

- **Toxic Air Contaminants Significance Thresholds -** The recommended significance thresholds for TACs are a lifetime probability of contracting cancer greater than 10 in one million and a ground-level concentration of non-carcinogenic toxic air pollutants would result in a Hazard Index of greater than 1.

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[2] Sacramento Metropolitan Air Quality Management District, *Guide to Air Quality Assessment in Sacramento County*, July 2004.

- **Cumulative Impacts Thresholds -** A proposed project is considered cumulatively significant, if the project requires a change in the existing land use designation (i.e., general plan amendment, rezone), and projected emissions of the proposed project are greater than the emissions anticipated for the site if developed under the existing land use designation. Also, if a project will result in air pollutant emissions above the "project alone" significance threshold, the project will result in a significant cumulative air quality impact.

Methodology

Construction

The project would result in new sources of emissions both during construction and operation. During construction gaseous and particulate emissions would be released by equipment and vehicles on the site, trucks bringing materials to the site and construction employee vehicles. During portions of the construction period, fugitive particulate emissions (PM_{10} and $PM_{2.5}$) would occur due to the action of vehicles/ equipment and wind on unpaved areas.

The URBEMIS-2002 program[3] was applied to the project to estimate the maximum construction emissions from demolition, site excavation and preparation, equipment exhaust, construction worker vehicle trips and other construction activities. A detailed description of the assumption made in the use of the URBEMIS-2002 program, as well as the URBEMIS-2002 model output is included in the Appendix. The results are shown in Table 3.

Operation

The operation of the project land uses would include area sources (e.g., combustion of natural gas for heating), and be vehicle trips generated by project residents and patrons. Estimates of regional emissions generated by project traffic and area sources were made using a program called URBEMIS-2002. A detailed discussion of URBEMIS-2002 parameters used in the analysis is included in the Appendix. The results are shown in Table 4.

Impact 1: Implementation of the project would result in temporarily increased Particulate Matter levels in the immediate vicinity during construction.

The proposed project would require demolition of existing buildings. The physical demolition of existing structures and other infrastructure are construction activities with

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[3] Jones and Stokes Associates, *Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module*, Version 8.7, 2005.

Table 3: Estimated Maximum Daily Construction Emissions

	Maximum Daily Emissions (Pounds/day)		
Construction Phase	**ROG**	**NOx**	**PM10**
Demolition	2.2	21.0	5.2
Site Preparation and Excavation	6.2	43.8	8.3
Building Erection and Tenant Improvements	2.9	14.2	0.6
SMAQMD Significance Threshold	---	85.0	---

Table 4: Operational New Regional Emissions, in Pounds Per Day

	ROG	**NOx**
Project Vehicle Trips	13.0	11.7
Project Area Sources	15.7	1.9
Total	28.7	13.6
SMAQMD Significance Threshold	65.0	65.0

ROG = Reactive Organic Gases
NOx = Nitrogen Oxides

a high potential for creating air pollutants. In addition to the dust created during demolition, substantial dust emissions could be created as debris is loaded into trucks for disposal.

During excavation the potential for dust would be much less, but dust emissions are possible when soil is dropped on streets surfaces where it can be pulverized by the wheels of vehicles and disturbed by passing vehicles.

Dust emissions during demolition and construction would create the potential to exceed locally ambient air quality standards and possibly result in nuisance complaints. This is a ***significant impact.***

Also during construction small numbers of diesel-powered vehicles and equipment would be in use on the site. The California Air Resources Board identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[4] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic were identified as having the highest associated risk.

Health risks from Toxic Air Contaminants are function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting a specific receptor for a period of days or perhaps weeks. Because of its short duration and the lack of near sensitive receptors, health risks from construction emissions of diesel particulate would be a ***less-than-significant impact.***

Mitigation Measures

Require implementation of the following dust control measures by contractors during demolition of existing structures:

- Watering should be used to control dust generation during demolition of structures and break-up of pavement.
- Cover all trucks hauling demolition debris from the site.
- Use dust-proof chutes to load debris into trucks whenever feasible.

During excavation and site preparation activities, require the implementation of the following dust control measures:

- Watering should be used to control dust generation during transport and handling of

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[4] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

materials;

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard;

- Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets;

- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.);

- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

According to SMAQMD's *Guide to Air Quality Assessment in Sacramento County,* the above mitigation measure would reduce project fugitive particulate matter impacts to a less-than-significant level.

Impact 2: Implementation of the proposed project could result in temporary construction emissions of Nitrogen Oxides, but daily emissions would be less than the SMAQMD threshold of 85 pounds per day.

Daily emissions of NOx and other pollutants over the course of construction are shown in Table 3. Since construction emissions of NOx remain below the SMAQMD's threshold of significance of 85 pounds per day, construction exhaust emissions would have a **less-than-significant** impact on regional air quality.

Mitigation Measures

None required.

Impact 3: Project traffic would result in an increase in carbon monoxide concentrations.

The project would result in increased concentrations of carbon monoxide. New vehicle trips would add to carbon monoxide concentrations near streets providing access to the site. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Sacramento Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

SMAQMD's *Guide to Air Quality Assessment in Sacramento County* contains a screening procedure for determining if a project could have a significant impact on local carbon monoxide concentrations. The method utilizes estimates of background concentrations (adjusted by "rollback" values that reflect trends in county-wide emissions) and an estimated project-related carbon monoxide concentration determined by the peak-hour trip generation of the project.

When applied to the project the estimated worst-case total concentration (project plus background) was 5.8 parts per million (ppm) for a 1-hour averaging time and 4.1 ppm for an 8-hour averaging time. These predicted worst-case concentrations do not exceed or approach the most stringent ambient air quality standards of 20.0 ppm (1-hour) or 9.0 ppm (8-hour), so the impacts of the project on local carbon monoxide concentrations would be ***less-than-significant***.

Mitigation Measures

None required.

Impact 4: Development of the project would result in increases in emission of ozone precursors.

Operational emissions of regional pollutants associated with the project are shown in Table 4 for the two ozone precursors (Reactive Organic Gases and Nitrogen Oxides) and PM_{10}. Project emissions of ROG and NO_x do not exceed the SMAQMD's significance threshold of 65 pounds per day. Based on this criterion, the project would have a ***less-than-significant*** impact on regional ozone air quality.

Current SMAQMD policies regarding mitigation of indirect source air quality impacts, provides that projects with emissions exceeding the thresholds of significance prepare an air quality mitigation program to provide a minimum 15% reduction in operational emissions. The project would not be subject to this requirement because project impacts do not exceed the thresholds. However, the trip generation analysis prepared for the project estimates that the downtown location, transit proximity and mixed-use nature of the proposed project would result in a 23% reduction in vehicle trip generation from internal trips, transit trips and bicycle/pedestrian trips.

Mitigation Measures

None required.

Impact 5: Development of the project would generate emissions of ozone precursor emissions that contribute to a cumulative regional impact.

Sacramento Metropolitan Air Quality Management District CEQ guidance provides that if a development will result in air pollutant emissions above the “project alone” significance threshold, the project will result in a significant cumulative air quality impact.

Development projects are also considered cumulatively significant is the project requires a change in the existing land use designation (i.e., general pan amendment and the projected ozone precursor emissions anticipated for the site are greater than under the existing land use designation.

“Project alone” emissions would not exceed the SMAQMD significance thresholds (Table 4), and the project does not change the land use designation of the site nor require a General Plan Amendment. Based on the above SMAQMD standards, the project would not make a “cumulatively considerable” contribution to a cumulative regional impact. This impact would be ***less-than-significant***.

Mitigation Measures

None required.

APPENDIX: URBEMIS-2002 PROGRAM

Construction Emissions

The URBEMIS-2002 program was utilized to estimate construction emissions for each phase of construction. Based on preliminary schedule information provided by the construction planners for the project, the overall construction period was assumed to be 25 months. Demolition of existing structures was assumed to occur during the first month of construction, which was assumed to begin on April 1 of 2007. Site preparation, which includes excavation of the site and pile driving, was assumed to require 2 months to complete. The next 22 months were assumed to be spent erecting the building and completing the exterior and interior.

Estimates of equipment types and usage over the construction period were provided by the project construction planners. Number and duration of use for each equipment type were used to developed fractional numbers for each equipment type. Where URBEMIS-2002 did not include an identified equipment type, the equipment was designated as “other equipment”. All equipment was assumed to be diesel powered with the exception of cranes and hoists specified as being electrical.

Demolition emissions were estimated based on the square footage of the existing structures on the site and the 1-month demolition period. URBEMIS-2002 estimates daily truck travel for the removal of debris. Based on SMAQMD guidance, a diesel powered loader was assumed to be operational on the site for the entire month.

Site preparation emissions were considered as Phase 2 activities under URBEMIS-2002 nomenclature. A drill rig, excavator, pile driver, 2 generators and a loader were all assumed to be in use during this phase. Truck traffic emissions were estimated by URBEMIS-2002 by inputting “soil imported” and “soil exported” totals that resulting in a total number of truck trips that equaled the dump truck and concrete truck trip estimates provided by the construction planner.

The erection of the building and finishing of the exterior/interior were considered as Phase 3 activities under URBEMIS-2002 nomenclature. As per SMAQMD guidance, emissions from architectural coatings were not included. The project was also assumed to not include any significant asphalt paving. A forklift, 2 conveyors, concrete pump, concrete troweling machines, portable welder and small crane were all assumed to be in use during this phase.

Truck traffic emissions are not included by URBEMIS-2002 for this phase of construction. The total of trips for concrete, rebar, glazing and crane delivery over this period average about 147 deliveries per month. This is less than the 204 trips per month that occur under Phase 2 (Site Preparation). Truck emissions for Phase 3 activity was conservatively estimated as equal to that during Phase 2.

Operational Emissions

Estimates of regional emissions generated by project traffic were made using a program called URBEMIS-2002.[5] URBEMIS-2002 is a program that estimates the emissions that result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Trip generation rates for project land uses were provided by the project transportation consultant. The run assumed a year 2008 vehicle mix and summer ambient temperatures. Program defaults were utilized for all area source categories. The default values for lower Sacramento Valley were used for Vehicle Fleet, Trip lengths, Trip Speed, Variable Speeds and Road Dust.

The URBEMIS-2002 results are attached.

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[5] Jones and Stokes Associates, Software User's Guide: *URBEMIS2002 for Windows with Enhanced Construction Module*, Version 8.7, 2005.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedraldemo.urb
Project Name: Cathedal Square Demolition
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	2.15	21.01	14.69	0.03	5.20	0.60	4.60

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedraldemo.urb
Project Name: Cathedal Square Demolition
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: April, 2007
Construction Duration: 1
Total Land Use Area to be Developed: 0 acres
Maximum Acreage Disturbed Per Day: 0 acres
Single Family Units: 0 Multi-Family Units: 233
Retail/Office/Institutional/Industrial Square Footage: 10100

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	4.54	-	4.54
Off-Road Diesel	1.35	8.03	11.49	-	0.26	0.26	0.00
On-Road Diesel	0.79	12.96	2.92	0.03	0.40	0.34	0.06
Worker Trips	0.01	0.02	0.28	0.00	0.00	0.00	0.00
Maximum lbs/day	2.15	21.01	14.69	0.03	5.20	0.60	4.60
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	2.15	21.01	14.69	0.03	5.20	0.60	4.60

Phase 3 - Building Construction Assumptions: Phase Turned OFF
Start Month/Year for Phase 1: Apr '07
Phase 1 Duration: 1.0 months
Building Volume Total (cubic feet): 250000.344
Building Volume Daily (cubic feet): 10802.484
On-Road Truck Travel (VMT): 600
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Loaders	165	0.465	8.0

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Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.64 to 3.24/3.64

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

07/08/2006 2:50 PM

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedralsiteprep.urb
Project Name: Cathedral Square Site Preparation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	6.17	43.84	48.43	0.01	8.33	1.61	6.72

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedralsiteprep.urb
Project Name: Cathedral Square Site Preparation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: May, 2007
Construction Duration: 2
Total Land Use Area to be Developed: 0.67 acres
Maximum Acreage Disturbed Per Day: 0.67 acres
Single Family Units: 0 Multi-Family Units: 233
Retail/Office/Institutional/Industrial Square Footage: 10100

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	6.70	-	6.70
Off-Road Diesel	5.87	39.78	46.50	-	1.51	1.51	0.00
On-Road Diesel	0.25	4.00	0.90	0.01	0.12	0.10	0.02
Worker Trips	0.05	0.06	1.03	0.00	0.00	0.00	0.00
Maximum lbs/day	6.17	43.84	48.43	0.01	8.33	1.61	6.72
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	6.17	43.84	48.43	0.01	8.33	1.61	6.72

Phase 3 - Building Construction Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: May '07
Phase 2 Duration: 2 months
On-Road Truck Travel (VMT): 186
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Bore/Drill Rigs	218	0.750	8.0
1	Excavators	180	0.580	8.0
2	Other Equipment	190	0.620	8.0
0	Rubber Tired Loaders	165	0.465	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.64 to 3.24/3.64

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedralerection.urb
Project Name: Cathedral Square Erection and Tenant Improvements
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	2.60	10.19	40.01	0.02	0.49	0.41	0.08

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	2.55	9.80	39.79	0.02	0.45	0.37	0.08

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	2.51	9.43	39.55	0.02	0.43	0.35	0.08

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\cathedralerection.urb
Project Name: Cathedral Square Erection and Tenant Improvements
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: July, 2007
Construction Duration: 22
Total Land Use Area to be Developed: 0.67 acres
Maximum Acreage Disturbed Per Day: 0.67 acres
Single Family Units: 0 Multi-Family Units: 233
Retail/Office/Institutional/Industrial Square Footage: 10100

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.17	8.46	8.96	-	0.36	0.36	0.00
Bldg Const Worker Trips	1.43	1.72	31.05	0.02	0.13	0.05	0.08
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.60	10.19	40.01	0.02	0.49	0.41	0.08
Max lbs/day all phases	2.60	10.19	40.01	0.02	0.49	0.41	0.08
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.17	8.10	9.20	-	0.32	0.32	0.00

Bldg Const Worker Trips	1.38	1.70	30.59	0.02	0.13	0.05	0.08
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.55	9.80	39.79	0.02	0.45	0.37	0.08
Max lbs/day all phases	2.55	9.80	39.79	0.02	0.45	0.37	0.08

*** 2009***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	1.17	7.75	9.45	-	0.30	0.30	0.00
Bldg Const Worker Trips	1.34	1.68	30.10	0.02	0.13	0.05	0.08
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	2.51	9.43	39.55	0.02	0.43	0.35	0.08
Max lbs/day all phases	2.51	9.43	39.55	0.02	0.43	0.35	0.08

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jul '07
Phase 3 Duration: 22 months
Start Month/Year for SubPhase Building: Jul '07
SubPhase Building Duration: 22 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
0	Cranes	190	0.430	8.0
0	Other Equipment	190	0.620	8.0
0	Rough Terrain Forklifts	94	0.475	8.0

SubPhase Architectural Coatings Turned OFF
SubPhase Asphalt Turned OFF

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.64 to 3.24/3.64

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Cathedral Square Operation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	15.68	1.86	2.39	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	13.00	11.65	116.10	0.06	10.70

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	28.68	13.51	118.49	0.06	10.71

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Cathedral Square Operation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	15.51	3.14	1.38	0.01	0.11

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	13.12	17.35	142.00	0.06	10.70

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	28.62	20.49	143.37	0.07	10.81

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Cathedral Square Operation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.14	1.85	0.83	0	0.00
Hearth	0.08	1.29	0.55	0.01	0.10
Landscaping - No winter emissions					
Consumer Prdcts	11.40	-	-	-	-
Architectural Coatings	3.89	-	-	-	-
TOTALS(lbs/day,unmitigated)	15.51	3.14	1.38	0.01	0.11

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo/townhouse high rise	5.95	8.96	69.77	0.03	5.85
Retail	7.17	8.39	72.23	0.03	4.85
TOTAL EMISSIONS (lbs/day)	13.12	17.35	142.00	0.06	10.70

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo/townhouse high rise	3.64	3.24 trips/dwelling unit	233.00	754.92
Retail		125.34 trips/1000 sq. ft.	10.10	1,265.93
		Sum of Total Trips		2,020.85
		Total Vehicle Miles Traveled		7,036.22

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Retail				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.64 to 3.24/3.64

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2008.

Page: 6
07/07/2006 1:11 PM

URBEMIS 2002 For Windows 8.7.0

File Name: <Not Saved>
Project Name: Cathedral Square Operation
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.14	1.85	0.83	0	0.00
Hearth - No summer emissions					
Landscaping	0.25	0.01	1.56	0.00	0.01
Consumer Prdcts	11.40	-	-	-	-
Architectural Coatings	3.89	-	-	-	-
TOTALS(lbs/day,unmitigated)	15.68	1.86	2.39	0.00	0.01

Page: 7
07/07/2006 1:11 PM

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Condo/townhouse high rise	7.60	5.97	61.19	0.03	5.85
Retail	5.41	5.68	54.90	0.03	4.85
TOTAL EMISSIONS (lbs/day)	13.00	11.65	116.10	0.06	10.70

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Condo/townhouse high rise	3.64	3.24 trips/dwelling unit	233.00	754.92
Retail		125.34 trips/1000 sq. ft.	10.10	1,265.93
		Sum of Total Trips		2,020.85
		Total Vehicle Miles Traveled		7,036.22

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20

Lite-Heavy	10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy	14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy	33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000	lbs	0.00	0.00	0.00	100.00
Urban Bus		0.20	0.00	50.00	50.00
Motorcycle		1.70	76.50	23.50	0.00
School Bus		0.10	0.00	0.00	100.00
Motor Home		1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Retail				2.0	1.0	97.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Condominium/townhouse high rise
have changed from the defaults 5.26/3.64 to 3.24/3.64

Changes made to the default values for Area

The wood stove percentage changed from 35 to 0.
The wood fireplace percentage changed from 10 to 0.
The natural gas fireplace percentage changed from 55 to 100.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The operational emission year changed from 2005 to 2008.

APPENDIX E

July 10, 2006

Cindy Gnos
Raney Planning & Management
1401 Halyard Drive, Suite 120
West Sacramento, CA. 95691

Subject: Wind and Comfort Impact Evaluation for the Cathedral Square Project, Sacramento

Dear Ms. Gnos:

This letter-report summarizes my findings and recommendations concerning potential wind and comfort impacts of the proposed Cathedral Square Project. I have based this analysis on a review of project plans and elevations, a site visit, and my knowledge of comfort conditions and basic building aerodynamics gained from wind tunnel studies of proposed buildings within the City of Sacramento over the last 25 years.

SETTING

Sacramento's climate includes several wind regimes that have the greatest potential for adversely affecting outdoor comfort. During the summer months the predominant wind direction is south-southwest, reflecting the orientation of the Sacramento Valley and the effect of marine breezes reaching Sacramento through the Carquinez Straits, a sea level gap in the Coast Range. Winds from this direction are the highest on average, and these winds are most dominant in the summer, when they have a profound positive effect on comfort outdoors. Another relative maximum in frequency occurs for northwest to north-northwest.

During the winter months winds blow the predominant wind direct is south through southeast. These winds occur primarily in winter during storms, and are the highest winds measured in Sacramento. Another relative maximum in frequency occurs for northwest to north-northwest.

When the strongest winds (greater than 20 mph) are considered, the most important wind directions are southwest, south, southeast and north-northwest. Winds over 20 mph are more common in winter than during the summer, and are often associated with cold fronts.

The project site is located at southwest corner of 11th and J Streets in the downtown area of the City of Sacramento and is currently occupied by four buildings ranging from one to three stories. The buildings are primarily vacant, but contain some existing restaurant,

retail, and office uses.

The properties surrounding the site include an office building and Elks Lodge building to the north (across J Street), commercial to the west, and an office building and the Cathedral of the Blessed Sacrament to east (across 11th Street). An art gallery and restaurant/brewery, as well as the Crest Theater exist to the south, across the alley.

PROJECT IMPACTS

Significance Criteria

CEQA does not list any specific criterion for the evaluation of wind effects of a project. Neither the state of California nor City of Sacramento has established criteria or standards for wind. For this analysis, the project is considered to have a potentially significant climate impact if the exposure, orientation and massing of the structure can be expected to substantially increase ground-level winds in pedestrian corridors or public spaces near the project site for the most important wind directions in Sacramento. A substantial wind acceleration would have the potential to increase winds to the point where a pedestrian hazard could exist.

Building Aerodynamics

Ground-level wind accelerations near buildings are controlled by exposure, massing and orientation. Exposure is a measure of the extent that the building extends above surrounding structures into the wind stream. A building that is surrounded by taller structures is not likely to cause adverse wind accelerations at ground level, while even a small building can cause wind problems if it is freestanding and exposed.

Massing is important in determining wind impact because it controls how much wind is intercepted by the structure and whether building-generated wind accelerations occur above-ground or at ground level. In general, slab-shaped buildings have the greatest potential for wind problems. Buildings that have an unusual shape, rounded faces or utilize set-backs have a lesser effect. A general rule is that the more complex the building is geometrically, the lesser the probable wind impact at ground level.

Orientation determines how much wind is intercepted by the structure, a factor that directly determines wind acceleration. In general, buildings that are oriented with their wide axis across the prevailing wind direction will have a greater impact on ground-level winds than a building oriented with its long axis along the prevailing wind direction.

Evaluation of Project Wind Effects

The proposed Cathedral Square project includes the demolition of the existing on-site structures and the construction of a 25-story, 472,020 square foot (sq. ft.) building located on 0.67 acres. The proposed project includes 233 residential units, approximately 10,100 sq. ft. of ground floor retail, and 326 parking stalls.

The proposed building would be 25 stories high (approximately 250 feet in height). The building would have a 30-foot step-back along 11th Street above the 5th floor (at approximately 70 feet high). The Lobby would be located on 11th Street. Parking would be located on both basement levels, as well as the first through fourth floors.

The project site has only limited shelter when winds blow from the most important wind directions (southwest, south, southeast, north-northwest). There are no major tall structures close to the site that would offer substantial shelter.

The proposed project plans show an “L-shaped” tower atop a low-rise base. The tower is oriented with its wide faces towards the northeast and southeast. This massing and orientation is advantageous from a wind standpoint, as the proposed design does not have the wide building faces and sharp corners known to focus wind energy at the ground level.

For southwest and south winds the new tower offers an irregular, discontinuous building face. North-northwest winds would not blow directly into any building face, approaching at a roughly 45 degree angle to the upwind building faces.

For southeasterly winds would be intercepted by the widest face of the tower, but the substantial setback (30 feet) on the L Street side of the building would intercept any wind accelerations before they reached the ground.

In summary, the project does not appear to have the potential for wind problems. While the site is exposed to winds, but the project orientation is such that only moderate wind accelerations are expected, and the massing of the project would place these accelerated winds in rooftop areas away from pedestrian spaces.

MITIGATION MEASURES

The project design avoids ground level wind accelerations by placing them over interior rooftop areas. This rooftop area includes a pool, spa and barbeque are as well as private terraces. These areas may be uncomfortably windy under certain wind directions, and should be landscaped to reduce wind and improve usability. Porous materials or structures (vegetation, hedges, screens, latticework, perforated or expanded metal) offer superior wind shelter compared to a solid surface. Wind sheltering elements should have sufficient

height to shelter the area in question (wind shadows behind porous wind screens or shelter belts provide shelter a distance downwind equivalent to 3-5 times the height of the wind screen). Outdoor furniture and any landscape structures should be firmly attached to the ground or buildings to resist being blown over.

I hope you find this analysis useful. Please call me if you have any questions.

Sincerely,

Donald Ballanti
Certified Consulting Meteorologist

APPENDIX F

CULTURAL RESOURCE OVERVIEW FOR THE FOR THE CATHEDRAL SQUARE PROJECT, ELEVENTH AND J STREETS (EASTERN SECTION OF LOT 2, LOT 3, AND LOT 4, 10/11/J/K BLOCK) CITY OF SACRAMENTO, CALIFORNIA

Prepared by

Melinda A. Peak
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762
(916) 939-2405

Prepared for

Raney Planning & Management, Inc.
1401 Halyard Drive, Suite 120
West Sacramento, CA 95691

September 2006
Revised January 2007
(Job #05-185)

INTRODUCTION

The project area consists of two city lots (3 and 4) and a narrow strip of the east side of lot 2 of the 10/11/J/K block of the City of Sacramento (Figure 1).

The goal of the study is to document the history of the development and use of the site, and to predict the potential for the presence of prehistoric and historic period archeological resources.

Melinda A. Peak, Senior Historian with Peak & Associates, Inc. served as principal investigator for the research, assisted by Kevin Morse.

RESEARCH METHODOLOGY

To compile the historical context for the site, research has been conducted at the Sacramento Archives and Museums Collections Center, Sacramento Room of the Sacramento City Library and the California Room of the California State Library. Sources utilized include City tax assessment map books and rolls, City directories, federal census, photographic collection, Sanborn Fire Insurance maps, City maps, and newspapers.

HISTORIC CONTEXT

Native American Period

At the time of contact, the project site lay in the territory of the Valley Nisenan. The Nisenan, or Southern Maidu, occupied the upper drainages and the adjacent ridges of the Yuba, the north, middle, and south forks of the American, and at least the upper north side of the Cosumnes River. The eastern limit of their territory is conventionally believed to extend to the crest of the Sierra. The Nisenan in the valley proper also occupied some area west of the lower reaches of the Feather River (Wilson and Towne 1978).

The Nisenan linguistically are grouped with the Northern Maidu and Konkow within the Penutian family (Riddell 1978:387). Kroeber distinguished three dialects within the larger territory occupied by the Nisenan, but Riddell indicated more distinctions is possible. Wilson and Towne (1978) distinguished several "centers," presumably linguistic and social groupings.

The Nisenan were socially integrated at the village or community group level (Wilson and Towne 1978), with the group participating in the decision-making process. The villages would range in size from 15 to 25 people to, at least in the Valley Nisenan, villages of over 500 people (Kroeber 1925:821). A very large settlement consisted of a major village and associated smaller camps, whether general or specialized in nature. A headman, respected by all, residing in the major village had the authority to call upon the smaller associated groups in times of need, although the smaller groups did not have to always obey.

The villages for the Hill Nisenan were located on ridges and flats along the major streams and rivers within their territory. The satellite encampments and villages were probably located on the smaller watercourses surrounding or nearby the major village.

The Nisenan, as with other Sierran groups, moved into the higher elevations during the hot summer months. The main activity was the collecting of pine nuts and numerous other species of nuts, roots, and berries. Primarily women and children did this. The foraging groups in a locale could range from small, extended family groups, composed of a woman, her immediate female kin, and their adolescent children to whole villages (Wilson and Towne 1978:389). The men spent most of their time hunting or fishing for a wide variety of fish and animals. Hunting was noted as often involving communal drives, with the best archers of the village posted to do the killing (Wilson and Towne 1978:389). Individual hunters made extensive use of decoys and imitative sounds.

Most Nisenan never left the territory used by their own village group. However, there were, in most large villages, at least some individuals who engaged in rather extensive trade with several valley and Sierra groups, such as the Washoe.

Post-Contact History

Gabriel Moraga led the first recorded Spanish expedition into the project vicinity between 1806 and 1808, in order to scout new mission sites, return runaway Indians, and punish Indians hostile to Spanish rule. Beaver and other fur resources were exploited in the Sacramento Valley by the Hudson Bay Company. In 1827 and 1828, Jedediah Smith led a trapping foray into the project vicinity. These and other trappers set up temporary camps in Nisenan territory and relationships were friendly. In 1833, a great malaria epidemic swept through the Sacramento Valley, killing an estimated 75 percent of the Valley Nisenan population.

The first permanent European settler in the Sacramento Valley was Captain John Sutter, who set up operations in the present downtown area of Sacramento in 1839. Sutter initially employed the Nisenan to help him in his operations but later he imported large numbers of Plains Miwok from the Cosumnes River tribelets as laborers. Sutter's relations with these villages--both Miwok and Nisenan--were essentially feudal.

With the discovery of gold and the subsequent influx of a large Euro-American mining population after 1849, Nisenan numbers were further reduced by disease and genocide.

Survivors who were not either sickened or murdered were ultimately forced to vacate their ancestral homes. By the 1920s, when University of California anthropologists sought Native American informants who could testify concerning aboriginal lifeways in the areas, only two elderly individuals could be located who retained any knowledge of Sacramento's native heritage.

Several village names have been reported for sites in the City of Sacramento, including *Sacum*, for the site at City Hall, the subject of recent excavations. Another site, associated with the former location of China Slough, has also been the subject of recent excavations.

The City of Sacramento

In 1841, Sutter was granted 11 leagues of land by the Mexican government. His settlement of Rancho New Helvetia, located within present-day Sacramento and later known as Sutter's Fort, also served as a trading post and a place of refuge for immigrants. With the discovery of gold at his mill site in Coloma in 1848, Sutter's plans for New Helvetia as an independent state were ruined and gold seekers overran his ranching empire.

From a handful of residents at Sutter’s Fort, the population of Sacramento had grown to about 2,000 in October 1849, and to an estimated 3,500 two months later. Early settlement focused on the waterfront, with businesses extending along J Street (Severson 1973).

Sacramento became an off-loading point for those destined for the northern mines and it profited greatly from the mining trade. Sacramento was situated at a crucial transshipment point and soon came to dominate commercial activity in the interior of the state. The subsequent history is an example of urban growth based on its control over transportation. Sacramento became the state capitol in 1854 and continues as the State's political center to the present day.

The project area originally gained definition in Sacramento's first city plan of 1848, extended and resurveyed in 1849. Each block was divided into eight standard city lots—160 feet by 80 feet, bisected east to west by a 20-foot alleyway. Lot 1 of the block is located at the northwest corner of the block, at the corner of 10th and J Streets. Lots 2 and 3 are located facing J Street; with lot 4 at the corner of 11th and J Streets; with lots 5 to 8 facing L Street.

Early development centered on the downtown central business district. The rapidity of Sacramento's growth provided the economic incentive to transform this tent community quickly to a city of wood-frame and brick structures. More permanent structures served to reduce the damage caused by a series of devastating fires.

Increasingly efficient flood control measures protected the town from inundation and subsequent sewage problems generated by periodic flooding of the Sacramento and American Rivers. Undertakings to prevent flooding included building and strengthening levees, re-channeling the American River, and raising streets in the main business district

some 12 feet. In 1868, the "S" curve of the American River was bypassed by digging an entirely new channel, which joined the Sacramento River north of the rail yards, and reduced the frequency of flooding that once occurred within the present-day Richards Area. Major raising of the City streets occurred in the 1860s. Many building owners opted to raise their buildings to the new street grades; others converted their first floors into cellars.

Historic Project Site Use and Occupancy

Early Years

The business district of Sacramento started along the waterfront but rapidly expanded up J Street, the main road out of town leading to the gold fields. The December 1850 Directory for the City suggests that there was at least one business on the project site: Hutchinson and Green, merchants (City Directory 1851).

The early address system for the City allowed 32 numbers per block, so the addresses of the businesses and residences along J Street were originally starting at 292 J, with this section of the block apparently starting at 314 J Street. By 1853-1854, there were two businesses present in the project area: with G. E. Graves the proprietor of the National Hotel at 314 and 316 J Street, and Charles B. Ingalls, a hay dealer at 320 J (City Directory 1853).

The 1851 City Tax Assessment Map Book shows a number of improvements on the project site. There is nothing on the section of lot 2. The western two sub lots of Lot 3 are owned by Hutchinson, Greene and Company, with improvements valued at $1,500 on each lot. The next lot east in lot 3 was owned by H.G. Lake, with $600 in improvements. The remnant eastern sub lot of lot 3 was vacant. Lot 4 had been subdivided into 8 smaller lots, with 1 to 4 facing J Street, and lots 5 to 8 facing 11th. Three of the lots facing J Street had improvements, with the back half of the lot unoccupied.

The first City map to show locations of buildings, published in 1854, indicates no buildings on the overall project block (Watson 1854). There are two buildings indicated in the project area: one on lot 3 and one on lot 4. The block lay outside of the portions of the City that were devastated by early fires.

In the 1855 City Tax Assessment map book, three individuals are listed in the project area: Conrad Weil, H. Julien, and A. Runyon. Runyon owned the eastern section of lot 2, and had acquired all of lot 3, with 500 in improvements. H. Julien owned the western 20 feet of lot 4, with improvements valued at $150. C. Weil had one of the smaller lots that faced J Street, with improvements of $200.

In 1859, Armstead Runyon was the owner of lot 3 and the eastern 20 feet of lot 2. He had improvements of $450 on lot 2. Lot 4 was subdivided into four small lots facing J Street, and the half of the lot on the alley side a single parcel. P. Reiley has the most westerly lot, with improvements of $150. C. Weil & Company had the next two lots, with $200 in

improvements, and C. J. Diefendorf had the fourth small parcel as well as the parcel at 11th and the alley (Tax Assessment Map Book 1858).

Armstead Runyon was a prominent pioneer who first settled in the Courtland area in 1849 (Thompson and West 1880:220). His biography appears in an 1889 Sonoma county history. Runyon established a major farm for fruit growing in Courtland area. In 1871, they left the ranch and moved to Santa Rosa. His occupancy within the project site must have been as an investor, with Runyon never living on the property (Lewis Publishing Company 1889: 325).

By 1866, Runyon had sold the narrow section of lot 2 to F.S. George, who had built an improvement valued at $1,200. Lot 4 was split in ownership between F. Gotthold and C. Weil. Gotthold had tow buildings one valued at $200 and the one on the more easterly parcel valued at $900. Weil owned the eastern two lots along 11th Street, with $1800 in improvements (Tax Assessment Map Book 1866).

F.S. George was a native of New York, and had a barbershop on his holding at 304 J Street, with his residence also in the building. F. Gotthold was born in Germany, and had a harness maker's shop at 308 J Street. His residence was listed at 51 11th Street between J and K, suggesting he was living on the back alley of his holdings (City Directory 1866). Alley residences were common throughout Sacramento at this time.

By 1870, there had been several changes to the site. F.S. George still had his barbershop on lot 2. Three new owners had taken over Runyon's holdings—S. Denton, George C. Bruce and Jacob Griesel. All had improvements on their lots. Solomon Denton had a boot and shoe shop at 306 J, with his residence on 10th between L and M. Bruce had a saloon named the "Bruce House" at 308 J St where he also resided (Tax Assessment Map Book 1870; City Directory 1870).

The east half of lot 4 was owned by Mohr and Yoerk, with improvements on both parcels. Mohr and Yoerk were the proprietors of the National Market which was located on lot 4. The National Market sold hams, bacon, lard dried beef and sausages. The also advertised that they would buy hogs at market prices (Figure 2). Mohr did not live on the property.

The eastern half of lot 4 was owned still by Conrad Weil, with $1,500 in improvements (Tax Assessment Map Book 1870). Conrad Weil and his wife Barbara had come to California in 1852. Mr. Weil opened a grocery within the project area. Conrad Weil died in 1871 on a return trip from Germany to California. His wife remained in Germany until 1876, eventually returning to Sacramento (Guinn 1907:384-385).

In 1870, Augustus Koch an artistic representation of a bird's eye view of the City of Sacramento(Figure 3). The project area contains buildings on every lot facing J. Behind the project area, the land of lots 5, 6 and 7 were relatively open.

The Stable City

Ownership remained the primarily the same through 1880. F.S. George's business had become a hairdressing salon. Mrs. Denton had become a widow by 1875, but retained ownership of the lot on J Street, possibly renting it to others. Rachael Bruce, suggesting the loss of her husband, owned Bruce House. Jacob Griesel retained a saddle and harness making business at312 J Street, with his residence in the building (Figure 2). Mohr & Yoerk had the west half of lot 4; the estate of Conrad Weil had the west half by 1875 (Tax Assessment Map Books 1870, 1875-1876, 1880-1881). By 1880, Mrs. Denton had sold to M. A. Parker and Mrs. Bruce had sold her holding to R.C. Rose.

Griesel advertised his business in the 1879-1880 City Directory. He sold saddles, harness, collars, whips, curry combs and brushes, noting that he was located opposite of the Central Hay Market. Griesel continued in the business for a number of years. Figure 4 shows him in front of his harness shop at 1022 J Street in about 1897. Griesel came to California in 1852, and went to work as a harness maker in Nevada City in 1854. He went to work for his brother in 1863 in a shop on J Street, eventually taking over after the death of his brother. He operated this business until the time of his death in 1907, with the business lasting over forty years in the same location (State Library Pioneer Card file; Davis 1890:327-328). Griesel's son continued the business for about ten more years (State Library Biographical Information File).

By 1880, Mrs. Rose had converted the saloon to a boarding house. Mohr & Yoerk continued the meat market business, and the remainder of the businesses remained in the same ownership with the exception of the east 20 feet of lot 2, transferees to H. Goepal by 1885-1886. Goepal was a boot and shoemaker. By 1885, the addressed had shifted to the modern system, and the shop and residence of Goepal were at 1014 J Street instead of 304 J Street. Griesel's business was now numbered 1022 J Street. Mohr and Yoerk business had expanded from a meat market to a market and packinghouse. They had acquired lot 5 by this time for an expansion of their business. Other businesses remained the same through 1890 (Tax Assessment Map Books 1880, 1885, 1890).

By 1895, there had been a few modest changes to the project area. Herman Goepal had sold his lot and shop to Jacob Gruhler. He had purchased the western half of lot 3, and was apparently out of business. Jacob Gruhler had changed the shoe and boot shop into the Gilt Edge Saloon, and resided in the building. Jacob Griesel retained the eastern half of the lot, but had moved to a more genteel address at 1718 J Street. Mohr and Yoerk were apparently focusing on their packing business, and the Weil family retained the end lot at 11th and J Streets. Ehmann & Co. apparently rented the premises from the Weils, and had a business offering: "Choice Family Groceries and Provisions" at 1028 and 1030 J Street. The Ehmanns resided at 1236 I Street (Tax Assessment Map Book1895; City Directory 1895).

The 1895 Sanborn Fire Insurance map indicates the layout of the lot (Figure 5). On the eastern section of lot 2, there is a saloon at 1014 J, with a residence at 1014-1/2 J, on the alley. Lot 3 is divided into four parcels. 1016 J Street had a building at the front of the lot, with a small shed or living unit at 1016-1/2 J Street on the alley. 1018 J Street is indicated

as a restaurant, with a small shed along the alley. 1020 was also shown as a saloon, with a small building on the alley at 1020-1/2 J. 1020 J Street is the harness shop, with two small sheds along the side lot line near the alley.

1020 J Street is the commercial factory for the Mohr and Yoerk Packing Company. There are several smokehouses and a pork packing area near the alley. The building was connected to their other operation on K Street by an elevated bridge across the alley to an even larger factory facility, covering all of lot 5 completely. For context, lots 6 and 7 were a stable facility. Directly across the J Street on lot 7 were the Central Stables and on lot 6 was hay and grain storage.

Mohr and Yoerk produced ham, bacon and lard under the "Our Taste" brand. Hall, Luhrs & Company distributed the product (Wooldridge 1931).

Ownership remained the same through 1900. By 1905, 1028 J Street had become a thriving mercantile business run by Charles C. Perkins, the son of the man for whom the town of Perkins was named (Willis 1913; City Directory 1905). 1016 J Street had also become a grocery business. J. Gruhler had acquired the adjacent west half of lot 3, including that building. He continued to operate the Gilt Edge Saloon at 1014 J Street, with a residence at 1014-1/2 J Street on the alley.

Gruhler was another native of Germany was gravitated to this section of Sacramento. He was born in 1861, and came to California in 1880. He worked for his brother for a few years, and then acquired his own saloon. Mr. Gruhler was an active member of several fraternal lodges. In 1890, his facility was called the "Butcher's Home", suggesting he also had lodgings for the men who worked at the nearby meat-processing facility (Davis 1890:320-321).

In 1910, there was a hardware store at 1022 J Street, Campbell & Boutwell. Frederick Eckhardt had acquired the east half of lot 4. Eckhardt had a saloon at 906 J Street. At 1016 J Street was Kilgore & Tracy, a grocery business. By 1910, their business had expanded into both 1016 and 1018 J Street. Kilgore was born in Sacramento in 1855. In 1878, he had formed a partnership with T. M. Tracy, and they bought out their employer's grocery business (Thompson and West 1880).

According to Boghosian (2005), the building at 1030 J Street was built in 1911 or 1912 (DPR form). The top of the building can be seen in Figure 6.

In 1915, the ownership remained the same with Jacob Gruhler owning the east 20-foot strip of lot 2 and lot 3. Griesel's heir had apparently taken over the family business on the east half of lot 3. Mohr & Yoerk still maintained the packing plant on the west half of lot 4, with Frederick Eckhardt the owner of the east half of lot 4. The 1915 Sanborn map (Figure 6) shows that the building remained the same, but with modifications, including the split of the building at 11th and J, with storefronts along 11th Street, the current configuration of the building.

A major change in the setting also occurred through the closure of the facilities related to animal-drawn transportation. Up until this time stable had been quite common in the City. Due to the advent of the automobile stables were no longer an integral part of City life. The stables were no longer present, and the site of the stables behind the project site on lots 6 and 7 now was the site of a theater.

The 1915 City Directory indicates that there was still some residential occupancy. Jacob Gruhler lived in the small alley residence at 1014-1/2 J. E. B. Rogers was a resident of 1016-1/2 J. D. E. Newbert was an occupant at 1018-1/2 J. Jacob Meyer was a resident of 1020-1/2 J. 1024 ½ was vacant. E. P. Howe apparently lived upstairs at 1028 J. above the meat packing operation. 1010 11th Street, on the second floor of the building, was the Lucerne Apartments, with nine units.

Later Years

In 1920, the same four owners controlled the property. A major change was that the packing plant was no longer: the new replacement was the Mohr & Yoerk Realty company. There were still residents in 1014-1/2, 1016-1/12, 1018-1/2, 1020-1/2, and 1022-1/2 J, and the only other residents of the project area were in the Lucerne Apartments. 1030 J Street at the corner was now Western Auto Supply (Figure 8).

In 1924, businesses had again changes, with the Waxon Brothers, hardware electrical dealers and contractors, who had a shop in 1014 J, still owned by Jacob Gruhler. Gruhler continued to own the same holdings in lot 2 and lot 3. The east half of lot 3 had been sold to apparent investors, and the east half of lot 4 had been sold to Henry Kleinsorge, a real estate investor in Sacramento. 1016 J was a music store. 1018 J was a sewing machine shop, owned by J. Kirby. 1022 J was Campbell & Boutwell.1024 J was the Eastern Outfitting Company, a ladies' apparel business. In 1925, Jacob Gruhler had finally moved off the project area to a home on 43rd Street. Individuals continued to live in the small alleyway residences (City Directory 1924, 1925).

In 1930-1931, Gruhler continued to own portions of lot 2 and lot 3. W.H. and Rita James owned the east half of lot 3, with Mohr & Yoerk Realty Company retaining their holding. Mohr & Yoerk had converted their packing plant to a realty office on the first floor with apartments above. Henry Mohr returned home from college to enter his father's business, managing various properties (Wooldridge 1931:192-193). Mohr & Yoerk were also the largest retail grocers in Sacramento. However, the project site was no longer used for grocery or meat packing activities. George Yoerk joined Henry Mohr in the realty business (Tax Assessment Map Book 1930-1931; Reed 1923: 322).

In 1935, Carrie Gruhler owned the western section of the project area, with Rita James, The Capital National Bank and Esther Bloomberg each owning a half lot section. In 1939, the Waxon Brothers were in business at 1014, 1016 was Radio Sales and Service Company, 1018 was the Singer Sewing Machine company, 1020 was Hobrecht Appliances, 1024 was vacant, 1026 was R.E. Watson Furniture, 1028 was Atlas Blue Prints, and 1030 was vacant.

The same buildings along the alley were all vacant. 1010 11th Street was the Lucerne Apartments, with seven tenants (Tax Assessment Map Book 1935; City Directory 1939).

Lazarus and Abraham Bloomberg had purchased the east half of lot 4 (Tax Assessment Map Book 1930-1931). Laz Bloomberg was a Sacramento fixture that owned the cigar shop next to the Saddle Rock Restaurant on Second Street that his family acquired in 1876. He became an investor in Sacramento real estate (*The Sacramento Union* February 1, 1953).

The Country Maid restaurant opened in 1030 J Street, remaining there until 1982 (Figures 9, 10, 11 and 12). In 1949, many of the second floor apartments were remodeled into office space. The building was remodeled again in 1956 after a fire (Boghosian 2005).

Through the 1940s, the businesses within the project area continued to change, with a variety of businesses including musical instruments, liquor store, electrical repair, dentist, chiropodist, physician, sewing machine store, grocer, blue print shop, electrical appliance shop, restaurant, floral shop, and women's clothing. One important individual who started his business here was Manuel Joseph, who first worked for Waxon Brothers at 1014 J, then opened his family appliance business in 1937 at 1020 J Street (Figure 13 and 14). Joseph opened a second store in Citrus Heights in 1987, and finally closed his store on J Street in 1990, opening in North Natomas. He was known as the "Mayor of J Street." (*The Sacramento Bee* April 8, 1993).

Figure 15 is the earlier Sanborn map with paste-ups to bring it current to 1952. The most noticeable changes were the elimination of the buildings along the alley. Figure 16 is a contemporary view, prior to the fire damage.

Current Exterior Conditions Along J Street and 11th Street

The on-site buildings were constructed between 1886 and 1915. The buildings currently display deferred maintenance. Of the three buildings, only 1024-1030 J Street is currently occupied on the ground floor by Mother India restauarant, Lee's Hair Design, Capitol Clothing Company, and Pacific Promotional Design (Figure 17 and 18). The upper floors of 1024-1030 J Street are currently unoccupied (Figure 19). The building at 1018 J Street is currently vacant and has not been occupied since 1994 as a result of extensive fire damage (Figure 20). Due to this damage, the building is uninhabitable and is not in condition for repair or remodel. The building at 1020 J Street is currently vacant and has not been occupied in recent years.

As can be seen in a comparison of Figure 11 and Figure 16, much of the exterior detailing was removed during renovations in the mid-20th century. In addition, exterior facing materials have been added, including: river rock, brick, and wood. Due to the loss of culturally significant exterior detailing during the renovations the buildings exteriors along J Street and 11th Street would not be considered to be good examples of period architecture; therefore, they are not cultural resources.

According to the City of Sacramento Historic Resources report updated March 2005, none of the buildings occupying the proposed project site are listed as a historical resource.

POTENTIAL RESOURCES

Section 15064.5 of the CEQA Guidelines specifies criteria for evaluating the importance of cultural resources, which include an assessment of whether:

1) The resource is associated with events that have made a significant contribution to the broad patterns of California history;
2) The resource is associated with the lives of important persons from our past;
3) The resource embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
4) The resource has yielded, or may be likely to yield, important information in prehistory or history.

Prominent Individuals

As discussed throughout the historical setting, the project site has been associated with locally prominent individuals including: Armstead Runyon, Mohr & Yoerk, and Manuel Joseph. Armstead Runyon might be considered a significant individual in California history; however, the property is not related to his prominence beyond its use as a financial investment. Mohr & Yorek were locally prominent business families; however, they did not contribute significantly to the local history beyond what would be expected of a successful family. Similarly, Manuel Joseph was successful in the retail electronics business, but he did not significantly affect the industry or the history of California. Therefore, while the property has been associated with locally prominent individuals neither the buildings, nor the land, would be considered culturally significant on the basis of their ownership.

Underground Features

As stated previously, because of repeated flooding of the downtown area, major raising of the City streets occurred in the 1860s. The raised portion of the City roughly encompasses the area within H and L streets, and Front Street to approximately 12th Street. Many building owners opted to raise their buildings to the new street grades; others converted their first floors into cellars. The City raised the street grade only, leaving the business owners to construct the new sidewalk in front of their businesses. Eventually all the new sidewalks were constructed covering the open gap between the street and the storefronts, creating a network of tunnels under the new sidewalks or “hollow sidewalks.”

Due to their increasing rareness, the City of Sacramento has determined that the brick features (buttresses, walls, and vaulted ceilings) under the hollow City sidewalks related to the raising of the City are important resources (Roberta Deering, 2006). In addition, the underground features would appear to constitute a significant cultural resource as defined above by the CEQA Guidelines, as the underground sidewalks relate to a significant event in City history; specifically disastrous floods of the winter of 1861-62 and the decision to raise the level of all streets along J and K Street beginning in 1869. Furthermore, the underground sidewalks are a singular landmark, specific to Sacramento, whose features embody the distinctive characteristics of a type, period, region, and method of construction. Therefore, the hollow sidewalks throughout the City constitute a historic resource.

Hollow sidewalks exist under the project site. The important aspects of the hollow sidewalks, according to the City and as shown in Figure 20-34, are the brick features (buttresses, walls, and vaulted ceilings). The underground features are decayed and altered as would be expected by their age, and a large number of metal, wooden, and concrete support poles are located within the hollow sidewalks (Figure 26 and 30). In addition, utility wiring has been placed in the underground sidewalks (Figure 31), as well as some refuse (Figure 34 and 35). The buttresses are clearly visible (Figure 23), and some sections of the brick and vaulted ceiling can still be seen (Figure 27). While extensive precautions would be required to make the underground features safe and available to the public, elimination of the features for the proposed project would constitute a significant impact to an important cultural resource.

With implementation of the proposed project, the hollow sidewalk areas would be destroyed. Therefore, the project as proposed, will cause a significant impact to the brick underground features.

Copenhagen Alley District

In 2005, Paula Boghosian recorded the Copenhagen Alley District, including the Alley between 10th and 11th, J and K Streets, east end. The District is comprised of the rear elevations of what were originally seven buildings, and the alley from 11th Street to the west edge of the 1018 J Street parcel. The brick buildings are consistent with a late nineteenth and early twentieth century construction. The renovations made to the facades of the buildings along J Street and 11th Street were not made to the alleyway facades. Therefore, the alley facades feature brick construction, segmented arched widows and doors, stepped brick parapets, and the flat arches in widows and doors that defined the architecture of the time period. In addition, the rear elevation of 1030 J Street features two large bay windows. Alley residences were common during the time period in which they were built; however, they are becoming increasingly rare in Sacramento. According to Ms. Boghosian, "These rear/alley elevations provide a strong sense of historic time and place, and reflect the image and significance of downtown Sacramento better than any remaining streetscape in Sacramento."

The alley facades provide an image of the post Gold Rush Sacramento that provides

valuable visual information of Sacramento's early years. These groupings contribute significantly to the character and image of Sacramento's historic downtown.

IMPACTS OF THE PROPOSED PROJECT

Underground Features

The project site contains a network of underground sidewalks at the basement level. The City has determined that all remaining brick features related to the raising of the City are considered to be important resources, regardless of the condition or integrity of the features. The project, as proposed, would excavate below the basement level. Therefore, the project as proposed, will cause a significant impact to the brick underground features. This is an unavoidable impact of the project as currently designed.

Copenhagen Alley District

Construction of the proposed project would require the removal of all the on-site buildings. The removal of the buildings that form this District will cause an impact to the resource with the demolition of the streetscape. Therefore, the project as proposed, will cause a significant impact to the Copenhagen Alley District. This is an unavoidable impact of the project as currently designed.

Archeological Deposits

Prehistoric Period

We do not believe that prehistoric period cultural deposits are present within the project site. This parcel lies away from any natural water source; therefore, as most village sites were located adjacent to a water source the site is not likely to contain prehistoric cultural materials. Furthermore, it does not seem likely that another site would be located so close to the City Hall/Plaza Park site.

Excavations at a nearby project site, the 800 J Street Lofts, yielded only a few scattered prehistoric period artifacts, and no intact cultural deposit (Kim Tremaine, 2006). Similarly, this site, so close to a major site, is not likely to contain an intact prehistoric period cultural deposit. It is always possible that a few scattered artifacts from the prehistoric period could be found. Isolated finds of artifacts are not significant resources under California Register criteria.

Historic Period

The project area has been occupied since the early 1850s by a variety of businesses and residences, but has been primarily commercial enterprises, as it is today. As stated above, while the property has been associated with locally prominent individuals, neither the buildings nor the land would be considered culturally significant. Thus, None of the businesses on the site appears to be important or associated with important events in local or State history. The resource possibly present within the site that could be eligible for the California Register would be intact cultural deposits that could address research questions that the historic record cannot address. Deposits on the site could provide an insight into the lifeways of early Sacramento, and add to our knowledge regarding early businesses and the material culture of the City. The historic record has provided information on the specific occupants of the site through time; more information may be gained by a study of the deposits potentially preserved within the project area.

The project area could yield subsurface materials related to the early settlement of the City. The buildings on lots 2 and 3 were apparently jacked up in the 1860s and there may be materials present below the floors of these buildings. There may be privy and trash pits related to the early use of these buildings in the open area behind the buildings, not serving as parking lots. In addition, the small buildings in the rear of the lots were occupied for a number of years, and could have associated deposits.

The large buildings on lot 4 have been modified and re-built. It appears that the buildings on this lot were not jacked up, but rather, the original street level became the basement level. The 1911-1912 re-build apparently involved demolition to the street level, with the additional stories added above the existing basement level building. It seems less likely that earlier deposits would exist below the original street level of the building.

PROPOSED MITIGATION MEASURES

Underground Features

If possible, the underground features of concern (brick buttresses, walls and vaulted ceilings) should be retained and incorporated into the project design, with the features incorporated into the new construction in an interpretative manner available to the public. Preservation and incorporation would reduce impacts to the underground features to a less-than-significant level.

If this is not feasible, the applicant shall conduct a program of archival photography documenting the features of concern. Mesa Technical has taken archival photographs for some sections of the underground features. Additional photographs are proposed for the sections under 1028/1030 J Street, previously inaccessible. Sets of the photographs will be placed at the Sacramento Archives and Museums Collections Center and possibly the Sacramento Room of the Sacramento Public Library for the use of future researchers.

Anyone interested in the history of the raising of the City in the 1860s will be able to see other sections of the altered physical remains as they existed in 2006. It may be possible to develop an interpretive display for the public in the building regarding the raising of the streets. However, archival photography would not reduce impacts to a less-than-significant level; therefore, impacts to the underground features would be significant and unavoidable.

Copenhagen Alley District

If possible, the alley facades should be retained and incorporated into the project design, with the features incorporated into the new construction in an interpretative manner available to the public. However, the relationship of the buildings to each other and the rear lot line would be significantly altered. A significant portion of the historical and cultural value of the alley district is composed of the spatial relationship of the buildings to each other. Therefore, the proposed mitigation would not reduce the impact to a less-than-significant level; and impacts would remain significant and unavoidable.

If this is not feasible, the applicant shall conduct a program of archival photography documenting the features of concern in the Copenhagen Alley District, documenting the current appearance of the resource. Mesa Technical has taken archival photographs of the District. Sets of the photographs will be placed at the Sacramento Archives and Museums Collections Center and possibly the Sacramento Room of the Sacramento Public Library for the use of future researchers. However, archival photography would not reduce impacts to a less-than-significant level; therefore, impacts to the underground features would be significant and unavoidable.

Archeological Deposits

Prehistoric Period

As stated above, excavations at a nearby project site, the 800 J Street Lofts, yielded only a few scattered prehistoric period artifacts, and no intact cultural deposit. As a result, there does not appear to be a high likelihood for the presence of prehistoric period resources. It is always possible that a few scattered artifacts from the prehistoric period could be found. A sensitivity training course should be given to construction personnel prior to initiation of site excavation activities to prepare them to recognize prehistoric artifacts.

The developer should have an agreement with an archeological firm to be available during construction for an emergency discovery situation, and be able to rapidly assess the situation, and quickly recover any findings. If cultural materials are found, the City should be immediately notified. Data recovery excavations should then be conducted. Any recovered materials should processed, cleaned and analyzed and a professional report prepared detailing the results of the excavation work. Reports should be filed with the North Central Information Center of the California Historical Resources Information

System, the City of Sacramento and the Sacramento Archives and Museums Collections Center. Any recovered artifacts with interpretative value should be placed with the Sacramento Archives and Museums Collections Center or other appropriate facility.

Historic Period

A research design should be developed for a program of archeological testing for the site. After demolition of the buildings, a program of testing should be implemented to determine if there are subsurface cultural materials that could be used to address important research questions. If such deposits are present, data recovery excavations should then be conducted to excavate these deposits.

Any recovered materials should processed, cleaned and analyzed and a professional report prepared detailing the results of the excavation work. Reports should be filed with the North Central Information Center of the California Historical Resources Information System, the City of Sacramento and the Sacramento Archives and Museums Collections Center. Any recovered artifacts with interpretative value should be placed with the Sacramento Archives and Museums Collections Center or other appropriate facility.

For the portions of the site not covered by testing and data recovery excavations, historic period artifacts and features could be found during the site excavation. There should be a pre-field sensitivity training session for the excavation team at which an archeologist can make members aware of the types of resources and artifacts that could be present. The team would be trained as to when there would be a need to call in an archeologist for an on-site consultation should historic period cultural resources be encountered during the excavations. The developer should have an agreement with an archeological firm to be available during construction for an emergency discovery situation, and be able to rapidly assess the situation, and quickly recover any findings.

If significant findings are made, it may be possible to incorporate historic materials and artifacts in an interpretive display in the building.

HISTORIC PRESERVATION ALTERNATIVE

Under the Historic Preservation Alternative the applicant would seek to incorporate portions of the Underground Features and the Copenhagen Alley District into the design and facade of the proposed project. In particular, the rear elevations would be preserved and attached to the rear elevation of the proposed tower. This Alternative would preserve much of the architectural detail from the alleyway. However, the historical quality of the buildings includes their spatial relationship to each other. Under the Alternative, the facade variety of depth would be lost. As a result, although the alternative would result in a reduced impact, the impact to cultural resources would remain significant.

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FIGURE LIST

1. Project area.

2. Advertisements for Mohr & Yoerk and Jacob Griesel (City Directory 1870; 1879-80).

3. Augustus Koch, Bird's-eye view of Sacramento, 1870.

4. Jacob Griesel in front of his harness shop at 1022 J Street, taken about 1897. Courtesy California State Library, on file at the Sacramento Museums and Archives Collections Center (SAMCC). (84/62/225)

5. Sanborn Fire Insurance Map Company, 1895.

6. Sanborn Fire Insurance Map Company, 1915.

7. Looking east, J Street on left. In foreground, rooftop and partial view of the side of 1028/1030 J Street. Appears to date to the mid-1920s. David Joslyn Collection. On file, Sacramento Archives and Museums Collections Center. (70/01/26)

8. Parade scene on J Street from the late 1920s/early 1930s, cars heading west. Western Auto Supply Co. is located at 1030 J Street. On file, Sacramento Archives and Museums Collections Center. (2001/007/096)

9. Looking south on 11th Street, Country Maid restaurant on right. Hepting Collection. On file, Sacramento Archives and Museums Collections Center. (85/24/5169)

10. Looking south at 11th and J, March 20, 1938. Hepting Collection. On file, Sacramento Archives and Museums Collections Center. (85/24/807)

11. Looking west on J Street. Feb. 23, 1938. Hepting Collection. On file, Sacramento Archives and Museums Collections Center. (85/24/1510)

12. Looking southwest at 11th and J, 1939. Frank Christy Collection. On file, Sacramento Archives and Museums Collections Center. (98/722/1016)

13. Looking northeast at the intersection of 11th and J in the snow, 1942. Manuel Joseph sign in right foreground. Hepting Collection. On file, Sacramento Archives and Museums Collections Center. (85/24/1734)

14. Advertisements from directories, upper from 1935 City Directory; center and lower from 1940 City Directory.

15. Sanborn Fire Insurance Map Company, 1915 revised to 1952.

16. Looking west at project area, July 1989. Frank Christy Collection. On file, Sacramento Archives and Museums Collections Center. (98/722/1022)

17. Looking south on 11th Street, October 2006. Raney Planning and Management.

18. Looking east at the corner of J Street and 11th Street, October 2006. Raney Planning and Management.

19. Looking west along J Street at 1020 J Street, October 2006. Raney Planning and Management.

20. 1018 J Street, October 2006. Raney Planning and Management.

21. Westernmost point under the sidewalk.

22. Buttresses along J Street.

23. Buttresses along J Street.

24. Support under the sidewalk along J Street.

25. Looking east at buttresses along J Street.

26. Buttresses along J Street.

27. Brick vaulted ceiling under the sidewalk, looking north along J Street.

28. Buttresses along J Street.

29. Looking southeast under the sidewalk.

30. Buttresses along J Street.

31. Convergence of J Street and 11th Street.

32. Convex wall and buttresses along 11th Street.

33. Buttresses along 11th Street, looking north.

34. Looking north under the sidewalk along 11th Street.

35. Southward view of the convergence of 11th Street and the Alley.

36. Rear view (north from alley) of 1018 J Street, January 2007. Raney Planning and Management.

37. Rear view (north from alley) of 1018 J Street, January 2007. Raney Planning and Management.

38. Rear view (north from alley) of 1020 J Street, January 2007. Raney Planning and Management.

39. Side view (northeast from alley) of 1024 J Street, January 2007. Raney Planning and Management.

40. Side view (northeast from alley) of 1024 J Street, January 2007. Raney Planning and Management.

41. Rear view (northeast from alley) of the rear of 1024 and 1030 J Street, January 2007. Raney Planning and Management.

42. Bay window detail on rear of 1030 J Street (north from alley), January 2007. Raney Planning and Management.

43. North west view up 11th Street from alley entrance, January 2007. Raney Planning and Management.

APPENDIX G

Historic Environment Consultants

Cathedral Square, Cultural Resources Supplementary Report, ADEIR

March 2007

5420 Home Court **Carmichael, CA 95608**
(916) 488-2887 **historic@surewest.net**

CATHEDRAL SQUARE PROJECT ADEIR
SUPPLEMENTARY REPORT

This Report is prepared as a Supplement to the Cultural Resources section of the ADEIR developed for the Cathedral Square Project in downtown Sacramento. The Report is intended to supplement the existing Cultural Resources section and address some elements of the Project that have not been treated in the existing ADEIR. Those portions of the existing document whose information is considered adequate will not be reiterated in this Report.

Federal and State Historic Preservation Regulations have already been provided in the existing document (Peak). This Report will provide Sacramento Historic Preservation Regulations.

Sacramento City Historic Preservation Regulatory Background

City of Sacramento Preservation Element

The City of Sacramento adopted a Preservation Element in their General Plan in April 2000. The overarching goal of the Preservation Element is:

"To retain and celebrate Sacramento's heritage and recognize its importance to the City's unique character, identity, economy, and quality of life."

The Element is further divided into six major goal and policy sections, each with a single goal and many policy statements to achieve the stated goal. Applicable goals and policies are as follows:

Goal A: To establish and maintain a comprehensive citywide preservation program.

Applicable policies under this goal include:

A.1 The City shall promote the recognition, preservation, and enhancement of historic and cultural resources throughout the City.

A.2 The City shall promote the preservation, restoration, enhancement, and recognition of historic and cultural resources. Historic and cultural resources include not only sites and structures, but also features such as infrastructure (e.g. bridges, canals, roads, and trails), signs, landscaping and trees, open space areas, lighting and hardscape (e.g., sidewalks, paving) that are important to the overall context.

Goal B: To protect and preserve important historic and cultural resources that serve as significant, visible reminders of the City's social and architectural history.

Applicable policies under this goal include:

B.2 The City shall review new development, alterations, and rehabilitation/remodels in design review areas, preservation areas, and other areas of historic resources for compatibility with the surrounding historic context.

B.6 The City shall promote the conservation of historic neighborhoods to encourage preservation of structures and other features. In these areas, the City shall encourage the maintenance or reconversion of parkway strips to landscaping, maintenance and replication of historic sidewalk patterns, use of historic street lamps and street signs, and maintenance or restoration of historic park features.

Goal E: To identify and protect archaeological resources which enrich our understanding of the early Sacramento area (Goal E).

The applicable policy under this goal includes:

E.3 The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the North Central Information Center of the California Historical Resources Information System, requiring a site evaluation as may be indicated and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist.

Sacramento Preservation Ordinance:

In June of 2001, the City Council adopted a new Sacramento Historic Preservation ordinance that revised the former ordinance, expanded its jurisdiction and changed a number of its provisions, following the adoption of the Sacramento Historic Preservation Element. This Ordinance provides for the review of potential rehabilitation and demolition projects affecting listed properties in the Sacramento Register. Under this Ordinance such projects were reviewed by the Design Review/Preservation Board for their appropriateness to the historic preservation goals of the city. The City Preservation Department conducted a new survey in 1996-97 to update the original survey of 1980, and Sacramento Heritage, Inc. added to the survey in 1999. Additional survey work, in coordination with the State Office of Historic Preservation, continued in 2001 and up to the present.

Surveyed buildings identified as meeting the City's criteria for listing in the Sacramento Register as individual properties (now Landmarks) and supportive or non-supportive structures (now contributing or non-contributing structures) in Historic Districts by the design Review/Preservation Board were presented for review and comment at public meetings prior to their final adoption into the Register by the City Council.

On October 24, 2006, the City Council adopted a revised city-wide Sacramento Historic Preservation ordinance (#2006-063) that revised the former ordinance, expanded its jurisdiction and changed a number of its provisions. Surveyed buildings that have been identified as meeting the City's criteria for listing in the Sacramento Register as Landmark properties and contributing or non-contributing structures in Historic Districts are presented for review and comment at public meetings prior to their final adoption into

the Sacramento Register by the City Council. Additional modification of the Ordinance has divided the former Design Review and Preservation Board into two separate bodies: the Preservation Commission, and the Design Review Commission.

The Preservation Ordinance also includes the following information pertinent to the current proposal identified in the Cultural Resources evaluation of the Cathedral Square ADEIR:

Article VIII Proposed Demolition or Relocation of Building or Structure Fifty Years Old or Older.

17.134.430 Proposed demolition or relocation of buildings or structures that are fifty years old or older—Review for nomination for listing on Sacramento Register.

A. If a permit is sought to demolish or relocate a building or structure that was constructed at least fifty (50) years prior to the date of application for demolition or relocation, and that building or structure is not currently on the official register, is not the subject of a pending nomination, has not been nominated for listing on the official register or reviewed pursuant to this section within the past three years, the permit application shall be referred to the preservation director to allow the director to make a preliminary determination whether the structure should be nominated for listing on the official register. For purposes of this section, a building or structure for which a building permit issued and construction commenced not less than fifty (50) years prior to the date of application for a demolition or relocation permit shall be considered to have been constructed not less than fifty (50) years ago, regardless of when the construction was completed, and regardless of whether the building or structure was thereafter expanded, modified or otherwise altered. Absent sufficient evidence to the contrary, the date of issuance of the building permit shall be considered to be the date on which construction commenced.

1. Exceptions:

a. Buildings and Structures within the Richards Boulevard Special Planning District.

In the Richards Boulevard special planning district, the requirements of this section shall apply only to applications to demolish or relocate buildings or structures that are identified in the "Richards Boulevard Area Architectural and Historical Property Survey" (herinafter "survey), as either potential essential structures, priority structures, or contributing structures within the potential North 16th Street preservation area. Applications to demolish or relocate buildings or structures within Richards Boulevard special planning district that are not so identified in the survey shall not be subject to the requirements of this section.

b. Building and Structures within other Surveyed Areas.

To the extent that surveys have been prepared for other areas, and council has approved and adopted these surveys, the council may provide, by resolution or ordinance,

that this section shall apply only to those building or structures that the survey has identified as potential landmarks or contributing resources.

B. Preliminary Determination by Preservation Director.

1. Preliminary Determination—Time Limit—Criteria

Within forty-five (45) days of receipt of an application to demolish or relocate a building or structure under subsection (A) of this section, the preservation director shall make a preliminary determination of whether the building or structure is eligible for listing on the Sacramento Register. In making this preliminary determination, the preservation director shall apply the eligibility criteria and factors specified in Section 17.134.170. The preservation director shall find that the building or structure is eligible for consideration for listing on the Sacramento Register if the director finds that there is a reasonable likelihood that the building or structure will be placed on the Sacramento Register following completion of the notice and hearing requirements of this chapter.

2. Preliminary Determination—Notice.

The preservation director shall notify the property owner of the preliminary determination by first-class, prepaid mail. Failure of the preservation director to act within the forty-five (45) day period shall be considered to be a determination that the structure is no eligible for listing on the register. For purposes of this section, the decision shall be considered to have been made on or before the date of mailing of the notice.

3. Preliminary Determination—Effect

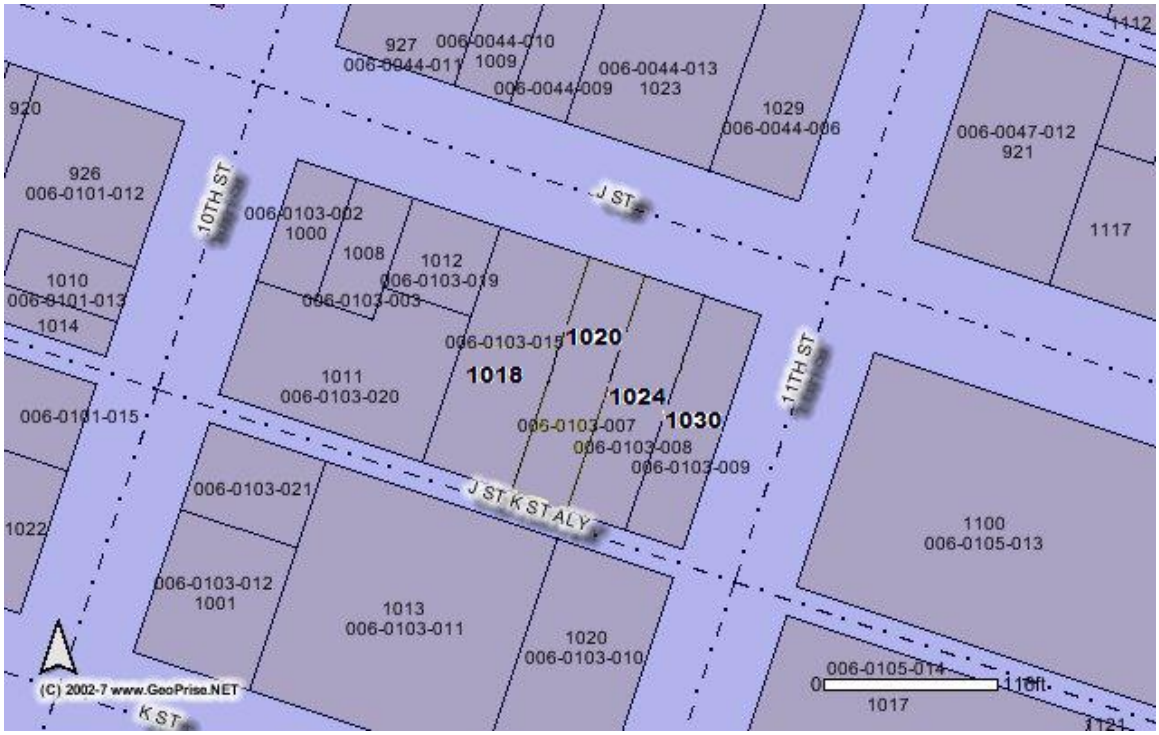
a. If the preservation director determines that the building or structure is eligible for listing on the Sacramento Register, the building or structure shall be deemed nominated for listing on the Sacramento Register under subsection (A) of Section 17.134.180 and shall be subject to Section 17.134.200, except that the restriction of subsection (B) of Section 17.134.200 shall apply for a period of forty-five (45) days from the date of the preservation director's preliminary determination under this subsection (B) and the time by which the council may extend the time period shall be limited to an additional forty-five (45) days.

b. If the preservation director determines that the building or structure is not eligible for listing on the Sacramento Register, the permit to demolish or relocate the building or structure shall be issued without further restrictions under this chapter. The decision of the preservation directors that the building or structure is not eligible for listing on the Sacramento Register shall be final and shall not be subject to appeal.

Cathedral Square Project Area

The Project includes the proposed demolition of properties at (1014, 1016) 1018 J, 1020-1022 J, 1024-1026 J, 1028-1030 J Street including the alley elevations of these buildings, and the areas beneath the sidewalks on J and 11th Streets that front on these buildings. Also affected would be the alley subsurface itself.

Map of Project Area



Historic Setting of the Project Area and Vicinity

Historic Background.

The Project Area is located near the core of early Sacramento development along J and K Streets from Front to 12th Streets, which occurred during the 1850s and 1860s. Archeological resources from that early period of development may remain in this location. The map of 1854 identified as "Part of Official Map of the City of Sacramento California, compiled from Actual Surveys by W.S. Watson Civil Engineer," shows one small building on lot 3 fronting on J Street between 10th and 11th Streets, and two on adjacent lot 4 at that time. A review of information regarding first and early property tenants and owners reveals the individual background of each existing structure as well as those that no longer exist. The histories of the individual properties within the project area provides information important to the evaluation of the significance of each resource and its eligibility to established federal, state and local Registers of significant historic, architectural, and archeological properties.

The J Street corridor began to be settled during the 1850s and 1860s with stores, saloons, stables, hotels and apartments. As the street evolved over time, the classic configuration of brick buildings with one or more stores on the ground floor, and apartments on the second floor began to cluster along here as well as other major downtown streets. The 1895 Sanborn Map clearly shows this pattern of development.

As Sacramento's focus changed from mining to agriculture, railroad, and merchandising activities, downtown J and K Street shops with their second story dwelling spaces, began to shift their merchandise to suit downtown core and surrounding area residents. Downtown Sacramento, over time, became the hub of the city, with theaters, restaurants, hotels, markets, drug stores, office buildings, bank and insurance buildings, fraternal meeting halls, post offices, and federal buildings. By the turn of the century, many buildings constructed from the mid-19th century remained in use, some altered in appearance and use, and some intact.

With the advent of the 1920s and 1930s, the commerce along J Street began to evolve into department stores, clothing, jewelry, and shoe stores. Through the 1940s, residences and rooming houses disappeared from L Street and were replaced with garages, automotive aftermarket sales, restaurants, and various retail activities. A number of national retail businesses opened branches downtown along K Street including Kress', Grant's, Woolworth's, and Sears. Employment opportunities and services opportunities attracted residents, and the construction of hotels and apartment buildings mixed in with retail businesses and professional offices.

The block containing the project properties evolved with a variety of stores, saloons, stables and second floor apartments. The advent of Prohibition dramatically changed the make-up of the block. The saloons and liquor stores disappeared.

The full evolution of downtown Sacramento ranged from the Gold Rush era's narrow brick two story buildings lining J Street – the celebrated path to the northern gold fields – and K Street, through its 1930-1949 'modernization' and the 1960-1980's attempts at regeneration. The core of the city has retained a number of historic character-defining features that span the range of time in spite of substantial efforts to change them.

Character-Defining Features of Downtown Historic Sacramento

The following features are character-defining features of the general historic downtown of Sacramento that help to define the history and visual image of this area and its contribution to the heritage of the city.

- Relatively consistent original grid format of numbered and lettered streets.
- Mixture of building ages and styles, reflecting continuing uses from 1848 beginnings to the present.
- Alleys between east-west streets dividing north and south half blocks, are consistently lower in the middle, reflecting the original ground level of the city.

- Remaining vestiges of angled bays on the upper floors of buildings. The facades of many buildings formerly had projecting angled bays on the upper floors for apartments above ground floor retail. Most of these bays were removed after World War II in an effort to 'modernize' a receding downtown. These remodelings made downtown dwelling units less desirable due to the resulting flat fronts with less visibility of street activity, contributing to the occupancy of upper floors of downtown buildings changing from residential to office/commercial. There are some remaining vestiges of the bay windows in the alley facades of buildings facing the streets, mostly in some locations between 9th and 12th Streets, J and K. This is the case at the alley façade of 1028-30 J Street.
- Remaining two and three story building heights along major historic downtown streets, associated with original 20' or 40' x 160' building parcels from the Gold Rush era, and creating a sense of original scale dependant on both the height and width of nineteenth or early twentieth century buildings. These remnants occur generally between 7th-12th Streets along J and K Streets.
- Vestiges of hollow underground areas beneath sidewalks reflecting the original level of the city
- Remaining granite curbstones in some locations.
- Remaining iron rings embedded in granite curbs for tying horse reins; along 8th Street between I and J, for example.
-
- Remaining cast metal access covers, metal basement-to-street elevator doors, and sections of small glass blocks providing light to the 'underground.'

- Character-defining features of the alley buildings include brick construction, segmented arched windows with brick sills and arched door openings, flat arches in windows and doors, stepped brick parapets, brick chimney stacks along the periphery of buildings, some patterned brick areas, variable alley setbacks, occasional trees or bushes, and some cobble-stone surfaced alleys, and angled bays projecting above the alley. Some alleys have resource features on facing sides of the alley.

History of buildings

The Project Area contains several buildings along J and 11th Streets, and the east-west alley from 10th to 11th Streets that will be removed to allow construction of new buildings. The buildings generally date from the last quarter of the nineteenth century and have historic and some architectural values.

In order to provide historic context for the Project Area buildings, a brief historic overview discusses the evolution of the downtown area in the late 19th and early 20th century, and the kinds of activities that occurred during the operation of the various building uses at that time. It was during this time period that most of the buildings acquired their current configurations, irrespective of their ever changing street facades.

Relevant Trends

There were three main trends in development in Sacramento that occurred during the early phases of the project area and affected the buildings that are still located there.

1. The rise of the automobile and trolley car service brought about the decline of horse-based transportation.
2. The growth of Sacramento to the east kept pushing light industrial uses out of the central area and increased residential tenancy. Retail and service businesses followed residential growth and moved eastward.
3. Prohibition was enacted in January of 1920 and the breweries, liquor stores and saloons were closed and converted into other uses.

In 1907 the County Courthouse faced dirt streets and horse-drawn transportation.

Photo Courtesy of SAMCC

A ca 1907 photograph of the Sacramento County Courthouse shows a classical building with dirt streets and a horse and horse-drawn wagons plodding slowly by. By the late teens a photograph of the County Courthouse shows a stylish new building, paved streets and cars line up solidly at the curb. It is remarkable when one considers that the two pictures were taken only a little more than a decade apart.

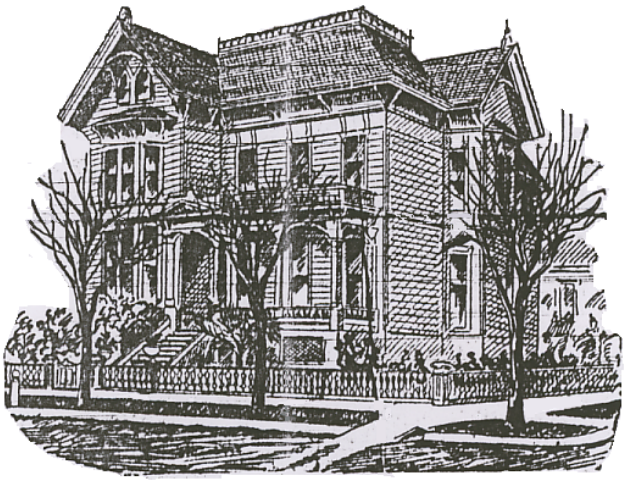
In little more than a decade the Country Courthouse became this imposing structure with paved streets and cars packed at the curb.
Photo Courtesy of SAMCC 1973-003-0233

There were two main stables serving the project area, but neither was located in the project area. Stanley's Stables was a large complex in the middle of the block on the north side of K Street between 10th and 11th Streets. It is shown prominently in the 1895 Sanborn, however, by the 1915 Sanborn it had been replaced by the Empress Theater. The Central Stables were across J Street from the project area at 1019-21 J Street. They were still in place in 1915, but they did not last that much longer. In 1923 the Public Market Building at 12th & J Streets replaced the Telegraph Stables and a photograph of the market just before its opening shows trucks and automobiles making deliveries to the building while a single horse and buggy passes by making deliveries for the Perfection Bread Company.

The Central Stables was one of two that served the project area.
Photo Courtesy of SAMCC1985-024-3022

Within the project area there were changes too, but they weren't as dramatic. In 1895 there are small stable buildings of the back lots of 1014, 1016, 1020 and 1030 J and by 1915 they are all converted to other uses, including auto garages. At 1022 J the successful harness works of Jacob Griesel simply ceased to exist not long after his death in 1907. As early as 1912 the first auto parts supplier made an appearance when G.A. Ritchie opened his business at 1028-30 J Street. By 1920, Western Auto Supply had opened in the same space.

The only light industrial uses in the project area were Griesel's harness works and the significant Mohr & Yoerk packing operations. Between 1907 and 1912 they were gone and converted to other uses.



Louis Mohr's home at 12th & L Streets in 1891.
Illustration from Sacramento Bee

Residential trends paralleled the general pattern. The owners of the small businesses along J and K Street often lived in the second floor space above their shops. In the late 1880s and 1890s many of these shop owners built fine residences on large lots around Capitol Park and further out. In turn, they turned the units above their shops into apartments and offices. To accommodate the movement of residential uses to the east, the retailers and services followed. Mohr & Yoerk opened their fine grocery at 11th & K in 1910. Up-scale women's clothier, Eastern Outfitters, moved into 1024-26 J replacing a meat market and pork packing operation. In 1923 the Public Market was built at 13th & J and many smaller retailers moved into the project area, such as appliances stores, electrical supplies, auto parts, sewing machines, shoe stores, paints, wallpapers, sporting goods and many others. Further on in time as the residential uses continued to move east the spaces above businesses were turned into offices for services such as architects, financial services, blueprinters, printers and office supplies.

Jacob Griesel's house at 1718 J Street in 1891.
Illustration from Sacramento Bee

Last, but not least, was the passage and implementation of prohibition in 1920. Even an area as small as the project area, had two saloons in 1920. They were closed and turned over to other uses.

The project area generally followed the general pattern of evolution that occurred in the central business district over time.

The circled #4 in the above 1883 photograph is Stanley's Stable on K Street between 10th & 11th Streets. In the upper right of the photo is a #1 and an arrow that points to the back of Chris Ehman's grocery at 1028-30 J Street. To the left of Ehman's is The Mohr & Yoerk meat market and pork packing plant at 1024-1026 J Street. The wood frame smoking towers of the meat market are visible at the rear of that complex on the alley. The next building complex to the left of Mohr and Yoerk is Griesel's at 1020-22 J Street. Griesel's Harness works is the building on the right, but he owns both buildings. Across J Street to the north from Griesel's is the rounded parapet of the Central Stables. The lot next to Griesel on the left is obscured by the large tree, but to the left of the tree is Gruhler's Gilt Edge Saloon at 1014 J Street.

Photograph Courtesy of California State Library, Negative #6731

arly 1920s

1014 J Street

History:
In 1866, Armstead Runyon sold the east 20' of lot 2 to F.S. George who established a barber shop at that location, 304 J Street, which was renumbered in the early 1880s to 1014 J Street. By 1880 George's shop had become a hairdressing salon. By 1885-86 the property had been transferred to H. Goepal, a boot and shoemaker. [Peak]

By 1890 Jacob Gruhler owned the property and was operating the Gilt Edge Saloon. Gruhler came to Sacramento in 1880 where he worked for other family members in the Columbus Brewery. He later worked for his brother John in his saloon at 522 J Street. The building that Gruhler obtained, as shown in the 1895 Sanborn, was much smaller than the building shown in the 1915 Sanborn and it was Gruhler who enlarged and improved the building. The building that remains behind the existing remodeled façade is fundamentally Gruhler's building ca 1900 Some of the features of the old building can be seen in the alley elevation. Gruhler and his family made their residence on the second floor.

Gruhler's saloon (Center)

In the late teens the Anti-Saloon league promoted the 18th Amendment to the U.S. Constitution, the Volstead Act, which was also known as Prohibition. The manufacture, sale and consumption of alcoholic beverages in the United States became illegal on January 16, 1920. Jacob Gruhler responded to the situation promptly and took out a building permit for $3,000 to remodel his saloon into a store. It was soon occupied by the Waxon Brothers (Peter & Frank) who had a store specializing in hardware and electrical supplies. They also operated as electrical contractors. The Waxons survived the early years of the Great Depression, but by 1938 two of their employees Cedarholm and Manuel Joseph were running an appliance and electronic supplies business at the address. They stayed there until early 1939 when they moved to 1020 J Street.

1014, 1016-18 J Street.

Photograph by Don Cox

In the latter part of the 1930s the building at 1014 J was sold by Jacob Gruhler to Minnie Morgan, et al. During the 1950s the building was occupied by the Golden West Café. During the 1960s the building was modified to accommodate offices and was known as the Morgan Building, with Fireside Thrift as the occupant. In 1970 1014 was apparently incorporated into the 1016-1018 building. The facades of both buildings were combined

into a single design which became the Copenhagen Store in 1974. The store was vacated in 1999 after a fire in the building.

Significance

It is not known how much of any building occupied by F. George's barbershop remains after the Greuhler remodeling between 1895 and 1915. The existing façade is a remodel that obscures any of the original façade that may have remained after it was combined with 1016-1018 J Street next door. The interior has been remodeled to accommodate its incorporation into offices and then the furniture store. The street façade and the interior have lost their design integrity. However, the alley façade has retained much of its original character and a good degree of integrity with its brick construction, rectangular windows, proportions and scale.

The building has been occupied since the mid 19th century, and its occupants have been varied. The businesses that have occupied the structure were common uses in the downtown area during the times they were active. However, none of the activities have been associated with prominent businesses that have survived and grown over a long period of time, or with individuals whose work contributed in significant ways to the evolution and growth of the city. The building has lost integrity on its street elevation and interior, and is not associated with significant Sacramento citizens.

The area beneath the sidewalk in front of the building has either lost its original brick barrel vaulted ceiling or had it covered with arched pieces of corrugated metal. The buttresses and shallow curved brick walls between them remain. The loss of the brick barrel vaults and replacement with another material constitute an important loss of original character.

However, the alley elevation of the building has retained sufficient character to contribute importantly to the Copenhagen Alley District and the historic character of downtown historic Sacramento. It appears that the building would be eligible for listing in the Sacramento Register as a contributor to the recommended Copenhagen Alley District.

1016-1018 J Street

Jacob Gruhler owned this property by 1890. In 1895 two small businesses were operating out of two 1 ½ story wood-frame buildings. 1016 was a store and 1018 was a restaurant. Each unit appears to have a single-story extension at the rear for storage. At some point between the 1895 and 1915 Sanborn map, the two buildings were replaced by a two-story brick building and occupied early by the Kilgore & Tracey Grocery. By the mid 1920s Singer Sewing Machines occupied 1018 and they remained in that location until the 1940s. The 1016 unit was occupied by Radio Sales & Service in the mid 1930s. Minnie Morgan purchased this building from Gruhler in the late 1930s. In 1937 Alfred Miles Shoes was doing business at 1018 J. By the 1950s the two units were occupied respectively by Reshke Jewelry (1016) and Silverman Music (1018). In 1960, 1016 was Taylor Surgical Supplies and 1018 was Ye Olde Music Shop. In 1970 Capitol Shoe and Sport was at 1016 and 1018 was vacant. In the early 1970s Beneficial Finance remodeled the units into offices for its own use. They also purchased 1014 J Street and combined the two buildings into one.

1016-18 J St.

In 1974, 1014 and 1016-18 were acquired by the Copenhagen furniture store, which occupied both buildings. They remained there until a 1999 fire after which they moved to Citrus Heights.

1014 J St. 1016-18 J St. 1020-22 J St.

Photograph by Don Cox

Significance

The existing brick building dates between 1895 and 1915. The building contained two adjacent and changing businesses that were providers of goods and services typical for the downtown area from 1915 until the early 1970s when the 1014 J Street building was combined with 1016 -1018 J Street, becoming Copenhagen Furniture store in 1974.

None of the business activities have been associated with prominent businesses that have survived and served Sacramento over a long period of time, or with individuals whose work contributed in significant ways to the evolution and growth of the city. The building street façade and interior have been substantially modified and lack original design integrity.

The remaining areas beneath the sidewalk still exist but the ceilings have been covered or replaced with arched corrugated metal sections and no brick barrel-vaulted portions are visible. The brick buttresses and shallow curved brick walls containing the street infill remain. The integrity of the original design and materials has been partially compromised by modifications to the original brick barrel vault construction.

However, the rear or alley elevation of the building has retained substantial character. Contributing features include the brick construction, the stepped parapet, the arched windows, the tall arched basement doors, the proportions and scale of minimal details. This alley façade contributes strongly to the Copenhagen Alley District.

The alley elevation of the building has retained sufficient character to contribute importantly to the Copenhagen Alley District and the historic character of downtown historic Sacramento. It appears the building would be eligible for listing in the Sacramento Register as a contributor to the recommended Copenhagen Alley District.

1020-1022

Jacob Griesel was born in Germany where he learned the trade of a harness maker. He had first come to the U.S. in 1848 and Sacramento in 1852. After a few years he returned to Germany where he married in 1859. He came back to Sacramento in 1863 and entered into the harness making trade. In the late 1860s he purchased the property at 1020-1022 J Street and opened his own harness making shop. In 1882 Griesel had the popular Sacramento architect Nathaniel Goodell expand and improve his building. The Goodell expansion included the addition of a second floor and the building that occupies the site today is mostly this 1882 building.

Griesel's business occupied the 1022 unit and he and his family lived upstairs. By about 1890 Griesel had a fine Victorian era home built for him on J Street between 17th & 18th Streets. However, his son Adolph continued to live above the shop for several more years. In the 1895 and 1915 Sanborn maps the 1020 unit was a saloon. Griesel died in 1907 and his son continued the harness business for only about another year. By this time it was beginning to become apparent to some that the horse, buggy and harness days were numbered and the automobile would soon become king. In 1909 the 1022 unit had become the home of the Campbell & Boutwell hardware store. They continued to occupy the unit until 1924, after which it was occupied by J.C. Hobrecht's radio store. The store fronts were remodeled in 1925 bringing them to their basic appearance today. By the mid 1930s Hobrecht's store was selling appliances and 1020 was vacant. In 1939 Cedarholm & Joseph moved into 1020 from 1014 J Street.

Jacob Griesel (right) at his Harness Shop in 1887. The man in front of the doorway is probably his son Adolph.

Photograph Courtesy of SAMCC 1984/062/0225

In 1950 contractor Charles Vanina performed $6,000 worth of alterations and repairs. Not long afterward, the Manuel Joseph Electric Center was selling appliances at 1020 and the Sacramento Sewing Machine Center was located at 1022. Business must have been good for Manuel Joseph because by 1956 the business re-located into larger quarters at 1212 J Street. The Sacramento Sewing Machine Center remained at the 1022 location

until it closed in recent years. In 1956 John Otto took out a $10,000 building permit to renovate the former Manuel Joseph store into offices for Walton & Company Investments. In 1970 1020 was vacant and the Sewing Machine Center was still in place and it finally closed in January 2005. One recent tenant of the 1020 unit was the Bean Heads Coffee & Deli.

1020-22 J Street.

Photograph by Don Cox

Alley elevations for 1020-22 J Street.

Photograph by Don Cox

Significance

The current upper floor appearance of the building at 1020-1022 J Street reflects the remodeling of 1925. Street level storefronts probably date from the 1950 remodeling. The second floor still reflects some integrity of the 1925 design and contributes to some degree to the overall character of the 'downtown' of that era.

Occupants of the two stores housed in the building evolved from the sale of traditionally 19th century products like harnesses and hardware to radios, appliances and electrical sales, now pertinent to the 1920s and 1930s. Both of the stores became associated with individual names that became prominent in the commercial community of the city: Hobrecht and Manual Joseph.

It appears that the Hobrecht name first associated with radio and electrical appliance sales at 1022 J Street evolved into the prominent Hobrecht Lighting stores of today. This represents a family business involvement of approximately 83 years.

The business that began as Cedarholm and Joseph in 1939 appears to have matured as Manuel Joseph Electrical Center by 1950 at 1020 J Street, and expanded successfully with Sacramento's appliance boom after World War II. The Manuel Joseph company prominently remained downtown into the 1970s before moving to the suburbs.

The Sacramento Sewing Machine Center next door at 1022 remained in business at that location from about 1950 to circa 2005, over 50 years.

The associations of the prominent local Hobrecht and Manuel Joseph businesses with the building lends it strong local historic importance that reflects the philosophy of stability and long term service of a former era, also reflected by the Sacramento Sewing Machine Center. The building possesses some local historic importance due to its associations with prominent local businesses.

The areas beneath the sidewalk are different for the 1020 and 1022 units. The area beneath the sidewalk in front of 1022 J has been modified with a ceiling replaced or encased with concrete. The buttresses and curved walls holding the street infill still remain. The area beneath the sidewalk at 1020 J appears to have retained its brick barrel vault ceiling and its buttresses, making it a significant remnant of the original unique 'hollow sidewalk' construction.

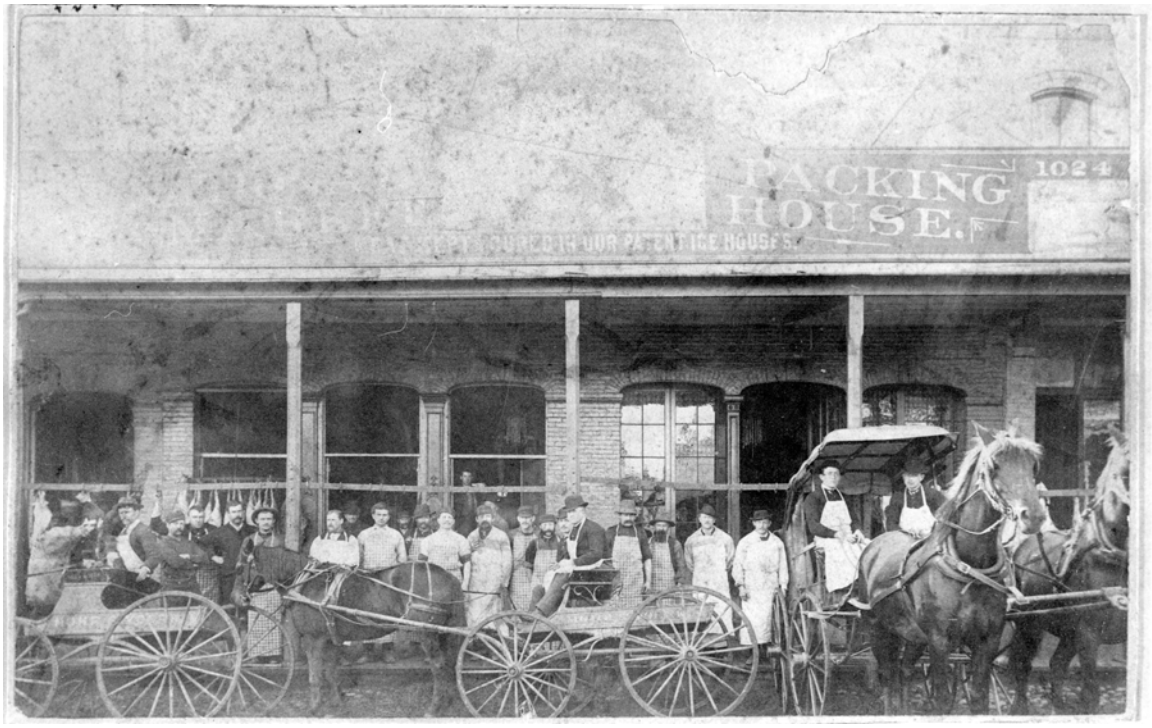
While the street façade of the building has received some modifications, it still displays the image of its 1925 design. However, it is the alley elevation that contributes to the character of the Copenhagen Alley District. The rear elevation of 1022 J has been enclosed and any original features are obscured from view but may still be intact beneath the cover, and it has retained its scale. The rear of 1020 has essentially retained its early image.

The building at 1020-1022 J Street is significant due to its local historic associations, its Alley District-contributing elevation, and the rare remnant of brick barrel vault construction under the sidewalk at 1020 J Street. The property appears eligible to the Sacramento Register based upon historic significance, its potential contribution to the recommended Copenhagen Alley District, and its unique historic underground construction that reflects a significant chapter of Sacramento's history.

The original brick barrel vaults supporting the sidewalk date to circa 1870 and are an increasingly rare remnant of underground Sacramento.

1024-1026 J Street

Louis B. Mohr began a meat market at 316 J Street (now 1024-1026 J) in about 1863 which he called The National Market. He operated on his own for a number of years until taking in Charles A. Yoerk as a partner. The business grew and prospered and by about 1870 they owned the property on which their business was located.



The Mohr & Yoerk meat market at 1024 J Street. In the upper right hand corner, notice the second story window.

Photograph Courtesy of SAMCC 1968/111/0036

In the late 1870s Mohr & Yoerk joined together with Thomas B. Hall and C.A. Luhrs to form the Hall, Luhrs & Co. wholesale grocers. Mohr & Yoerk used the Hall-Luhrs company to market its packaged meats locally and regionally under the brand names of "Our Taste" smoked pork, "Columbia" ham and bacon and "Eureka" canned corned beef. Over time Hall and Luhrs were no longer involved in the business and its principal officers were primarily members of the Mohr and Yoerk families.

The Hall-Luhrs headquarters building.

Photograph Courtesy of SAMCC 2000/125/0005

Mohr & Yoerk were extensively written up in the 1880 Thompson & West: *History of Sacramento*

County. Their write-up leaves the reader with no doubts that Mohr & Yoerk were the premiere pork curing operation in Sacramento County. The only operating competitors that Thompson & West mention are Weisel & Co. and Jacob Arnold. Weisel is credited with annually processing about 2,500 hogs and Arnold about 1,500. Mohr & Yoerk were processing about 50 hogs daily or about 13,000 annually.

In 1888 Mohr & Yoerk built a 5-story meat packing plant on the J & K Street alley at 11th Street. The 1895 Sanborn shows on the 40′ x 160′ J Street lot a single-story brick meat market covering the front ¼ of the lot. The middle ½ of the lot has a two-story brick pork packing plant with the last ½ of the lot occupied by 2 ½ story smoke houses. At the rear of the complex is a bridge connecting it at the second story level with the 5-story meat packing plant across the alley. The former openings in the walls on either side of the alley currently stimulate conjecture as to its former location.

The Sacramento Record-Union published a book in 1901 titled: *Sacramento City and County through the camera*. In it they refer to Mohr & Yoerk as *"One of the most important enterprises that have located in Sacramento City…"* They credit Mohr & Yoerk with employing 50 full-time year-round employees and even more in stock yards and slaughter houses outside the city. The book also says, *"The business of the company extends all over the Pacific Coast, and large shipments of canned meats, etc., are made to the Eastern States and elsewhere."*

A photograph of the Clauss & Kraus operation located at 17th & I in the 1890s show the two principals with their sons and employees. There are some thirteen butchers in the picture with Clauss & Kraus. However, their operation would continue to grow into the 1940s and 1950s and would not have its peak in growth until a much later period than Mohr & Yoerk.

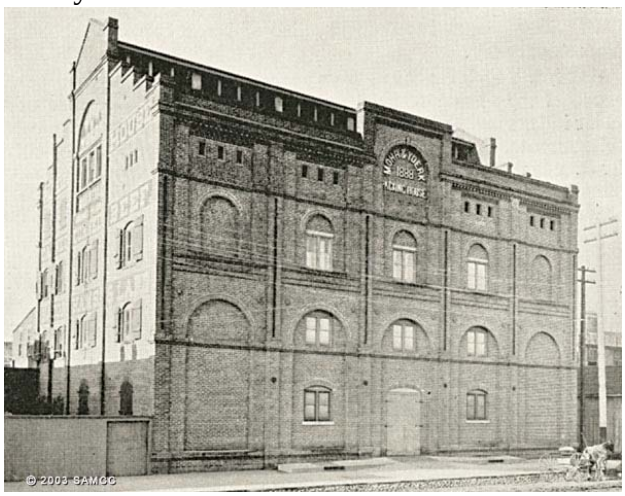
Another major meat packing company which had its roots in the same time period was Swanston & Son. However, like Clauss & Kraus, Swanston had its big years still ahead of it when they opened a large plant in 1914 along the Southern Pacific rail line at Arden Way.

After the turn of the 19th to the 20th century, the winds of change began to blow at the Mohr & Yoerk company. Mohr had retired from the company and the sons of the founders, George Yoerk and Henry Mohr, started to take over. It was noted that when Henry Mohr returned from college with a degree in law, *"…he was made president of the Mohr & Yoerk Realty Company, which had been formed to handle the various properties in which his father was interested."*

In 1910 the Mohr & Yoerk company completed an elegant building at the northwest corner of 11th & K Streets (not in the project area) which housed a grocery store on the ground floor with a mezzanine and three stories above which were up-scale apartments known as the Park View Apartments. In 1912 the company embarked on two

other large projects. One turned the former meat packing plant on the back half of the 11th & K parcel (not in the project area) into a 4-story apartment building. The second project focused on the transformation of the 1024-1026 J building—which is in the project area.

With the opening of the grocery store at 11th & K (which contained a meat market), Mohr & Yoerk were among the largest grocery operations in Sacramento. However, their meat packing operation, which had defined them for decades, was not longer in business. In the grocery business Mohr & Yoerk probably had as much square footage as Hale's, who had a grocery operation in their basement. Weinstock-Lubin was selling groceries and another large scale store was the American Cash Store in the ground floor of the Clunie Block. In 1914 the American cash Store moved into a building designed for them by George Sellon at 1017-23 8th Street. These stores would have been among the largest grocers in the area from 1910-1923. In the teens and 1920s the Arata Brothers and Piggly Wiggly had several stores in operation. However, rather than one large store, they operated multiple neighborhood stores. In 1923 the Public Market Building was opened and although various aspects of the grocery business were spread among several tenants, the Public Market would have had the most space devoted to groceries. When Mohr & Yoerk went out of business as a grocery in 1932 they explained that the "expensive mercantile" neighborhood could no longer support such large grocery store. However, the nearby Public Market survived into the early 1970s.



The Mohr & Yoerk meat packing plant on 11th Street was built in 1888.

Photograph Courtesy of SAMCC 1985/152/251

In 1912 Mohr & Yoerk had the 1024-1026 J building remodeled into a two-story brick building with a mezzanine and a basement. Retail shops were located on the ground floor and offices on the second floor. Eastern Outfitters, a trendy women's clothing store, took a ten year lease on the ground floor shop. In the 1930s R.E. Wilson's Furniture took over part of the ground floor and in the later 1930s Atlas Blueprint was listed at 1026. In June of 1940 Mohr & Yoerk Real Estate sold the building to Agnes Thiele Anderson. By the early 1940s through the early 1950s the ground floor shops were occupied by Sherwin Williams's wallpapers and paints and Atlas Blueprint. During the late 1930s the upstairs offices were occupied by the Cooks & Waiters Union. In the mid 1950s Sherwin Williams and Atlas Blueprint were still in place, and the architectural office of Gordon Stafford occupied the office space. In the early 1960s the Marty & Shine office supplies and stationery store was located in 1024, Atlas Blueprint was at 1026 and the architects were still in the office space. In 1970 the stationery firm had evolved into Marty & Curry and they had grown to several locations in the Sacramento

area. In the 1990s the Arbor Press printing establishment occupied the buildings. In recent years the building has been vacant.

Photograph by Don Cox

Alley elevations of 1024-26 and 1030 J (on left) and the old Mohr & Yoerk Meat Packing Plant on 11th Street (right).

Photograph by Don Cox

Significance

The Mohr & Yoerk Meat Packing company, originating in 1863, grew by 1880 to be the premier pork curing operation in Sacramento County, according to Thompson & West's 1880 *History of Sacramento County*. Their operation processed more than three times as many hogs as their nearest competitors combined. The J Street store packing and sales, and the large meat packing plant across the alley to the south were prominent and successful, the largest grocery establishment in the city at that time. However, it is interesting how the sons of the next generation transitioned into real estate and built apartments above their grocery and meat store. The founders and their families established one of the most successful businesses in Sacramento during the mid 19th century up to the early 20th century, and as such contributed significantly to the community and its economic strength during that era.

While the J Street façade has been substantially altered, the alley elevation with its handsome brick walls on both west and south elevations, arched windows and 19th century scale, contributes to the Copenhagen Alley District. While the J Street façade has lost its integrity, the building is important historically and it appears the property would be eligible to the Sacramento Register as a contributor to the recommended Copenhagen Alley District.

These smoke stained brick walls located in the basement of the Mohr & Yoerk building were once part of the smokehouses at the rear of the complex.

Photograph by Paula Boghosian

We are lucky to get such a good look at the 1028-30 J Street building during this 1927 parade. However, we are not as lucky as the parade's honoree, Charles Lindbergh, who is perched atop the back seat of the automobile at center.

Photo Courtesy of SAMCC 2001/007/0096

1028-1030 J Street

This piece of property was owned in the 1850s by C. Weil. He is reputed to have had a grocery on the property and the 1854 map of Sacramento shows a building on the parcel. Evidently he and his wife returned to Germany in the late 1860s and Weil died on the return trip in 1871. His wife remained in Germany until 1876 when she returned to Sacramento. In the late 1870s or early 1880s Chris E. Ehman and F.A. Spieke opened a grocery and provisions store at 1028 J Street. Ehman seemed to take over the business and stayed there until around the turn of the century. The 1895 Sanborn shows a pair of brick buildings one-story in height. One segment of the building, 1028, goes back about 100′ on the 160′ lot and the other, 1030, appears to go back about 70′. Both segments of the building have passage ways between them so they could be operated as one store. In the rear were one and two-story wood frame storage facilities and stable. A 1907

newspaper article noted the destruction of these wood sheds by fire and that the Mohr & Yoerk building next door was damaged by fire and water.

In 1901 Perkins & Son cash grocers moved from 1100 J Street to 1028 J. They stayed at that location until around 1911. In 1912 the building was occupied by G.A. Ritchie auto supplies. A 1912 article in The Bee concerning the remodeling of the Mohr & Yoerk building makes note of the new building on the corner. The new building that was depicted in the 1915 Sanborn map is the immediate forerunner of the building on the parcel today. The front of the building had two addresses 1028 and 1030, however, there were no interior partitions dividing it. There were five addresses on 11th Street from 1006-1014, with four stores and an entrance to the second floor apartment buildings. Bay windows adorn the rear portion of the apartment structure and form the alley elevation on the second floor. By the late teens to early 1920s Western Auto Supply was the retail tenant. In the later 1930s the ground floor retail was occupied by two stores; 1030, G.E. Theodore grocer and 1032 the Country Maid ice cream parlor and they continued in place into the 1940s. Country Maid eventually became a restaurant that would occupy all of the retail space and they were still in business there as late as 1982. In 1949 there was a remodel which converted all of the second story residential space into office space. The most recent tenant for the retail space has been the Mother of India restaurant. Most of the office space has been vacant in recent years; however, the store fronts along 11th Street have been frequently occupied.

The original brick building, ca 1912, is underneath the skin of remodeling materials.
Photograph by Don Cox

The alley elevation of 1030 J Street still has the bay windows from its 1912 construction.
Photograph by Don Cox

Significance
The building has been substantially remodeled from its original appearance except it has retained bay windows on the alley that formerly served residential units.

Probably the building's most common use from its construction to about 1911 was as several different grocery stores with residential units above. It became most well known as the Country Maid ice cream parlor and restaurant, remaining in that location from the 1930s to 1982. It was a downtown 'landmark' for generations of shoppers, workers and children.

The most significant remaining original architectural features of the building are the two 2-story bay windows at the rear in the alley. These windows are some of the few remaining bay windows in the downtown area which once held many projecting bay windows on both the street and alley elevations, providing inviting upstairs residency. The windows are a character-defining feature of downtown and would make the building an important contributor to the recommended Copenhagen Alley District.

A freight elevator with metal doors in the sidewalk above it remains in the sidewalk on 11th Street between the alley and J Street. It appears to have retained its structural form under the sidewalk and is one of a remaining few in the downtown area.

The character of the areas beneath the sidewalks adjacent to the building on both J and 11th Streets has been modified. The ceilings have been covered with concrete affecting the integrity of the original sidewalk construction, but the buttresses remain.

Buildings formerly sited on the alley behind 1014-1022 J Street

The buildings fronting on J Street don't all extend the full 160'depth to the alley. There are varying degrees of building depth, leaving space between the back of the street-facing buildings and the edge of the alley at the rear. Possible reasons for the empty space on these lots may have been that there were small buildings on the alley built to serve the needs of the owners as garages, storage, stables, or perhaps small dwellings, preventing construction of the larger buildings all the way to the alley.

The 1854 map previously mentioned indicated one small building on lot 3 and two small buildings on lot 4. It is not known if these buildings were incorporated into the existing structures in some way or not.

Sacramento Sanborn Insurance Maps of 1895 indicate small structures stood along the alley behind the J Street buildings at 1014, 1016, 1018, 1020, and 1022 J.
The buildings on the alley labeled 1014 ½, 1016 ½, and 1020 ½ were small stables, according to the Sanborn Insurance Map KEY of symbols. The small rectangular structure behind 1018 was not identified as 1018 ½ and was probably a utility building. Behind 1022 J, there are two indications of unlabeled rectangular structures with dotted lines, presumably open storage structures with supported roofs.

The building marked 1014 ½ was labeled "AUTO" on the 1915 Sanborn Map, apparently indicating its use. The building marked 1016 ½ was labeled "Store Room," as was the alley building at 1020 ½. There are no other former structures along the alley within the Project Area noted in the 1895 and 1915 Sanborn Maps. According to these maps, the small alley buildings within the Project Area do not appear to be dwellings, which are always noted in the Sanborn Insurance Maps as such, with a "D" or sometimes "dw."

There appear to have been a number of alley dwellings general downtown area in 1895, differentiated from other non-residential buildings which were labeled stables, coal and hay, and a variety of other storage types. By 1915, the number of alley dwellings diminished.

The use of " ½" as part of a whole number address in city directories appears to have traditionally referred to an upstairs unit. However, the Sanborn maps label most of the alley buildings in the downtown with numbers, whether storage, stables or auto-related. This may be to assist alley freight deliveries to the stores fronting on the principal streets.

The address of 1020 ½ J Street would appear to bear out that assumption. It would seem that the owner of the brick saloon building at 1020 J Street, Jacob Gruhler, would have occupied an upstairs unit in his building rather than a small building labeled "Store Room" in the alley with the address of "1020 ½" J Street.

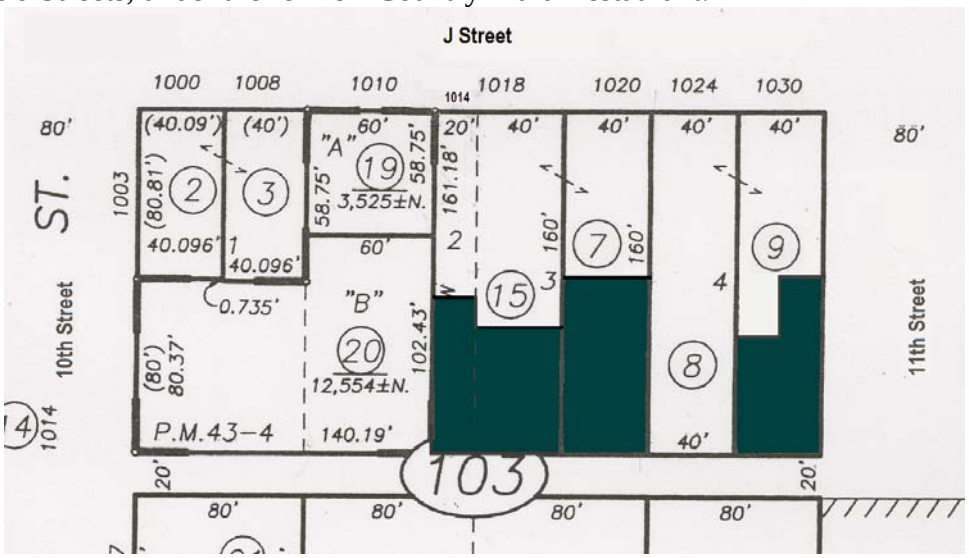
All of the small alley structures are now gone, but the spaces they occupied may have affected potential decisions to extend the larger buildings fronting J Street farther back to the alley edge. However, the vacant ground between them and the back of the street-facing buildings were prime areas for the collection of refuse over the last one hundred and twenty or thirty years and may contain a variety of archeological artifacts.

Potential Historic Archeological Artifacts

Due to the occurrence of various activities on this block on J Street from the 1850s, and the absence of buildings on the back portions of some of the lots, it appears that detritus and artifacts could have accumulated on the vacant portions making it likely that historic archaeological resources may be located beneath the surface on those sites. Pieces of crockery and bottles have already been currently sighted in disturbed soil in basements of buildings to be razed.

Another category of historic archeological resource would be the cobblestones used as a base for the alley street when first constructed, and some granite edging along the sides. Part of this is visible in the alley in back of 1022 J Street. These and the cobblestones are concealed by later road surface material but are likely still in place in parts of the alley beneath that surface.

A probable original cornerstone is still in place beneath the sidewalks on the corner of 11th and J Streets, under the former 'Country Maid' restaurant.



The darkened areas in this map show the vacant areas where archaeological artifacts might be found. The area behind 1030 J represents the configuration of the building as shown in the 1895 Sanborn map. There were no buildings on the darkened area until the turn of the 20th Century.

Alley Resources

Alleys were established with the layout of the city in 1848 by Captain W. Warner and then-Lt. William Tecumseh Sherman. It extended from the Sacramento River east to the current Alhambra Boulevard, and from the railroad levee on the north of downtown to just south of the X Street (Highway 50 freeway) on the south. The street pattern included a numbering system from Front Street (1st) to 30th Street with north/south running streets, and from the Railroad levee (B Street) through the alphabet to Broadway, running from east to west. Each block of lots within this rectangle contained eight 80' by 160' lots, with an alley running between the four lots on the north side of the alley and the four on the south of it.

Flooding was a major problem in Sacramento from its beginnings as a result of its location in the American River watershed, and at the conflux of the Sacramento and American Rivers. Particularly disastrous floods occurred in Sacramento in the winter of 1861-62, fueling the city decision to change the path of the American River and raise the levels of all the streets by twelve to fourteen feet along J and K to the east.

The general effort to elevate the levels of the streets began in 1869 and lasted several years. Some merchants jacked their buildings up and inserted new foundations and storerooms underneath them in order to have the main floor of the building at the new street level. Others added floors on top of the structure already in place at the lower level.

While this project raised the facing street levels one story, the alleys retained their original ground level, as did the rear facades of buildings facing the streets. At the east and west ends of the alleys, the alley street descended to the original street level and then back up to the new level. This facilitated the delivery and loading of goods and provided basement access to businesses, hotels and other tenants.

Over the evolution of downtown, the alleys have contained small dwellings, as well as small personal stables, auto garages, and storage buildings for related businesses. A number of the small utilitarian buildings appear to have just evolved without any plan, and were additions to additions, makeshift and mostly not intended to be permanent. Some small houses were relocated from other sites to alleys rather than be demolished when some new project presented itself. Some belonged to ethnic groups that gathered together in inconspicuous locations such as alleys. While alleys were originally less expensive but accessible locations for dwellings, and served as adjuncts to businesses along lettered streets, as the city grew they became less desirable and gradually disappeared.

Over time, many of the street facades of downtown buildings have been altered, but often the alley elevation, with its purely utilitarian function, has remained less modified. As a result, some of the more intact 19th century building facades remaining in the downtown area are those located in the alleys. These alley facades thus often provide a better image of the post Gold Rush era of Sacramento than downtown street-face facades. Some

groupings of remaining alley elevations convey a strong sense of time and place reflecting late Gold Rush and mid to late 19th century construction. As such, they provide valuable visual information of Sacramento's early years. These groupings contribute significantly to the character and image of Sacramento's historic downtown, its important heritage, and its evolution over time.

Further, the alley configuration also provides an otherwise very limited opportunity to view and understand that unique aspect of the city's history when its streets were raised to their current level. Sacramento's unusual underground level is highlighted by the alley configuration with its lower original mid-block level, and slope up to current street level on each end. The form and image of the downtown alleys are critical character-defining features of downtown Sacramento and its historic districts.

The alleys also demonstrate some unique spatial relationships, some due to the path of the alleys down in the middle to original city levels and up to street level on each end. The alleys often abut the sides of older buildings and angle past pre-existing closed up windows in brick buildings that once were open at the lower level, creating a sort of mystery about their origins. Other spatial characteristics derive from the varying depths of main street buildings back to the alley creating in and out open spaces between full depth construction and shallower buildings.

The proposed Project will directly affect buildings on the northeast quarter of the block, the underground area beneath the buildings, and portions of the alley surface to allow new construction on the site. The Project Area includes the rear facades of buildings from 1016 (including former 1014) -1030 J Street. These buildings are located in the identified Copenhagen Alley District of downtown Sacramento.

Copenhagen Alley District

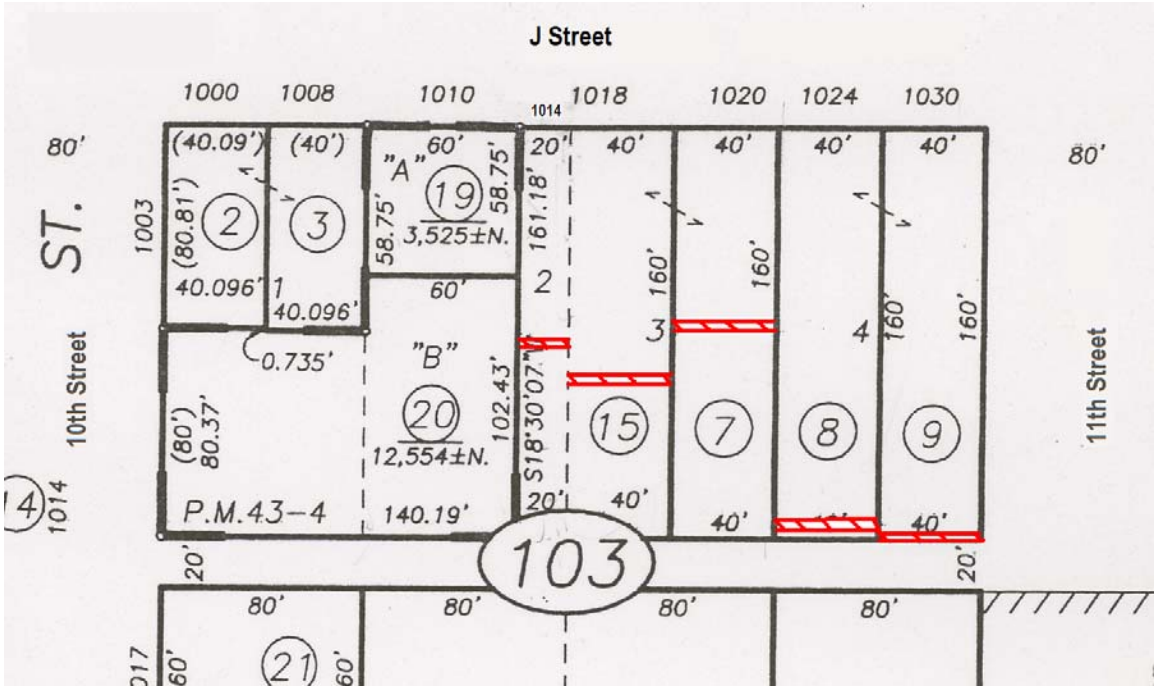
The Copenhagen Alley District is comprised of a group of buildings that convey a strong sense of an earlier time and place in Sacramento's history. The size, scale, and materials of the buildings, and their architectural details reflect primarily nineteenth century images, and give some sense of what Sacramento looked like after the Gold Rush and up until the early years of the twentieth century.

Character-defining features of these alley buildings include brick construction, segmented arched windows with brick sills and arched door openings, flat arches in windows and doors, stepped brick parapets, brick chimney stacks along the periphery of buildings, and some patterned brick areas. Building setbacks are varied according to the depth of the building. There is a fairly large tree and a few volunteer bushes, a probable cobble-stone base beneath the current alley surface, and some angled bays projecting from upper floors of buildings over the alley on the north east end. Spaces on lots whose buildings do not extend completely back to the alley are used for parking and former business access.

The Copenhagen Alley District is one of the best remaining examples of nineteenth century alley features in Sacramento and contributes strongly to the character and image of downtown Sacramento while reflecting a history unique to this city.

Further, the particular configuration of the alley illustrates another series of events that caused the creation of Sacramento's unique "underground" city.

Sacramento's 'Underground" – "hollow sidewalks" beneath current sidewalks - were created with the raising of the streets in the downtown business district circa 1869. They have become a unique historic resource that contributes to the dramatic story of the city's evolution.



This map shows contributing alley facades in the Copenhagen Alley District that are located in the project area.

Underground Resources: " hollow sidewalks"

As part of the American River watershed and sited at the confluence of two rivers, flooding has been a major problem in Sacramento from its inception. The construction of levees along the rivers in these early years proved inadequate to protect the city from major floods in 1850 and 1852, and particularly damaging floods that occurred in the winter of 1861-62. Flooding may have been largely responsible for the severe cholera outbreak that killed hundreds of Sacramentans in the 1850s. The floods contributed to statewide questions that perhaps the capitol of the state should not be located in such a problematical region. In order to dispel such questions and retain Sacramento as capitol, the city determined to change the path of the American River and raise the levels of all the streets by twelve to fourteen feet along J and K Streets to the east.

The general effort to elevate the levels of the streets began in 1869 and lasted several years. Individual merchants or building owners were responsible for the treatment of their buildings to meet the new street level. Some merchants jacked their buildings up and put new foundations and storerooms underneath them in order to have the main floor of the building at the new street level. Others added floors on top of the structure already in place. These individual 'improvements' were accomplished by building owners at their own pace, creating an extremely awkward up and down pedestrian level along the street face that depended on each owner's progress. On a dark night, many an unwary pedestrian found themselves suddenly, and occasionally fatally, at the bottom of the old street.

The City constructed shallow curved brick walls supported by brick buttresses, on each side of the streets along the outer edge of the sidewalks, and filled in the middle with dirt to the new street level. This left a gap between the wall holding the middle of the street and the front of the buildings. Former windows and doors at the original level now faced a brick wall on the other side of their former sidewalks. The gap was covered by a new sidewalk supported by a series of steel I beams extending between the bulwarks and the buildings at their new floor level. A series of brick barrel vaults between the beams filled in the space between the beams, and supported flat new street sidewalks above the space between the bulwarks and the new level of the buildings.

This created long corridors beneath the sidewalks - between the bulwarks and wall containing the street infill, and the old fronts of buildings on the original ground level. When completed, one could walk from one end of the block to the other beneath the sidewalk. Over time, in order to secure individual basements from unwanted entry, brick walls were erected under the sidewalks between buildings, providing each with a 'room' or space the width of the sidewalk and the length of the building. This area has become known as the 'Underground' or 'hollow sidewalks' of downtown Sacramento.

The space was accessed in many instances by metal elevators inserted in the sidewalk that rose to street surface for the loading or unloading of goods and then lowered to basement level under the sidewalk of various businesses. Metal plate doors lifted when the elevator raised to new street level, and closed flush with the new sidewalk when the elevator descended. Filtered light from above was often provided to the space by the insertion of sections of thick small round or square glass blocks in the sidewalk. Daylight penetrated the thick glass but essentially obscured street level images. Building walls along original sidewalks often contained former door and window openings at the original ground level. There were also a few instances of portions of the sidewalk left open adjacent to buildings that still retained businesses on the original ground level. There were stairways that extended from the new sidewalk level down to the lower level under the sidewalk, providing access to basement businesses or offices. While none of these have remained to the present, the shadow patterns of stairways on the existing walls of a few buildings indicate their former existence.

While this project raised the facing street levels one story, the alleys retained their original ground level, as did the rear facades of buildings facing the streets. At the east and west ends of the alleys, the alley street descended to original street level and then

back up to the new level. This facilitated the delivery and loading of goods and provided basement access to businesses, hotels and other tenants.

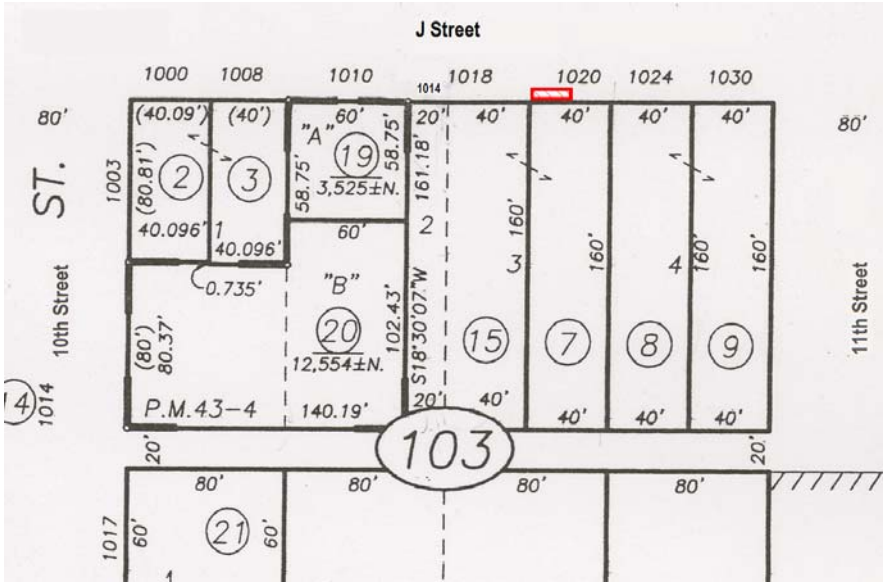
Over time, most of the original underground sidewalk construction configuration has been removed or modified by the city through encapsulation by concrete, stabilization by metal or timber supports, or changes in materials, in order to strengthen sidewalks that often had been supported only by crumbling nineteenth century brick.

Character-defining features of "hollow sidewalks"

The principal character-defining features of the "hollow sidewalks" are the brick walls with brick buttresses containing the one-story high earth infill in the middle of the streets, the steel "I" beams that extend from these walls to the buildings lining the sidewalks, the brick barrel vaults that are supported by the beams and support, in turn, the sidewalks at current street level.

There are some sidewalk elevator remnants with metal doors flush with the sidewalk remaining in some locations. These illustrate the delivery of goods to the basements of businesses. The elevators were elevated to sidewalk level, pushing the metal doors up and open in the process. When loaded they descended to the basement for unloading and the metal doors closed to be flush again with the sidewalk surface. A few of these former elevators with their metal sidewalk doors still exist, sometimes enclosed at the lower level to avoid intruders. These elevators contribute to an understanding of the former business uses of the underground area and, where they occur, are character defining features.

There are a number of circular cast metal opening covers with a variety of vent designs in the current sidewalks. Venting the 'underground' spaces, they are also character defining features of the 'hollow sidewalks.'



While "hollow sidewalks" line the Project Area block along J and 11th Streets, this map shows the location of significant underground "hollow sidewalk" features in the project area.

All of the underground hollow sidewalk areas along J and 11th Street were reviewed. The most consistent alteration was to the ceilings of the areas. Most ceilings were covered with concrete, possibly sealing the brick barrel vaults above the coat of concrete. The ceilings of the area adjoining 1014, 1016 and 1018 J street were of corrugated metal arched between the I beams connecting the building to the shallow curved walls that support the street.

1020 J Street

The "hollow sidewalk" at 1020 J contains brick barrel vaults, brick walls and buttresses. A street light standard has been inserted into the space and the buttresses have been somewhat modified. The brick ceiling has been painted and may have been mended in some places, but it is the only segment in the Project Area that has retained this degree of integrity.

Significant Resources within the Project Area

Buildings:

The buildings within the Project Area are brick structures, all of which were constructed in the 19th century. The J Street facades of all of these buildings have been altered substantially and do not contribute visually to a historic district along J Street. However, the alley elevations contribute to the recommended Copenhagen Alley District due to the integrity, character, materials and spatial configuration of their alley facades. These buildings include the following J Street addresses within the recommended Copenhagen Alley District.

1014 J alley elevation
1016-1018 J alley elevation
1020-1022 J alley elevation
1024-1026 J alley elevation
1028-1030 J alley elevation

Alleys:

The north side of the east end of the alley between J and K, 10th and 11th Streets, from 1014 to 1030 J Street.

Underground "Hollow" sidewalks:

"Hollow" sidewalk areas are present within the Project Area all along J and 11th Streets. However, the original brick barrel ceilings of all but one segment have been covered or replaced by either concrete or corrugated metal sheets. Only one fairly small section of the hollow sidewalk areas within the Project Area has retained some integrity with the principal character-defining features of underground sidewalk construction including brick barrel vault ceilings as well as brick buttresses and walls:

1020 J Street

Impacts of Project upon Significant Resources

1. The Project will result in the demolition of all of the buildings within the Project Area. Constructed in the 19th century, this demolition will remove resources significant both for their history and for their contribution to the recommended Copenhagen Alley District. Existing bay windows and other downtown character-defining features will be removed. This constitutes a significant impact.

2. The Project will result in the removal of unique underground sidewalk resources significant to the history of Sacramento. This constitutes a significant impact.

3. The Project will result in the removal of more than half of the alley elevations included in the recommended Copenhagen Alley District, eliminating the establishment of the recommended District due to substantial loss of integrity. This constitutes a significant impact.

4. The project will remove existing visible references to the past downtown history of Sacramento resulting in less exposure, appreciation, and understanding of its unique heritage as a gold rush city, railroad city, agricultural city and state capitol. Downtown remnants in Old Sacramento, J and K Streets in particular reflect the events that catapulted Sacramento into its 19th and 20th century prominence.

Mitigation Alternatives

Alternative 1. Impacts to buildings within the Project Area

There does not appear to be an Alternative to the demolition of the historic Project Area buildings that would mitigate the impact of the Project to Less than Significant.

Mitigation Recommendation: #1
However, the new design could integrate some design aspects that the alley façade with respect to the scale of details and appropriate compatible materials into the new construction. The addition of contemporary bay windows in appropriate proportions and scale would at least reflect the historic concept of living above the stores that was so much a part of downtown life for many decades. This would not reduce the impact of the Project but would make the new construction more compatible with the remainder of the alley and provide a pertinent historic reference.

The buildings should be recorded photographically and the images used in an interpretive display at some location on the site of the new building(s). This will not diminish the impact of the Project upon the resources to Less than Significant.

Alternative 2. Impacts to the alley elevations of the Project Area buildings.

Remove the alley brick façade wall of 1018 J and relocate it on the base of the new construction along the alley edge at the height of the original buildings.

A letter from the contractor of the project, Dave Higgins Jr. discussing the feasibility of the possible relocation of the alley façade to the surface of new construction follows:

> Feasibility of Removing Back Alley Facade of 1018 J
> The existing facade is built of unreinforced masonry brick. The integrity of this method of construction is subject to the quality and strength of the brick and mortar. If the facade was to remain in the same location, a reinforced concrete wall could be built behind it to permanently support the facade and provide a safe structural element. To prepare a substructure that could support the wall intact and allow its removal and relocation to a new elevation on the site is technically unfeasible, due to the lack of ductility of the brick and mortar assembly. Any substructure will deflect as it is picked up and moved, which will damage the existing facade beyond a level consistent with the goal of preserving it.
>
> The better solution is to document the existing elevations, integrate the existing elevations into the new designs of the new building elevations, then carefully remove the brick with the intent of reuse. Each brick will need to be cleaned and checked for strength. The bricks can be safely stored and then be integrated into the new construction using modern techniques including mechanical attachment devices which will deliver better public safety and final quality of installation. The finished product will have a higher likely hood of preserving the existing look with a better long term quality to meet the goal of preservation.
>
> (prepared by Dave Higgins Jr. contractor) 3/2/07

While this Alternative may provide some sense of the building heights and materials of the original alley, interpreting other details in this manner does not appear to be effective. The window and door openings would have to be re-created as 'blind' openings or omitted, which would change the scale of the building walls. Utilizing the exterior of only one flattened alley building elevation would diminish the rich image provided by the full three dimensional complement of north alley buildings.

Under this Alternative, the strongest negation of the original experience of entering the alley district– the spatial character of the alley elevations in relation to the alley and its opposite face -- would be removed, with the southward extension of all of the new building(s) to the alley edge. The untold story of how the alleys served everyday human scale needs with small alley structures, personal stables, goods and produce storage, etc. in the 19th century before semi-truck- deliveries and enormous noisy garbage machines, would be removed from the potential of historical imagination.

Additionally, the notation of original building height, its deconstruction, brick cleaning and reconstruction of a version of the former building would be very expensive and would not convey the original character.

.

Further, the application of the old building brick to a non-historic surface in an attempt to falsely suggest the original image, and the change of an original three dimensional configuration to a flat one would not comply with the federal *Secretary of the Interior's Standards for the Treatment of Historic Buildings,* utilized by the City of Sacramento Preservation Department.

This Alternative would not appear to diminish the potential impact of the Project to Less than Significant.

Mitigation Recommendation: #2
A better approach than reattaching the façade brick to new construction without considering significant spatial aspects may be to design the new alley elevation with a new design treatment and alley-compatible materials that would recall the detail concepts of the former buildings in terms of scale, detail, simplicity and spatial features.

Alternative 3; Impacts to the historic 'hollow sidewalks' area

Retain the most intact and demonstrative example of a segment of the original configuration of the underground or 'hollow sidewalks' area within the Project Area and stabilize it for use as a display of this unique and historic type of construction. An interpretive display could be created allowing public view of a section of the actual original alley configuration and made available to the public on a limited pre-arranged tour basis.

The proposed resource segment for the application of this alternative is located beneath the sidewalk in front of 1020 J Street. This Alternative would retain a rare and significant historic architectural feature and provide for an ongoing and unique understanding of Sacramento history. This Alternative is recommended as a mitigation measure for the loss of the remaining 'hollow sidewalk' area which possesses diminished physical and design integrity.

This Alternative has been discussed with the developer and his contractor, and the concept appears to be acceptable. It appears that the targeted area can physically withstand the interruption of a solid wall for its length in order to allow a view of the area, and appears to provide enough height to accommodate construction activities in and around it. The retention would involve both vertical and horizontal shoring up of brick walls in the vicinity, the walls around the space, the sidewalks above during the building construction and the reconstruction of the sidewalks. A sump pump would be installed to handle the collection of moisture from sidewalk vent above. The remaining hollow sidewalk areas would be shored and then filled.

The estimated cost of shoring the area for the segment retention is $250,000. The developer has said that assistance would probably be necessary, possibly requested from the Sacramento Housing and Redevelopment Authority.

An examination of the Alternative appears determine it to be physically possible, and it would retain that segment of the hollow sidewalk within the Project Area that has retained the most integrity.

While the Project would essentially remove the rest of the hollow sidewalk area, it has been compromised by modifications. The segment at 1020 has retained more integrity including its brick barrel vaulted ceiling. This segment would be a better portion for

interpretation of the unique construction technique than the other portions of the underground sidewalk.

Mitigation Recommendation: #3
Retain the segment of the underground sidewalk area at 1020 J Street, stabilize it and use it as interpretive display that helps explain how and why the downtown city streets were raised circa 1869. Viewing the actual final configuration contributes substantially to understanding the original project, a unique Sacramento heritage.
This Alternative with its provision to retain the sidewalk area beneath 1020 J Street, will modify impacts to the altered hollow sidewalks in the Project Area to less than significant.

Mitigation Recommendation: #4

Create an interpretive display in the new building that reflects the age, history and character of the Project Area buildings. Historically important individuals and businesses were associated with this early downtown block. Their lives and contributions to the Sacramento community could be presented in an informative and interesting display.
A video could be created and aired on local public television that demonstrates a respect and interest in the evolution of the city while showing the underground and the alleys – all part of the same historic matrix.

This measure would record and make available to the public the historical importance of this block and its history, but would not diminish the impact of its loss to Less than Significant.

Mitigation Recommendation: #5

Prepare an interpretative display featuring the spatial aspects and relationships of the buildings and the alley. Create a three dimensional model for display on the Project site that illustrates the spatial relationships of the Copenhagen Alley District, and demonstrating the importance of these relationships to the original alley configuration and experience.

This measure would record and make available to the public the visual importance of this block and its history, but would not diminish the impact of its loss to Less than Significant.

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APPENDIX H

Environmental Noise Assessment

Cathedral Square

Sacramento, California

BAC Job # 2006-065

Prepared For:

Raney Planning & Management, Inc.

1401 Halyard Drive, Suite 120
West Sacramento, California 95691

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard

Paul Bollard, President

July 7, 2006

BOLLARD
Acoustical Consultants

1293 Lincoln Way, Suite A ► Auburn, CA 95603 ► Phone: (530) 745-0550 ► Fax: (530) 745-0551 ► BACNOISE.COM

INTRODUCTION

This section discusses the existing noise environment in the project vicinity, and identifies potential impacts and mitigation measures related to the Cathedral Square Project. Specifically, this section analyzes potential noise impacts due to the construction and operation of the proposed facilities relative to applicable noise criteria and to the existing ambient noise environment.

ENVIRONMENTAL SETTING

Acoustical Terminology

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers is a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by the A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The Day-night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Background on Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A persons perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities. For this project, vibration may be a concern during construction related activities which incorporate impulse-type equipment, such as jack hammers or pile driving. An analysis of construction-related vibration levels is contained within this report.

Existing Land Uses in the Project Vicinity

Existing land uses in the project vicinity consist of professional office buildings, commercial/retail uses, church uses, and parking facilities.

Existing Noise Environment in the Project Vicinity

The existing ambient noise environment in the immediate project vicinity is defined almost exclusively by local and distant surface traffic.

To generally quantify existing ambient noise levels in the project vicinity, a short-term ambient noise survey was conducted at four locations surrounding the project site on the afternoon of June 8, 2006. The ambient noise measurement sites were located at the corners of 10th and J Street, 11th and J Street, 11th and K Street, and 10th and K Street. Figure 1 shows the noise measurement locations.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used for the ambient noise level measurement survey. The meter was calibrated before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The noise level meters were programmed to record the maximum and average noise level at each site during the survey. The maximum value, denoted Lmax, represents the highest noise level measured. The average value, denoted Leq, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The ambient noise level measurement results are provided in Table 1.

Table 1
Ambient Noise Monitoring Results
Cathedral Square Project Site - June 8, 2006

Site	Location	Time	Measured Sound Level, dBA Average (Leq)	Measured Sound Level, dBA Maximum (Lmax)
1	Corner of J Street and 10th Street	3:05 pm	70.4	84.6
2	Corner of J Street and 11th Street	3:26 pm	70.9	87.6
3	Corner of K Street and 11th Street	3:44 pm	66.8	79.9
4	Corner of K Street and 10th Street	4:10 pm	70.8	81.7

Source: Bollard Acoustical Consultants, Inc.
Noise measurement locations are shown on Figure 1.

The ambient noise survey results indicate that the measured daytime ambient noise levels at the project site are fairly high, typical of urban areas affected primarily by nearby traffic noise sources. A specific assessment of existing and future, project and no-project traffic noise levels is provided later in this section.

Existing Traffic Noise Environment

To predict noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from Dowling Associates, Inc. in the form of intersection turning movements. Truck usage on the local area roadways was estimated from field observations.

Table 2 shows the predicted existing traffic noise levels in terms of the Day/Night Average Level descriptor (Ldn) at a standard distance of 50 feet from the centerlines of the existing immediate project-area roadways for existing conditions, as well as distances to existing traffic noise contours. The extent by which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise.

Table 2
Existing Traffic Data, Noise Levels and Distances to Contours
Cathedral Square Project - Sacramento County, California

				Distance to Contours (feet)		
Intersection	Direction	Existing ADT	Ldn @ 50 Feet	70 dB Ldn	65 dB Ldn	60 dB Ldn
10th & J St.	North	7,420	63	18	39	84
	South	6,640	63	17	36	78
	East	14,540	66	28	61	131
	West	15,320	66	29	63	135
10th & L St.	North	9,560	64	21	46	99
	South	9,290	64	21	45	97
	East	12,910	66	26	56	121
	West	12,640	66	26	55	119
12th & J St.	North	8,260	64	19	42	90
	South	7,660	63	18	40	85
	East	17,290	67	32	68	147
	West	14,410	66	28	60	130
12th & L St.	North	7,030	63	17	37	81
	South	100	45	1	2	5
	East	8,980	64	20	44	95
	West	12,970	66	26	56	121

Notes: Source: FHWA-RD-77-108 with inputs from Dowling (p.m. peak hour *10) and Bollard Acoustical Consultants, Inc.
Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

REGULATORY SETTING

The only identified potentially significant noise-producing components of this project are project-related construction, increased traffic noise on the local roadway network associated with the more intensive use of the Cathedral Square site, and activities at the proposed loading dock at the eastern portion of the site. The only identified significant noise-sensitive components of this project are the proposed residential uses on the upper floors of the building. The following section identified the noise standards which would be applicable to these noise sources.

Noise Standards Applicable to Proposed Residential Uses Affected by Traffic Noise

The Noise Element of the City of Sacramento General Plan establishes 60 dB Ldn as a normally acceptable exterior noise environment for outdoor activity areas of residential uses affected by traffic noise sources, with conditionally acceptable levels up to 70 dB. In addition the City's General Plan establishes 45 dB Ldn as an acceptable interior noise environment for residential uses affected by traffic noise sources. Where residential development is proposed within area exceeding normally acceptable levels, acoustical analyses must be provided to ensure that appropriate noise mitigation measures are included in the project design to achieve acceptable noise exposure at the interior and exterior spaces of the residential use. It should be noted that patio/balcony areas of multifamily residential uses are not considered to be primary outdoor activity areas by the City, so the aforementioned noise standards would be applicable to the common outdoor pool/recreation area on the 5th floor of the building.

Noise Standards Applicable to Proposed Residential Uses Affected by Loading Dock/Commercial Operations

For non-transportation noise sources affecting existing or proposed noise-sensitive land uses, the City of Sacramento Noise Ordinance establishes maximum noise level standards of 75 dB during daytime hours (7 am-10 pm), and 70 dB during nighttime hours (10 pm - 7 am). The Noise Ordinance also contains other noise standards which would apply depending on the duration of the noise generation, but the maximum noise level standard is expected to be the most restrictive for the proposed loading dock, so that standard is the focus of this analysis. As with the standards applicable to traffic, the non-transportation noise standards described above are not applicable at individual patios or balconies, but would be applicable at the common outdoor recreation area on the 5th floor.

Noise Standards Applicable to Construction Noise

The Sacramento Noise Ordinance exempts construction noise from the local noise standards provided it occurs during the hours of Monday through Saturday from 7 am to 6 pm, and on Sunday from 9 am to 6 pm.

Noise Standards Applicable to Project-Related Traffic Noise Level Increases

The City of Sacramento General Plan establishes 4 dB as the threshold of significance for project-related traffic noise level increases.

Vibration Standards

Certain construction-related activities, such as pile driving, may generate substantial vibration levels. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3 indicates that the threshold for damage to structures ranges from 2 to 6 in/sec. One-half this minimum threshold, or 1 in/sec peak particle velocity (p.p.v.) is considered a safe criterion that would protect against architectural or structural damage (ESA, 1996).

Table 3
General Human and Structural Responses to Vibration Levels

Effects on Structures & People	Peak Vibration Threshold (in/sec PPV)
Structural damage to commercial structures	6
Structural damage to residential buildings	2
Architectural damage	1.0
General threshold of human annoyance	0.1
General threshold of human perception	0.01

Sources: *Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic*, Caltrans 1976.
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IMPACTS AND MITIGATION MEASURES

Standards of Significance

CEQA guidelines state that implementation of the project would result in significant noise impacts if the project would result in either of the following:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
e. For a project located within an airport land use plan or, where such a plan has not be adopted, within two miles of a public airport or public use airport, where the project would expose people residing or working in the area to excessive noise levels.
f. For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

As stated previously, the only potentially significant noise-producing activities associated with this project are increases in off-site traffic noise due to the increased intensity of the site usage, noise generated by construction-related activities, and noise generated at the proposed loading dock/commercial aspects of the project.

Because the project site is not appreciably affected by operations of public or private airports, CEQA criteria "e" and "f" would not apply to this project.

Method of Analysis

Traffic Noise Sources

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at a representative distance for both existing and future, project and no-project conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level increases which result from the project exceed the 4 dB significance threshold.

To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions. To predict traffic noise levels in terms of Ldn, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Traffic volumes for existing and future conditions and scenarios are contained in the Transportation Section of this document. Table 4 shows the predicted increases in traffic noise levels on the local roadway network for existing and future conditions which would result from the project. These Tables are provided in terms of Ldn at a standard distance of 50 feet from the centerlines of the project-area roadways.

Table 4
Daily Traffic Volumes, Project-Related Traffic Noise Level Increases, and Predicted Ldn Values at 50' from Roadway Centerlines
Cathedral Square Project - Sacramento, California

Intersection	Direction	Exist ADT	E+P ADT	Change, dB	Existing Ldn@50'	Future +P ADT	Change, dB[2]	Future Ldn@50'
10th & J St.	North	7,420	7,420	0	63	11,830	2	65
	South	6,640	6,640	0	63	10,950	2	65
	East	14,540	14,690	0	66	16,950	1	67
	West	15,320	15,470	0	66	17,830	1	67
10th & L St.	North	9,560	9,690	0	64	14,230	2	66
	South	9,290	9,380	0	64	14,210	2	66
	East	12,910	12,980	0	66	15,390	1	67
	West	12,640	12,670	0	66	15,370	1	67
12th & J St.	North	8,260	8,260	0	64	9,240	0	64
	South	7,660	7,690	0	63	8,150	0	64
	East	17,290	17,270	0	67	19,110	0	67
	West	14,410	14,420	0	66	15,740	0	67
12th & L St.	North	7,030	7,060	0	63	7,620	0	63
	South	100	100	0	45	100	0	45
	East	8,980	9,020	0	64	10,820	1	65
	West	12,970	13,040	0	66	15,200	1	66

Notes:
1. Source is Bollard Acoustical, Inc., FHWA RD-77-108 Traffic Noise Prediction Model & Dowling Associates, Inc. Data.
2. This Column represents the difference between future plus project (i.e. cumulative) conditions and existing conditions.

Loading Dock / Commercial Noise

Due to the elevated noise emissions of heavy trucks, adverse public reaction to loading dock usage in the vicinity of residential areas is not uncommon. This is especially true if heavy trucks idle during unloading in close proximity to residential boundaries.

Average noise levels for single idling trucks generally range from 60 to 65 dB L_{eq} at a distance of 100 feet, and maximum noise levels associated with heavy truck passages range from 70 to 75 dB L_{max} at a distance of 100 feet. Maximum noise levels generated by passages of medium duty delivery trucks generally range from 55 to 65 dB at a distance of 100 feet, depending on whether or not the driver is accelerating.

Because the primary outdoor activity area associated with this project is the common pool/recreation area on the 5th floor, which will be shielded from the proposed loading dock area by the intervening structure, commercial/loading dock noise generation is not predicted to be audible at this location.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 54, ranging from 85 to 90 dB at a distance of 50 feet. Noise generated by pile driving activities would be considerably higher. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Table 5 Construction Equipment Noise	
Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85
Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977.	

Construction Vibration

Construction activities can generate ground-borne vibrations. These vibrations can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants.

Construction vibrations can either be transient, random, or continuous. Transient construction vibrations occur from blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibrations can result from jack hammers, pavement breakers, and heavy construction equipment.

Specific Impacts and Mitigation Measures

Impact 1: **Project-Related Increase in Existing Traffic Noise Levels.** The project will generate increased traffic on the existing roadway network. The project-generated traffic is expected to result in traffic noise level increases over existing baseline levels, as indicated by Table 4.

Pursuant to the City of Sacramento General Plan, a substantial increase in traffic noise levels is defined as 4 dB. Due to the relatively small number of trips which are predicted to be generated by the proposed project as compared to existing volumes, traffic noise level increases are predicted to be insignificant on all segments of the local roadway network evaluated in Table 3. Because the project-generated traffic would not cause significant traffic noise level increases along the existing roadway network, this impact is considered to be **less than significant based on significance criteria "c".**

Mitigation for Impact 1: *None Required.*

Impact 2: **Future (Cumulative) increase in traffic noise levels.** The project will contribute to future/cumulative traffic on the roadway network. The cumulative plus project traffic noise level increases over existing levels without the project are predicted to range from 0 to 2 dB on the project area roadways, as indicated by Table 4.

Pursuant to the City of Sacramento General Plan, a substantial increase in traffic noise levels is defined as 4 dB. Due to the relatively small number of trips which are predicted to be generated by the proposed project, traffic noise level increases are predicted to be insignificant on all segments of the local roadway network evaluated in Table 3. Because the project-generated traffic would not cause significant traffic noise level increases along the existing roadway network, this impact is considered to be **less than significant based on significance criteria "c".**

Mitigation for Impact 2: *None Required.*

Impact 3: **Commercial/Loading Dock Noise at Existing and Proposed Residential Uses.** The proposed first floor commercial areas and loading dock, which would be accessed by J Street, would be well removed and shielded from the proposed outdoor recreation area of the residential component of this project (5th floor pool area). As a result, predicted maximum noise levels resulting from commercial/loading dock activities at those nearest residential areas are predicted to be well below the City's 70 dB standard.

Pursuant to the City of Sacramento Noise Ordinance, noise from the loading docks would be considered significant if it exceeded 75 dB at residential uses during daytime hours, or 70 dB at those areas during nighttime hours. Because loading dock activities would be substantially removed and shielded from the nearest existing and proposed residential uses, loading dock noise is not predicted to exceed 70 dB at those areas. As a result, this impact is considered to be **less than significant based on significance criteria "a".**

Mitigation for Impact 3: *None Required.*

Impact 4: **Construction Noise:** Activities associated with construction at the project site will result in elevated noise levels in the immediate area.

Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet, as indicated in Table 5. Construction activities would be temporary in nature and would likely occur during normal daytime working hours. If construction activities occur outside the hours of Monday through Saturday from 7 am to 6 pm, and on Sunday from 9 am to 6 pm., **this impact would be considered potentially significant according to significance criteria "d".**

Mitigation for Impact 4:

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant level.*

MM 4: Construction activities should adhere to the requirements of the City of Sacramento policies with respect to hours of operation, muffling of internal combustion engines, and other factors which affect construction noise generation and it's effects on noise-sensitive land uses.

Significance after mitigation: ***Less than Significant.***

Impact 5: **Traffic Noise Levels at Proposed Exterior Residential Areas on the Project Site:** Exterior noise levels associated with future traffic along J Street could exceed the City's 60 dB Ldn exterior noise level standard.

The City of Sacramento does not generally consider decks, patios, and balconies of multi-family residential developments as primary outdoor activity areas. Therefore for the purpose of this study the City's exterior noise level standards were not applied to the proposed deck areas included in the project design. Rather, the City's exterior standards are applied at the common pool/recreation area located on the 5th floor of the building. Due to shielding of traffic noise levels at that location by the Cathedral Square building, existing and future exterior noise levels at that location are predicted to be well below 60 dB Ldn. **As a result, this impact is considered less than significant according to significance criteria "a."**

Mitigation for Impact 5: *None Required.*

Impact 6: **Traffic Noise Levels at Proposed Interior Residential Areas on the Project Site:** Interior noise levels associated with future traffic along J Street could exceed the City's 45 dB Ldn interior noise level standard.

According to the data contained in Table 4, future traffic noise levels on J Street are predicted to be approximately 67 dB Ldn at the nearest proposed residential building facades. At elevated positions, traffic noise levels are commonly 2-3 dB higher than at first floor locations due to reduces ground absorption. In addition, reflections from other local buildings in the area could future increase exterior noise levels at the residential facades of this building which face "J" Street. As a result, exterior noise levels at the facades adjacent to this roadway are predicted to be approximately 70 dB Ldn.

Standard building construction typically provides a 25 dB exterior to interior noise level reduction. Therefore standard building construction may not be adequate to reduce future traffic noise levels to 45 dB ldn or less within the residences facing "J" Street. **As a result, this impact is considered significant according to significance criteria "a."**

Mitigation for Impact 6:

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant level.*

> **MM 6:** All residential windows which will face "J" Street should have a minimum Sound Transmission Class (STC) rating of 32. This measure is designed to reduce future traffic noise levels within the residential areas adjacent to "J" Street to less than 45 dB Ldn.

Significance after Mitigation: *Less than Significant*

Impact 7: **Construction-induced vibration impact:** Construction activities for the proposed project would generate construction-induced vibration that could adversely affect nearby structures. This would be a **potentially significant impact.**

Architectural damage is defined here as cracks in plaster, etc., resulting from repeated building motion. The vibration study for the Meridian Plaza project (which was based on the vibration analysis conducted for the nearby Esquire Plaza Office/IMAX Theater construction), was reviewed to estimate the potential for vibration impacts on nearby structures. The Esquire Theater facade was measured five feet from the pile hole, and no damage was observed during pile driving. The vibration report concluded that indicator pile driving at the Esquire Plaza site generated vibrations well below the FHWA Architectural Threshold Limits for architectural damage to historic buildings. All pile holes were pre-drilled. No damage was observed and non would be expected at the buildings adjacent to the Cathedral Square building based on this information.

Other pile driving monitoring for the nearby Convention Center and the Attorney General's office building projects similarly identified vibrations well below the FHWA Architectural Threshold Limits. However, while no structural damage occurred, these studies did note that it is possible for fire sprinklers to break at joints at vibration levels below current criteria. Because of the expected low vibration levels, no vibration monitoring should be necessary at the project site. Pre-drilling of pile holes would result in conditions at the nearby buildings similar to those at Esquire site. Since fire sprinkler failure has reportedly been observed in the past at other sites, monitoring should begin only if such failures are observed at adjacent buildings.

Mitigation for Impact 7:

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant level.*

MM7a: All pile driving holes should be pre-drilled.

MM7b: Provide protective coverings or temporary shoring of historic features.

MM7c: The pre-existing condition of all buildings within a 50-foot radius will be recorded in order to evaluate damage from construction activities. Fixtures and finishes within a 50-foot radius of construction activities susceptible to damage will be documented (photographically and in writing) prior to construction. All damage will be repaired back to it's pre-existing condition.

MM7d: If fire sprinkler failure failures are reported in adjacent buildings, the contractor shall provide monitoring during construction and repairs to sprinkler systems shall be provided.

MM7e: Should damage occur despite the above mitigation measures, construction operations shall be halted and the problem activity shall be identified. A qualified engineer shall establish vibration limits based on soil conditions and the types of buildings in the immediate area. The contractor shall monitor the buildings throughout the remaining construction period and follow all recommendations of the qualified engineer to repair any damage that has occurred to the pre-existing state, and to avoid any further structural damage.

Significance after Mitigation: *Less than Significant*

Figure 1
Cathedral Square Project
Sacramento, California

Noise Measurement Site

Project Site

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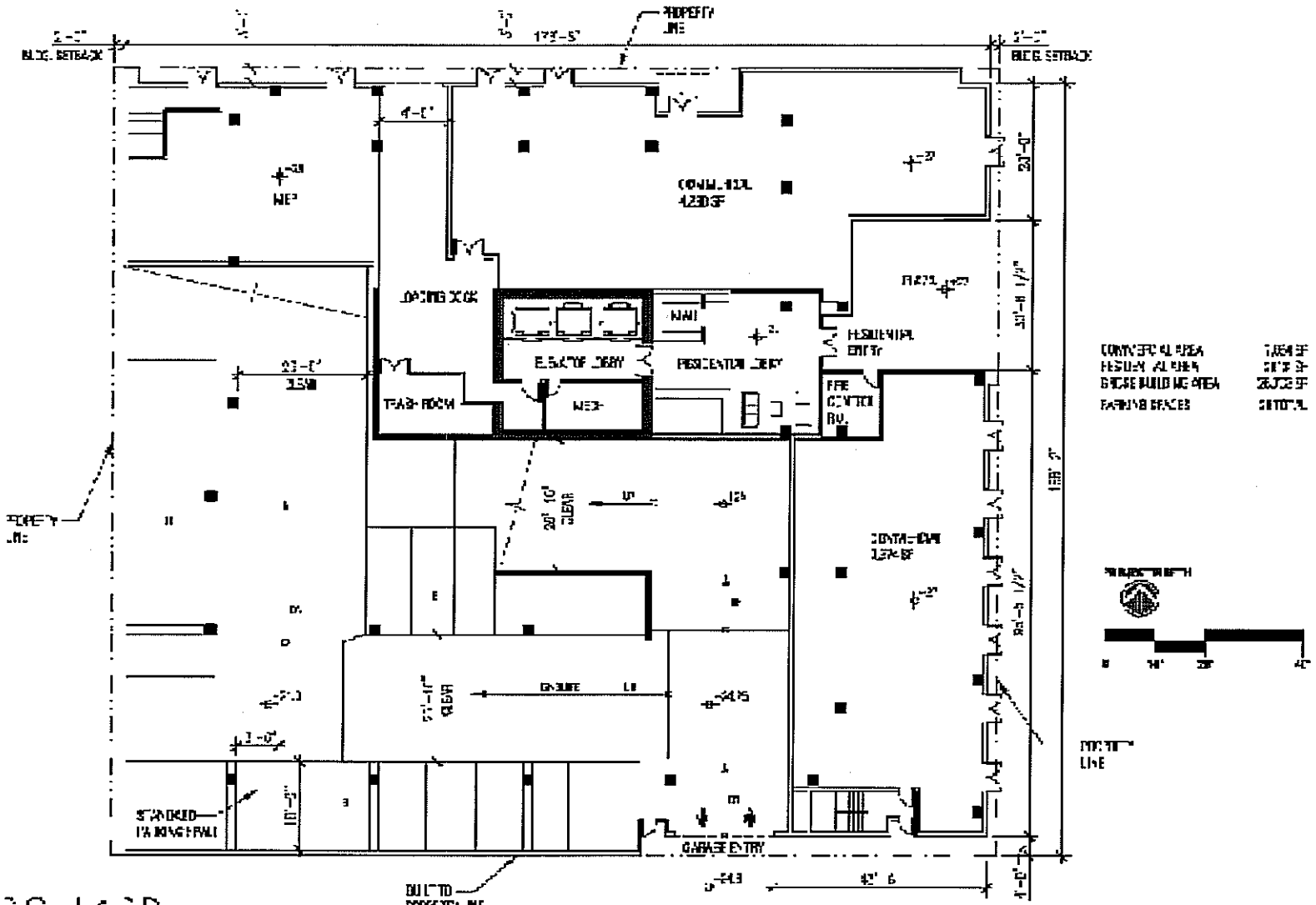
Figure 2
Cathedral Square - Ground Floor Plan
Sacramento, California



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Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the "Maximum" level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

Appendix B-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2006-065 Cathedral Square
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Intersection	Direction	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	10th & J St.	North	7,000	85		15	2	1	35	50	
2		South	7,220	85		15	2	1	35	50	
3		East	13,140	85		15	2	1	35	50	
4		West	12,920	85		15	2	1	35	50	
5	10th & L St.	North	9,540	85		15	2	1	35	50	
6		South	8,220	85		15	2	1	35	50	
7		East	18,030	85		15	2	1	35	50	
8		West	16,710	85		15	2	1	35	50	
9	12th & J St.	North	8,340	85		15	2	1	35	50	
10		South	8,900	85		15	2	1	35	50	
11		East	17,640	85		15	2	1	35	50	
12		West	13,340	85		15	2	1	35	50	
13	12th & L St.	North	8,480	85		15	2	1	35	50	
14		South	50	85		15	2	1	35	50	
15		East	12,180	85		15	2	1	35	50	
16		West	17,990	85		15	2	1	35	50	

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Appendix B-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2006-065 Cathedral Square
Description: Existing Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Intersection	Direction	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	10th & J St.	North	7,000	85		15	2	1	35	50	
2		South	7,220	85		15	2	1	35	50	
3		East	13,290	85		15	2	1	35	50	
4		West	13,070	85		15	2	1	35	50	
5	10th & L St.	North	9,670	85		15	2	1	35	50	
6		South	8,310	85		15	2	1	35	50	
7		East	18,100	85		15	2	1	35	50	
8		West	16,740	85		15	2	1	35	50	
9	12th & J St.	North	8,340	85		15	2	1	35	50	
10		South	8,930	85		15	2	1	35	50	
11		East	17,620	85		15	2	1	35	50	
12		West	13,350	85		15	2	1	35	50	
13	12th & L St.	North	8,510	85		15	2	1	35	50	
14		South	50	85		15	2	1	35	50	
15		East	12,220	85		15	2	1	35	50	
16		West	18,060	85		15	2	1	35	50	

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Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2006-065 Cathedral Square
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Intersection	Direction	Autos	Medium Trucks	Heavy Trucks	Total
1	10th & J St.	North	61.3	54.1	56.3	63
2		South	61.4	54.3	56.5	63
3		East	64.0	56.9	59.1	66
4		West	64.0	56.8	59.0	66
5	10th & L St.	North	62.6	55.5	57.7	64
6		South	62.0	54.8	57.0	64
7		East	65.4	58.2	60.4	67
8		West	65.1	57.9	60.1	67
9	12th & J St.	North	62.1	54.9	57.1	64
10		South	62.3	55.2	57.4	64
11		East	65.3	58.2	60.3	67
12		West	64.1	56.9	59.1	66
13	12th & L St.	North	62.1	55.0	57.2	64
14		South	39.8	32.7	34.9	42
15		East	63.7	56.5	58.7	65
16		West	65.4	58.2	60.4	67

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Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2006-065 Cathedral Square
Description: Existing Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Intersection	Direction	Autos	Medium Trucks	Heavy Trucks	Total
1	10th & J St.	North	61.3	54.1	56.3	63
2		South	61.4	54.3	56.5	63
3		East	64.1	56.9	59.1	66
4		West	64.0	56.8	59.0	66
5	10th & L St.	North	62.7	55.5	57.7	64
6		South	62.0	54.9	57.1	64
7		East	65.4	58.3	60.4	67
8		West	65.1	57.9	60.1	67
9	12th & J St.	North	62.1	54.9	57.1	64
10		South	62.4	55.2	57.4	64
11		East	65.3	58.1	60.3	67
12		West	64.1	56.9	59.1	66
13	12th & L St.	North	62.2	55.0	57.2	64
14		South	39.8	32.7	34.9	42
15		East	63.7	56.6	58.7	66
16		West	65.4	58.3	60.4	67

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Appendix D-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2006-065 Cathedral Square
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

			------- Distances to Traffic Noise Contours ———				
Segment	Intersection	Direction	75	70	65	60	55
1	10th & J St.	North	8	17	37	80	173
2		South	8	18	38	82	177
3		East	12	26	57	122	263
4		West	12	26	56	121	261
5	10th & L St.	North	10	21	46	99	213
6		South	9	19	42	89	193
7		East	15	33	70	151	325
8		West	14	31	67	144	309
9	12th & J St.	North	9	19	42	90	195
10		South	9	20	44	94	203
11		East	15	32	69	149	321
12		West	12	27	57	124	266
13	12th & L St.	North	9	20	42	91	197
14		South	0	1	1	3	6
15		East	12	25	54	116	250
16		West	15	32	70	151	325

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Appendix D-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2006-065 Cathedral Square
Description: Existing Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Intersection	Direction	Distances to Traffic Noise Contours 75	70	65	60	55
1	10th & J St.	North	8	17	37	80	173
2		South	8	18	38	82	177
3		East	12	27	57	123	265
4		West	12	26	57	122	263
5	10th & L St.	North	10	21	46	100	215
6		South	9	19	42	90	194
7		East	15	33	70	151	326
8		West	14	31	67	144	310
9	12th & J St.	North	9	19	42	90	195
10		South	9	20	44	95	204
11		East	15	32	69	149	320
12		West	12	27	57	124	266
13	12th & L St.	North	9	20	42	92	197
14		South	0	1	1	3	6
15		East	12	25	54	117	251
16		West	15	33	70	151	326

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APPENDIX I

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Scenario Report

Scenario:	AM Existing
Command:	EX AM
Volume:	Existing AM
Geometry:	Existing AM
Impact Fee:	Default Impact Fee
Trip Generation:	AM Existing
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec):	100	Critical Vol./Cap. (X):	0.879
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	44.4
Optimal Cycle:	109	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	15		15	15	0		35	35	35		50	50	50	
Lanes:	0 0	0 0	2		2 0	1 0	0		0 1	2 1	0		0 1	1 1	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	91		88	106	0		4	1611	192		10	1568	449	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	91		88	106	0		4	1611	192		10	1568	449	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.55	0.90	1.00		0.81	0.81	0.81		0.79	0.79	0.79	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.01	3.57	0.42		0.01	2.33	0.66	
Final Sat.:	0	0	2558		2093	1710	0		14	5460	651		22	3492	1000	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.04		0.04	0.06	0.00		0.30	0.30	0.30		0.45	0.45	0.45	
Crit Moves:						****			****					****		
Green/Cycle:	0.00	0.00	0.14		0.14	0.14	0.00		0.32	0.32	0.32		0.46	0.46	0.46	
Volume/Cap:	0.00	0.00	0.26		0.31	0.45	0.00		0.92	0.92	0.92		0.98	0.98	0.98	
Delay/Veh:	0.0	0.0	43.8		45.0	49.3	0.0		44.0	44.0	44.0		44.4	44.4	44.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	43.8		45.0	49.3	0.0		44.0	44.0	44.0		44.4	44.4	44.4	
HCM2k95th:	0	0	4		5	8	0		30	30	30		46	46	46	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.261
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	34	34			0	0	0	0	36	36	36	
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	1	1	1	0 1
Volume Module: >> Count Date: 28 Sep 2004 << 8																
Base Vol:	0	0	0	0	541	138			0	0	0		125	314	75	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0	0	541	138			0	0	0		125	314	75	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0	0	541	138			0	0	0		125	314	75	
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0	0	
Reduced Vol:	0	0	0	0	541	138			0	0	0		125	314	75	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0	0	541	138			0	0	0		125	314	75	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00	1.00	0.79	0.79			1.00	1.00	1.00		0.73	0.73	0.77	
Lanes:	0.00	0.00	0.00	0.00	2.39	0.61			0.00	0.00	0.00		1.00	2.00	1.00	
Final Sat.:	0	0	0	0	3608	920			0	0	0		1381	2762	1454	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.15			0.00	0.00	0.00		0.09	0.11	0.05	
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.45	0.45			0.00	0.00	0.00		0.47	0.47	0.47	
Volume/Cap:	0.00	0.00	0.00	0.00	0.34	0.34			0.00	0.00	0.00		0.19	0.24	0.11	
Delay/Veh:	0.0	0.0	0.0	0.0	14.1	14.1			0.0	0.0	0.0		11.8	12.2	11.4	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0	0.0	14.1	14.1			0.0	0.0	0.0		11.8	12.2	11.4	
HCM2k95th:	0	0	0	0	8	8			0	0	0		5	6	2	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.377
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29		0	14	25		0	16	27		0
Lanes:	0	0	0	0 0	0	1	1	1 0	0	0	3	0 0	1	0	2	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	0	189	462	6			0	638		0	91	129		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	189	462	6			0	638		0	91	129		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	189	462	6			0	638		0	91	129		0
Reduct Vol:	0	0	0	0	0	0			0	0		0	0	0		0
Reduced Vol:	0	0	0	189	462	6			0	638		0	91	129		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	189	462	6			0	638		0	91	129		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900		1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	0.82			1.00	0.82		1.00	0.86	0.86		1.00
Lanes:	0.00	0.00	0.00	0.86	2.11	0.03			0.00	3.00		0.00	1.00	2.00		0.00
Final Sat.:	0	0	0	1340	3276	43			0	4668		0	1625	3249		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.14			0.00	0.14		0.00	0.06	0.04		0.00
Crit Moves:				****						****			****			
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37			0.00	0.32		0.00	0.56	0.52		0.00
Volume/Cap:	0.00	0.00	0.00	0.38	0.38	0.38			0.00	0.43		0.00	0.18	0.08		0.00
Delay/Veh:	0.0	0.0	0.0	19.1	19.1	19.1			0.0	22.3		0.0	9.4	9.6		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	19.1	19.1	19.1			0.0	22.3		0.0	9.4	9.6		0.0
HCM2k95th:	0	0	0	8	8	8			0	9		0	3	2		0

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.425
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.1
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		33	33	0		0	21	21		0	0	0	
Lanes:	0 0	0 1	0		0 1	2 0	0		0 0	1 1	0		0 0	0 0	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	60	4		362	267	0		0	318	122		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	60	4		362	267	0		0	318	122		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	60	4		362	267	0		0	318	122		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	60	4		362	267	0		0	318	122		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	60	4		362	267	0		0	318	122		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.99	0.99		0.88	0.88	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.94	0.06		1.00	2.00	0.00		0.00	1.45	0.55		0.00	0.00	0.00	
Final Sat.:	0	1765	118		1681	3361	0		0	2499	959		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.03	0.03		0.22	0.08	0.00		0.00	0.13	0.13		0.00	0.00	0.00	
Crit Moves:		****			****					****						
Green/Cycle:	0.00	0.20	0.20		0.42	0.42	0.00		0.00	0.27	0.27		0.00	0.00	0.00	
Volume/Cap:	0.00	0.17	0.17		0.52	0.19	0.00		0.00	0.48	0.48		0.00	0.00	0.00	
Delay/Veh:	0.0	27.0	27.0		18.6	14.7	0.0		0.0	26.2	26.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.0	27.0		18.6	14.7	0.0		0.0	26.2	26.2		0.0	0.0	0.0	
HCM2k95th:	0	3	3		13	5	0		0	10	10		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.217
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.9
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0 0	0 0	0		0 0	1 1	1		0 0	0 0	0		0 1	2 0	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:30																
Base Vol:	0	0	0		0	199	137		0	0	0		158	506	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	199	137		0	0	0		158	506	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	199	137		0	0	0		158	506	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	199	137		0	0	0		158	506	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	199	137		0	0	0		158	506	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.78	1.22		0.00	0.00	0.00		0.71	2.29	0.00	
Final Sat.:	0	0	0		0	3011	2073		0	0	0		1234	3953	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.07	0.07		0.00	0.00	0.00		0.13	0.13	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.19	0.19		0.00	0.00	0.00		0.23	0.23	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	13.3	13.3		0.0	0.0	0.0		6.6	6.6	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	13.3	13.3		0.0	0.0	0.0		6.6	6.6	0.0	
HCM2k95th:	0	0	0		0	3	3		0	0	0		5	5	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.464
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	3	1 0	0	0	0	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	0	0		129	202	0		0	1997	308		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		129	202	0		0	1997	308		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		129	202	0		0	1997	308		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		129	202	0		0	1997	308		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		129	202	0		0	1997	308		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	2.00	0.00		0.00	3.47	0.53		0.00	0.00	0.00	
Final Sat.:	0	0	0		1729	3458	0		0	5872	906		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.07	0.06	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.22	0.17	0.00		0.00	0.61	0.61		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		4	3	0		0	14	14		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.202
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	0	0		0	20	20	
Lanes:	2	0	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 8																
Base Vol:	148	752	0		0	0	0		0	0	0		0	753	81	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	148	752	0		0	0	0		0	0	0		0	753	81	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	148	752	0		0	0	0		0	0	0		0	753	81	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	148	752	0		0	0	0		0	0	0		0	753	81	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	148	752	0		0	0	0		0	0	0		0	753	81	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.87	0.86	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	2.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	3.61	0.39	
Final Sat.:	3317	3249	0		0	0	0		0	0	0		0	5536	595	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.14	0.14	
Crit Moves:	****													****		
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.08	0.43	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Delay/Veh:	6.4	8.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.9	13.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	6.4	8.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.9	13.9	
HCM2k95th:	2	8	0		0	0	0		0	0	0		0	6	6	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.607
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	40	40		0	0	0		60	60	60		0	0	0	
Lanes:	0 0	1	1	1	0 0	0	0	0	1 1	3	0	1	0 0	0	0	0
Volume Module: >> Count Date: 13 Jan 2005 << 7:45																
Base Vol:	0	260	274		0	0	0		680	2325	96		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	260	274		0	0	0		680	2325	96		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	260	274		0	0	0		680	2325	96		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	260	274		0	0	0		680	2325	96		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	260	274		0	0	0		680	2325	96		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.79	0.79		1.00	1.00	1.00		0.70	0.70	0.77		1.00	1.00	1.00	
Lanes:	0.00	1.46	1.54		0.00	0.00	0.00		1.13	3.87	1.00		0.00	0.00	0.00	
Final Sat.:	0	2190	2308		0	0	0		1497	5117	1454		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12		0.00	0.00	0.00		0.45	0.45	0.07		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.38	0.38		0.00	0.00	0.00		0.57	0.57	0.57		0.00	0.00	0.00	
Volume/Cap:	0.00	0.31	0.31		0.00	0.00	0.00		0.80	0.80	0.12		0.00	0.00	0.00	
Delay/Veh:	0.0	23.8	23.8		0.0	0.0	0.0		20.2	20.2	11.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	23.8	23.8		0.0	0.0	0.0		20.2	20.2	11.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		32	32	3		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.229
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	40	40	0		0	0	40		0	0	0		0	30	30	
Lanes:	1 0	3	0	0	0 0	0	0	2	0 0	0	0	0	0 0	3	1	0
Volume Module: >> Count Date: 13 Jan 2085 << 8																
Base Vol:	76	483	0		0	0	98		0	0	0		0	514	93	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	76	483	0		0	0	98		0	0	0		0	514	93	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	76	483	0		0	0	98		0	0	0		0	514	93	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	76	483	0		0	0	98		0	0	0		0	514	93	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	76	483	0		0	0	98		0	0	0		0	514	93	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.69	0.82	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	1.00	3.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.39	0.61	
Final Sat.:	1315	4668	0		0	0	2558		0	0	0		0	5150	932	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.10	0.00		0.00	0.00	0.04		0.00	0.00	0.00		0.00	0.10	0.10	
Crit Moves:		****												****		
Green/Cycle:	0.51	0.51	0.00		0.00	0.00	0.51		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.11	0.20	0.00		0.00	0.00	0.08		0.00	0.00	0.00		0.00	0.26	0.26	
Delay/Veh:	10.6	10.9	0.0		0.0	0.0	10.1		0.0	0.0	0.0		0.0	17.2	17.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.6	10.9	0.0		0.0	0.0	10.1		0.0	0.0	0.0		0.0	17.2	17.2	
HCM2k95th:	3	5	0		0	0	2		0	0	0		0	6	6	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.161
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 76 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		17	35	0		0	18	18	
Lanes:	2	0 2	1	0	0	0 0	0	0	2	0 2	0	0	0	0 2	1	0
Volume Module: >> Count Date: 13 Jan 2005 << 8																
Base Vol:	126	297	60		0	0	0		491	354	0		0	96	37	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	126	297	60		0	0	0		491	354	0		0	96	37	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	126	297	60		0	0	0		491	354	0		0	96	37	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	126	297	60		0	0	0		491	354	0		0	96	37	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	126	297	60		0	0	0		491	354	0		0	96	37	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.85	0.80	0.80		1.00	1.00	1.00		0.83	0.86	1.00		1.00	0.78	0.78	
Lanes:	2.00	2.50	0.50		0.00	0.00	0.00		2.00	2.00	0.00		0.00	2.17	0.83	
Final Sat.:	3234	3787	765		0	0	0		3152	3249	0		0	3228	1244	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.08	0.08		0.00	0.00	0.00		0.16	0.11	0.00		0.00	0.03	0.03	
Crit Moves:	****									****			****			
Green/Cycle:	0.46	0.46	0.46		0.00	0.00	0.00		0.22	0.46	0.00		0.00	0.24	0.24	
Volume/Cap:	0.08	0.17	0.17		0.00	0.00	0.00		0.70	0.24	0.00		0.00	0.13	0.13	
Delay/Veh:	11.6	12.2	12.2		0.0	0.0	0.0		32.8	12.8	0.0		0.0	23.1	23.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	11.6	12.2	12.2		0.0	0.0	0.0		32.8	12.8	0.0		0.0	23.1	23.1	
HCM2k95th:	2	4	4		0	0	0		13	6	0		0	2	2	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.299
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0	0 2	1	0	0	0 0	0	0	0	1 2	0	0	0	0 0	0	0
Volume Module: >> Count Date: 13 Jan 2005 <<																
Base Vol:	0	619	193		0	0	0		63	523	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	619	193		0	0	0		63	523	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	619	193		0	0	0		63	523	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	619	193		0	0	0		63	523	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	619	193		0	0	0		63	523	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.88	0.88		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.29	0.71		0.00	0.00	0.00		0.32	2.68	0.00		0.00	0.00	0.00	
Final Sat.:	0	3812	1188		0	0	0		558	4629	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.16	0.16		0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.35	0.35		0.00	0.00	0.00		0.25	0.25	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.6	13.6		0.0	0.0	0.0		12.7	12.7	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.6	13.6		0.0	0.0	0.0		12.7	12.7	0.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		6	6	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.353
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	0	0		0	20	20	
Lanes:	0 1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module: >> Count Date: 21 Apr 2005 << 7:45																
Base Vol:	178	704	0		0	0	0		0	0	0		0	413	237	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	178	704	0		0	0	0		0	0	0		0	413	237	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	178	704	0		0	0	0		0	0	0		0	413	237	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	178	704	0		0	0	0		0	0	0		0	413	237	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	178	704	0		0	0	0		0	0	0		0	413	237	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.86	0.86	
Lanes:	0.61	2.39	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.00	1.00	
Final Sat.:	1047	4140	0		0	0	0		0	0	0		0	3268	1634	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.13	0.15	
Crit Moves:	****														****	
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.32	0.32	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.35	0.41	
Delay/Veh:	7.6	7.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.8	14.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.6	7.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.8	14.3	
HCM2k95th:	6	6	0		0	0	0		0	0	0		0	6	7	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.434
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	19	19		0	0	0		31	31	0		0	0	0	
Lanes:	0 0	2	1	0	0	0	0	0	0	1	1	2	0	0	0	0 0
Volume Module: >> Count Date: 26 Apr 2005 << 7:30																
Base Vol:	0	311	49		0	0	0		560	1633	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	311	49		0	0	0		560	1633	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	311	49		0	0	0		560	1633	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	311	49		0	0	0		560	1633	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	311	49		0	0	0		560	1633	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.59	0.41		0.00	0.00	0.00		1.02	2.98	0.00		0.00	0.00	0.00	
Final Sat.:	0	4391	692		0	0	0		1766	5150	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.07	0.07		0.00	0.00	0.00		0.32	0.32	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.21	0.21		0.00	0.00	0.00		0.57	0.57	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.4	13.4		0.0	0.0	0.0		8.8	8.8	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.4	13.4		0.0	0.0	0.0		8.8	8.8	0.0		0.0	0.0	0.0	
HCM2k95th:	0	4	4		0	0	0		12	12	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.267
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	23	23	0	0	0	27	27	0				
Lanes:	0 0	0	0	0	0 0	2	0	2	0 0	0	0	0	1 1	2	0	0
Volume Module: >> Count Date: 30 Sep 2004 << 8																
Base Vol:	0	0	0	0	266	218	0	0	0	253	701	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	266	218	0	0	0	253	701	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	266	218	0	0	0	253	701	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	266	218	0	0	0	253	701	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	266	218	0	0	0	253	701	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.06	2.94	0.00				
Final Sat.:	0	0	0	0	3249	2558	0	0	0	1651	4574	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.08	0.09	0.00	0.00	0.00	0.15	0.15	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.48	0.48	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.20	0.21	0.00	0.00	0.00	0.32	0.32	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	10.9	11.1	0.0	0.0	0.0	9.1	9.1	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.9	11.1	0.0	0.0	0.0	9.1	9.1	0.0				
HCM2k95th:	0	0	0	0	4	3	0	0	0	6	6	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.566
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.5
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	35	35	0	0	65	65	0	0	0				
Lanes:	0 0	0	0	0	0 1	2	0	0	0 0	2	1	1	0 0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	0	0	156	254	0	0	1986	280	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	156	254	0	0	1986	280	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	156	254	0	0	1986	280	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	156	254	0	0	1986	280	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	156	254	0	0	1986	280	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00				
Final Sat.:	0	0	0	1556	3112	0	0	4580	1527	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.10	0.08	0.00	0.00	0.43	0.18	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.61	0.61	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.30	0.25	0.00	0.00	0.71	0.30	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	27.0	26.2	0.0	0.0	15.3	9.8	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	27.0	26.2	0.0	0.0	15.3	9.8	0.0	0.0	0.0				
HCM2k95th:	0	0	0	8	6	0	0	26	9	0	0	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.256
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29	0	0	0	21	21	0				
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	1	0	3	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 8																
Base Vol:	0	0	0	0	334	175	0	0	0	188	662	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	334	175	0	0	0	188	662	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	334	175	0	0	0	188	662	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	334	175	0	0	0	188	662	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	334	175	0	0	0	188	662	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2950	1475	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.12	0.00	0.00	0.00	0.11	0.14	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.38	0.38	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.22	0.23	0.00	0.00	0.00	0.29	0.38	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	7.6	7.6	0.0	0.0	0.0	13.4	13.4	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.6	7.6	0.0	0.0	0.0	13.4	13.4	0.0				
HCM2k95th:	0	0	0	0	4	4	0	0	0	5	7	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.312
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	0	0	25	25		
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	121	329	0	0	0	0	0	0	0	0	851	126				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	121	329	0	0	0	0	0	0	0	0	851	126				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	121	329	0	0	0	0	0	0	0	0	851	126				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	121	329	0	0	0	0	0	0	0	0	851	126				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	121	329	0	0	0	0	0	0	0	0	851	126				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.81	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	0.39				
Final Sat.:	1395	3792	0	0	0	0	0	0	0	0	4432	656				
Capacity Analysis Module:																
Vol/Sat:	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.19	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43				
Delay/Veh:	9.4	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	10.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	9.4	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	10.8				
HCM2k95th:	3	3	0	0	0	0	0	0	0	0	7	7				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.283
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		65	65	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	304	151		0	0	0		256	1880	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	304	151		0	0	0		256	1880	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	304	151		0	0	0		256	1880	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	304	151		0	0	0		256	1880	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	304	151		0	0	0		256	1880	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.78	0.78		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	2963	1472		0	0	0		1556	4668	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.10	0.10		0.00	0.00	0.00		0.16	0.40	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.33	0.33		0.00	0.00	0.00		0.61	0.61	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.31	0.31		0.00	0.00	0.00		0.27	0.66	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	27.0	27.0		0.0	0.0	0.0		9.6	14.3	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.0	27.0		0.0	0.0	0.0		9.6	14.3	0.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		8	22	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.283
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	1
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	111	308	0		0	0	0		0	0	0		0	740	165	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	111	308	0		0	0	0		0	0	0		0	740	165	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	111	308	0		0	0	0		0	0	0		0	740	165	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	111	308	0		0	0	0		0	0	0		0	740	165	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	111	308	0		0	0	0		0	0	0		0	740	165	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.79	2.21	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	3.00	1.00	
Final Sat.:	1237	3432	0		0	0	0		0	0	0		0	4542	1514	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.09	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.16	0.11	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.17	0.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.43	0.29	
Delay/Veh:	7.3	7.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.7	12.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.3	7.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.7	12.5	
HCM2k95th:	3	3	0		0	0	0		0	0	0		0	8	5	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.264
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	22	22	0	0	0	28	28	0				
Lanes:	0 0	0 0	0	0 0	2 1	0	0 0	0 0	0	1 0	3 0	0				
Volume Module: >> Count Date: 12 Jan 2006 << 7:45																
Base Vol:	0	0	0	0	214	192	0	0	0	137	853	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	214	192	0	0	0	137	853	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	214	192	0	0	0	137	853	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	214	192	0	0	0	137	853	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	214	192	0	0	0	137	853	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.76	0.76	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2891	1446	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.07	0.13	0.00	0.00	0.00	0.08	0.18	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.45	0.45	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.21	0.37	0.00	0.00	0.00	0.18	0.40	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	14.2	15.9	0.0	0.0	0.0	10.6	12.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	14.2	15.9	0.0	0.0	0.0	10.6	12.0	0.0				
HCM2k95th:	0	0	0	0	4	7	0	0	0	4	8	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.473
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	40	40	0	0	60	60	0	0	0				
Lanes:	0 0	0 0	0	0 1	2 0	0	0 0	2 1	0	0 0	0 0	0				
Volume Module: >> Count Date: 12 Jan 2005 << 7:45																
Base Vol:	0	0	0	71	278	0	0	1527	179	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	71	278	0	0	1527	179	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	71	278	0	0	1527	179	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	71	278	0	0	1527	179	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	71	278	0	0	1527	179	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.81	0.81	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.61	2.39	0.00	0.00	2.69	0.31	0.00	0.00	0.00				
Final Sat.:	0	0	0	950	3719	0	0	4112	482	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.37	0.37	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.57	0.57	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.20	0.20	0.00	0.00	0.66	0.66	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	22.5	22.5	0.0	0.0	17.2	17.2	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	22.5	22.5	0.0	0.0	17.2	17.2	0.0	0.0	0.0				
HCM2k95th:	0	0	0	6	6	0	0	22	22	0	0	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.284
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.6
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21	0	0	0	29	29	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	255	146	0	0	0	264	969	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	255	146	0	0	0	264	969	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	255	146	0	0	0	264	969	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	255	146	0	0	0	264	969	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	255	146	0	0	0	264	969	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2941	1471	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.09	0.10	0.00	0.00	0.00	0.15	0.21	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.23	0.26	0.00	0.00	0.00	0.30	0.40	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	12.3	12.6	0.0	0.0	0.0	8.6	8.7	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	12.3	12.6	0.0	0.0	0.0	8.6	8.7	0.0				
HCM2k95th:	0	0	0	0	4	4	0	0	0	6	7	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.287
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10	0	0	0	0	0	10	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	458	133	0	0	0	108	592	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	458	133	0	0	0	108	592	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	458	133	0	0	0	108	592	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	458	133	0	0	0	108	592	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	458	133	0	0	0	108	592	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.32	0.68	0.00	0.00	0.00	0.46	2.54	0.00				
Final Sat.:	0	0	0	0	3883	1128	0	0	0	800	4387	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.00	0.13	0.13	0.00				
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.47	0.47	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.29	0.29	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	9.9	9.9	0.0	0.0	0.0	8.2	8.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	9.9	9.9	0.0	0.0	0.0	8.2	8.2	0.0				
HCM2k95th:	0	0	0	0	5	5	0	0	0	4	4	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.351
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	3	1	0	0	0	0	0	0
Volume Module:																				
Base Vol:	0	0	0		169	391	0		0	1288	113		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		169	391	0		0	1288	113		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		169	391	0		0	1288	113		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		169	391	0		0	1288	113		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		169	391	0		0	1288	113		0	0	0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.91	2.09	0.00		0.00	3.68	0.32		0.00	0.00	0.00	
Final Sat.:	0	0	0		1565	3622	0		0	6282	551		0	0	0	
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.21	0.21		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.24	0.24	0.00		0.00	0.46	0.46		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	10.9	10.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	10.9	10.9		0.0	0.0	0.0	
HCM2k95th:	0	0	0		4	4	0		0	9	9		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.431
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	26	26	0		0	0	0		0	0	0		0	24	24	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																				
Base Vol:	176	510	0		0	0	0		0	0	0		0	787	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	510	0		0	0	0		0	0	0		0	787	130	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	510	0		0	0	0		0	0	0		0	787	130	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	510	0		0	0	0		0	0	0		0	787	130	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	176	510	0		0	0	0		0	0	0		0	787	130	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.77	2.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.57	0.43	
Final Sat.:	1198	3471	0		0	0	0		0	0	0		0	3922	648	
Capacity Analysis Module:																				
Vol/Sat:	0.15	0.15	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.20	0.20	
Crit Moves:	****													****		
Green/Cycle:	0.42	0.42	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.39	0.39	
Volume/Cap:	0.35	0.35	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Delay/Veh:	12.7	12.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.7	15.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.7	12.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.7	15.7	
HCM2k95th:	7	7	0		0	0	0		0	0	0		0	10	10	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.493
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	40	40		0	0	0		60	60	0		0	0	0	
Lanes:	0 0	2	1	1	0 0	0	0	0	0 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 8																
Base Vol:	0	464	200		0	0	0		278	1254	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	464	200		0	0	0		278	1254	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	464	200		0	0	0		278	1254	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	464	200		0	0	0		278	1254	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	464	200		0	0	0		278	1254	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.78	0.78		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.80	1.20		0.00	0.00	0.00		0.54	2.46	0.00		0.00	0.00	0.00	
Final Sat.:	0	4154	1790		0	0	0		847	3821	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.11		0.00	0.00	0.00		0.33	0.33	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.36	0.36		0.00	0.00	0.00		0.54	0.54	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.31	0.31		0.00	0.00	0.00		0.61	0.61	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	26.4	26.4		0.0	0.0	0.0		19.1	19.1	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	26.4	26.4		0.0	0.0	0.0		19.1	19.1	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		21	21	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.543
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	29	29	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 8																
Base Vol:	244	685	0		0	0	0		0	0	0		0	1020	271	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	244	685	0		0	0	0		0	0	0		0	1020	271	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	244	685	0		0	0	0		0	0	0		0	1020	271	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	244	685	0		0	0	0		0	0	0		0	1020	271	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	244	685	0		0	0	0		0	0	0		0	1020	271	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.79	0.79	
Lanes:	0.79	2.21	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.37	0.63	
Final Sat.:	1226	3442	0		0	0	0		0	0	0		0	3574	950	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.20	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.29	0.29	
Crit Moves:	****													****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Volume/Cap:	0.53	0.53	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.55	0.55	
Delay/Veh:	14.8	14.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.0	10.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.8	14.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.0	10.0	
HCM2k95th:	10	10	0		0	0	0		0	0	0		0	11	11	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.459
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	0	1 2	0	0	0	0	0	0	0	0	0	0	0	0	2 1	0
Volume Module:																
Base Vol:	130	1243	0		0	0	0		0	0	0		0	519	202	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	130	1243	0		0	0	0		0	0	0		0	519	202	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	130	1243	0		0	0	0		0	0	0		0	519	202	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	130	1243	0		0	0	0		0	0	0		0	519	202	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	130	1243	0		0	0	0		0	0	0		0	519	202	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.87	0.87	
Lanes:	0.28	2.72	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.16	0.84	
Final Sat.:	491	4696	0		0	0	0		0	0	0		0	3577	1392	
Capacity Analysis Module:																
Vol/Sat:	0.26	0.26	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.15	0.15	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.59	0.59	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.33	0.33	
Delay/Veh:	12.1	12.1	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.1	10.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.1	12.1	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.1	10.1	
HCM2k95th:	11	11	0		0	0	0		0	0	0		0	5	5	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.448
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0 2	1	0	0	0	0	0	1	1 2	0	0	0	0	0	0
Volume Module:																
Base Vol:	0	876	91		0	0	0		375	1083	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	876	91		0	0	0		375	1083	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	876	91		0	0	0		375	1083	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	876	91		0	0	0		375	1083	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	876	91		0	0	0		375	1083	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.72	0.28		0.00	0.00	0.00		1.03	2.97	0.00		0.00	0.00	0.00	
Final Sat.:	0	4633	481		0	0	0		1779	5137	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.00	0.00	0.00		0.21	0.21	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.42	0.42		0.00	0.00	0.00		0.47	0.47	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	10.7	10.7		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	10.7	10.7		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		9	9	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.427
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.5
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 23 Mar 2005 << 7:30																
Base Vol:	0	0	0		288	1260	0		0	419	40		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		288	1260	0		0	419	40		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		288	1260	0		0	419	40		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		288	1260	0		0	419	40		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		288	1260	0		0	419	40		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.56	2.44	0.00		0.00	2.74	0.26		0.00	0.00	0.00	
Final Sat.:	0	0	0		965	4222	0		0	4673	446		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.30	0.30	0.00		0.00	0.09	0.09		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.73	0.73	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		18.7	18.7	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		18.7	18.7	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		18	18	0		0	4	4		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.497
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 6.3
Optimal Cycle: 23 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	0	1	2	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 7:45																
Base Vol:	0	0	0		0	804	356		0	0	0		61	627	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	804	356		0	0	0		61	627	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	804	356		0	0	0		61	627	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	804	356		0	0	0		61	627	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	804	356		0	0	0		61	627	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.08	0.92		0.00	0.00	0.00		0.27	2.73	0.00	
Final Sat.:	0	0	0		0	3430	1519		0	0	0		460	4727	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.23	0.23		0.00	0.00	0.00		0.13	0.13	0.00	
Crit Moves:						****								****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.43	0.43		0.00	0.00	0.00		0.30	0.30	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.54	0.54		0.00	0.00	0.00		0.44	0.44	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	5.8	5.8		0.0	0.0	0.0		7.3	7.3	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	5.8	5.8		0.0	0.0	0.0		7.3	7.3	0.0	
HCM2k95th:	0	0	0		0	6	6		0	0	0		4	4	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.563
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0	0	0	0 1	1	0	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 8																
Base Vol:	0	0	114		323	503	0		0	1292	149		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	114		323	503	0		0	1292	149		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	114		323	503	0		0	1292	149		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	114		323	503	0		0	1292	149		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	114		323	503	0		0	1292	149		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.69	0.31		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4581	528		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.22	0.14	0.00		0.00	0.28	0.28		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.13		0.40	0.25	0.00		0.00	0.83	0.83		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	6.3		8.6	6.8	0.0		0.0	21.8	21.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	6.3		8.6	6.8	0.0		0.0	21.8	21.8		0.0	0.0	0.0	
HCM2k95th:	0	0	2		9	5	0		0	18	18		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.416
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	0	1	0	0 0	0	0	0	1 1	0	0	0	0 0	0	1	1	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 8																
Base Vol:	5	1	0		0	1	549		0	0	0		3	743	152	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	1	0		0	1	549		0	0	0		3	743	152	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	1	0		0	1	549		0	0	0		3	743	152	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	1	0		0	1	549		0	0	0		3	743	152	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	1	0		0	1	549		0	0	0		3	743	152	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.92	1.00		1.00	0.85	0.85		1.00	1.00	1.00		0.87	0.87	0.87	
Lanes:	0.83	0.17	0.00		0.00	0.01	1.99		0.00	0.00	0.00		0.01	2.48	0.51	
Final Sat.:	1454	291	0		0	6	3224		0	0	0		16	4080	835	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.17	0.17		0.00	0.00	0.00		0.18	0.18	0.18	
Crit Moves:						****							****			
Green/Cycle:	0.42	0.42	0.00		0.00	0.42	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.01	0.00		0.00	0.40	0.40		0.00	0.00	0.00		0.43	0.43	0.43	
Delay/Veh:	9.9	9.9	0.0		0.0	12.7	12.7		0.0	0.0	0.0		12.6	12.6	12.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.9	9.9	0.0		0.0	12.7	12.7		0.0	0.0	0.0		12.6	12.6	12.6	
HCM2k95th:	0	0	0		0	7	7		0	0	0		8	8	8	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.271
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 7:30																
Base Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		31	559	0		0	346	209		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		31	559	0		0	346	209		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		31	559	0		0	346	209		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.86	0.86		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.16	2.84	0.00		0.00	2.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	0	0		273	4914	0		0	3261	1630		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.11	0.13		0.00	0.00	0.00	
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.25	0.25	0.00		0.00	0.24	0.29		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	4	5		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.436
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 8																
Base Vol:	0	0	0		140	604	0		0	896	328		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		140	604	0		0	896	328		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		140	604	0		0	896	328		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		140	604	0		0	896	328		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		140	604	0		0	896	328		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.56	2.44	0.00		0.00	2.20	0.80		0.00	0.00	0.00	
Final Sat.:	0	0	0		976	4211	0		0	3645	1334		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.14	0.00		0.00	0.25	0.25		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.32	0.32	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	11.7	11.7		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	11.7	11.7		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	11	11		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.376
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30	0	0	0	20	20	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	635	185	0	0	0	59	834	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	635	185	0	0	0	59	834	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	635	185	0	0	0	59	834	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	635	185	0	0	0	59	834	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	635	185	0	0	0	59	834	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.32	0.68	0.00	0.00	0.00	0.20	2.80	0.00				
Final Sat.:	0	0	0	0	3880	1130	0	0	0	343	4844	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.16	0.16	0.00	0.00	0.00	0.17	0.17	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.36	0.36	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.48	0.48	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	7.3	7.3	0.0	0.0	0.0	14.2	14.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.3	7.3	0.0	0.0	0.0	14.2	14.2	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	8	8	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.383
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28	0	0	0	22	22	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	530	168	0	0	0	107	943	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	530	168	0	0	0	107	943	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	530	168	0	0	0	107	943	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	530	168	0	0	0	107	943	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	530	168	0	0	0	107	943	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.28	0.72	0.00	0.00	0.00	0.31	2.69	0.00				
Final Sat.:	0	0	0	0	3797	1204	0	0	0	529	4658	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.20	0.20	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.39	0.39	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.52	0.52	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	13.2	13.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	13.2	13.2	0.0				
HCM2k95th:	0	0	0	0	5	5	0	0	0	9	9	0				

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.295
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				27	27	0				0	23	23				0	0	0			
Lanes:	0	0	0	0	0		0	1	2	0	0		0	0	2	1	0		0	0	0	0	0	
Volume Module:																								
Base Vol:	0	0	0				108	553	0				0	571	117				0	0	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	0	0				108	553	0				0	571	117				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Volume:	0	0	0				108	553	0				0	571	117				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	0	0	0				108	553	0				0	571	117				0	0	0			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Final Vol.:	0	0	0				108	553	0				0	571	117				0	0	0			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	1.00	1.00	1.00				0.91	0.91	1.00				1.00	0.89	0.89				1.00	1.00	1.00			
Lanes:	0.00	0.00	0.00				0.49	2.51	0.00				0.00	2.49	0.51				0.00	0.00	0.00			
Final Sat.:	0	0	0				847	4340	0				0	4197	860				0	0	0			
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.00	0.00				0.13	0.13	0.00				0.00	0.14	0.14				0.00	0.00	0.00			
Crit Moves:							****							****										
Green/Cycle:	0.00	0.00	0.00				0.48	0.48	0.00				0.00	0.41	0.41				0.00	0.00	0.00			
Volume/Cap:	0.00	0.00	0.00				0.26	0.26	0.00				0.00	0.33	0.33				0.00	0.00	0.00			
Delay/Veh:	0.0	0.0	0.0				8.7	8.7	0.0				0.0	11.3	11.3				0.0	0.0	0.0			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	0.0	0.0	0.0				8.7	8.7	0.0				0.0	11.3	11.3				0.0	0.0	0.0			
HCM2k95th:	0	0	0				4	4	0				0	5	5				0	0	0			

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.224
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.3
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	32	32				0	0	0				38	38	0			
Lanes:	0	0	0	0	0		0	0	3	1	0		0	0	0	0	0		1	1	2	0	0	
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																								
Base Vol:	0	0	0				0	585	19				0	0	0				205	871	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	0	0	0				0	585	19				0	0	0				205	871	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Volume:	0	0	0				0	585	19				0	0	0				205	871	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	0	0	0				0	585	19				0	0	0				205	871	0			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Final Vol.:	0	0	0				0	585	19				0	0	0				205	871	0			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	1.00	1.00	1.00				1.00	0.91	0.91				1.00	1.00	1.00				0.91	0.91	1.00			
Lanes:	0.00	0.00	0.00				0.00	3.87	0.13				0.00	0.00	0.00				1.00	3.00	0.00			
Final Sat.:	0	0	0				0	6665	216				0	0	0				1729	5187	0			
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.00	0.00				0.00	0.09	0.09				0.00	0.00	0.00				0.12	0.17	0.00			
Crit Moves:								****											****					
Green/Cycle:	0.00	0.00	0.00				0.00	0.42	0.42				0.00	0.00	0.00				0.50	0.50	0.00			
Volume/Cap:	0.00	0.00	0.00				0.00	0.21	0.21				0.00	0.00	0.00				0.24	0.34	0.00			
Delay/Veh:	0.0	0.0	0.0				0.0	14.0	14.0				0.0	0.0	0.0				10.8	11.5	0.0			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	0.0	0.0	0.0				0.0	14.0	14.0				0.0	0.0	0.0				10.8	11.5	0.0			
HCM2k95th:	0	0	0				0	5	5				0	0	0				6	8	0			

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.433
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	14	14		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1	1 2	0	0	0	0 1	1	0	0	0 0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																
Base Vol:	0	483	23		317	369	0		0	558	91		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	483	23		317	369	0		0	558	91		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	483	23		317	369	0		0	558	91		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	483	23		317	369	0		0	558	91		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	483	23		317	369	0		0	558	91		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		0.89	0.89	1.00		1.00	0.93	0.93		1.00	1.00	1.00	
Lanes:	0.00	2.86	0.14		1.85	2.15	0.00		0.00	1.72	0.28		0.00	0.00	0.00	
Final Sat.:	0	4917	234		3122	3635	0		0	3039	496		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.10	0.10		0.10	0.10	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.18	0.18		0.30	0.30	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.55	0.55		0.33	0.33	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Delay/Veh:	0.0	30.4	30.4		21.4	21.4	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.4	30.4		21.4	21.4	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
HCM2k95th:	0	9	9		6	6	0		0	12	12		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.373
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		16	25	0		0	0	9	
Lanes:	0 0	2	1	0	0	0 0	0	0	2	1 0	0	0	0	0 0	1	
Volume Module: >> Count Date: 6 Dec 2005 << 7:30																
Base Vol:	0	995	22		0	0	0		144	254	0		0	0	39	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	995	22		0	0	0		144	254	0		0	0	39	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	995	22		0	0	0		144	254	0		0	0	39	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	995	22		0	0	0		144	254	0		0	0	39	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	995	22		0	0	0		144	254	0		0	0	39	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.98	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.94	0.06		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5060	112		0	0	0		3620	1866	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.20	0.20		0.00	0.00	0.00		0.04	0.14	0.00		0.00	0.00	0.02	
Crit Moves:		****								****			****			
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.29	0.45	0.00		0.00	0.00	0.16	
Volume/Cap:	0.00	0.44	0.44		0.00	0.00	0.00		0.14	0.30	0.00		0.00	0.00	0.15	
Delay/Veh:	0.0	10.8	10.8		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	10.8	10.8		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
HCM2k95th:	0	8	8		0	0	0		2	6	0		0	0	1	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.364
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	1	1 2	0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	314	828	0		0	0	0		0	0	0		0	637	168	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	314	828	0		0	0	0		0	0	0		0	637	168	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	314	828	0		0	0	0		0	0	0		0	637	168	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	314	828	0		0	0	0		0	0	0		0	637	168	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	314	828	0		0	0	0		0	0	0		0	637	168	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.88	0.88	
Lanes:	1.10	2.90	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.37	0.63	
Final Sat.:	1902	5014	0		0	0	0		0	0	0		0	3977	1049	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.16	0.16	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.37	0.37	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Delay/Veh:	10.4	10.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.4	10.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
HCM2k95th:	6	6	0		0	0	0		0	0	0		0	7	7	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.440
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0 2	1	0	0	0 0	0	0	1	1 2	0	0	0	0 0	0	0
Volume Module: >> Count Date: 30 Sep 2004 << 7:45																
Base Vol:	0	1299	136		0	0	0		194	1003	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1299	136		0	0	0		194	1003	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1299	136		0	0	0		194	1003	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1299	136		0	0	0		194	1003	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1299	136		0	0	0		194	1003	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.72	0.28		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4630	485		0	0	0		1729	5187	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.28	0.28		0.00	0.00	0.00		0.11	0.19	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.63	0.63		0.00	0.00	0.00		0.25	0.43	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	12.5	12.5		0.0	0.0	0.0		9.7	10.7	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.5	12.5		0.0	0.0	0.0		9.7	10.7	0.0		0.0	0.0	0.0	
HCM2k95th:	0	14	14		0	0	0		4	8	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.310
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	1	0 3	0	0	0	0	0	0	0	0	0	0	0	0 2	1	0
Volume Module: >> Count Date: 20 Jan 2005 << 7:45																
Base Vol:	242	1214	0		0	0	0		0	0	0		0	628	128	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	242	1214	0		0	0	0		0	0	0		0	628	128	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	242	1214	0		0	0	0		0	0	0		0	628	128	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	242	1214	0		0	0	0		0	0	0		0	628	128	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	242	1214	0		0	0	0		0	0	0		0	628	128	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.89	0.89	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.49	0.51	
Final Sat.:	1900	5187	0		0	0	0		0	0	0		0	4201	856	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.15	0.15	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.29	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.33	0.33	
Delay/Veh:	10.0	11.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.2	10.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.0	11.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.2	10.2	
HCM2k95th:	6	11	0		0	0	0		0	0	0		0	6	6	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.560
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	0	1 2	0	0	0	0	0	0	0	0	0	0	0	0 2	1	0
Volume Module:																
Base Vol:	192	1355	0		0	0	0		0	0	0		0	875	149	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	192	1355	0		0	0	0		0	0	0		0	875	149	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	192	1355	0		0	0	0		0	0	0		0	875	149	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	192	1355	0		0	0	0		0	0	0		0	875	149	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	192	1355	0		0	0	0		0	0	0		0	875	149	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.89	0.89	
Lanes:	0.37	2.63	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.56	0.44	
Final Sat.:	644	4543	0		0	0	0		0	0	0		0	4335	738	
Capacity Analysis Module:																
Vol/Sat:	0.30	0.30	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.20	0.20	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.58	0.58	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.54	0.54	
Delay/Veh:	9.6	9.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.0	14.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.6	9.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.0	14.0	
HCM2k95th:	12	12	0		0	0	0		0	0	0		0	10	10	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.527
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	0 1	1	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	1273	42		0	0	0		272	506	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1273	42		0	0	0		272	506	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1273	42		0	0	0		272	506	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1273	42		0	0	0		272	506	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1273	42		0	0	0		272	506	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.90	0.10		0.00	0.00	0.00		0.70	1.30	0.00		0.00	0.00	0.00	
Final Sat.:	0	4996	165		0	0	0		1262	2348	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.25	0.25		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.57	0.57		0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	11.9	11.9		0.0	0.0	0.0		11.2	11.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.9	11.9		0.0	0.0	0.0		11.2	11.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	12	12		0	0	0		9	9	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.414
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 23.5
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	16	16		0	24	24	
Lanes:	1 1	2	0	0	0 0	0	0	0	0 0	2	1	0	0 0	1	1	1
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	97	1007	0		0	0	0		0	515	157		0	286	594	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	97	1007	0		0	0	0		0	515	157		0	286	594	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	97	1007	0		0	0	0		0	515	157		0	286	594	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	97	1007	0		0	0	0		0	515	157		0	286	594	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	97	1007	0		0	0	0		0	515	157		0	286	594	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	0.88	0.88		1.00	0.85	0.85	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	2.30	0.70		0.00	1.00	2.00	
Final Sat.:	1729	5187	0		0	0	0		0	3836	1169		0	1623	3245	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.19	0.00		0.00	0.00	0.00		0.00	0.13	0.13		0.00	0.18	0.18	
Crit Moves:	****									****				****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.20	0.20		0.00	0.30	0.30	
Volume/Cap:	0.15	0.51	0.00		0.00	0.00	0.00		0.00	0.66	0.66		0.00	0.58	0.60	
Delay/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	24.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	24.1	
HCM2k95th:	3	12	0		0	0	0		0	12	12		0	13	13	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.385
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0 0	3	1	0	0 0	0	0	0	2 0	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:30																
Base Vol:	0	1243	62		0	0	0		606	732	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1243	62		0	0	0		606	732	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1243	62		0	0	0		606	732	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1243	62		0	0	0		606	732	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1243	62		0	0	0		606	732	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.97	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	3.81	0.19		0.00	0.00	0.00		2.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	6541	326		0	0	0		3686	3610	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.00	0.00	0.00		0.16	0.20	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.41	0.41		0.00	0.00	0.00		0.36	0.44	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		13.4	14.1	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		13.4	14.1	0.0		0.0	0.0	0.0	
HCM2k95th:	0	10	10		0	0	0		9	11	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.582
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 28.6
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	18	18	0		26	26	0		0	26	26		0	0	0	
Lanes:	0 1	2	0	0	0 1	1	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:30																
Base Vol:	47	271	0		426	595	0		0	568	250		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	47	271	0		426	595	0		0	568	250		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	47	271	0		426	595	0		0	568	250		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	47	271	0		426	595	0		0	568	250		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	47	271	0		426	595	0		0	568	250		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	1.00		0.93	0.93	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.44	2.56	0.00		0.83	1.17	0.00		0.00	2.08	0.92		0.00	0.00	0.00	
Final Sat.:	761	4389	0		1476	2062	0		0	3436	1512		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.06	0.00		0.29	0.29	0.00		0.00	0.17	0.17		0.00	0.00	0.00	
Crit Moves:		****			****					****						
Green/Cycle:	0.23	0.23	0.00		0.33	0.33	0.00		0.00	0.33	0.33		0.00	0.00	0.00	
Volume/Cap:	0.27	0.27	0.00		0.88	0.88	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Delay/Veh:	25.7	25.7	0.0		34.4	34.4	0.0		0.0	22.4	22.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	25.7	25.7	0.0		34.4	34.4	0.0		0.0	22.4	22.4		0.0	0.0	0.0	
HCM2k95th:	5	5	0		25	25	0		0	11	11		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.277
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	31		0	0	0		39	39	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:45																
Base Vol:	0	395	173		0	0	0		242	812	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	395	173		0	0	0		242	812	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	395	173		0	0	0		242	812	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	395	173		0	0	0		242	812	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	395	173		0	0	0		242	812	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.09	0.91		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	3441	1507		0	0	0		1729	5187	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.11		0.00	0.00	0.00		0.14	0.16	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.41	0.41		0.00	0.00	0.00		0.51	0.51	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.28	0.28		0.00	0.00	0.00		0.27	0.31	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	15.1	15.1		0.0	0.0	0.0		10.5	10.7	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	15.1	15.1		0.0	0.0	0.0		10.5	10.7	0.0		0.0	0.0	0.0	
HCM2k95th:	0	6	6		0	0	0		6	7	0		0	0	0	

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Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Scenario Report

Scenario:	PM Existing
Command:	EX PM
Volume:	Existing PM
Geometry:	Existing PM
Impact Fee:	Default Impact Fee
Trip Generation:	PM Existing
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec):	0	Critical Vol./Cap. (X):	0.693
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	15.7
Optimal Cycle:	41	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	4		4	4	0		4	4	4		4	4	4	
Lanes:	0 0	0	0	2	2 0	1	0	0	0 1	2	1	0	0 1	1	1	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	184		219	318	0		2	353	59		10	858	407	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	184		219	318	0		2	353	59		10	858	407	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	184		219	318	0		2	353	59		10	858	407	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	184		219	318	0		2	353	59		10	858	407	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	184		219	318	0		2	353	59		10	858	407	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.56	0.90	1.00		0.80	0.80	0.80		0.78	0.78	0.78	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.02	3.41	0.57		0.02	2.02	0.96	
Final Sat.:	0	0	2558		2126	1710	0		29	5196	868		35	2991	1419	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.10	0.19	0.00		0.07	0.07	0.07		0.29	0.29	0.29	
Crit Moves:						****			****					****		
Green/Cycle:	0.00	0.00	0.27		0.27	0.27	0.00		0.10	0.10	0.10		0.41	0.41	0.41	
Volume/Cap:	0.00	0.00	0.27		0.38	0.69	0.00		0.69	0.69	0.69		0.69	0.69	0.69	
Delay/Veh:	0.0	0.0	12.8		14.2	21.8	0.0		24.4	24.4	24.4		12.0	12.0	12.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	12.8		14.2	21.8	0.0		24.4	24.4	24.4		12.0	12.0	12.0	
HCM2k95th:	0	0	3		5	10	0		6	6	6		11	11	11	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	20	20	0	0	0	50	50	50				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 1	1	0	1
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	445	306	0	0	0	360	1353	99				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	445	306	0	0	0	360	1353	99				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	445	306	0	0	0	360	1353	99				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	445	306	0	0	0	360	1353	99				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	445	306	0	0	0	360	1353	99				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.73	0.73	0.77				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	2.00	1.00				
Final Sat.:	0	0	0	0	2922	1461	0	0	0	1381	2762	1454				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.21	0.00	0.00	0.00	0.26	0.49	0.07				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.26	0.26	0.00	0.00	0.00	0.66	0.66	0.66				
Volume/Cap:	0.00	0.00	0.00	0.00	0.58	0.80	0.00	0.00	0.00	0.40	0.74	0.10				
Delay/Veh:	0.0	0.0	0.0	0.0	26.2	33.0	0.0	0.0	0.0	6.3	11.0	5.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	26.2	33.0	0.0	0.0	0.0	6.3	11.0	5.0				
HCM2k95th:	0	0	0	0	10	16	0	0	0	9	23	2				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.423
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	29	29	0	14	21	0	20	27	0				
Lanes:	0 0	0	0	0	0 1	1	1	0	0 0	3	0	0	1 0	2	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	43	760	0	0	466	0	167	467	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	43	760	0	0	466	0	167	467	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	43	760	0	0	466	0	167	467	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	43	760	0	0	466	0	167	467	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	43	760	0	0	466	0	167	467	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	0.91	1.00	0.82	1.00	0.86	0.86	1.00				
Lanes:	0.00	0.00	0.00	0.16	2.84	0.00	0.00	3.00	0.00	1.00	2.00	0.00				
Final Sat.:	0	0	0	250	4418	0	0	4668	0	1625	3249	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.17	0.17	0.00	0.00	0.10	0.00	0.10	0.14	0.00				
Crit Moves:				****				****		****						
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.00	0.00	0.27	0.00	0.56	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00	0.47	0.47	0.00	0.00	0.38	0.00	0.28	0.28	0.00				
Delay/Veh:	0.0	0.0	0.0	20.0	20.0	0.0	0.0	24.5	0.0	10.1	11.1	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	20.0	20.0	0.0	0.0	24.5	0.0	10.1	11.1	0.0				
HCM2k95th:	0	0	0	10	10	0	0	7	0	5	7	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.415
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		36	36	0		0	18	18		0	0	0	
Lanes:	0	0	0	1 0	0	1	2	0 0	0	0	1	1 0	0	0	0	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	79	25		128	898	0		0	129	184		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	79	25		128	898	0		0	129	184		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	79	25		128	898	0		0	129	184		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	79	25		128	898	0		0	129	184		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	79	25		128	898	0		0	129	184		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.97	0.97		0.90	0.90	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		0.37	2.63	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	1397	442		643	4513	0		0	1646	1646		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.06	0.06		0.20	0.20	0.00		0.00	0.08	0.11		0.00	0.00	0.00	
Crit Moves:		****			****						****					
Green/Cycle:	0.00	0.20	0.20		0.46	0.46	0.00		0.00	0.23	0.23		0.00	0.00	0.00	
Volume/Cap:	0.00	0.28	0.28		0.44	0.44	0.00		0.00	0.34	0.49		0.00	0.00	0.00	
Delay/Veh:	0.0	28.5	28.5		15.2	15.2	0.0		0.0	26.6	29.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	28.5	28.5		15.2	15.2	0.0		0.0	26.6	29.2		0.0	0.0	0.0	
HCM2k95th:	0	5	5		11	11	0		0	6	9		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.742
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0	0	0	0 0	0	0	1	1 1	0	0	0	0 0	0	1	2	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 4:30																
Base Vol:	0	0	0		0	417	677		0	0	0		151	2129	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	417	677		0	0	0		151	2129	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	417	677		0	0	0		151	2129	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	417	677		0	0	0		151	2129	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	417	677		0	0	0		151	2129	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.86	0.86		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.14	1.86		0.00	0.00	0.00		0.20	2.80	0.00	
Final Sat.:	0	0	0		0	1872	3039		0	0	0		344	4843	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.22	0.22		0.00	0.00	0.00		0.44	0.44	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.66	0.66		0.00	0.00	0.00		0.79	0.79	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	17.8	17.8		0.0	0.0	0.0		12.3	12.3	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	17.8	17.8		0.0	0.0	0.0		12.3	12.3	0.0	
HCM2k95th:	0	0	0		0	12	12		0	0	0		19	19	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.228
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	3	1	0	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0		160	442	0		0	525	72		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		160	442	0		0	525	72		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		160	442	0		0	525	72		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		160	442	0		0	525	72		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		160	442	0		0	525	72		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.80	2.20	0.00		0.00	3.52	0.48		0.00	0.00	0.00	
Final Sat.:	0	0	0		1379	3808	0		0	5972	819		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.12	0.12	0.00		0.00	0.09	0.09		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.16	0.16		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.2	6.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.2	6.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	3	3		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.594
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	79	79	
Lanes:	2	0	2	0	0	0	0	0	0	0	0	0	0	0	3	1	0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	419	347	0		0	0	0		0	0	0		0	2640	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	419	347	0		0	0	0		0	0	0		0	2640	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	419	347	0		0	0	0		0	0	0		0	2640	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	419	347	0		0	0	0		0	0	0		0	2640	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	419	347	0		0	0	0		0	0	0		0	2640	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.87	0.86	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.82	0.82	
Lanes:	2.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	3.92	0.08	
Final Sat.:	3317	3249	0		0	0	0		0	0	0		0	6079	127	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.11	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.43	0.43	
Crit Moves:	****													****		
Green/Cycle:	0.20	0.20	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.75	0.75	
Volume/Cap:	0.64	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Delay/Veh:	43.7	41.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.6	6.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	43.7	41.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.6	6.6	
HCM2k95th:	12	10	0		0	0	0		0	0	0		0	18	18	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.455
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	25		0	0	0	
Lanes:	0 0	1	1	1	0 0	0	0	0	1 1	3	0	1	0 0	0	0	0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	0	449	407		0	0	0		324	1112	130		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	449	407		0	0	0		324	1112	130		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	449	407		0	0	0		324	1112	130		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	449	407		0	0	0		324	1112	130		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	449	407		0	0	0		324	1112	130		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.79	0.79		1.00	1.00	1.00		0.70	0.70	0.77		1.00	1.00	1.00	
Lanes:	0.00	1.57	1.43		0.00	0.00	0.00		1.13	3.87	1.00		0.00	0.00	0.00	
Final Sat.:	0	2375	2153		0	0	0		1492	5121	1454		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.00	0.00	0.00		0.22	0.22	0.09		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.42	0.42		0.00	0.00	0.00		0.49	0.49	0.20		0.00	0.00	0.00	
Delay/Veh:	0.0	11.2	11.2		0.0	0.0	0.0		11.5	11.5	10.1		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.2	11.2		0.0	0.0	0.0		11.5	11.5	10.1		0.0	0.0	0.0	
HCM2k95th:	0	7	7		0	0	0		9	9	3		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.573
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.7
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	45	45	0		0	0	45		0	0	0		0	25	25	
Lanes:	1 0	3	0	0	0 0	0	0	2	0 0	0	0	0	0 0	3	1	0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	320	664	0		0	0	59		0	0	0		0	1484	140	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	320	664	0		0	0	59		0	0	0		0	1484	140	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	320	664	0		0	0	59		0	0	0		0	1484	140	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	320	664	0		0	0	59		0	0	0		0	1484	140	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	320	664	0		0	0	59		0	0	0		0	1484	140	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.69	0.82	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	1.00	3.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.66	0.34	
Final Sat.:	1315	4668	0		0	0	2558		0	0	0		0	5614	530	
Capacity Analysis Module:																
Vol/Sat:	0.24	0.14	0.00		0.00	0.00	0.02		0.00	0.00	0.00		0.00	0.26	0.26	
Crit Moves:	****													****		
Green/Cycle:	0.57	0.57	0.00		0.00	0.00	0.57		0.00	0.00	0.00		0.00	0.32	0.32	
Volume/Cap:	0.43	0.25	0.00		0.00	0.00	0.04		0.00	0.00	0.00		0.00	0.84	0.84	
Delay/Veh:	11.4	8.8	0.0		0.0	0.0	7.5		0.0	0.0	0.0		0.0	29.5	29.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	11.4	8.8	0.0		0.0	0.0	7.5		0.0	0.0	0.0		0.0	29.5	29.5	
HCM2k95th:	11	6	0		0	0	1		0	0	0		0	20	20	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.168
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		17	35	0		0	18	18	
Lanes:	2 0	2 1	0		0 0	0 0	0		2 0	2 0	0		0 0	2 1	0	
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	244	626	43		0	0	0		340	262	0		0	329	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	244	626	43		0	0	0		340	262	0		0	329	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	244	626	43		0	0	0		340	262	0		0	329	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	244	626	43		0	0	0		340	262	0		0	329	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	244	626	43		0	0	0		340	262	0		0	329	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.86	0.81	0.81		1.00	1.00	1.00		0.83	0.86	1.00		1.00	0.80	0.80	
Lanes:	2.00	2.81	0.19		0.00	0.00	0.00		2.00	2.00	0.00		0.00	2.57	0.43	
Final Sat.:	3284	4325	297		0	0	0		3152	3249	0		0	3916	655	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.14	0.14		0.00	0.00	0.00		0.11	0.08	0.00		0.00	0.08	0.08	
Crit Moves:	****									****			****			
Green/Cycle:	0.46	0.46	0.46		0.00	0.00	0.00		0.22	0.46	0.00		0.00	0.24	0.24	
Volume/Cap:	0.16	0.31	0.31		0.00	0.00	0.00		0.48	0.18	0.00		0.00	0.35	0.35	
Delay/Veh:	12.2	13.3	13.3		0.0	0.0	0.0		28.0	12.3	0.0		0.0	25.1	25.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.2	13.3	13.3		0.0	0.0	0.0		28.0	12.3	0.0		0.0	25.1	25.1	
HCM2k95th:	4	7	7		0	0	0		9	4	0		0	6	6	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.283
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0 0	2 1	0		0 0	0 0	0		0 1	2 0	0		0 0	0 0	0	
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	0	710	124		0	0	0		72	427	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	710	124		0	0	0		72	427	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	710	124		0	0	0		72	427	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	710	124		0	0	0		72	427	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	710	124		0	0	0		72	427	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.55	0.45		0.00	0.00	0.00		0.43	2.57	0.00		0.00	0.00	0.00	
Final Sat.:	0	4319	754		0	0	0		748	4439	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.16	0.16		0.00	0.00	0.00		0.10	0.10	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.36	0.36		0.00	0.00	0.00		0.21	0.21	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		12.4	12.4	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		12.4	12.4	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		5	5	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.590
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0	0	0	0	0	0	0	0	29	29				
Lanes:	0 1	2 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2 1	0				
Volume Module: >> Count Date: 21 Apr 2005 << 4:30																
Base Vol:	336	551	0	0	0	0	0	0	0	0	1392	288				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	336	551	0	0	0	0	0	0	0	0	1392	288				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	336	551	0	0	0	0	0	0	0	0	1392	288				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	336	551	0	0	0	0	0	0	0	0	1392	288				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	336	551	0	0	0	0	0	0	0	0	1392	288				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49	0.51				
Final Sat.:	1729	3458	0	0	0	0	0	0	0	0	4186	866				
Capacity Analysis Module:																
Vol/Sat:	0.19	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.33				
Crit Moves:	****										****					
Green/Cycle:	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52				
Volume/Cap:	0.52	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64				
Delay/Veh:	14.7	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	11.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	14.7	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	11.0				
HCM2k95th:	9	8	0	0	0	0	0	0	0	0	14	14				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.257
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	21	21	0	0	0	29	29	0	0	0	0				
Lanes:	0 0	2 1	0	0 0	0 0	0 0	1 1	2 0	0	0 0	0 0	0				
Volume Module: >> Count Date: 26 Apr 2005 << 4:30																
Base Vol:	0	550	73	0	0	0	259	484	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	550	73	0	0	0	259	484	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	550	73	0	0	0	259	484	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	550	73	0	0	0	259	484	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	550	73	0	0	0	259	484	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.65	0.35	0.00	0.00	0.00	1.39	2.61	0.00	0.00	0.00	0.00				
Final Sat.:	0	4497	597	0	0	0	2411	4505	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.33	0.33	0.00	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.4	7.4	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.4	7.4	0.0	0.0	0.0	0.0				
HCM2k95th:	0	6	6	0	0	0	4	4	0	0	0	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.336
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	34	34	0	0	0	66	66	0				
Lanes:	0 0	0 0	0	0 0	2 0	2	0 0	0 0	0	1 1	2 0	0				
Volume Module: >> Count Date: 30 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	368	496	0	0	0	191	1618	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	368	496	0	0	0	191	1618	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	368	496	0	0	0	191	1618	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	368	496	0	0	0	191	1618	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	368	496	0	0	0	191	1618	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3249	2558	0	0	0	1556	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.19	0.00	0.00	0.00	0.12	0.35	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.62	0.62	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.35	0.60	0.00	0.00	0.00	0.20	0.56	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	28.5	33.6	0.0	0.0	0.0	8.7	12.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	28.5	33.6	0.0	0.0	0.0	8.7	12.2	0.0				
HCM2k95th:	0	0	0	0	9	14	0	0	0	6	18	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.524
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	22	22	0	0	28	28	0	0	0				
Lanes:	0 0	0 0	0	0 1	2 0	0	0 0	2 1	0	0 0	0 0	0				
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	83	471	0	0	1289	294	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	83	471	0	0	1289	294	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	83	471	0	0	1289	294	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	83	471	0	0	1289	294	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	83	471	0	0	1289	294	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.45	2.55	0.00	0.00	2.44	0.56	0.00	0.00	0.00				
Final Sat.:	0	0	0	699	3969	0	0	3695	843	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.35	0.35	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.39	0.39	0.00	0.00	0.50	0.50	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.70	0.70	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	12.1	12.1	0.0	0.0	12.6	12.6	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	12.1	12.1	0.0	0.0	12.6	12.6	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	15	15	0	0	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.251
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29	0	0	0	21	21	0				
Lanes:	0 0	0 0	0	0 0	2 1	0	0 0	0 0	0	1 0	3 0	0				
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	469	214	0	0	0	121	1306	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	469	214	0	0	0	121	1306	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	469	214	0	0	0	121	1306	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	469	214	0	0	0	121	1306	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	469	214	0	0	0	121	1306	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.06	0.94	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3055	1394	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	0.07	0.28	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.38	0.38	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.19	0.75	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	8.0	8.0	0.0	0.0	0.0	12.4	18.1	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.0	8.0	0.0	0.0	0.0	12.4	18.1	0.0				
HCM2k95th:	0	0	0	0	5	5	0	0	0	4	15	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.580
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.5
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	34	34	0	0	0	0	0	0	0	0	66	66				
Lanes:	0 1	2 0	0	0 0	0 0	0 0	0 0	0 0	0	0 0	2 1	0				
Volume Module:																
Base Vol:	359	472	0	0	0	0	0	0	0	0	1666	83				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	359	472	0	0	0	0	0	0	0	0	1666	83				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	359	472	0	0	0	0	0	0	0	0	1666	83				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	359	472	0	0	0	0	0	0	0	0	1666	83				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	359	472	0	0	0	0	0	0	0	0	1666	83				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90				
Lanes:	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.14				
Final Sat.:	1729	3458	0	0	0	0	0	0	0	0	4906	244				
Capacity Analysis Module:																
Vol/Sat:	0.21	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34				
Crit Moves:	****										****					
Green/Cycle:	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62				
Volume/Cap:	0.65	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55				
Delay/Veh:	32.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	32.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.6				
HCM2k95th:	20	12	0	0	0	0	0	0	0	0	19	19				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.236
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0 2	1	0	0	0 0	0	0	1	1 2	0	0	0	0 0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 5																
Base Vol:	0	417	208		0	0	0		108	1297	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	417	208		0	0	0		108	1297	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	417	208		0	0	0		108	1297	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	417	208		0	0	0		108	1297	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	417	208		0	0	0		108	1297	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.78	0.78		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	2959	1476		0	0	0		1556	4668	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.14	0.14		0.00	0.00	0.00		0.07	0.28	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.32	0.32		0.00	0.00	0.00		0.16	0.62	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	10.4	10.4		0.0	0.0	0.0		9.3	13.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	10.4	10.4		0.0	0.0	0.0		9.3	13.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	6	6		0	0	0		3	11	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.438
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 15.2
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	0	1 2	0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	1
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	158	335	0		0	0	0		0	0	0		0	1319	81	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	158	335	0		0	0	0		0	0	0		0	1319	81	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	158	335	0		0	0	0		0	0	0		0	1319	81	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	158	335	0		0	0	0		0	0	0		0	1319	81	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	158	335	0		0	0	0		0	0	0		0	1319	81	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	0.96	2.04	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	3.00	1.00	
Final Sat.:	1496	3172	0		0	0	0		0	0	0		0	4626	1542	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.11	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.29	0.05	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.20	0.20	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.76	0.14	
Delay/Veh:	7.5	7.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	18.3	11.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.5	7.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	18.3	11.6	
HCM2k95th:	4	4	0		0	0	0		0	0	0		0	15	2	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.401
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 20.7
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	35	35	0	0	0	65	65	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:30																
Base Vol:	0	0	0	0	385	330	0	0	0	223	1445	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	385	330	0	0	0	223	1445	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	385	330	0	0	0	223	1445	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	385	330	0	0	0	223	1445	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	385	330	0	0	0	223	1445	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.76	0.76	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2897	1449	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.13	0.23	0.00	0.00	0.00	0.13	0.31	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.58	0.58	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.43	0.73	0.00	0.00	0.00	0.22	0.53	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	31.3	39.0	0.0	0.0	0.0	11.9	15.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	31.3	39.0	0.0	0.0	0.0	11.9	15.0	0.0				
HCM2k95th:	0	0	0	0	11	20	0	0	0	8	18	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.451
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	25	25	0	0	25	25	0	0	0			
Lanes:	0 0	0	0	0	0 1	2	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:45																
Base Vol:	0	0	0	93	480	0	0	1159	129	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	93	480	0	0	1159	129	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	93	480	0	0	1159	129	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	93	480	0	0	1159	129	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	93	480	0	0	1159	129	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.81	0.81	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.49	2.51	0.00	0.00	2.70	0.30	0.00	0.00	0.00				
Final Sat.:	0	0	0	758	3911	0	0	4138	461	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.28	0.28	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.45	0.45	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.27	0.27	0.00	0.00	0.63	0.63	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	10.1	10.1	0.0	0.0	13.4	13.4	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	10.1	10.1	0.0	0.0	13.4	13.4	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	11	11	0	0	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.543
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21	0	0	0	29	29	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	564	127	0	0	0	569	1123	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	564	127	0	0	0	569	1123	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	564	127	0	0	0	569	1123	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	564	127	0	0	0	569	1123	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	564	127	0	0	0	569	1123	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.80	0.80	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.45	0.55	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3704	834	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	0.33	0.24	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.64	0.46	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	13.6	13.6	0.0	0.0	0.0	13.3	9.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	13.6	13.6	0.0	0.0	0.0	13.3	9.2	0.0				
HCM2k95th:	0	0	0	0	7	7	0	0	0	13	8	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.566
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.8
Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10	0	0	0	0	0	10	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	1015	240	0	0	0	200	1090	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	1015	240	0	0	0	200	1090	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	1015	240	0	0	0	200	1090	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	1015	240	0	0	0	200	1090	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	1015	240	0	0	0	200	1090	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.43	0.57	0.00	0.00	0.00	0.47	2.53	0.00				
Final Sat.:	0	0	0	0	4073	963	0	0	0	804	4383	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.25	0.25	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.44	0.44	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.57	0.57	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	10.8	10.8	0.0	0.0	0.0	10.8	10.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.8	10.8	0.0	0.0	0.0	10.8	10.8	0.0				
HCM2k95th:	0	0	0	0	11	11	0	0	0	10	10	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.387
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	3	1	0	0	0	0	0	0
Volume Module:																				
Base Vol:	0	0	0		159	1116	0		0	569	103		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		159	1116	0		0	569	103		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		159	1116	0		0	569	103		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		159	1116	0		0	569	103		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		159	1116	0		0	569	103		0	0	0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.37	2.63	0.00		0.00	3.39	0.61		0.00	0.00	0.00	
Final Sat.:	0	0	0		647	4540	0		0	5721	1036		0	0	0	
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00		0.25	0.25	0.00		0.00	0.10	0.10		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.55	0.55	0.00		0.00	0.22	0.22		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		11.7	11.7	0.0		0.0	9.6	9.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		11.7	11.7	0.0		0.0	9.6	9.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		10	10	0		0	4	4		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.571
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		0	0	0		0	65	65	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																				
Base Vol:	246	477	0		0	0	0		0	0	0		0	1552	77	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	246	477	0		0	0	0		0	0	0		0	1552	77	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	246	477	0		0	0	0		0	0	0		0	1552	77	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	246	477	0		0	0	0		0	0	0		0	1552	77	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	246	477	0		0	0	0		0	0	0		0	1552	77	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	1.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.86	0.14	
Final Sat.:	1556	3112	0		0	0	0		0	0	0		0	4417	219	
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.15	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.35	0.35	
Crit Moves:	****													****		
Green/Cycle:	0.31	0.31	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Volume/Cap:	0.51	0.49	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.61	0.61	
Delay/Veh:	32.7	32.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.2	16.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	32.7	32.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.2	16.2	
HCM2k95th:	13	13	0		0	0	0		0	0	0		0	21	21	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.541
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 16.6
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	26	26		0	0	0		24	24	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	571	151		0	0	0		129	1163	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	571	151		0	0	0		129	1163	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	571	151		0	0	0		129	1163	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	571	151		0	0	0		129	1163	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	571	151		0	0	0		129	1163	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.79	0.79		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.37	0.63		0.00	0.00	0.00		0.30	2.70	0.00		0.00	0.00	0.00	
Final Sat.:	0	3578	946		0	0	0		466	4202	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.16	0.16		0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.42	0.42		0.00	0.00	0.00		0.39	0.39	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.38	0.38		0.00	0.00	0.00		0.71	0.71	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.0	13.0		0.0	0.0	0.0		18.6	18.6	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.0	13.0		0.0	0.0	0.0		18.6	18.6	0.0		0.0	0.0	0.0	
HCM2k95th:	0	7	7		0	0	0		13	13	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.641
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	29	29	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module: >> Count Date: 30 Apr 2000 <<																
Base Vol:	181	641	0		0	0	0		0	0	0		0	1490	313	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	181	641	0		0	0	0		0	0	0		0	1490	313	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	181	641	0		0	0	0		0	0	0		0	1490	313	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	181	641	0		0	0	0		0	0	0		0	1490	313	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	181	641	0		0	0	0		0	0	0		0	1490	313	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.66	2.34	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.48	0.52	
Final Sat.:	1028	3640	0		0	0	0		0	0	0		0	3758	789	
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.40	0.40	
Crit Moves:	****													****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Volume/Cap:	0.47	0.47	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.77	0.77	
Delay/Veh:	14.2	14.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.2	13.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.2	14.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.2	13.2	
HCM2k95th:	8	8	0		0	0	0		0	0	0		0	18	18	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.418
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.6
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	0	0		0	10	0	
Lanes:	0 1	2 0	0		0 0	0 0	0		0 0	0 0	0		0 0	2 1	0	
Volume Module:																
Base Vol:	155	472	0		0	0	0		0	0	0		0	1131	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	155	472	0		0	0	0		0	0	0		0	1131	130	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	155	472	0		0	0	0		0	0	0		0	1131	130	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	155	472	0		0	0	0		0	0	0		0	1131	130	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	155	472	0		0	0	0		0	0	0		0	1131	130	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.90	0.90	
Lanes:	0.74	2.26	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.69	0.31	
Final Sat.:	1282	3905	0		0	0	0		0	0	0		0	4582	527	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.12	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.25	0.25	
Crit Moves:		****												****		
Green/Cycle:	0.29	0.29	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.59	0.59	
Volume/Cap:	0.42	0.42	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.42	0.42	
Delay/Veh:	14.6	14.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	5.7	5.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.6	14.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	5.7	5.7	
HCM2k95th:	5	5	0		0	0	0		0	0	0		0	7	7	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.272
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.5
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	10	0		0	0	0	
Lanes:	0 0	2 1	0		0 0	0 0	0		0 1	2 0	0		0 0	0 0	0	
Volume Module:																
Base Vol:	0	619	125		0	0	0		40	437	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	619	125		0	0	0		40	437	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	619	125		0	0	0		40	437	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	619	125		0	0	0		40	437	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	619	125		0	0	0		40	437	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.50	0.50		0.00	0.00	0.00		0.25	2.75	0.00		0.00	0.00	0.00	
Final Sat.:	0	4208	850		0	0	0		435	4752	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.15	0.15		0.00	0.00	0.00		0.09	0.09	0.00		0.00	0.00	0.00	
Crit Moves:		****								****						
Green/Cycle:	0.00	0.54	0.54		0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.27	0.27		0.00	0.00	0.00		0.27	0.27	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	6.2	6.2		0.0	0.0	0.0		12.1	12.1	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	6.2	6.2		0.0	0.0	0.0		12.1	12.1	0.0		0.0	0.0	0.0	
HCM2k95th:	0	5	5		0	0	0		4	4	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.451
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0	0	0
Volume Module: >> Count Date: 23 Mar 2005 << 4:30																
Base Vol:	0	0	0		231	897	0		0	969	27		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		231	897	0		0	969	27		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		231	897	0		0	969	27		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		231	897	0		0	969	27		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		231	897	0		0	969	27		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.61	2.39	0.00		0.00	2.92	0.08		0.00	0.00	0.00	
Final Sat.:	0	0	0		1062	4125	0		0	5026	140		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.19	0.19		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.53	0.53	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		15.7	15.7	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		15.7	15.7	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
HCM2k95th:	0	0	0		12	12	0		0	9	9		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.565
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 25 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	2	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	774	268		0	0	0		66	1077	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	774	268		0	0	0		66	1077	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	774	268		0	0	0		66	1077	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	774	268		0	0	0		66	1077	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	774	268		0	0	0		66	1077	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.23	0.77		0.00	0.00	0.00		0.17	2.83	0.00	
Final Sat.:	0	0	0		0	3703	1282		0	0	0		300	4887	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.21	0.21		0.00	0.00	0.00		0.22	0.22	0.00	
Crit Moves:						****								****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.37	0.37		0.00	0.00	0.00		0.39	0.39	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.56	0.56		0.00	0.00	0.00		0.56	0.56	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.1	7.1	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.1	7.1	0.0	
HCM2k95th:	0	0	0		0	7	7		0	0	0		7	7	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.536
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0	0	0	0 1	1	0	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	0	243		318	516	0		0	1203	131		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	243		318	516	0		0	1203	131		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	243		318	516	0		0	1203	131		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	243		318	516	0		0	1203	131		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	243		318	516	0		0	1203	131		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.71	0.29		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4607	502		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.15		0.22	0.14	0.00		0.00	0.26	0.26		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.27		0.39	0.26	0.00		0.00	0.77	0.77		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	7.3		8.6	6.8	0.0		0.0	19.9	19.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	7.3		8.6	6.8	0.0		0.0	19.9	19.9		0.0	0.0	0.0	
HCM2k95th:	0	0	5		8	5	0		0	16	16		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.547
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	1	0	0	0 0	0	0	0	1 1	0	0	0	0 0	0	1	1	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	5	0	0		0	0	712		0	0	0		1	1082	136	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	0	0		0	0	712		0	0	0		1	1082	136	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	0	0		0	0	712		0	0	0		1	1082	136	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	0	0		0	0	712		0	0	0		1	1082	136	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	0	0		0	0	712		0	0	0		1	1082	136	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	1.00		1.00	1.00	0.85		1.00	1.00	1.00		0.88	0.88	0.88	
Lanes:	1.00	0.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.01	2.66	0.33	
Final Sat.:	1758	0	0		0	0	3230		0	0	0		4	4449	559	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.00	0.22		0.00	0.00	0.00		0.24	0.24	0.24	
Crit Moves:							****						****			
Green/Cycle:	0.42	0.00	0.00		0.00	0.00	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.00	0.00		0.00	0.00	0.52		0.00	0.00	0.00		0.57	0.57	0.57	
Delay/Veh:	9.8	0.0	0.0		0.0	0.0	14.0		0.0	0.0	0.0		14.1	14.1	14.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.8	0.0	0.0		0.0	0.0	14.0		0.0	0.0	0.0		14.1	14.1	14.1	
HCM2k95th:	0	0	0		0	0	10		0	0	0		11	11	11	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.467
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	2	1	0	0	0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																
Base Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		69	585	0		0	1151	310		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		69	585	0		0	1151	310		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		69	585	0		0	1151	310		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.32	2.68	0.00		0.00	2.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	0	0		547	4640	0		0	3956	1065		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.13	0.13	0.00		0.00	0.29	0.29		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.65	0.65		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	15	15		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.687
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	2	1	0	0	0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		229	764	0		0	1605	507		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		229	764	0		0	1605	507		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		229	764	0		0	1605	507		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		229	764	0		0	1605	507		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		229	764	0		0	1605	507		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.69	2.31	0.00		0.00	2.28	0.72		0.00	0.00	0.00	
Final Sat.:	0	0	0		1196	3991	0		0	3800	1200		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.19	0.19	0.00		0.00	0.42	0.42		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.43	0.43	0.00		0.00	0.95	0.95		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	24.2	24.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	24.2	24.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		8	8	0		0	31	31		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.559
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30			0	0	0	0	20	20		0
Lanes:	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 4:45																				
Base Vol:	0	0	0	0	1285	293			0	0	0	0	155	809		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	1285	293			0	0	0	0	155	809		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	1285	293			0	0	0	0	155	809		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	1285	293			0	0	0	0	155	809		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	1285	293			0	0	0	0	155	809		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.44	0.56	0.00	0.00	0.00	0.48	2.52	0.00	0.54	2.46		0.00
Final Sat.:	0	0	0	0	4106	936			0	0	0	0	834	4353		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.19	0.19	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.36	0.36	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.58	0.58	0.00	0.00	0.00	0.52	0.52	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	9.1	9.1	0.0	0.0	0.0	14.5	14.5	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	9.1	9.1	0.0	0.0	0.0	14.5	14.5	0.0				
HCM2k95th:	0	0	0	0	13	13	0	0	0	9	9	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.509
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28			0	0	0	0	22	22		0
Lanes:	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	2	0	0
Volume Module:																				
Base Vol:	0	0	0	0	1188	224			0	0	0	0	163	746		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	1188	224			0	0	0	0	163	746		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	1188	224			0	0	0	0	163	746		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	1188	224			0	0	0	0	163	746		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	1188	224			0	0	0	0	163	746		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.52	0.48	0.00	0.00	0.00	0.54	2.46	0.00	0.54	2.46		0.00
Final Sat.:	0	0	0	0	4259	803			0	0	0	0	930	4257		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.18	0.18	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.39	0.39	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.45	0.45	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	10.0	10.0	0.0	0.0	0.0	12.7	12.7	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.0	10.0	0.0	0.0	0.0	12.7	12.7	0.0				
HCM2k95th:	0	0	0	0	12	12	0	0	0	7	7	0				

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.496
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	23	23		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0	0	0
Volume Module:																
Base Vol:	0	0	0		139	1203	0		0	802	132		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		139	1203	0		0	802	132		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		139	1203	0		0	802	132		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		139	1203	0		0	802	132		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		139	1203	0		0	802	132		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.31	2.69	0.00		0.00	2.58	0.42		0.00	0.00	0.00	
Final Sat.:	0	0	0		537	4650	0		0	4360	718		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.26	0.26	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.54	0.54	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	12.1	12.1		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	12.1	12.1		0.0	0.0	0.0	
HCM2k95th:	0	0	0		10	10	0		0	8	8		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.504
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	38	38		0	0	0		32	32	0	
Lanes:	0	0	0	0	0	0	3	1	0	0	0	0	0	1	1	2	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	1604	148		0	0	0		361	1074	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	1604	148		0	0	0		361	1074	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	3.66	0.34		0.00	0.00	0.00		1.01	2.99	0.00	
Final Sat.:	0	0	0		0	6249	577		0	0	0		1740	5176	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.26	0.26		0.00	0.00	0.00		0.21	0.21	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.50	0.50		0.00	0.00	0.00		0.42	0.42	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.51	0.51		0.00	0.00	0.00		0.49	0.49	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	12.9	12.9		0.0	0.0	0.0		16.2	16.2	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	12.9	12.9		0.0	0.0	0.0		16.2	16.2	0.0	
HCM2k95th:	0	0	0		0	14	14		0	0	0		12	12	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.647
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 29.5
Optimal Cycle: 82 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	17	17		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1 1	2	0	0	0 0	1	1	0	0 0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	535	67		766	1001	0		0	459	217		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	535	67		766	1001	0		0	459	217		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	535	67		766	1001	0		0	459	217		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	535	67		766	1001	0		0	459	217		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	535	67		766	1001	0		0	459	217		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		0.89	0.89	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	2.67	0.33		1.73	2.27	0.00		0.00	1.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	4531	567		2935	3836	0		0	2334	1103		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12		0.26	0.26	0.00		0.00	0.20	0.20		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.21	0.21		0.29	0.29	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Volume/Cap:	0.00	0.57	0.57		0.89	0.89	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Delay/Veh:	0.0	30.0	30.0		33.3	33.3	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.0	30.0		33.3	33.3	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
HCM2k95th:	0	10	10		22	22	0		0	13	13		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.723
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		19	25	0		0	0	6	
Lanes:	0 0	2	1	0	0 0	0	0	0	2	1	0	0	0 0	0	0	1
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	2028	20		0	0	0		794	413	0		0	0	46	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	2028	20		0	0	0		794	413	0		0	0	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	2028	20		0	0	0		794	413	0		0	0	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	2028	20		0	0	0		794	413	0		0	0	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	2028	20		0	0	0		794	413	0		0	0	46	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.94	0.97	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.97	0.03		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5131	51		0	0	0		3568	1839	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.40	0.40		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.03	
Crit Moves:		****							****						****	
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.34	0.45	0.00		0.00	0.00	0.11	
Volume/Cap:	0.00	0.89	0.89		0.00	0.00	0.00		0.66	0.50	0.00		0.00	0.00	0.26	
Delay/Veh:	0.0	18.7	18.7		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	18.7	18.7		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
HCM2k95th:	0	22	22		0	0	0		11	10	0		0	0	2	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.388
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	0	0		0	20	20	
Lanes:	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																	
Base Vol:	179	1647	0		0	0	0		0	0	0		0	708	398	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	179	1647	0		0	0	0		0	0	0		0	708	398	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	179	1647	0		0	0	0		0	0	0		0	708	398	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	179	1647	0		0	0	0		0	0	0		0	708	398	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	179	1647	0		0	0	0		0	0	0		0	708	398	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.86	0.86	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.00	1.00	
Final Sat.:	1729	5187	0		0	0	0		0	0	0		0	3271	1636	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.32	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.22	0.24	
Crit Moves:	****														****	
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.19	0.59	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.61	0.68	
Delay/Veh:	6.7	9.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.4	16.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	6.7	9.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.4	16.5	
HCM2k95th:	3	12	0		0	0	0		0	0	0		0	12	14	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.631
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0	2	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0
Volume Module: >> Count Date: 30 Sep 2004 << 4:15																	
Base Vol:	0	1627	136		0	0	0		379	1287	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1627	136		0	0	0		379	1287	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1627	136		0	0	0		379	1287	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1627	136		0	0	0		379	1287	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1627	136		0	0	0		379	1287	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.77	0.23		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4729	395		0	0	0		1729	5187	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.34	0.34		0.00	0.00	0.00		0.22	0.25	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.77	0.77		0.00	0.00	0.00		0.49	0.56	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	14.7	14.7		0.0	0.0	0.0		11.1	11.6	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	14.7	14.7		0.0	0.0	0.0		11.1	11.6	0.0		0.0	0.0	0.0	
HCM2k95th:	0	20	20		0	0	0		8	10	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.341
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	1	0 3	0	0	0	0	0	0	0	0	0	0	0	0 2	1	0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	260	1515	0		0	0	0		0	0	0		0	645	195	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	260	1515	0		0	0	0		0	0	0		0	645	195	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	260	1515	0		0	0	0		0	0	0		0	645	195	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	260	1515	0		0	0	0		0	0	0		0	645	195	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	260	1515	0		0	0	0		0	0	0		0	645	195	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.88	0.88	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.30	0.70	
Final Sat.:	1900	5187	0		0	0	0		0	0	0		0	3843	1162	
Capacity Analysis Module:																
Vol/Sat:	0.14	0.29	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.17	0.17	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.31	0.65	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Delay/Veh:	10.1	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.4	10.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.1	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.4	10.4	
HCM2k95th:	6	15	0		0	0	0		0	0	0		0	7	7	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.472
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	0	1 2	0	0	0	0	0	0	0	0	0	0	0	0 2	1	0
Volume Module:																
Base Vol:	125	1105	0		0	0	0		0	0	0		0	770	159	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	125	1105	0		0	0	0		0	0	0		0	770	159	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	125	1105	0		0	0	0		0	0	0		0	770	159	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	125	1105	0		0	0	0		0	0	0		0	770	159	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	125	1105	0		0	0	0		0	0	0		0	770	159	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.89	0.89	
Lanes:	0.30	2.70	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.49	0.51	
Final Sat.:	527	4660	0		0	0	0		0	0	0		0	4187	865	
Capacity Analysis Module:																
Vol/Sat:	0.24	0.24	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.18	0.18	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.46	0.46	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.49	0.49	
Delay/Veh:	8.7	8.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.6	13.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	8.7	8.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.6	13.6	
HCM2k95th:	9	9	0		0	0	0		0	0	0		0	9	9	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.470
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.9
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	10	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	1	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	1028	63		0	0	0		204	726	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1028	63		0	0	0		204	726	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1028	63		0	0	0		204	726	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1028	63		0	0	0		204	726	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1028	63		0	0	0		204	726	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.95	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.83	0.17		0.00	0.00	0.00		1.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4843	297		0	0	0		1805	3610	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21	0.21		0.00	0.00	0.00		0.11	0.20	0.00		0.00	0.00	0.00	
Crit Moves:		****								****						
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.43	0.43	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.47	0.47		0.00	0.00	0.00		0.26	0.47	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	9.7	9.7		0.0	0.0	0.0		9.3	10.4	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	9.7	9.7		0.0	0.0	0.0		9.3	10.4	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		4	8	0		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.448
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 23.7
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	31	31	0		0	0	0		0	23	23		0	16	16	
Lanes:	1 1	2	0	0	0 0	0	0	0	0 0	2	1	0	0 0	1	1	1
Volume Module: >> Count Date: 14 Dec 2005 << 5																
Base Vol:	151	644	0		0	0	0		0	786	105		0	287	380	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	151	644	0		0	0	0		0	786	105		0	287	380	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	151	644	0		0	0	0		0	786	105		0	287	380	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	151	644	0		0	0	0		0	786	105		0	287	380	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	151	644	0		0	0	0		0	786	105		0	287	380	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	0.89	0.89		1.00	0.87	0.87	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	2.65	0.35		0.00	1.29	1.71	
Final Sat.:	1729	5187	0		0	0	0		0	4493	600		0	2132	2823	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.12	0.00		0.00	0.00	0.00		0.00	0.17	0.17		0.00	0.13	0.13	
Crit Moves:	****									****				****		
Green/Cycle:	0.39	0.39	0.00		0.00	0.00	0.00		0.00	0.29	0.29		0.00	0.20	0.20	
Volume/Cap:	0.22	0.32	0.00		0.00	0.00	0.00		0.00	0.60	0.60		0.00	0.66	0.66	
Delay/Veh:	16.0	16.7	0.0		0.0	0.0	0.0		0.0	24.8	24.8		0.0	30.7	30.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.0	16.7	0.0		0.0	0.0	0.0		0.0	24.8	24.8		0.0	30.7	30.7	
HCM2k95th:	5	7	0		0	0	0		0	13	13		0	12	12	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.478
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0 0	3 1	0		0 0	0 0	0		1 0	2 0	1		0 0	0 0	0	
Volume Module: >> Count Date: 14 Dec 2005 << 5																
Base Vol:	0	656	66		0	0	0		540	1066	265		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	656	66		0	0	0		540	1066	265		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	656	66		0	0	0		540	1066	265		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	656	66		0	0	0		540	1066	265		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	656	66		0	0	0		540	1066	265		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.85	0.95	0.85		1.00	1.00	1.00	
Lanes:	0.00	3.63	0.37		0.00	0.00	0.00		1.00	2.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	6196	623		0	0	0		1615	3610	1615		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.11		0.00	0.00	0.00		0.33	0.30	0.16		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.46		0.00	0.00	0.00	
Volume/Cap:	0.00	0.23	0.23		0.00	0.00	0.00		0.73	0.64	0.36		0.00	0.00	0.00	
Delay/Veh:	0.0	12.4	12.4		0.0	0.0	0.0		20.2	16.6	13.5		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.4	12.4		0.0	0.0	0.0		20.2	16.6	13.5		0.0	0.0	0.0	
HCM2k95th:	0	5	5		0	0	0		22	18	8		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.560
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	18	18	0		18	18	0		0	34	34		0	0	0	
Lanes:	0 1	2 0	0		0 1	1 0	0		0 0	2 1	0		0 0	0 0	0	
Volume Module: >> Count Date: 7 Jun 2005 << 5																
Base Vol:	55	303	0		217	274	0		0	1089	349		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	55	303	0		217	274	0		0	1089	349		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	55	303	0		217	274	0		0	1089	349		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	55	303	0		217	274	0		0	1089	349		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	55	303	0		217	274	0		0	1089	349		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	1.00		0.93	0.93	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.46	2.54	0.00		0.88	1.12	0.00		0.00	2.27	0.73		0.00	0.00	0.00	
Final Sat.:	791	4355	0		1560	1970	0		0	3787	1214		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07	0.00		0.14	0.14	0.00		0.00	0.29	0.29		0.00	0.00	0.00	
Crit Moves:	****					****				****						
Green/Cycle:	0.23	0.23	0.00		0.23	0.23	0.00		0.00	0.43	0.43		0.00	0.00	0.00	
Volume/Cap:	0.31	0.31	0.00		0.61	0.61	0.00		0.00	0.67	0.67		0.00	0.00	0.00	
Delay/Veh:	25.5	25.5	0.0		28.7	28.7	0.0		0.0	18.8	18.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	25.5	25.5	0.0		28.7	28.7	0.0		0.0	18.8	18.8		0.0	0.0	0.0	
HCM2k95th:	5	5	0		12	12	0		0	19	19		0	0	0	

Cathedral Square Traffic Study
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.452
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	31		0	0	0		39	39	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 5																
Base Vol:	0	927	182		0	0	0		383	978	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	927	182		0	0	0		383	978	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	927	182		0	0	0		383	978	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	927	182		0	0	0		383	978	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	927	182		0	0	0		383	978	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.51	0.49		0.00	0.00	0.00		1.13	2.87	0.00		0.00	0.00	0.00	
Final Sat.:	0	4227	830		0	0	0		1946	4970	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.22	0.22		0.00	0.00	0.00		0.20	0.20	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.41	0.41		0.00	0.00	0.00		0.51	0.51	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.54	0.54		0.00	0.00	0.00		0.38	0.38	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	17.3	17.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	17.3	17.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
HCM2k95th:	0	13	13		0	0	0		9	9	0		0	0	0	

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Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Scenario Report

Scenario:	AM Baseline
Command:	Base AM
Volume:	Baseline AM
Geometry:	Baseline AM
Impact Fee:	Default Impact Fee
Trip Generation:	AM Baseline Projects
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.943
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 59.9
Optimal Cycle: 109 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	15		15	15	0		35	35	35		50	50	50	
Lanes:	0 0	0 0	2		2 0	1 0	0		0 1	2 1	0		0 1	1 1	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Added Vol:	0	0	0		0	1	0		0	136	50		0	130	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	91		88	107	0		4	1747	242		10	1698	449	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	91		88	107	0		4	1747	242		10	1698	449	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	91		88	107	0		4	1747	242		10	1698	449	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	91		88	107	0		4	1747	242		10	1698	449	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.55	0.90	1.00		0.80	0.80	0.80		0.79	0.79	0.79	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.01	3.51	0.48		0.01	2.37	0.62	
Final Sat.:	0	0	2558		2093	1710	0		12	5358	742		21	3561	942	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.04		0.04	0.06	0.00		0.33	0.33	0.33		0.48	0.48	0.48	
Crit Moves:						****					****			****		
Green/Cycle:	0.00	0.00	0.14		0.14	0.14	0.00		0.32	0.32	0.32		0.46	0.46	0.46	
Volume/Cap:	0.00	0.00	0.26		0.31	0.45	0.00		1.02	1.02	1.02		1.04	1.04	1.04	
Delay/Veh:	0.0	0.0	43.8		45.0	49.5	0.0		61.2	61.2	61.2		60.4	60.4	60.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	43.8		45.0	49.5	0.0		61.2	61.2	61.2		60.4	60.4	60.4	
HCM2k95th:	0	0	4		5	8	0		38	38	38		53	53	53	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.374
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	10	44	0	0	34	34	0	0	0	26	26	26				
Lanes:	1 0	2 0	0	0 0	2 1	0	0 0	0 0	0	1 1	1 0	1				
Volume Module: >> Count Date: 28 Sep 2004 << 8																
Base Vol:	0	0	0	0	541	138	0	0	0	125	314	75				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	541	138	0	0	0	125	314	75				
Added Vol:	43	0	0	0	107	0	0	0	0	57	67	0				
2-way Adj:	0	30	0	0	0	0	0	0	0	0	0	-30				
Initial Fut:	43	30	0	0	648	138	0	0	0	182	381	45				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	43	30	0	0	648	138	0	0	0	182	381	45				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	43	30	0	0	648	138	0	0	0	182	381	45				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	43	30	0	0	648	138	0	0	0	182	381	45				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.86	0.86	1.00	1.00	0.80	0.80	1.00	1.00	1.00	0.73	0.73	0.77				
Lanes:	1.00	2.00	0.00	0.00	2.47	0.53	0.00	0.00	0.00	1.00	2.00	1.00				
Final Sat.:	1625	3249	0	0	3749	798	0	0	0	1381	2762	1454				
Capacity Analysis Module:																
Vol/Sat:	0.03	0.01	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.13	0.14	0.03				
Crit Moves:	****				****					****						
Green/Cycle:	0.13	0.56	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.33	0.33	0.33				
Volume/Cap:	0.21	0.02	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.40	0.42	0.09				
Delay/Veh:	33.3	7.8	0.0	0.0	16.1	16.1	0.0	0.0	0.0	21.3	21.6	18.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	33.3	7.8	0.0	0.0	16.1	16.1	0.0	0.0	0.0	21.3	21.6	18.7				
HCM2k95th:	3	0	0	0	9	9	0	0	0	9	9	2				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.519
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	29	29	0	14	25	0	16	27	0				
Lanes:	0 0	0 0	0	0 1	1 1	1	1 0	3 0	0	1 0	1 1	0				
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	0	189	462	0	0	638	0	91	129	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	189	462	0	0	638	0	91	129	0				
Added Vol:	0	0	0	131	67	68	36	201	0	33	35	33				
2-way Adj:	0	0	0	0	0	0	30	-30	0	0	0	0				
Initial Fut:	0	0	0	320	529	68	66	809	0	124	164	33				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	320	529	68	66	809	0	124	164	33				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	320	529	68	66	809	0	124	164	33				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	320	529	68	66	809	0	124	164	33				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	0.86	0.82	1.00	0.85	0.83	0.83				
Lanes:	0.00	0.00	0.00	1.00	2.00	1.00	1.00	3.00	0.00	1.00	1.66	0.34				
Final Sat.:	0	0	0	1522	3044	1522	1625	4668	0	1624	2637	531				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.21	0.17	0.04	0.04	0.17	0.00	0.08	0.06	0.06				
Crit Moves:				****				****		****						
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.18	0.32	0.00	0.56	0.34	0.34				
Volume/Cap:	0.00	0.00	0.00	0.57	0.47	0.12	0.23	0.55	0.00	0.27	0.18	0.18				
Delay/Veh:	0.0	0.0	0.0	21.5	20.0	16.6	29.7	23.8	0.0	10.6	18.6	18.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	21.5	20.0	16.6	29.7	23.8	0.0	10.6	18.6	18.6				
HCM2k95th:	0	0	0	13	10	3	4	11	0	4	4	4				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.436
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		33	33	0		0	21	21		0	0	0	
Lanes:	0 0	0 1	0		0 1	2 0	0		0 0	1 1	0		0 0	0 0	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	60	4		362	267	0		0	318	122		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	60	4		362	267	0		0	318	122		0	0	0	
Added Vol:	0	0	0		9	91	0		0	16	1		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	60	4		371	358	0		0	334	123		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	60	4		371	358	0		0	334	123		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	60	4		371	358	0		0	334	123		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	60	4		371	358	0		0	334	123		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.99	0.99		0.89	0.89	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.94	0.06		1.00	2.00	0.00		0.00	1.46	0.54		0.00	0.00	0.00	
Final Sat.:	0	1765	118		1686	3372	0		0	2533	933		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.03	0.03		0.22	0.11	0.00		0.00	0.13	0.13		0.00	0.00	0.00	
Crit Moves:		****			****					****						
Green/Cycle:	0.00	0.20	0.20		0.42	0.42	0.00		0.00	0.27	0.27		0.00	0.00	0.00	
Volume/Cap:	0.00	0.17	0.17		0.53	0.25	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Delay/Veh:	0.0	27.0	27.0		18.6	15.2	0.0		0.0	26.4	26.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.0	27.0		18.6	15.2	0.0		0.0	26.4	26.4		0.0	0.0	0.0	
HCM2k95th:	0	3	3		13	6	0		0	10	10		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.260
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0 0	0 0	0		0 0	1 1	1		0 0	0 0	0		0 1	2 0	0	
Volume Module: >> Count Date: 28 Sep 2004 << 7:30																
Base Vol:	0	0	0		0	199	137		0	0	0		158	506	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	199	137		0	0	0		158	506	0	
Added Vol:	0	0	0		0	0	83		0	0	0		0	105	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	199	220		0	0	0		158	611	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	199	220		0	0	0		158	611	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	199	220		0	0	0		158	611	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	199	220		0	0	0		158	611	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.42	1.58		0.00	0.00	0.00		0.62	2.38	0.00	
Final Sat.:	0	0	0		0	2369	2619		0	0	0		1066	4121	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.08	0.08		0.00	0.00	0.00		0.15	0.15	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.25	0.25		0.00	0.00	0.00		0.27	0.27	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	13.7	13.7		0.0	0.0	0.0		6.8	6.8	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	13.7	13.7		0.0	0.0	0.0		6.8	6.8	0.0	
HCM2k95th:	0	0	0		0	4	4		0	0	0		5	5	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.563
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	3	1 0	0	0	0	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	0	0		129	202	0		0	1997	308		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		129	202	0		0	1997	308		0	0	0	
Added Vol:	0	0	0		0	0	0		0	611	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		129	202	0		0	2608	308		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		129	202	0		0	2608	308		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		129	202	0		0	2608	308		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		129	202	0		0	2608	308		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	2.00	0.00		0.00	3.58	0.42		0.00	0.00	0.00	
Final Sat.:	0	0	0		1729	3458	0		0	6087	719		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.07	0.06	0.00		0.00	0.43	0.43		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.22	0.17	0.00		0.00	0.77	0.77		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
HCM2k95th:	0	0	0		4	3	0		0	20	20		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.418
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	30		0	0	0		0	20	20	
Lanes:	2	0	2	0 0	0	0	0	0 2	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 8																
Base Vol:	148	752	0		0	0	0		0	0	0		0	753	81	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	148	752	0		0	0	0		0	0	0		0	753	81	
Added Vol:	0	2	0		0	0	0		0	0	0		0	33	0	
5th St Conv:	0	0	0		0	0	12		0	0	0		0	0	0	
Initial Fut:	148	754	0		0	0	12		0	0	0		0	786	81	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	148	754	0		0	0	12		0	0	0		0	786	81	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	148	754	0		0	0	12		0	0	0		0	786	81	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	148	754	0		0	0	12		0	0	0		0	786	81	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.54	0.86	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	2.00	2.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.63	0.37	
Final Sat.:	2034	3249	0		0	0	2558		0	0	0		0	5564	573	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.14	0.14	
Crit Moves:		****			****									****		
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.54		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.14	0.43	0.00		0.00	0.00	0.01		0.00	0.00	0.00		0.00	0.40	0.40	
Delay/Veh:	6.8	8.6	0.0		0.0	0.0	6.1		0.0	0.0	0.0		0.0	14.0	14.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	6.8	8.6	0.0		0.0	0.0	6.1		0.0	0.0	0.0		0.0	14.0	14.0	
HCM2k95th:	2	8	0		0	0	0		0	0	0		0	6	6	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.635
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.7
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	40	40		0	0	0		60	60	60		0	0	0	
Lanes:	0	0	1	1 1	0	0	0	0 0	1	1	3	0 1	0	0	0	0 0
Volume Module: >> Count Date: 13 Jan 2005 << 7:45																
Base Vol:	0	260	274		0	0	0		680	2325	96		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	260	274		0	0	0		680	2325	96		0	0	0	
Added Vol:	0	2	0		0	0	0		0	170	39		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	262	274		0	0	0		680	2495	135		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	262	274		0	0	0		680	2495	135		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	262	274		0	0	0		680	2495	135		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	262	274		0	0	0		680	2495	135		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.79	0.79		1.00	1.00	1.00		0.70	0.70	0.77		1.00	1.00	1.00	
Lanes:	0.00	1.47	1.53		0.00	0.00	0.00		1.07	3.93	1.00		0.00	0.00	0.00	
Final Sat.:	0	2199	2299		0	0	0		1416	5197	1454		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12		0.00	0.00	0.00		0.48	0.48	0.09		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.38	0.38		0.00	0.00	0.00		0.57	0.57	0.57		0.00	0.00	0.00	
Volume/Cap:	0.00	0.32	0.32		0.00	0.00	0.00		0.85	0.85	0.16		0.00	0.00	0.00	
Delay/Veh:	0.0	23.8	23.8		0.0	0.0	0.0		21.8	21.8	11.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	23.8	23.8		0.0	0.0	0.0		21.8	21.8	11.4		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		37	37	5		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.240
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	40	40	0		0	0	40		0	0	0		0	30	30	
Lanes:	1	0	3	0 0	0	0	0	0 2	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 13 Jan 2085 << 8																
Base Vol:	76	483	0		0	0	98		0	0	0		0	514	93	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	76	483	0		0	0	98		0	0	0		0	514	93	
Added Vol:	1	2	0		0	0	39		0	0	0		0	54	0	
2-way Adj:	-30	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	47	485	0		0	0	137		0	0	0		0	568	93	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	47	485	0		0	0	137		0	0	0		0	568	93	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	47	485	0		0	0	137		0	0	0		0	568	93	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	47	485	0		0	0	137		0	0	0		0	568	93	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.69	0.82	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	1.00	3.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.44	0.56	
Final Sat.:	1315	4668	0		0	0	2558		0	0	0		0	5236	857	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.10	0.00		0.00	0.00	0.05		0.00	0.00	0.00		0.00	0.11	0.11	
Crit Moves:		****												****		
Green/Cycle:	0.51	0.51	0.00		0.00	0.00	0.51		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.07	0.21	0.00		0.00	0.00	0.11		0.00	0.00	0.00		0.00	0.29	0.29	
Delay/Veh:	10.2	10.9	0.0		0.0	0.0	10.3		0.0	0.0	0.0		0.0	17.4	17.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.2	10.9	0.0		0.0	0.0	10.3		0.0	0.0	0.0		0.0	17.4	17.4	
HCM2k95th:	2	5	0		0	0	2		0	0	0		0	6	6	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.280
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0	0	0	0	17	35	0	0	18	18				
Lanes:	2 0	2 1	0	0 0	0 0	0 0	2 0	2 0	0	0 0	2 1	0				
Volume Module: >> Count Date: 13 Jan 2005 << 8																
Base Vol:	126	297	60	0	0	0	491	354	0	0	96	37				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	126	297	60	0	0	0	491	354	0	0	96	37				
Added Vol:	25	1	42	0	0	0	2	330	0	0	76	0				
2-way Adj:	0	0	0	0	0	0	-30	0	0	0	0	0				
Initial Fut:	151	298	102	0	0	0	463	684	0	0	172	37				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	151	298	102	0	0	0	463	684	0	0	172	37				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	151	298	102	0	0	0	463	684	0	0	172	37				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	151	298	102	0	0	0	463	684	0	0	172	37				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.84	0.79	0.79	1.00	1.00	1.00	0.83	0.86	1.00	1.00	0.80	0.80				
Lanes:	2.00	2.23	0.77	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.47	0.53				
Final Sat.:	3191	3346	1145	0	0	0	3152	3249	0	0	3738	804				
Capacity Analysis Module:																
Vol/Sat:	0.05	0.09	0.09	0.00	0.00	0.00	0.15	0.21	0.00	0.00	0.05	0.05				
Crit Moves:	****							****		****						
Green/Cycle:	0.46	0.46	0.46	0.00	0.00	0.00	0.22	0.46	0.00	0.00	0.24	0.24				
Volume/Cap:	0.10	0.19	0.19	0.00	0.00	0.00	0.66	0.46	0.00	0.00	0.19	0.19				
Delay/Veh:	11.7	12.3	12.3	0.0	0.0	0.0	31.6	15.0	0.0	0.0	23.6	23.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	11.7	12.3	12.3	0.0	0.0	0.0	31.6	15.0	0.0	0.0	23.6	23.6				
HCM2k95th:	3	4	4	0	0	0	12	11	0	0	3	3				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.318
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35	0	0	0	35	35	0	0	0	0				
Lanes:	0 0	2 1	0	0 0	0 0	0 0	0 1	2 0	0	0 0	0 0	0				
Volume Module: >> Count Date: 13 Jan 2005 <<																
Base Vol:	0	619	193	0	0	0	63	523	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	619	193	0	0	0	63	523	0	0	0	0				
Added Vol:	0	68	0	0	0	0	0	25	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	687	193	0	0	0	63	548	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	687	193	0	0	0	63	548	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	687	193	0	0	0	63	548	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	687	193	0	0	0	63	548	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.34	0.66	0.00	0.00	0.00	0.31	2.69	0.00	0.00	0.00	0.00				
Final Sat.:	0	3916	1100	0	0	0	535	4652	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.18	0.18	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.46	0.46	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.38	0.38	0.00	0.00	0.00	0.26	0.26	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	13.9	13.9	0.0	0.0	0.0	12.8	12.8	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	13.9	13.9	0.0	0.0	0.0	12.8	12.8	0.0	0.0	0.0	0.0				
HCM2k95th:	0	9	9	0	0	0	6	6	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.376
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0	0	0	0	0	0	0	0	20	20				
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 21 Apr 2005 << 7:45																
Base Vol:	178	704	0	0	0	0	0	0	0	0	413	237				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	178	704	0	0	0	0	0	0	0	0	413	237				
Added Vol:	1	59	0	0	0	0	0	0	0	0	104	9				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	179	763	0	0	0	0	0	0	0	0	517	246				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	179	763	0	0	0	0	0	0	0	0	517	246				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	179	763	0	0	0	0	0	0	0	0	517	246				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	179	763	0	0	0	0	0	0	0	0	517	246				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87				
Lanes:	0.57	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.97				
Final Sat.:	986	4201	0	0	0	0	0	0	0	0	3346	1592				
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15				
Crit Moves:	****										****					
Green/Cycle:	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36				
Volume/Cap:	0.34	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43				
Delay/Veh:	7.7	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	7.7	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
HCM2k95th:	7	7	0	0	0	0	0	0	0	0	8	8				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.481
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	19	19	0	0	0	31	31	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0 0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 26 Apr 2005 << 7:30																
Base Vol:	0	311	49	0	0	0	560	1633	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	311	49	0	0	0	560	1633	0	0	0	0				
Added Vol:	0	0	0	0	0	0	60	551	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	311	49	0	0	0	620	2184	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	311	49	0	0	0	620	2184	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	311	49	0	0	0	620	2184	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	311	49	0	0	0	620	2184	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.59	0.41	0.00	0.00	0.00	1.00	3.00	0.00	0.00	0.00	0.00				
Final Sat.:	0	4391	692	0	0	0	1729	5187	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.07	0.07	0.00	0.00	0.00	0.36	0.42	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.34	0.34	0.00	0.00	0.00	0.55	0.55	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.21	0.21	0.00	0.00	0.00	0.65	0.76	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	13.4	13.4	0.0	0.0	0.0	9.5	11.2	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	13.4	13.4	0.0	0.0	0.0	9.5	11.2	0.0	0.0	0.0	0.0				
HCM2k95th:	0	4	4	0	0	0	14	17	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.302
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.0
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	23	23	0	0	0	27	27	0				
Lanes:	0	0	0	0 0	0	0	2	0 2	0	0	0	0 0	1	1	2	0 0
Volume Module: >> Count Date: 30 Sep 2004 << 8																
Base Vol:	0	0	0	0	266	218	0	0	0	253	701	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	266	218	0	0	0	253	701	0				
Added Vol:	0	0	0	0	96	1	0	0	0	0	32	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	362	219	0	0	0	253	733	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	362	219	0	0	0	253	733	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	362	219	0	0	0	253	733	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	362	219	0	0	0	253	733	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.03	2.97	0.00				
Final Sat.:	0	0	0	0	3249	2558	0	0	0	1597	4627	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.09	0.00	0.00	0.00	0.16	0.16	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.48	0.48	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.27	0.21	0.00	0.00	0.00	0.33	0.33	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	11.4	11.1	0.0	0.0	0.0	9.2	9.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	11.4	11.1	0.0	0.0	0.0	9.2	9.2	0.0				
HCM2k95th:	0	0	0	0	5	3	0	0	0	6	6	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.615
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	35	35	0	0	65	65	0	0	0				
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 1	0	0	0	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	0	0	156	254	0	0	1986	280	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	156	254	0	0	1986	280	0	0	0				
Added Vol:	0	0	0	18	78	0	0	158	42	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	174	332	0	0	2144	322	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	174	332	0	0	2144	322	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	174	332	0	0	2144	322	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	174	332	0	0	2144	322	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00				
Final Sat.:	0	0	0	1556	3112	0	0	4575	1525	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.47	0.21	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.61	0.61	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.34	0.32	0.00	0.00	0.76	0.34	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	27.4	27.2	0.0	0.0	16.7	10.2	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	27.4	27.2	0.0	0.0	16.7	10.2	0.0	0.0	0.0				
HCM2k95th:	0	0	0	9	8	0	0	30	10	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.330
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29	0	0	0	21	21	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 8																
Base Vol:	0	0	0	0	334	175	0	0	0	188	662	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	334	175	0	0	0	188	662	0				
Added Vol:	0	0	0	0	117	4	0	0	0	74	36	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	451	179	0	0	0	262	698	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	451	179	0	0	0	262	698	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	451	179	0	0	0	262	698	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	451	179	0	0	0	262	698	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.15	0.85	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3198	1269	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.00	0.15	0.15	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.38	0.38	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.41	0.40	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	14.8	13.5	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	14.8	13.5	0.0				
HCM2k95th:	0	0	0	0	5	5	0	0	0	8	7	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.299
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	0	0	25	25		
Lanes:	1 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module:																
Base Vol:	121	329	0	0	0	0	0	0	0	0	851	126				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	121	329	0	0	0	0	0	0	0	0	851	126				
Added Vol:	32	36	0	0	0	0	0	0	0	0	1	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	153	365	0	0	0	0	0	0	0	0	852	126				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	153	365	0	0	0	0	0	0	0	0	852	126				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	153	365	0	0	0	0	0	0	0	0	852	126				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	153	365	0	0	0	0	0	0	0	0	852	126				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	1.18	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	0.39				
Final Sat.:	2043	4873	0	0	0	0	0	0	0	0	4433	656				
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43				
Delay/Veh:	9.3	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	10.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	9.3	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	10.8				
HCM2k95th:	3	3	0	0	0	0	0	0	0	0	8	8				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.374
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		65	65	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	304	151		0	0	0		256	1880	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	304	151		0	0	0		256	1880	0		0	0	0	
Added Vol:	0	63	119		0	0	0		5	171	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	367	270		0	0	0		261	2051	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	367	270		0	0	0		261	2051	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	367	270		0	0	0		261	2051	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	367	270		0	0	0		261	2051	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.77	0.77		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	2913	1457		0	0	0		1556	4668	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.13	0.19		0.00	0.00	0.00		0.17	0.44	0.00		0.00	0.00	0.00	
Crit Moves:			****						****							
Green/Cycle:	0.00	0.33	0.33		0.00	0.00	0.00		0.61	0.61	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.38	0.56		0.00	0.00	0.00		0.27	0.72	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	27.9	31.2		0.0	0.0	0.0		9.6	15.5	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.9	31.2		0.0	0.0	0.0		9.6	15.5	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	14		0	0	0		8	26	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.295
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	1 0	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	1
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	111	308	0		0	0	0		0	0	0		0	740	165	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	111	308	0		0	0	0		0	0	0		0	740	165	
Added Vol:	0	81	0		0	0	0		0	0	0		0	110	170	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	111	389	0		0	0	0		0	0	0		0	850	335	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	111	389	0		0	0	0		0	0	0		0	850	335	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	111	389	0		0	0	0		0	0	0		0	850	335	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	111	389	0		0	0	0		0	0	0		0	850	335	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.86	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.78	0.78	
Lanes:	1.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.87	1.13	
Final Sat.:	1710	3249	0		0	0	0		0	0	0		0	4277	1686	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.12	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.20	0.20	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.13	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.53	0.53	
Delay/Veh:	7.3	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.6	14.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.3	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.6	14.6	
HCM2k95th:	2	4	0		0	0	0		0	0	0		0	9	9	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.334
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	22	22	0	0	0	28	28	0				
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	1	0	3	0 0
Volume Module: >> Count Date: 12 Jan 2006 << 7:45																
Base Vol:	0	0	0	0	214	192	0	0	0	137	853	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	214	192	0	0	0	137	853	0				
Added Vol:	0	0	0	0	124	0	0	0	0	101	1	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	338	192	0	0	0	238	854	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	338	192	0	0	0	238	854	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	338	192	0	0	0	238	854	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	338	192	0	0	0	238	854	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2944	1472	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.13	0.00	0.00	0.00	0.14	0.18	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.45	0.45	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.32	0.37	0.00	0.00	0.00	0.31	0.41	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	15.1	15.6	0.0	0.0	0.0	11.9	12.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	15.1	15.6	0.0	0.0	0.0	11.9	12.0	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	6	8	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.595
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	40	40	0	0	60	60	0	0	0				
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 12 Jan 2005 << 7:45																
Base Vol:	0	0	0	71	278	0	0	1527	179	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	71	278	0	0	1527	179	0	0	0				
Added Vol:	0	0	0	0	225	0	0	132	158	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	71	503	0	0	1659	337	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	71	503	0	0	1659	337	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	71	503	0	0	1659	337	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	71	503	0	0	1659	337	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.37	2.63	0.00	0.00	2.49	0.51	0.00	0.00	0.00				
Final Sat.:	0	0	0	577	4091	0	0	3783	768	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.44	0.44	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.57	0.57	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.77	0.77	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	23.9	23.9	0.0	0.0	20.1	20.1	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	23.9	23.9	0.0	0.0	20.1	20.1	0.0	0.0	0.0				
HCM2k95th:	0	0	0	9	9	0	0	28	28	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.314
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21	0	0	0	29	29	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	255	146	0	0	0	264	969	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	255	146	0	0	0	264	969	0				
Added Vol:	0	0	0	0	151	10	0	0	0	0	270	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	406	156	0	0	0	264	1239	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	406	156	0	0	0	264	1239	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	406	156	0	0	0	264	1239	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	406	156	0	0	0	264	1239	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.17	0.83	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3231	1241	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.15	0.27	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.30	0.51	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	8.6	9.6	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	13.0	13.0	0.0	0.0	0.0	8.6	9.6	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	6	9	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.370
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10	0	0	0	0	0	10	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	458	133	0	0	0	108	592	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	458	133	0	0	0	108	592	0				
Added Vol:	0	0	0	0	262	6	0	0	0	45	63	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	720	139	0	0	0	153	655	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	720	139	0	0	0	153	655	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	720	139	0	0	0	153	655	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	720	139	0	0	0	153	655	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.51	0.49	0.00	0.00	0.00	0.57	2.43	0.00				
Final Sat.:	0	0	0	0	4243	819	0	0	0	982	4205	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.16	0.16	0.00				
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.42	0.42	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.37	0.37	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	8.9	8.9	0.0	0.0	0.0	10.0	10.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.9	8.9	0.0	0.0	0.0	10.0	10.0	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	6	6	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	3	1	0	0	0	0	0	0
Volume Module:																				
Base Vol:	0	0	0		169	391	0		0	1288	113		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		169	391	0		0	1288	113		0	0	0	
Added Vol:	0	0	0		12	294	0		0	11	366		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		181	685	0		0	1299	479		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		181	685	0		0	1299	479		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		181	685	0		0	1299	479		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		181	685	0		0	1299	479		0	0	0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.63	2.37	0.00		0.00	3.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	0	0		1084	4103	0		0	4980	1660		0	0	0	
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00		0.17	0.17	0.00		0.00	0.26	0.29		0.00	0.00	0.00	
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.37	0.37	0.00		0.00	0.58	0.65		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	11.9	12.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	11.9	12.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	12	14		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.461
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	26	26	0		0	0	0		0	0	0		0	24	24	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																				
Base Vol:	176	510	0		0	0	0		0	0	0		0	787	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	510	0		0	0	0		0	0	0		0	787	130	
Added Vol:	0	10	0		0	0	0		0	0	0		0	101	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	176	520	0		0	0	0		0	0	0		0	888	130	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	520	0		0	0	0		0	0	0		0	888	130	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	520	0		0	0	0		0	0	0		0	888	130	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	176	520	0		0	0	0		0	0	0		0	888	130	
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.76	2.24	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.62	0.38	
Final Sat.:	1180	3488	0		0	0	0		0	0	0		0	3995	585	
Capacity Analysis Module:																				
Vol/Sat:	0.15	0.15	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.22	0.22	
Crit Moves:	****													****		
Green/Cycle:	0.42	0.42	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.39	0.39	
Volume/Cap:	0.36	0.36	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.57	0.57	
Delay/Veh:	12.8	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.3	16.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.8	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.3	16.3	
HCM2k95th:	7	7	0		0	0	0		0	0	0		0	11	11	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.526
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	40	40		0	0	0		60	60	0		0	0	0	
Lanes:	0 0	2	1	1	0 0	0	0	0	0 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 8																
Base Vol:	0	464	200		0	0	0		278	1254	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	464	200		0	0	0		278	1254	0		0	0	0	
Added Vol:	0	10	0		0	0	0		0	132	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	474	200		0	0	0		278	1386	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	474	200		0	0	0		278	1386	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	474	200		0	0	0		278	1386	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	474	200		0	0	0		278	1386	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.78	0.78		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.81	1.19		0.00	0.00	0.00		0.50	2.50	0.00		0.00	0.00	0.00	
Final Sat.:	0	4180	1764		0	0	0		780	3888	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.11		0.00	0.00	0.00		0.36	0.36	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.36	0.36		0.00	0.00	0.00		0.54	0.54	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.32	0.32		0.00	0.00	0.00		0.67	0.67	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	26.5	26.5		0.0	0.0	0.0		20.2	20.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	26.5	26.5		0.0	0.0	0.0		20.2	20.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		23	23	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.610
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	29	29	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 8																
Base Vol:	244	685	0		0	0	0		0	0	0		0	1020	271	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	244	685	0		0	0	0		0	0	0		0	1020	271	
Added Vol:	54	10	0		0	0	0		0	0	0		0	216	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	298	695	0		0	0	0		0	0	0		0	1236	271	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	298	695	0		0	0	0		0	0	0		0	1236	271	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	298	695	0		0	0	0		0	0	0		0	1236	271	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	298	695	0		0	0	0		0	0	0		0	1236	271	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.90	2.10	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.46	0.54	
Final Sat.:	1401	3267	0		0	0	0		0	0	0		0	3725	817	
Capacity Analysis Module:																
Vol/Sat:	0.21	0.21	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.33	0.33	
Crit Moves:	****													****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Volume/Cap:	0.57	0.57	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.64	0.64	
Delay/Veh:	15.2	15.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	11.1	11.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.2	15.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	11.1	11.1	
HCM2k95th:	10	10	0		0	0	0		0	0	0		0	13	13	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.495
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module:																	
Base Vol:	130	1243	0		0	0	0		0	0	0		0	519	202	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	130	1243	0		0	0	0		0	0	0		0	519	202	
Added Vol:	38	57	0		0	0	0		0	0	0		0	70	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	168	1300	0		0	0	0		0	0	0		0	589	202	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	168	1300	0		0	0	0		0	0	0		0	589	202	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	168	1300	0		0	0	0		0	0	0		0	589	202	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	168	1300	0		0	0	0		0	0	0		0	589	202	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.88	0.88	
Lanes:	0.34	2.66	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.23	0.77	
Final Sat.:	594	4593	0		0	0	0		0	0	0		0	3716	1274	
Capacity Analysis Module:																
Vol/Sat:	0.28	0.28	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.16	0.16	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.63	0.63	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Delay/Veh:	12.5	12.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.5	12.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
HCM2k95th:	13	13	0		0	0	0		0	0	0		0	6	6	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.472
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0	2	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0
Volume Module:																	
Base Vol:	0	876	91		0	0	0		375	1083	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	876	91		0	0	0		375	1083	0		0	0	0	
Added Vol:	0	94	0		0	0	0		0	23	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	970	91		0	0	0		375	1106	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	970	91		0	0	0		375	1106	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	970	91		0	0	0		375	1106	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	970	91		0	0	0		375	1106	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.74	0.26		0.00	0.00	0.00		1.01	2.99	0.00		0.00	0.00	0.00	
Final Sat.:	0	4680	439		0	0	0		1751	5165	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21	0.21		0.00	0.00	0.00		0.21	0.21	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.46	0.46		0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		9	9	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.460
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 23 Mar 2005 << 7:30																
Base Vol:	0	0	0		288	1260	0		0	419	40		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		288	1260	0		0	419	40		0	0	0	
Added Vol:	0	0	0		0	155	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		288	1415	0		0	419	40		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		288	1415	0		0	419	40		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		288	1415	0		0	419	40		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		288	1415	0		0	419	40		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.51	2.49	0.00		0.00	2.74	0.26		0.00	0.00	0.00	
Final Sat.:	0	0	0		877	4310	0		0	4673	446		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.33	0.33	0.00		0.00	0.09	0.09		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.80	0.80	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		20.5	20.5	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		20.5	20.5	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		21	21	0		0	4	4		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.549
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	0	1	2	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 7:45																
Base Vol:	0	0	0		0	804	356		0	0	0		61	627	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	804	356		0	0	0		61	627	0	
Added Vol:	0	0	0		0	55	101		0	0	0		0	1	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	859	457		0	0	0		61	628	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	859	457		0	0	0		61	628	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	859	457		0	0	0		61	628	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	859	457		0	0	0		61	628	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.86	0.86		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.00	1.00		0.00	0.00	0.00		0.27	2.73	0.00	
Final Sat.:	0	0	0		0	3278	1639		0	0	0		459	4728	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.26	0.28		0.00	0.00	0.00		0.13	0.13	0.00	
Crit Moves:							****							****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.46	0.46		0.00	0.00	0.00		0.29	0.29	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.57	0.61		0.00	0.00	0.00		0.46	0.46	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	5.8	6.2		0.0	0.0	0.0		7.9	7.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	5.8	6.2		0.0	0.0	0.0		7.9	7.9	0.0	
HCM2k95th:	0	0	0		0	7	8		0	0	0		5	5	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.599
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0	0	0	0 1	1	0	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 8																
Base Vol:	0	0	114		323	503	0		0	1292	149		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	114		323	503	0		0	1292	149		0	0	0	
Added Vol:	0	0	0		9	46	0		0	132	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	114		332	549	0		0	1424	149		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	114		332	549	0		0	1424	149		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	114		332	549	0		0	1424	149		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	114		332	549	0		0	1424	149		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.72	0.28		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4630	484		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.23	0.15	0.00		0.00	0.31	0.31		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.13		0.41	0.27	0.00		0.00	0.91	0.91		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	6.3		8.8	6.9	0.0		0.0	26.0	26.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	6.3		8.8	6.9	0.0		0.0	26.0	26.0		0.0	0.0	0.0	
HCM2k95th:	0	0	2		9	6	0		0	22	22		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.471
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	0	1	0	0 0	0	0	0	1 1	0	0	0	0 0	0	1	1	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 8																
Base Vol:	5	1	0		0	1	549		0	0	0		3	743	152	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	1	0		0	1	549		0	0	0		3	743	152	
Added Vol:	0	0	0		0	0	46		0	0	0		0	170	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	5	1	0		0	1	595		0	0	0		3	913	152	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	1	0		0	1	595		0	0	0		3	913	152	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	1	0		0	1	595		0	0	0		3	913	152	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	1	0		0	1	595		0	0	0		3	913	152	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.92	1.00		1.00	0.85	0.85		1.00	1.00	1.00		0.87	0.87	0.87	
Lanes:	0.83	0.17	0.00		0.00	0.01	1.99		0.00	0.00	0.00		0.01	2.56	0.43	
Final Sat.:	1454	291	0		0	5	3225		0	0	0		14	4250	708	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.18	0.18		0.00	0.00	0.00		0.21	0.21	0.21	
Crit Moves:						****							****			
Green/Cycle:	0.42	0.42	0.00		0.00	0.42	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.01	0.00		0.00	0.44	0.44		0.00	0.00	0.00		0.51	0.51	0.51	
Delay/Veh:	9.9	9.9	0.0		0.0	13.0	13.0		0.0	0.0	0.0		13.4	13.4	13.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.9	9.9	0.0		0.0	13.0	13.0		0.0	0.0	0.0		13.4	13.4	13.4	
HCM2k95th:	0	0	0		0	8	8		0	0	0		10	10	10	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.271
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 7:30																
Base Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		31	559	0		0	346	209		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		31	559	0		0	346	209		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		31	559	0		0	346	209		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		31	559	0		0	346	209		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.86	0.86		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.16	2.84	0.00		0.00	2.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	0	0		273	4914	0		0	3261	1630		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.11	0.13		0.00	0.00	0.00	
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.25	0.25	0.00		0.00	0.24	0.29		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	4	5		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.468
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 8																
Base Vol:	0	0	0		140	604	0		0	896	328		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		140	604	0		0	896	328		0	0	0	
Added Vol:	0	0	0		0	0	0		0	94	47		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		140	604	0		0	990	375		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		140	604	0		0	990	375		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		140	604	0		0	990	375		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		140	604	0		0	990	375		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.56	2.44	0.00		0.00	2.18	0.82		0.00	0.00	0.00	
Final Sat.:	0	0	0		976	4211	0		0	3608	1367		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.14	0.00		0.00	0.27	0.27		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.32	0.32	0.00		0.00	0.61	0.61		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	13	13		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.422
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30	0	0	0	20	20	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	635	185	0	0	0	59	834	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	635	185	0	0	0	59	834	0				
Added Vol:	0	0	0	0	42	5	0	0	0	0	165	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	677	190	0	0	0	59	999	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	677	190	0	0	0	59	999	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	677	190	0	0	0	59	999	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	677	190	0	0	0	59	999	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.34	0.66	0.00	0.00	0.00	0.17	2.83	0.00				
Final Sat.:	0	0	0	0	3917	1099	0	0	0	289	4898	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.20	0.20	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.36	0.36	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.57	0.57	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	7.4	7.4	0.0	0.0	0.0	15.0	15.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.4	7.4	0.0	0.0	0.0	15.0	15.0	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	10	10	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.407
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28	0	0	0	22	22	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	530	168	0	0	0	107	943	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	530	168	0	0	0	107	943	0				
Added Vol:	0	0	0	0	41	2	0	0	0	0	69	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	571	170	0	0	0	107	1012	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	571	170	0	0	0	107	1012	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	571	170	0	0	0	107	1012	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	571	170	0	0	0	107	1012	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.31	0.69	0.00	0.00	0.00	0.29	2.71	0.00				
Final Sat.:	0	0	0	0	3861	1150	0	0	0	496	4691	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	0.22	0.22	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.39	0.39	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.55	0.55	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	8.3	8.3	0.0	0.0	0.0	13.5	13.5	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.3	8.3	0.0	0.0	0.0	13.5	13.5	0.0				
HCM2k95th:	0	0	0	0	5	5	0	0	0	10	10	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.309
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	23	23		0	0	0	
Lanes:	0	0	0	0	0	0	1	2	0	0	0	0	2	1	0	0	0	0	0	0
Volume Module:																
Base Vol:	0	0	0		108	553	0		0	571	117		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		108	553	0		0	571	117		0	0	0	
Added Vol:	0	0	0		4	37	0		0	23	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		112	590	0		0	594	117		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		112	590	0		0	594	117		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		112	590	0		0	594	117		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		112	590	0		0	594	117		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.48	2.52	0.00		0.00	2.51	0.49		0.00	0.00	0.00	
Final Sat.:	0	0	0		828	4359	0		0	4225	832		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.14	0.00		0.00	0.14	0.14		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		8.7	8.7	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		8.7	8.7	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	5	5		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.230
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	32	32		0	0	0		38	38	0	
Lanes:	0	0	0	0	0	0	3	1	0	0	0	0	0	1	1	2	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																
Base Vol:	0	0	0		0	585	19		0	0	0		205	871	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	585	19		0	0	0		205	871	0	
Added Vol:	0	0	0		0	32	5		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	617	24		0	0	0		205	871	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	617	24		0	0	0		205	871	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	617	24		0	0	0		205	871	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	617	24		0	0	0		205	871	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	3.85	0.15		0.00	0.00	0.00		1.00	3.00	0.00	
Final Sat.:	0	0	0		0	6617	257		0	0	0		1729	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.09		0.00	0.00	0.00		0.12	0.17	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.42	0.42		0.00	0.00	0.00		0.50	0.50	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.22	0.22		0.00	0.00	0.00		0.24	0.34	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	14.1	14.1		0.0	0.0	0.0		10.8	11.5	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	14.1	14.1		0.0	0.0	0.0		10.8	11.5	0.0	
HCM2k95th:	0	0	0		0	5	5		0	0	0		6	8	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.438
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	14	14		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1	1 2	0	0	0 0	1	1	0	0 0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																
Base Vol:	0	483	23		317	369	0		0	558	91		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	483	23		317	369	0		0	558	91		0	0	0	
Added Vol:	0	0	0		32	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	483	23		349	369	0		0	558	91		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	483	23		349	369	0		0	558	91		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	483	23		349	369	0		0	558	91		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	483	23		349	369	0		0	558	91		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		0.89	0.89	1.00		1.00	0.93	0.93		1.00	1.00	1.00	
Lanes:	0.00	2.86	0.14		1.94	2.06	0.00		0.00	1.72	0.28		0.00	0.00	0.00	
Final Sat.:	0	4917	234		3281	3469	0		0	3039	496		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.10	0.10		0.11	0.11	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.18	0.18		0.30	0.30	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.55	0.55		0.35	0.35	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Delay/Veh:	0.0	30.4	30.4		21.5	21.5	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.4	30.4		21.5	21.5	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
HCM2k95th:	0	9	9		7	7	0		0	12	12		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.386
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		16	25	0		0	0	9	
Lanes:	0 0	2	1	0	0	0 0	0	0	2	1	0	0	0 0	0	0	1
Volume Module: >> Count Date: 6 Dec 2005 << 7:30																
Base Vol:	0	995	22		0	0	0		144	254	0		0	0	39	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	995	22		0	0	0		144	254	0		0	0	39	
Added Vol:	0	63	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1058	22		0	0	0		144	254	0		0	0	39	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1058	22		0	0	0		144	254	0		0	0	39	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1058	22		0	0	0		144	254	0		0	0	39	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1058	22		0	0	0		144	254	0		0	0	39	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.98	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.94	0.06		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5066	105		0	0	0		3620	1866	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21	0.21		0.00	0.00	0.00		0.04	0.14	0.00		0.00	0.00	0.02	
Crit Moves:		****								****			****			
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.29	0.45	0.00		0.00	0.00	0.16	
Volume/Cap:	0.00	0.47	0.47		0.00	0.00	0.00		0.14	0.30	0.00		0.00	0.00	0.15	
Delay/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
HCM2k95th:	0	8	8		0	0	0		2	6	0		0	0	1	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.375
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	25	25				
Lanes:	1	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	314	828	0	0	0	0	0	0	0	0	637	168				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	314	828	0	0	0	0	0	0	0	0	637	168				
Added Vol:	1	63	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	315	891	0	0	0	0	0	0	0	0	637	168				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	315	891	0	0	0	0	0	0	0	0	637	168				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	315	891	0	0	0	0	0	0	0	0	637	168				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	315	891	0	0	0	0	0	0	0	0	637	168				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88				
Lanes:	1.04	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.63				
Final Sat.:	1806	5110	0	0	0	0	0	0	0	0	3977	1049				
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36				
Delay/Veh:	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	10.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	10.3				
HCM2k95th:	7	7	0	0	0	0	0	0	0	0	7	7				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.479
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25	0	0	0	25	25	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0 0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 30 Sep 2004 << 7:45																
Base Vol:	0	1299	136	0	0	0	194	1003	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	1299	136	0	0	0	194	1003	0	0	0	0				
Added Vol:	0	6	3	0	0	0	57	37	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	1305	139	0	0	0	251	1040	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	1305	139	0	0	0	251	1040	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	1305	139	0	0	0	251	1040	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	1305	139	0	0	0	251	1040	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.90	0.90	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.71	0.29	0.00	0.00	0.00	1.00	3.00	0.00	0.00	0.00	0.00				
Final Sat.:	0	4622	492	0	0	0	1729	5187	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.28	0.28	0.00	0.00	0.00	0.15	0.20	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.45	0.45	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.63	0.63	0.00	0.00	0.00	0.33	0.45	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	12.5	12.5	0.0	0.0	0.0	10.1	10.8	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	12.5	12.5	0.0	0.0	0.0	10.1	10.8	0.0	0.0	0.0	0.0				
HCM2k95th:	0	14	14	0	0	0	5	8	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.381
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	25	25				
Lanes:	1	0	3	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 7:45																
Base Vol:	242	1214	0	0	0	0	0	0	0	0	628	128				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	242	1214	0	0	0	0	0	0	0	0	628	128				
Added Vol:	92	24	0	0	0	0	0	0	0	0	73	5				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	334	1238	0	0	0	0	0	0	0	0	701	133				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	334	1238	0	0	0	0	0	0	0	0	701	133				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	334	1238	0	0	0	0	0	0	0	0	701	133				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	334	1238	0	0	0	0	0	0	0	0	701	133				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52	0.48				
Final Sat.:	1900	5187	0	0	0	0	0	0	0	0	4255	807				
Capacity Analysis Module:																
Vol/Sat:	0.18	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.39	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37				
Delay/Veh:	10.7	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	10.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.7	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	10.4				
HCM2k95th:	8	11	0	0	0	0	0	0	0	0	7	7				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.599
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0	0	0	0	0	0	0	0	21	21				
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	192	1355	0	0	0	0	0	0	0	0	875	149				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	192	1355	0	0	0	0	0	0	0	0	875	149				
Added Vol:	0	93	0	0	0	0	0	0	0	0	69	18				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	192	1448	0	0	0	0	0	0	0	0	944	167				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	192	1448	0	0	0	0	0	0	0	0	944	167				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	192	1448	0	0	0	0	0	0	0	0	944	167				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	192	1448	0	0	0	0	0	0	0	0	944	167				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.35	2.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	0.45				
Final Sat.:	607	4580	0	0	0	0	0	0	0	0	4310	763				
Capacity Analysis Module:																
Vol/Sat:	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22				
Crit Moves:	****										****					
Green/Cycle:	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38				
Volume/Cap:	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58				
Delay/Veh:	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
HCM2k95th:	13	13	0	0	0	0	0	0	0	0	12	12				

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.555
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	0 1	1	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	1273	42		0	0	0		272	506	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1273	42		0	0	0		272	506	0		0	0	0	
Added Vol:	0	92	0		0	0	0		2	25	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1365	42		0	0	0		274	531	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1365	42		0	0	0		274	531	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1365	42		0	0	0		274	531	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1365	42		0	0	0		274	531	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.91	0.09		0.00	0.00	0.00		0.68	1.32	0.00		0.00	0.00	0.00	
Final Sat.:	0	5012	154		0	0	0		1229	2381	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.27	0.27		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.61	0.61		0.00	0.00	0.00		0.50	0.50	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	12.3	12.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.3	12.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
HCM2k95th:	0	13	13		0	0	0		10	10	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.415
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.0
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	16	16		0	24	24	
Lanes:	1 1	2	0	0	0 0	0	0	0	0 0	2	1	0	0 0	1	1	1
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	97	1007	0		0	0	0		0	515	157		0	286	594	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	97	1007	0		0	0	0		0	515	157		0	286	594	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	92	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	97	1007	0		0	0	0		0	515	157		0	286	686	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	97	1007	0		0	0	0		0	515	157		0	286	686	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	97	1007	0		0	0	0		0	515	157		0	286	686	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	97	1007	0		0	0	0		0	515	157		0	286	686	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	0.88	0.88		1.00	0.85	0.85	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	2.30	0.70		0.00	1.00	2.00	
Final Sat.:	1729	5187	0		0	0	0		0	3836	1169		0	1614	3227	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.19	0.00		0.00	0.00	0.00		0.00	0.13	0.13		0.00	0.18	0.21	
Crit Moves:	****									****				****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.20	0.20		0.00	0.30	0.30	
Volume/Cap:	0.15	0.51	0.00		0.00	0.00	0.00		0.00	0.66	0.66		0.00	0.58	0.70	
Delay/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	25.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	25.9	
HCM2k95th:	3	12	0		0	0	0		0	12	12		0	13	16	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.385
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0 0	3	1	0	0 0	0	0	0	2 0	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:30																
Base Vol:	0	1243	62		0	0	0		606	732	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1243	62		0	0	0		606	732	0		0	0	0	
Added Vol:	0	0	0		0	0	0		0	32	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1243	62		0	0	0		606	764	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1243	62		0	0	0		606	764	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1243	62		0	0	0		606	764	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1243	62		0	0	0		606	764	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.97	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	3.81	0.19		0.00	0.00	0.00		2.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	6541	326		0	0	0		3686	3610	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.00	0.00	0.00		0.16	0.21	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.41	0.41		0.00	0.00	0.00		0.36	0.46	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		13.4	14.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.7	13.7		0.0	0.0	0.0		13.4	14.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	10	10		0	0	0		9	11	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.625
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	18	18	0		26	26	0		0	26	26		0	0	0	
Lanes:	0 1	2	0	0	0 1	1	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:30																
Base Vol:	47	271	0		426	595	0		0	568	250		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	47	271	0		426	595	0		0	568	250		0	0	0	
Added Vol:	0	16	0		0	104	0		0	30	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	47	287	0		426	699	0		0	598	250		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	47	287	0		426	699	0		0	598	250		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	47	287	0		426	699	0		0	598	250		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	47	287	0		426	699	0		0	598	250		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	1.00		0.93	0.93	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.42	2.58	0.00		0.76	1.24	0.00		0.00	2.12	0.88		0.00	0.00	0.00	
Final Sat.:	725	4426	0		1341	2200	0		0	3497	1462		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.06	0.00		0.32	0.32	0.00		0.00	0.17	0.17		0.00	0.00	0.00	
Crit Moves:		****			****					****						
Green/Cycle:	0.23	0.23	0.00		0.33	0.33	0.00		0.00	0.33	0.33		0.00	0.00	0.00	
Volume/Cap:	0.28	0.28	0.00		0.97	0.97	0.00		0.00	0.52	0.52		0.00	0.00	0.00	
Delay/Veh:	25.8	25.8	0.0		45.3	45.3	0.0		0.0	22.6	22.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	25.8	25.8	0.0		45.3	45.3	0.0		0.0	22.6	22.6		0.0	0.0	0.0	
HCM2k95th:	5	5	0		32	32	0		0	12	12		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
AM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.298
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	31	0	0	0	39	39	0	0	0	0				
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:45																
Base Vol:	0	395	173	0	0	0	242	812	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	395	173	0	0	0	242	812	0	0	0	0				
Added Vol:	0	67	32	0	0	0	0	30	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	462	205	0	0	0	242	842	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	462	205	0	0	0	242	842	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	462	205	0	0	0	242	842	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	462	205	0	0	0	242	842	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.87	0.87	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.08	0.92	0.00	0.00	0.00	1.00	3.00	0.00	0.00	0.00	0.00				
Final Sat.:	0	3428	1521	0	0	0	1729	5187	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.13	0.13	0.00	0.00	0.00	0.14	0.16	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.41	0.41	0.00	0.00	0.00	0.51	0.51	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.33	0.33	0.00	0.00	0.00	0.27	0.32	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	15.5	15.5	0.0	0.0	0.0	10.5	10.8	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	15.5	15.5	0.0	0.0	0.0	10.5	10.8	0.0	0.0	0.0	0.0				
HCM2k95th:	0	7	7	0	0	0	6	7	0	0	0	0				

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Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Scenario Report

Scenario:	PM Baseline
Command:	Base PM
Volume:	Baseline PM
Geometry:	Baseline PM
Impact Fee:	Default Impact Fee
Trip Generation:	PM Baseline Projects
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.742
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.2
Optimal Cycle: 46 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	4		4	4	0		4	4	4		4	4	4	
Lanes:	0 0	0 0	2		2 0	1 0	0		0 1	2 1	0		0 1	1 1	0	
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	184		219	318	0		2	353	59		10	858	407	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	184		219	318	0		2	353	59		10	858	407	
Added Vol:	0	0	0		0	9	0		0	119	43		0	110	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	184		219	327	0		2	472	102		10	968	407	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	184		219	327	0		2	472	102		10	968	407	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	184		219	327	0		2	472	102		10	968	407	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	184		219	327	0		2	472	102		10	968	407	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.56	0.90	1.00		0.80	0.80	0.80		0.78	0.78	0.78	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.01	3.28	0.71		0.02	2.10	0.88	
Final Sat.:	0	0	2558		2117	1710	0		21	4963	1072		32	3119	1311	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.10	0.19	0.00		0.10	0.10	0.10		0.31	0.31	0.31	
Crit Moves:						****			****						****	
Green/Cycle:	0.00	0.00	0.26		0.26	0.26	0.00		0.13	0.13	0.13		0.42	0.42	0.42	
Volume/Cap:	0.00	0.00	0.28		0.40	0.74	0.00		0.74	0.74	0.74		0.74	0.74	0.74	
Delay/Veh:	0.0	0.0	14.7		16.3	26.4	0.0		25.6	25.6	25.6		14.0	14.0	14.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	14.7		16.3	26.4	0.0		25.6	25.6	25.6		14.0	14.0	14.0	
HCM2k95th:	0	0	3		5	12	0		8	8	8		14	14	14	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.902
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 43.8
Optimal Cycle: 85 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	10	30	0	0	20	20	0	0	0	40	40	0				
Lanes:	1 0	2 0	0	0 0	2 1	0	0 0	0 0	0	1 1	1 0	1				
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	445	306	0	0	0	360	1353	99				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	445	306	0	0	0	360	1353	99				
Added Vol:	82	0	0	0	89	0	0	0	0	83	139	0				
2-way Adj:	0	70	0	0	0	0	0	0	0	0	0	-70				
Initial Fut:	82	70	0	0	534	306	0	0	0	443	1492	29				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	82	70	0	0	534	306	0	0	0	443	1492	29				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	82	70	0	0	534	306	0	0	0	443	1492	29				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	82	70	0	0	534	306	0	0	0	443	1492	29				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.86	0.86	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.73	0.73	0.77				
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	2.00	1.00				
Final Sat.:	1625	3249	0	0	2941	1471	0	0	0	1381	2762	1454				
Capacity Analysis Module:																
Vol/Sat:	0.05	0.02	0.00	0.00	0.18	0.21	0.00	0.00	0.00	0.32	0.54	0.02				
Crit Moves:	****					****					****					
Green/Cycle:	0.13	0.38	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.51	0.51	0.51				
Volume/Cap:	0.40	0.06	0.00	0.00	0.72	0.82	0.00	0.00	0.00	0.63	1.07	0.04				
Delay/Veh:	37.4	15.6	0.0	0.0	30.7	35.3	0.0	0.0	0.0	15.2	61.1	9.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	37.4	15.6	0.0	0.0	30.7	35.3	0.0	0.0	0.0	15.2	61.1	9.9				
HCM2k95th:	5	1	0	0	14	17	0	0	0	17	54	1				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.631
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	29	29	0	14	21	0	20	27	0				
Lanes:	0 0	0 0	0	0 1	1 1	1	1 0	3 0	0	1 0	1 1	0				
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	43	760	0	0	466	0	167	467	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	43	760	0	0	466	0	167	467	0				
Added Vol:	0	0	0	95	103	89	106	66	0	194	170	98				
2-way Adj:	0	0	0	0	0	0	70	-70	0	0	0	0				
Initial Fut:	0	0	0	138	863	89	176	462	0	361	637	98				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	138	863	89	176	462	0	361	637	98				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	138	863	89	176	462	0	361	637	98				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	138	863	89	176	462	0	361	637	98				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	0.86	0.82	1.00	0.86	0.84	0.84				
Lanes:	0.00	0.00	0.00	0.41	2.59	1.00	1.00	3.00	0.00	1.00	1.73	0.27				
Final Sat.:	0	0	0	628	3929	1519	1625	4668	0	1625	2759	425				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.22	0.22	0.06	0.11	0.10	0.00	0.22	0.23	0.23				
Crit Moves:				****			****				****					
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.18	0.27	0.00	0.56	0.34	0.34				
Volume/Cap:	0.00	0.00	0.00	0.60	0.60	0.16	0.61	0.37	0.00	0.60	0.68	0.68				
Delay/Veh:	0.0	0.0	0.0	21.7	21.7	16.9	39.3	24.5	0.0	14.7	25.6	25.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	21.7	21.7	16.9	39.3	24.5	0.0	14.7	25.6	25.6				
HCM2k95th:	0	0	0	14	14	4	10	7	0	13	16	16				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.485
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		36	36	0		0	18	18		0	0	0	
Lanes:	0	0	0	1	0	0	1	2	0	0	0	1	1	0	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	79	25		128	898	0		0	129	184		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	79	25		128	898	0		0	129	184		0	0	0	
Added Vol:	0	0	0		12	285	0		0	9	9		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	79	25		140	1183	0		0	138	193		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	79	25		140	1183	0		0	138	193		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	79	25		140	1183	0		0	138	193		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	79	25		140	1183	0		0	138	193		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.97	0.97		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		0.32	2.68	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	1397	442		546	4615	0		0	1648	1648		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.06	0.06		0.26	0.26	0.00		0.00	0.08	0.12		0.00	0.00	0.00	
Crit Moves:		****			****						****					
Green/Cycle:	0.00	0.20	0.20		0.46	0.46	0.00		0.00	0.23	0.23		0.00	0.00	0.00	
Volume/Cap:	0.00	0.28	0.28		0.56	0.56	0.00		0.00	0.37	0.51		0.00	0.00	0.00	
Delay/Veh:	0.0	28.5	28.5		16.7	16.7	0.0		0.0	26.9	29.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	28.5	28.5		16.7	16.7	0.0		0.0	26.9	29.6		0.0	0.0	0.0	
HCM2k95th:	0	5	5		14	14	0		0	7	9		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.862
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 63 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	2	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:30																
Base Vol:	0	0	0		0	417	677		0	0	0		151	2129	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	417	677		0	0	0		151	2129	0	
Added Vol:	0	0	0		0	0	156		0	0	0		0	624	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	417	833		0	0	0		151	2753	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	417	833		0	0	0		151	2753	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	417	833		0	0	0		151	2753	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	417	833		0	0	0		151	2753	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.86	0.75		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.22	2.78		0.00	0.00	0.00		0.16	2.84	0.00	
Final Sat.:	0	0	0		0	1987	3970		0	0	0		270	4917	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.21	0.21		0.00	0.00	0.00		0.56	0.56	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.62	0.62		0.00	0.00	0.00		1.01	1.01	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	16.9	16.9		0.0	0.0	0.0		32.1	32.1	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	16.9	16.9		0.0	0.0	0.0		32.1	32.1	0.0	
HCM2k95th:	0	0	0		0	11	11		0	0	0		35	35	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.279
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	3	1 0	0	0	0	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0		160	442	0		0	525	72		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		160	442	0		0	525	72		0	0	0	
Added Vol:	0	0	0		0	0	0		0	314	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		160	442	0		0	839	72		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		160	442	0		0	839	72		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		160	442	0		0	839	72		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		160	442	0		0	839	72		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.80	2.20	0.00		0.00	3.68	0.32		0.00	0.00	0.00	
Final Sat.:	0	0	0		1379	3808	0		0	6293	540		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.12	0.12	0.00		0.00	0.13	0.13		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.24	0.24		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.6	6.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.6	6.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	5	5		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.6
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	21		0	0	0		0	79	79	
Lanes:	2	0	2	0 0	0	0	0	0 2	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	419	347	0		0	0	0		0	0	0		0	2640	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	419	347	0		0	0	0		0	0	0		0	2640	55	
Added Vol:	0	3	0		0	0	0		0	0	0		0	103	0	
5th St Conv:	0	0	0		0	0	46		0	0	0		0	0	0	
Initial Fut:	419	350	0		0	0	46		0	0	0		0	2743	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	419	350	0		0	0	46		0	0	0		0	2743	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	419	350	0		0	0	46		0	0	0		0	2743	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	419	350	0		0	0	46		0	0	0		0	2743	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.54	0.86	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.82	0.82	
Lanes:	2.00	2.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.92	0.08	
Final Sat.:	2063	3249	0		0	0	2558		0	0	0		0	6084	122	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.11	0.00		0.00	0.00	0.02		0.00	0.00	0.00		0.00	0.45	0.45	
Crit Moves:		****			****									****		
Green/Cycle:	0.20	0.20	0.00		0.00	0.00	0.20		0.00	0.00	0.00		0.00	0.75	0.75	
Volume/Cap:	1.03	0.54	0.00		0.00	0.00	0.09		0.00	0.00	0.00		0.00	0.60	0.60	
Delay/Veh:	93.6	41.5	0.0		0.0	0.0	35.1		0.0	0.0	0.0		0.0	6.9	6.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	93.6	41.5	0.0		0.0	0.0	35.1		0.0	0.0	0.0		0.0	6.9	6.9	
HCM2k95th:	18	10	0		0	0	2		0	0	0		0	19	19	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.469
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	25		0	0	0	
Lanes:	0	0	1	1 1	0	0	0	0 0	1	1	3	0 1	0	0	0	0 0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	0	449	407		0	0	0		324	1112	130		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	449	407		0	0	0		324	1112	130		0	0	0	
Added Vol:	0	3	0		0	0	0		0	78	113		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	452	407		0	0	0		324	1190	243		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	452	407		0	0	0		324	1190	243		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	452	407		0	0	0		324	1190	243		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	452	407		0	0	0		324	1190	243		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.79	0.79		1.00	1.00	1.00		0.70	0.70	0.77		1.00	1.00	1.00	
Lanes:	0.00	1.58	1.42		0.00	0.00	0.00		1.07	3.93	1.00		0.00	0.00	0.00	
Final Sat.:	0	2382	2145		0	0	0		1415	5198	1454		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.00	0.00	0.00		0.23	0.23	0.17		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.42	0.42		0.00	0.00	0.00		0.51	0.51	0.37		0.00	0.00	0.00	
Delay/Veh:	0.0	11.2	11.2		0.0	0.0	0.0		11.8	11.8	12.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.2	11.2		0.0	0.0	0.0		11.8	11.8	12.0		0.0	0.0	0.0	
HCM2k95th:	0	7	7		0	0	0		10	10	7		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.547
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.3
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	45	45	0		0	0	45		0	0	0		0	25	25	
Lanes:	1	0	3	0 0	0	0	0	0 2	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	320	664	0		0	0	59		0	0	0		0	1484	140	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	320	664	0		0	0	59		0	0	0		0	1484	140	
Added Vol:	9	3	0		0	0	113		0	0	0		0	147	0	
2-way Adj:	-70	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	259	667	0		0	0	172		0	0	0		0	1631	140	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	259	667	0		0	0	172		0	0	0		0	1631	140	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	259	667	0		0	0	172		0	0	0		0	1631	140	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	259	667	0		0	0	172		0	0	0		0	1631	140	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.69	0.82	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	1.00	3.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.68	0.32	
Final Sat.:	1315	4668	0		0	0	2558		0	0	0		0	5664	486	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.14	0.00		0.00	0.00	0.07		0.00	0.00	0.00		0.00	0.29	0.29	
Crit Moves:	****													****		
Green/Cycle:	0.57	0.57	0.00		0.00	0.00	0.57		0.00	0.00	0.00		0.00	0.32	0.32	
Volume/Cap:	0.35	0.25	0.00		0.00	0.00	0.12		0.00	0.00	0.00		0.00	0.91	0.91	
Delay/Veh:	10.4	8.8	0.0		0.0	0.0	8.0		0.0	0.0	0.0		0.0	33.8	33.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	10.4	8.8	0.0		0.0	0.0	8.0		0.0	0.0	0.0		0.0	33.8	33.8	
HCM2k95th:	9	6	0		0	0	2		0	0	0		0	24	24	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.276
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0	0	0	0	0	0	17	35	0	0	18	18		
Lanes:	2	0	2	1 0	0	0	0	0	0	2	0	2	0	0	0	0	2	1	0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	244	626	43	0	0	0	340	262	0	0	329	55				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	244	626	43	0	0	0	340	262	0	0	329	55				
Added Vol:	166	9	21	0	0	0	3	158	0	0	296	0				
2-way Adj:	0	0	0	0	0	0	-70	0	0	0	0	0				
Initial Fut:	410	635	64	0	0	0	273	420	0	0	625	55				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	410	635	64	0	0	0	273	420	0	0	625	55				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	410	635	64	0	0	0	273	420	0	0	625	55				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	410	635	64	0	0	0	273	420	0	0	625	55				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.86	0.81	0.81	1.00	1.00	1.00	0.83	0.86	1.00	1.00	0.81	0.81				
Lanes:	2.00	2.73	0.27	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.76	0.24				
Final Sat.:	3271	4182	421	0	0	0	3152	3249	0	0	4239	373				
Capacity Analysis Module:																
Vol/Sat:	0.13	0.15	0.15	0.00	0.00	0.00	0.09	0.13	0.00	0.00	0.15	0.15				
Crit Moves:	****							****		****						
Green/Cycle:	0.46	0.46	0.46	0.00	0.00	0.00	0.22	0.46	0.00	0.00	0.24	0.24				
Volume/Cap:	0.27	0.33	0.33	0.00	0.00	0.00	0.39	0.28	0.00	0.00	0.62	0.62				
Delay/Veh:	13.1	13.5	13.5	0.0	0.0	0.0	26.7	13.2	0.0	0.0	28.6	28.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	13.1	13.5	13.5	0.0	0.0	0.0	26.7	13.2	0.0	0.0	28.6	28.6				
HCM2k95th:	7	8	8	0	0	0	7	7	0	0	11	11				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.328
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35	0	0	0	35	35	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	0	710	124	0	0	0	72	427	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	710	124	0	0	0	72	427	0	0	0	0				
Added Vol:	0	195	0	0	0	0	0	21	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	905	124	0	0	0	72	448	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	905	124	0	0	0	72	448	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	905	124	0	0	0	72	448	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	905	124	0	0	0	72	448	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.64	0.36	0.00	0.00	0.00	0.42	2.58	0.00	0.00	0.00	0.00				
Final Sat.:	0	4480	614	0	0	0	718	4469	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.20	0.20	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.46	0.46	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.44	0.44	0.00	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	14.5	14.5	0.0	0.0	0.0	12.5	12.5	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	14.5	14.5	0.0	0.0	0.0	12.5	12.5	0.0	0.0	0.0	0.0				
HCM2k95th:	0	11	11	0	0	0	5	5	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.742
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0	0	0	0	0	0	0	0	0	0	29	29		
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 21 Apr 2005 << 4:30																
Base Vol:	336	551	0	0	0	0	0	0	0	0	1392	288				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	336	551	0	0	0	0	0	0	0	0	1392	288				
Added Vol:	15	163	0	0	0	0	0	0	0	0	609	33				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	351	714	0	0	0	0	0	0	0	0	2001	321				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	351	714	0	0	0	0	0	0	0	0	2001	321				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	351	714	0	0	0	0	0	0	0	0	2001	321				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	351	714	0	0	0	0	0	0	0	0	2001	321				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.99	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	0.41				
Final Sat.:	1710	3477	0	0	0	0	0	0	0	0	4376	702				
Capacity Analysis Module:																
Vol/Sat:	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46				
Crit Moves:	****										****					
Green/Cycle:	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52				
Volume/Cap:	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88				
Delay/Veh:	14.9	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	16.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	14.9	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	16.7				
HCM2k95th:	10	10	0	0	0	0	0	0	0	0	26	26				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.308
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	21	21	0	0	0	29	29	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0 0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 26 Apr 2005 << 4:30																
Base Vol:	0	550	73	0	0	0	259	484	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	550	73	0	0	0	259	484	0	0	0	0				
Added Vol:	0	0	0	0	0	0	178	136	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	550	73	0	0	0	437	620	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	550	73	0	0	0	437	620	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	550	73	0	0	0	437	620	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	550	73	0	0	0	437	620	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.65	0.35	0.00	0.00	0.00	1.65	2.35	0.00	0.00	0.00	0.00				
Final Sat.:	0	4497	597	0	0	0	2859	4057	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.33	0.33	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	0.0				
HCM2k95th:	0	6	6	0	0	0	6	6	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.339
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	34	34	0	0	0	66	66	0				
Lanes:	0 0	0 0	0	0 0	2 0	2	0 0	0 0	0	1 1	2 0	0				
Volume Module: >> Count Date: 30 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	368	496	0	0	0	191	1618	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	368	496	0	0	0	191	1618	0				
Added Vol:	0	0	0	0	40	9	0	0	0	0	94	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	408	505	0	0	0	191	1712	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	408	505	0	0	0	191	1712	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	408	505	0	0	0	191	1712	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	408	505	0	0	0	191	1712	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3249	2558	0	0	0	1556	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.13	0.20	0.00	0.00	0.00	0.12	0.37	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.62	0.62	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.39	0.62	0.00	0.00	0.00	0.20	0.59	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	29.1	33.9	0.0	0.0	0.0	8.6	12.7	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	29.1	33.9	0.0	0.0	0.0	8.6	12.7	0.0				
HCM2k95th:	0	0	0	0	10	14	0	0	0	6	19	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.575
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	22	22	0	0	28	28	0	0	0				
Lanes:	0 0	0 0	0	0 1	2 0	0	0 0	2 1	0	0 0	0 0	0				
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	83	471	0	0	1289	294	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	83	471	0	0	1289	294	0	0	0				
Added Vol:	0	0	0	7	32	0	0	150	21	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	90	503	0	0	1439	315	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	90	503	0	0	1439	315	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	90	503	0	0	1439	315	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	90	503	0	0	1439	315	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.46	2.54	0.00	0.00	2.46	0.54	0.00	0.00	0.00				
Final Sat.:	0	0	0	709	3960	0	0	3727	816	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.39	0.39	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.39	0.39	0.00	0.00	0.50	0.50	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.77	0.77	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	12.3	12.3	0.0	0.0	14.0	14.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	12.3	12.3	0.0	0.0	14.0	14.0	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	18	18	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.289
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29	0	0	0	21	21	0				
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	1	0	3	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	469	214	0	0	0	121	1306	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	469	214	0	0	0	121	1306	0				
Added Vol:	0	0	0	0	43	11	0	0	0	37	92	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	512	225	0	0	0	158	1398	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	512	225	0	0	0	158	1398	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	512	225	0	0	0	158	1398	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	512	225	0	0	0	158	1398	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.08	0.92	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3094	1360	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.09	0.30	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.38	0.38	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.25	0.80	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	13.0	19.5	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	13.0	19.5	0.0				
HCM2k95th:	0	0	0	0	6	6	0	0	0	5	17	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.527
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	34	34	0	0	0	0	0	0	0	0	66	66				
Lanes:	1	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	359	472	0	0	0	0	0	0	0	0	1666	83				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	359	472	0	0	0	0	0	0	0	0	1666	83				
Added Vol:	93	165	0	0	0	0	0	0	0	0	1	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	452	637	0	0	0	0	0	0	0	0	1667	83				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	452	637	0	0	0	0	0	0	0	0	1667	83				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	452	637	0	0	0	0	0	0	0	0	1667	83				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	452	637	0	0	0	0	0	0	0	0	1667	83				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90				
Lanes:	1.66	2.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	0.14				
Final Sat.:	2871	4045	0	0	0	0	0	0	0	0	4906	244				
Capacity Analysis Module:																
Vol/Sat:	0.16	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34				
Crit Moves:	****										****					
Green/Cycle:	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.62				
Volume/Cap:	0.49	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.55				
Delay/Veh:	29.2	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	29.2	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	11.6				
HCM2k95th:	14	14	0	0	0	0	0	0	0	0	19	19				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 5																
Base Vol:	0	417	208		0	0	0		108	1297	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	417	208		0	0	0		108	1297	0		0	0	0	
Added Vol:	0	243	338		0	0	0		15	143	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	660	546		0	0	0		123	1440	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	660	546		0	0	0		123	1440	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	660	546		0	0	0		123	1440	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	660	546		0	0	0		123	1440	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.76	0.76		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	2901	1450		0	0	0		1556	4668	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.23	0.38		0.00	0.00	0.00		0.08	0.31	0.00		0.00	0.00	0.00	
Crit Moves:			****						****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.51	0.84		0.00	0.00	0.00		0.18	0.69	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	11.9	20.0		0.0	0.0	0.0		9.4	14.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.9	20.0		0.0	0.0	0.0		9.4	14.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	20		0	0	0		3	13	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.456
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	1 0	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	1
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	158	335	0		0	0	0		0	0	0		0	1319	81	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	158	335	0		0	0	0		0	0	0		0	1319	81	
Added Vol:	0	175	0		0	0	0		0	0	0		0	129	77	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	158	510	0		0	0	0		0	0	0		0	1448	158	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	158	510	0		0	0	0		0	0	0		0	1448	158	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	158	510	0		0	0	0		0	0	0		0	1448	158	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	158	510	0		0	0	0		0	0	0		0	1448	158	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.86	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	1.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	3.00	1.00	
Final Sat.:	1710	3249	0		0	0	0		0	0	0		0	4598	1533	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.16	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.31	0.10	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.18	0.30	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.84	0.27	
Delay/Veh:	7.6	8.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	20.6	12.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.6	8.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	20.6	12.3	
HCM2k95th:	4	6	0		0	0	0		0	0	0		0	18	5	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.426
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	35	35	0	0	0	65	65	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:30																
Base Vol:	0	0	0	0	385	330	0	0	0	223	1445	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	385	330	0	0	0	223	1445	0				
Added Vol:	0	0	0	0	30	0	0	0	0	39	1	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	415	330	0	0	0	262	1446	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	415	330	0	0	0	262	1446	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	415	330	0	0	0	262	1446	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	415	330	0	0	0	262	1446	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.76	0.76	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	2907	1453	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.14	0.23	0.00	0.00	0.00	0.15	0.31	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.58	0.58	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.46	0.73	0.00	0.00	0.00	0.26	0.53	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	31.8	38.7	0.0	0.0	0.0	12.3	15.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	31.8	38.7	0.0	0.0	0.0	12.3	15.0	0.0				
HCM2k95th:	0	0	0	0	11	19	0	0	0	9	18	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.590
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	25	25	0	0	25	25	0	0	0				
Lanes:	0 0	0	0	0	0 1	2	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:45																
Base Vol:	0	0	0	93	480	0	0	1159	129	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	93	480	0	0	1159	129	0	0	0				
Added Vol:	0	0	0	0	70	0	0	316	165	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	93	550	0	0	1475	294	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	93	550	0	0	1475	294	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	93	550	0	0	1475	294	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	93	550	0	0	1475	294	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.43	2.57	0.00	0.00	2.50	0.50	0.00	0.00	0.00				
Final Sat.:	0	0	0	675	3993	0	0	3795	756	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.39	0.39	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.45	0.45	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.87	0.87	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	10.3	10.3	0.0	0.0	19.5	19.5	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	10.3	10.3	0.0	0.0	19.5	19.5	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	18	18	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.580
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21	0	0	0	29	29	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	564	127	0	0	0	569	1123	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	564	127	0	0	0	569	1123	0				
Added Vol:	0	0	0	0	115	32	0	0	0	0	173	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	679	159	0	0	0	569	1296	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	679	159	0	0	0	569	1296	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	679	159	0	0	0	569	1296	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	679	159	0	0	0	569	1296	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.80	0.80	1.00	1.00	1.00	0.90	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.43	0.57	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3677	861	0	0	0	1710	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.18	0.18	0.00	0.00	0.00	0.33	0.28	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.49	0.49	0.00	0.00	0.00	0.64	0.54	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	14.4	14.4	0.0	0.0	0.0	13.3	9.9	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	14.4	14.4	0.0	0.0	0.0	13.3	9.9	0.0				
HCM2k95th:	0	0	0	0	9	9	0	0	0	13	10	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.626
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 32 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10	0	0	0	0	0	10	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	1015	240	0	0	0	200	1090	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	1015	240	0	0	0	200	1090	0				
Added Vol:	0	0	0	0	182	20	0	0	0	12	57	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	1197	260	0	0	0	212	1147	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	1197	260	0	0	0	212	1147	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	1197	260	0	0	0	212	1147	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	1197	260	0	0	0	212	1147	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.46	0.54	0.00	0.00	0.00	0.47	2.53	0.00				
Final Sat.:	0	0	0	0	4146	901	0	0	0	809	4378	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.26	0.26	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.42	0.42	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.63	0.63	0.00	0.00	0.00	0.63	0.63	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	10.7	10.7	0.0	0.0	0.0	12.0	12.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.7	10.7	0.0	0.0	0.0	12.0	12.0	0.0				
HCM2k95th:	0	0	0	0	13	13	0	0	0	11	11	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.455
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	3	1 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	0	0		159	1116	0		0	569	103		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		159	1116	0		0	569	103		0	0	0	
Added Vol:	0	0	0		29	165	0		0	58	90		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		188	1281	0		0	627	193		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		188	1281	0		0	627	193		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		188	1281	0		0	627	193		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		188	1281	0		0	627	193		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.38	2.62	0.00		0.00	3.06	0.94		0.00	0.00	0.00	
Final Sat.:	0	0	0		664	4523	0		0	5103	1571		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.12	0.12		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.63	0.63	0.00		0.00	0.28	0.28		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		12.6	12.6	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		12.6	12.6	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
HCM2k95th:	0	0	0		12	12	0		0	5	5		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		0	0	0		0	65	65	
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																
Base Vol:	246	477	0		0	0	0		0	0	0		0	1552	77	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	246	477	0		0	0	0		0	0	0		0	1552	77	
Added Vol:	0	62	0		0	0	0		0	0	0		0	40	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	246	539	0		0	0	0		0	0	0		0	1592	77	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	246	539	0		0	0	0		0	0	0		0	1592	77	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	246	539	0		0	0	0		0	0	0		0	1592	77	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	246	539	0		0	0	0		0	0	0		0	1592	77	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	0.94	2.06	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.86	0.14	
Final Sat.:	1463	3205	0		0	0	0		0	0	0		0	4422	214	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Crit Moves:	****													****		
Green/Cycle:	0.31	0.31	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Volume/Cap:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.62	0.62	
Delay/Veh:	33.2	33.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	33.2	33.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
HCM2k95th:	14	14	0		0	0	0		0	0	0		0	22	22	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.642
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 62 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	26	26		0	0	0		24	24	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	571	151		0	0	0		129	1163	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	571	151		0	0	0		129	1163	0		0	0	0	
Added Vol:	0	62	0		0	0	0		0	316	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	633	151		0	0	0		129	1479	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	633	151		0	0	0		129	1479	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	633	151		0	0	0		129	1479	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	633	151		0	0	0		129	1479	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.80	0.80		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.42	0.58		0.00	0.00	0.00		0.24	2.76	0.00		0.00	0.00	0.00	
Final Sat.:	0	3660	873		0	0	0		375	4294	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.17	0.17		0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.42	0.42		0.00	0.00	0.00		0.39	0.39	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.41	0.41		0.00	0.00	0.00		0.89	0.89	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.3	13.3		0.0	0.0	0.0		24.8	24.8	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.3	13.3		0.0	0.0	0.0		24.8	24.8	0.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		18	18	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.698
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	29	29	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module: >> Count Date: 30 Apr 2000 <<																
Base Vol:	181	641	0		0	0	0		0	0	0		0	1490	313	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	181	641	0		0	0	0		0	0	0		0	1490	313	
Added Vol:	21	62	0		0	0	0		0	0	0		0	152	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	202	703	0		0	0	0		0	0	0		0	1642	313	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	202	703	0		0	0	0		0	0	0		0	1642	313	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	202	703	0		0	0	0		0	0	0		0	1642	313	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	202	703	0		0	0	0		0	0	0		0	1642	313	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.67	2.33	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.52	0.48	
Final Sat.:	1042	3626	0		0	0	0		0	0	0		0	3827	729	
Capacity Analysis Module:																
Vol/Sat:	0.19	0.19	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.43	0.43	
Crit Moves:	****													****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Volume/Cap:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.83	0.83	
Delay/Veh:	14.7	14.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.9	14.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.7	14.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.9	14.9	
HCM2k95th:	9	9	0		0	0	0		0	0	0		0	21	21	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.438
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.9
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	0	0		0	10	0	
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	155	472	0		0	0	0		0	0	0		0	1131	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	155	472	0		0	0	0		0	0	0		0	1131	130	
Added Vol:	33	23	0		0	0	0		0	0	0		0	36	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	188	495	0		0	0	0		0	0	0		0	1167	130	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	188	495	0		0	0	0		0	0	0		0	1167	130	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	188	495	0		0	0	0		0	0	0		0	1167	130	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	188	495	0		0	0	0		0	0	0		0	1167	130	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.90	0.90	
Lanes:	0.83	2.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.70	0.30	
Final Sat.:	1428	3759	0		0	0	0		0	0	0		0	4597	512	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.13	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.25	0.25	
Crit Moves:		****												****		
Green/Cycle:	0.30	0.30	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Volume/Cap:	0.44	0.44	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.44	0.44	
Delay/Veh:	14.3	14.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.0	6.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.3	14.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.0	6.0	
HCM2k95th:	6	6	0		0	0	0		0	0	0		0	7	7	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.303
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.8
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	10	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0 0	0	1	2	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	619	125		0	0	0		40	437	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	619	125		0	0	0		40	437	0		0	0	0	
Added Vol:	0	56	0		0	0	0		0	87	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	675	125		0	0	0		40	524	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	675	125		0	0	0		40	524	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	675	125		0	0	0		40	524	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	675	125		0	0	0		40	524	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.53	0.47		0.00	0.00	0.00		0.21	2.79	0.00		0.00	0.00	0.00	
Final Sat.:	0	4276	792		0	0	0		368	4819	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.16	0.16		0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.00	0.00	
Crit Moves:		****								****						
Green/Cycle:	0.00	0.52	0.52		0.00	0.00	0.00		0.36	0.36	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.30	0.30		0.00	0.00	0.00		0.30	0.30	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	6.9	6.9		0.0	0.0	0.0		11.6	11.6	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	6.9	6.9		0.0	0.0	0.0		11.6	11.6	0.0		0.0	0.0	0.0	
HCM2k95th:	0	5	5		0	0	0		4	4	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.470
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 23 Mar 2005 << 4:30																
Base Vol:	0	0	0		231	897	0		0	969	27		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		231	897	0		0	969	27		0	0	0	
Added Vol:	0	0	0		0	87	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		231	984	0		0	969	27		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		231	984	0		0	969	27		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		231	984	0		0	969	27		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		231	984	0		0	969	27		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.57	2.43	0.00		0.00	2.92	0.08		0.00	0.00	0.00	
Final Sat.:	0	0	0		986	4201	0		0	5026	140		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.23	0.23	0.00		0.00	0.19	0.19		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.57	0.57	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		16.2	16.2	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		16.2	16.2	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
HCM2k95th:	0	0	0		13	13	0		0	9	9		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.582
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 7.6
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0 0	0	0	2	1 0	0	0	0	0 0	0	1	2	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	774	268		0	0	0		66	1077	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	774	268		0	0	0		66	1077	0	
Added Vol:	0	0	0		0	48	39		0	0	0		0	1	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	822	307		0	0	0		66	1078	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	822	307		0	0	0		66	1078	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	822	307		0	0	0		66	1078	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	822	307		0	0	0		66	1078	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.18	0.82		0.00	0.00	0.00		0.17	2.83	0.00	
Final Sat.:	0	0	0		0	3622	1353		0	0	0		299	4888	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.23	0.23		0.00	0.00	0.00		0.22	0.22	0.00	
Crit Moves:						****								****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.39	0.39		0.00	0.00	0.00		0.38	0.38	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.58	0.58		0.00	0.00	0.00		0.58	0.58	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.7	7.7	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.7	7.7	0.0	
HCM2k95th:	0	0	0		0	7	7		0	0	0		7	7	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.610
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0	0	0	0 1	1	0	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	0	243		318	516	0		0	1203	131		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	243		318	516	0		0	1203	131		0	0	0	
Added Vol:	0	0	0		7	40	0		0	316	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	243		325	556	0		0	1519	131		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	243		325	556	0		0	1519	131		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	243		325	556	0		0	1519	131		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	243		325	556	0		0	1519	131		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.76	0.24		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4718	407		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.15		0.22	0.15	0.00		0.00	0.32	0.32		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.27		0.40	0.28	0.00		0.00	0.95	0.95		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	7.3		8.7	6.9	0.0		0.0	30.5	30.5		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	7.3		8.7	6.9	0.0		0.0	30.5	30.5		0.0	0.0	0.0	
HCM2k95th:	0	0	5		9	6	0		0	25	25		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.587
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	1	0	0	0 0	0	0	0	1 1	0	0	0	0 0	0	1	1	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	5	0	0		0	0	712		0	0	0		1	1082	136	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	0	0		0	0	712		0	0	0		1	1082	136	
Added Vol:	0	0	0		0	0	40		0	0	0		0	111	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	5	0	0		0	0	752		0	0	0		1	1193	136	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	0	0		0	0	752		0	0	0		1	1193	136	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	0	0		0	0	752		0	0	0		1	1193	136	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	0	0		0	0	752		0	0	0		1	1193	136	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	1.00		1.00	1.00	0.85		1.00	1.00	1.00		0.88	0.88	0.88	
Lanes:	1.00	0.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.01	2.69	0.30	
Final Sat.:	1758	0	0		0	0	3230		0	0	0		4	4514	515	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.00	0.23		0.00	0.00	0.00		0.26	0.26	0.26	
Crit Moves:							****						****			
Green/Cycle:	0.42	0.00	0.00		0.00	0.00	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.00	0.00		0.00	0.00	0.55		0.00	0.00	0.00		0.62	0.62	0.62	
Delay/Veh:	9.8	0.0	0.0		0.0	0.0	14.4		0.0	0.0	0.0		14.7	14.7	14.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.8	0.0	0.0		0.0	0.0	14.4		0.0	0.0	0.0		14.7	14.7	14.7	
HCM2k95th:	0	0	0		0	0	10		0	0	0		12	12	12	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.467
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																
Base Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		69	585	0		0	1151	310		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		69	585	0		0	1151	310		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		69	585	0		0	1151	310		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		69	585	0		0	1151	310		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.32	2.68	0.00		0.00	2.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	0	0		547	4640	0		0	3956	1065		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.13	0.13	0.00		0.00	0.29	0.29		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.65	0.65		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	15	15		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.760
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 49.2
Optimal Cycle: 56 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		229	764	0		0	1605	507		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		229	764	0		0	1605	507		0	0	0	
Added Vol:	0	0	0		0	0	0		0	227	96		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		229	764	0		0	1832	603		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		229	764	0		0	1832	603		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		229	764	0		0	1832	603		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		229	764	0		0	1832	603		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.69	2.31	0.00		0.00	2.26	0.74		0.00	0.00	0.00	
Final Sat.:	0	0	0		1196	3991	0		0	3758	1237		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.19	0.19	0.00		0.00	0.49	0.49		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.43	0.43	0.00		0.00	1.09	1.09		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	64.9	64.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	64.9	64.9		0.0	0.0	0.0	
HCM2k95th:	0	0	0		8	8	0		0	45	45		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.605
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30	0	0	0	20	20	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	1285	293	0	0	0	155	809	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	1285	293	0	0	0	155	809	0				
Added Vol:	0	0	0	0	101	7	0	0	0	0	104	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	1386	300	0	0	0	155	913	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	1386	300	0	0	0	155	913	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	1386	300	0	0	0	155	913	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	1386	300	0	0	0	155	913	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.47	0.53	0.00	0.00	0.00	0.44	2.56	0.00				
Final Sat.:	0	0	0	0	4149	898	0	0	0	753	4434	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.21	0.21	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.36	0.36	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.62	0.62	0.00	0.00	0.00	0.58	0.58	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	9.5	9.5	0.0	0.0	0.0	15.0	15.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	9.5	9.5	0.0	0.0	0.0	15.0	15.0	0.0				
HCM2k95th:	0	0	0	0	15	15	0	0	0	10	10	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.538
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28	0	0	0	22	22	0				
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	1188	224	0	0	0	163	746	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	1188	224	0	0	0	163	746	0				
Added Vol:	0	0	0	0	99	2	0	0	0	0	34	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	1287	226	0	0	0	163	780	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	1287	226	0	0	0	163	780	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	1287	226	0	0	0	163	780	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	1287	226	0	0	0	163	780	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.55	0.45	0.00	0.00	0.00	0.52	2.48	0.00				
Final Sat.:	0	0	0	0	4315	758	0	0	0	897	4290	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.18	0.18	0.00				
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.39	0.39	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.46	0.46	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	10.4	10.4	0.0	0.0	0.0	12.8	12.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.4	10.4	0.0	0.0	0.0	12.8	12.8	0.0				
HCM2k95th:	0	0	0	0	13	13	0	0	0	8	8	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.536
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	23	23		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	0	0		139	1203	0		0	802	132		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		139	1203	0		0	802	132		0	0	0	
Added Vol:	0	0	0		5	94	0		0	87	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		144	1297	0		0	889	132		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		144	1297	0		0	889	132		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		144	1297	0		0	889	132		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		144	1297	0		0	889	132		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.30	2.70	0.00		0.00	2.61	0.39		0.00	0.00	0.00	
Final Sat.:	0	0	0		518	4669	0		0	4431	658		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.20	0.20		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.58	0.58	0.00		0.00	0.49	0.49		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
HCM2k95th:	0	0	0		11	11	0		0	8	8		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.519
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	38	38		0	0	0		32	32	0	
Lanes:	0	0	0	0 0	0	0	3	1 0	0	0	0	0 0	1	1	2	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Added Vol:	0	0	0		0	87	7		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	1691	155		0	0	0		361	1074	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	1691	155		0	0	0		361	1074	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	1691	155		0	0	0		361	1074	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	1691	155		0	0	0		361	1074	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	3.66	0.34		0.00	0.00	0.00		1.01	2.99	0.00	
Final Sat.:	0	0	0		0	6253	573		0	0	0		1740	5176	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.27	0.27		0.00	0.00	0.00		0.21	0.21	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.50	0.50		0.00	0.00	0.00		0.42	0.42	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.54	0.54		0.00	0.00	0.00		0.49	0.49	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	13.2	13.2		0.0	0.0	0.0		16.2	16.2	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	13.2	13.2		0.0	0.0	0.0		16.2	16.2	0.0	
HCM2k95th:	0	0	0		0	15	15		0	0	0		12	12	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.661
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 32.1
Optimal Cycle: 82 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	17	17		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1	1 2	0	0	0 0	1	1	0	0 0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	535	67		766	1001	0		0	459	217		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	535	67		766	1001	0		0	459	217		0	0	0	
Added Vol:	0	0	0		87	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	535	67		853	1001	0		0	459	217		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	535	67		853	1001	0		0	459	217		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	535	67		853	1001	0		0	459	217		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	535	67		853	1001	0		0	459	217		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		0.89	0.89	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	2.67	0.33		1.84	2.16	0.00		0.00	1.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	4531	567		3112	3652	0		0	2334	1103		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12		0.27	0.27	0.00		0.00	0.20	0.20		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.21	0.21		0.29	0.29	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Volume/Cap:	0.00	0.57	0.57		0.94	0.94	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Delay/Veh:	0.0	30.0	30.0		37.4	37.4	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.0	30.0		37.4	37.4	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
HCM2k95th:	0	10	10		24	24	0		0	13	13		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.758
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		19	25	0		0	0	6	
Lanes:	0 0	2	1	0	0	0 0	0	0	2	1	0	0	0 0	0	0	1
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	2028	20		0	0	0		794	413	0		0	0	46	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	2028	20		0	0	0		794	413	0		0	0	46	
Added Vol:	0	163	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	2191	20		0	0	0		794	413	0		0	0	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	2191	20		0	0	0		794	413	0		0	0	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	2191	20		0	0	0		794	413	0		0	0	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	2191	20		0	0	0		794	413	0		0	0	46	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.94	0.97	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.97	0.03		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5135	47		0	0	0		3568	1839	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.43	0.43		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.03	
Crit Moves:		****							****						****	
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.34	0.45	0.00		0.00	0.00	0.11	
Volume/Cap:	0.00	0.96	0.96		0.00	0.00	0.00		0.66	0.50	0.00		0.00	0.00	0.26	
Delay/Veh:	0.0	25.3	25.3		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	25.3	25.3		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
HCM2k95th:	0	26	26		0	0	0		11	10	0		0	0	2	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.389
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0	0	0	0	0	0	0	0	20	20				
Lanes:	1	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	179	1647	0	0	0	0	0	0	0	0	708	398				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	179	1647	0	0	0	0	0	0	0	0	708	398				
Added Vol:	1	163	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	180	1810	0	0	0	0	0	0	0	0	708	398				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	180	1810	0	0	0	0	0	0	0	0	708	398				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	180	1810	0	0	0	0	0	0	0	0	708	398				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	180	1810	0	0	0	0	0	0	0	0	708	398				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86				
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00				
Final Sat.:	1729	5187	0	0	0	0	0	0	0	0	3271	1636				
Capacity Analysis Module:																
Vol/Sat:	0.10	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.24				
Crit Moves:	****											****				
Green/Cycle:	0.54	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36				
Volume/Cap:	0.19	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.68				
Delay/Veh:	6.7	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	16.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	6.7	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	16.5				
HCM2k95th:	3	14	0	0	0	0	0	0	0	0	12	14				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.694
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25	0	0	0	25	25	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0 0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 30 Sep 2004 << 4:15																
Base Vol:	0	1627	136	0	0	0	379	1287	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	1627	136	0	0	0	379	1287	0	0	0	0				
Added Vol:	0	8	4	0	0	0	156	71	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	1635	140	0	0	0	535	1358	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	1635	140	0	0	0	535	1358	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	1635	140	0	0	0	535	1358	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	1635	140	0	0	0	535	1358	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.90	0.90	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.76	0.24	0.00	0.00	0.00	1.13	2.87	0.00	0.00	0.00	0.00				
Final Sat.:	0	4721	404	0	0	0	1955	4961	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.35	0.35	0.00	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.45	0.45	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.78	0.78	0.00	0.00	0.00	0.61	0.61	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	14.9	14.9	0.0	0.0	0.0	12.2	12.2	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	14.9	14.9	0.0	0.0	0.0	12.2	12.2	0.0	0.0	0.0	0.0				
HCM2k95th:	0	20	20	0	0	0	11	11	0	0	0	0				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.378
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	25	25				
Lanes:	1	0	3	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	260	1515	0	0	0	0	0	0	0	0	645	195				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	260	1515	0	0	0	0	0	0	0	0	645	195				
Added Vol:	36	20	0	0	0	0	0	0	0	0	69	4				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	296	1535	0	0	0	0	0	0	0	0	714	199				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	296	1535	0	0	0	0	0	0	0	0	714	199				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	296	1535	0	0	0	0	0	0	0	0	714	199				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	296	1535	0	0	0	0	0	0	0	0	714	199				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88				
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	0.65				
Final Sat.:	1900	5187	0	0	0	0	0	0	0	0	3923	1093				
Capacity Analysis Module:																
Vol/Sat:	0.16	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.35	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41				
Delay/Veh:	10.4	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	10.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.4	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	10.6				
HCM2k95th:	7	15	0	0	0	0	0	0	0	0	8	8				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.490
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0	0	0	0	0	0	0	0	21	21				
Lanes:	0	1	2	0 0	0	0	0	0 0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	125	1105	0	0	0	0	0	0	0	0	770	159				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	125	1105	0	0	0	0	0	0	0	0	770	159				
Added Vol:	0	42	0	0	0	0	0	0	0	0	34	10				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	125	1147	0	0	0	0	0	0	0	0	804	169				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	125	1147	0	0	0	0	0	0	0	0	804	169				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	125	1147	0	0	0	0	0	0	0	0	804	169				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	125	1147	0	0	0	0	0	0	0	0	804	169				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.29	2.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48	0.52				
Final Sat.:	510	4677	0	0	0	0	0	0	0	0	4175	878				
Capacity Analysis Module:																
Vol/Sat:	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19				
Crit Moves:	****										****					
Green/Cycle:	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38				
Volume/Cap:	0.47	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51				
Delay/Veh:	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8				
HCM2k95th:	9	9	0	0	0	0	0	0	0	0	10	10				

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.507
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 26 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	10	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	1	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	1028	63		0	0	0		204	726	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1028	63		0	0	0		204	726	0		0	0	0	
Added Vol:	0	41	0		0	0	0		1	90	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1069	63		0	0	0		205	816	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1069	63		0	0	0		205	816	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1069	63		0	0	0		205	816	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1069	63		0	0	0		205	816	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.95	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.83	0.17		0.00	0.00	0.00		1.00	2.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4859	286		0	0	0		1805	3610	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.22	0.22		0.00	0.00	0.00		0.11	0.23	0.00		0.00	0.00	0.00	
Crit Moves:		****								****						
Green/Cycle:	0.00	0.43	0.43		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.51	0.51		0.00	0.00	0.00		0.25	0.51	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	10.5	10.5		0.0	0.0	0.0		8.7	10.1	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	10.5	10.5		0.0	0.0	0.0		8.7	10.1	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		4	9	0		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.458
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	31	31	0		0	0	0		0	23	23		0	16	16	
Lanes:	1 1	2	0	0	0 0	0	0	0	0 0	2	1	0	0 0	1	1	1
Volume Module: >> Count Date: 14 Dec 2005 << 5																
Base Vol:	151	644	0		0	0	0		0	786	105		0	287	380	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	151	644	0		0	0	0		0	786	105		0	287	380	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	41	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	151	644	0		0	0	0		0	786	105		0	287	421	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	151	644	0		0	0	0		0	786	105		0	287	421	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	151	644	0		0	0	0		0	786	105		0	287	421	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	151	644	0		0	0	0		0	786	105		0	287	421	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	0.89	0.89		1.00	0.87	0.87	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	2.65	0.35		0.00	1.22	1.78	
Final Sat.:	1729	5187	0		0	0	0		0	4493	600		0	2000	2933	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.12	0.00		0.00	0.00	0.00		0.00	0.17	0.17		0.00	0.14	0.14	
Crit Moves:	****									****				****		
Green/Cycle:	0.39	0.39	0.00		0.00	0.00	0.00		0.00	0.29	0.29		0.00	0.20	0.20	
Volume/Cap:	0.22	0.32	0.00		0.00	0.00	0.00		0.00	0.60	0.60		0.00	0.71	0.71	
Delay/Veh:	16.0	16.7	0.0		0.0	0.0	0.0		0.0	24.8	24.8		0.0	31.7	31.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.0	16.7	0.0		0.0	0.0	0.0		0.0	24.8	24.8		0.0	31.7	31.7	
HCM2k95th:	5	7	0		0	0	0		0	13	13		0	13	13	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.478
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0 0	3	1	0	0 0	0	0	0	1 0	2	0	1	0 0	0	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 5																
Base Vol:	0	656	66		0	0	0		540	1066	265		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	656	66		0	0	0		540	1066	265		0	0	0	
Added Vol:	0	0	0		0	0	0		0	87	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	656	66		0	0	0		540	1153	265		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	656	66		0	0	0		540	1153	265		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	656	66		0	0	0		540	1153	265		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	656	66		0	0	0		540	1153	265		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.85	0.95	0.85		1.00	1.00	1.00	
Lanes:	0.00	3.63	0.37		0.00	0.00	0.00		1.00	2.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	6196	623		0	0	0		1615	3610	1615		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.11	0.11		0.00	0.00	0.00		0.33	0.32	0.16		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.46		0.00	0.00	0.00	
Volume/Cap:	0.00	0.23	0.23		0.00	0.00	0.00		0.73	0.69	0.36		0.00	0.00	0.00	
Delay/Veh:	0.0	12.4	12.4		0.0	0.0	0.0		20.2	17.5	13.5		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.4	12.4		0.0	0.0	0.0		20.2	17.5	13.5		0.0	0.0	0.0	
HCM2k95th:	0	5	5		0	0	0		22	20	8		0	0	0	

Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.596
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	18	18	0		18	18	0		0	34	34		0	0	0	
Lanes:	0 1	2	0	0	0 1	1	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 5																
Base Vol:	55	303	0		217	274	0		0	1089	349		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	55	303	0		217	274	0		0	1089	349		0	0	0	
Added Vol:	0	9	0		0	59	0		0	70	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	55	312	0		217	333	0		0	1159	349		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	55	312	0		217	333	0		0	1159	349		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	55	312	0		217	333	0		0	1159	349		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	55	312	0		217	333	0		0	1159	349		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	1.00		0.93	0.93	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.45	2.55	0.00		0.79	1.21	0.00		0.00	2.31	0.69		0.00	0.00	0.00	
Final Sat.:	772	4379	0		1397	2144	0		0	3847	1158		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07	0.00		0.16	0.16	0.00		0.00	0.30	0.30		0.00	0.00	0.00	
Crit Moves:	****					****				****						
Green/Cycle:	0.23	0.23	0.00		0.23	0.23	0.00		0.00	0.43	0.43		0.00	0.00	0.00	
Volume/Cap:	0.31	0.31	0.00		0.68	0.68	0.00		0.00	0.70	0.70		0.00	0.00	0.00	
Delay/Veh:	25.5	25.5	0.0		30.3	30.3	0.0		0.0	19.4	19.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	25.5	25.5	0.0		30.3	30.3	0.0		0.0	19.4	19.4		0.0	0.0	0.0	
HCM2k95th:	5	5	0		14	14	0		0	20	20		0	0	0	

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Cathedral Square Traffic Study
Baseline Conditions
PM Peak Hour

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.504
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	31	31		0		0		0		0		39		39		0		0		0		0	
Lanes:	0	0	2	1	0		0	0	0	0	0		1	1	2	0	0		0	0	0	0	0	
Volume Module: >> Count Date: 7 Jun 2005 << 5																								
Base Vol:	0	927	182		0		0		0		0		383		978		0		0		0		0	
Growth Adj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0	927	182		0		0		0		0		383		978		0		0		0		0	
Added Vol:	0	128	61		0		0		0		0		0		70		0		0		0		0	
PasserByVol:	0	0	0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	0	1055	243		0		0		0		0		383		1048		0		0		0		0	
User Adj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	0	1055	243		0		0		0		0		383		1048		0		0		0		0	
Reduct Vol:	0	0	0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	0	1055	243		0		0		0		0		383		1048		0		0		0		0	
PCE Adj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Final Vol.:	0	1055	243		0		0		0		0		383		1048		0		0		0		0	
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900		1900		1900		1900		1900		1900		1900		1900		1900		1900		1900	
Adjustment:	1.00	0.88	0.88		1.00		1.00		1.00		1.00		0.91		0.91		1.00		1.00		1.00		1.00	
Lanes:	0.00	2.44	0.56		0.00		0.00		0.00		0.00		1.07		2.93		0.00		0.00		0.00		0.00	
Final Sat.:	0	4098	944		0		0		0		0		1851		5065		0		0		0		0	
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.26	0.26		0.00		0.00		0.00		0.00		0.21		0.21		0.00		0.00		0.00		0.00	
Crit Moves:		****											****											
Green/Cycle:	0.00	0.41	0.41		0.00		0.00		0.00		0.00		0.51		0.51		0.00		0.00		0.00		0.00	
Volume/Cap:	0.00	0.63	0.63		0.00		0.00		0.00		0.00		0.40		0.40		0.00		0.00		0.00		0.00	
Delay/Veh:	0.0	18.6	18.6		0.0		0.0		0.0		0.0		11.4		11.4		0.0		0.0		0.0		0.0	
User DelAdj:	1.00	1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
AdjDel/Veh:	0.0	18.6	18.6		0.0		0.0		0.0		0.0		11.4		11.4		0.0		0.0		0.0		0.0	
HCM2k95th:	0	17	17		0		0		0		0		10		10		0		0		0		0	

Scenario Report

Scenario:	AM BaselineProj
Command:	BaseProjAM
Volume:	Baseline AM
Geometry:	Baseline AM
Impact Fee:	Default Impact Fee
Trip Generation:	AM Base+PP
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.944
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 59.9
Optimal Cycle: 109 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	15		15	15	0		35	35	35		50	50	50	
Lanes:	0 0	0	0	2	2 0	1	0	0	0 1	2	1	0	0 1	1	1	0
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	91		88	106	0		4	1611	192		10	1568	449	
Added Vol:	0	0	0		0	1	0		0	137	50		0	130	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	91		88	107	0		4	1748	242		10	1698	449	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	91		88	107	0		4	1748	242		10	1698	449	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	91		88	107	0		4	1748	242		10	1698	449	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	91		88	107	0		4	1748	242		10	1698	449	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.55	0.90	1.00		0.80	0.80	0.80		0.79	0.79	0.79	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.01	3.51	0.48		0.01	2.37	0.62	
Final Sat.:	0	0	2558		2093	1710	0		12	5358	742		21	3561	942	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.04		0.04	0.06	0.00		0.33	0.33	0.33		0.48	0.48	0.48	
Crit Moves:						****				****				****		
Green/Cycle:	0.00	0.00	0.14		0.14	0.14	0.00		0.32	0.32	0.32		0.46	0.46	0.46	
Volume/Cap:	0.00	0.00	0.26		0.31	0.45	0.00		1.02	1.02	1.02		1.04	1.04	1.04	
Uniform Del:	0.0	0.0	42.0		42.3	43.2	0.0		37.0	37.0	37.0		29.5	29.5	29.5	
IncremntDel:	0.0	0.0	1.8		2.7	6.2	0.0		24.4	24.4	24.4		30.9	30.9	30.9	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	0.0	0.0	43.8		45.0	49.5	0.0		61.4	61.4	61.4		60.4	60.4	60.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	43.8		45.0	49.5	0.0		61.4	61.4	61.4		60.4	60.4	60.4	
HCM2k95th:	0	0	4		5	8	0		38	38	38		53	53	53	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.374
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 18.7
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	10	44	0	0	34	34	0	0	0	26	26	26				
Lanes:	1 0	2 0	0	0 0	2 1	0	0 0	0 0	0	1 1	1 0	1				
Volume Module: >> Count Date: 28 Sep 2004 << 8																
Base Vol:	0	0	0	0	541	138	0	0	0	125	314	75				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	541	138	0	0	0	125	314	75				
Added Vol:	43	0	0	0	107	0	0	0	0	57	77	0				
2-way Adj:	0	30	0	0	0	0	0	0	0	0	0	-30				
Initial Fut:	43	30	0	0	648	138	0	0	0	182	391	45				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	43	30	0	0	648	138	0	0	0	182	391	45				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	43	30	0	0	648	138	0	0	0	182	391	45				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	43	30	0	0	648	138	0	0	0	182	391	45				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.86	0.86	1.00	1.00	0.80	0.80	1.00	1.00	1.00	0.73	0.73	0.77				
Lanes:	1.00	2.00	0.00	0.00	2.47	0.53	0.00	0.00	0.00	1.00	2.00	1.00				
Final Sat.:	1625	3249	0	0	3749	798	0	0	0	1381	2762	1454				
Capacity Analysis Module:																
Vol/Sat:	0.03	0.01	0.00	0.00	0.17	0.17	0.00	0.00	0.00	0.13	0.14	0.03				
Crit Moves:	****				****					****						
Green/Cycle:	0.13	0.56	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.33	0.33	0.33				
Volume/Cap:	0.21	0.02	0.00	0.00	0.40	0.40	0.00	0.00	0.00	0.40	0.43	0.09				
Uniform Del:	31.0	7.8	0.0	0.0	15.5	15.5	0.0	0.0	0.0	20.5	20.7	18.3				
IncremntDel:	2.3	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.8	1.0	0.4				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00				
Delay/Veh:	33.3	7.8	0.0	0.0	16.1	16.1	0.0	0.0	0.0	21.3	21.7	18.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	33.3	7.8	0.0	0.0	16.1	16.1	0.0	0.0	0.0	21.3	21.7	18.7				
HCM2k95th:	3	0	0	0	9	9	0	0	0	9	9	2				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.524
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	29	29	0	14	25	0	16	27	0				
Lanes:	0 0	0 0	0	0 1	1 1	1	1 0	3 0	0	1 0	1 1	0				
Volume Module: >> Count Date: 28 Sep 2004 << 7:45																
Base Vol:	0	0	0	189	462	0	0	638	0	91	129	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	189	462	0	0	638	0	91	129	0				
Added Vol:	0	0	0	131	67	68	36	202	0	40	35	33				
2-way Adj:	0	0	0	0	0	0	30	-30	0	0	0	0				
Initial Fut:	0	0	0	320	529	68	66	810	0	131	164	33				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	320	529	68	66	810	0	131	164	33				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	320	529	68	66	810	0	131	164	33				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	320	529	68	66	810	0	131	164	33				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	0.86	0.82	1.00	0.86	0.83	0.83				
Lanes:	0.00	0.00	0.00	1.00	2.00	1.00	1.00	3.00	0.00	1.00	1.66	0.34				
Final Sat.:	0	0	0	1522	3044	1522	1625	4668	0	1625	2637	531				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.21	0.17	0.04	0.04	0.17	0.00	0.08	0.06	0.06				
Crit Moves:				****				****		****						
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.18	0.32	0.00	0.56	0.34	0.34				
Volume/Cap:	0.00	0.00	0.00	0.57	0.47	0.12	0.23	0.55	0.00	0.28	0.18	0.18				
Uniform Del:	0.0	0.0	0.0	20.0	19.2	16.6	27.9	22.3	0.0	9.3	18.2	18.2				
IncremntDel:	0.0	0.0	0.0	1.5	0.8	0.0	1.8	1.5	0.0	1.5	0.4	0.4				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				
Delay/Veh:	0.0	0.0	0.0	21.5	20.0	16.6	29.7	23.8	0.0	10.8	18.6	18.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	21.5	20.0	16.6	29.7	23.8	0.0	10.8	18.6	18.6				
HCM2k95th:	0	0	0	13	10	3	4	12	0	5	4	4				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.436
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 20.9
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		33	33	0		0	21	21		0	0	0	
Lanes:	0 0	0	1	0	0	1 2	0	0	0	1	1	0	0 0	0	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	60	4		362	267	0		0	318	122		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	60	4		362	267	0		0	318	122		0	0	0	
Added Vol:	0	0	0		9	97	0		0	16	1		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	60	4		371	364	0		0	334	123		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	60	4		371	364	0		0	334	123		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	60	4		371	364	0		0	334	123		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	60	4		371	364	0		0	334	123		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.99	0.99		0.89	0.89	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.94	0.06		1.00	2.00	0.00		0.00	1.46	0.54		0.00	0.00	0.00	
Final Sat.:	0	1765	118		1686	3372	0		0	2533	933		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.03	0.03		0.22	0.11	0.00		0.00	0.13	0.13		0.00	0.00	0.00	
Crit Moves:		****			****					****						
Green/Cycle:	0.00	0.20	0.20		0.42	0.42	0.00		0.00	0.27	0.27		0.00	0.00	0.00	
Volume/Cap:	0.00	0.17	0.17		0.53	0.26	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Uniform Del:	0.0	26.0	26.0		17.2	15.0	0.0		0.0	24.5	24.5		0.0	0.0	0.0	
IncremntDel:	0.0	0.9	0.9		1.4	0.2	0.0		0.0	1.9	1.9		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	27.0	27.0		18.6	15.2	0.0		0.0	26.4	26.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.0	27.0		18.6	15.2	0.0		0.0	26.4	26.4		0.0	0.0	0.0	
HCM2k95th:	0	3	3		13	6	0		0	10	10		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.262
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.3
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0 0	0	0	0	0 0	1	1	1	0	0	0	0	0	1	2	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 7:30																
Base Vol:	0	0	0		0	199	137		0	0	0		158	506	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	199	137		0	0	0		158	506	0	
Added Vol:	0	0	0		0	0	90		0	0	0		0	105	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	199	227		0	0	0		158	611	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	199	227		0	0	0		158	611	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	199	227		0	0	0		158	611	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	199	227		0	0	0		158	611	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.40	1.60		0.00	0.00	0.00		0.62	2.38	0.00	
Final Sat.:	0	0	0		0	2327	2655		0	0	0		1066	4121	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.09		0.00	0.00	0.00		0.15	0.15	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.25	0.25		0.00	0.00	0.00		0.27	0.27	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	13.4	13.4		0.0	0.0	0.0		6.6	6.6	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	0.4	0.4		0.0	0.0	0.0		0.2	0.2	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	13.7	13.7		0.0	0.0	0.0		6.8	6.8	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	13.7	13.7		0.0	0.0	0.0		6.8	6.8	0.0	
HCM2k95th:	0	0	0		0	4	4		0	0	0		5	5	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.564
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	3	1 0	0	0	0	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 7:15																
Base Vol:	0	0	0		129	202	0		0	1997	308		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		129	202	0		0	1997	308		0	0	0	
Added Vol:	0	0	0		0	0	0		0	612	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		129	202	0		0	2609	308		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		129	202	0		0	2609	308		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		129	202	0		0	2609	308		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		129	202	0		0	2609	308		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		1.00	2.00	0.00		0.00	3.58	0.42		0.00	0.00	0.00	
Final Sat.:	0	0	0		1729	3458	0		0	6087	719		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.07	0.06	0.00		0.00	0.43	0.43		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.22	0.17	0.00		0.00	0.77	0.77		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		13.2	13.0	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.3	0.2	0.0		0.0	1.6	1.6		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		13.5	13.2	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
HCM2k95th:	0	0	0		4	3	0		0	20	20		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.421
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	30		0	0	0		0	20	20	
Lanes:	2	0	2	0 0	0	0	0	2 0	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 8																
Base Vol:	148	752	0		0	0	0		0	0	0		0	753	81	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	148	752	0		0	0	0		0	0	0		0	753	81	
Added Vol:	0	2	0		0	0	0		0	0	0		0	49	0	
5th St Conv:	0	0	0		0	0	12		0	0	0		0	0	0	
Initial Fut:	148	754	0		0	0	12		0	0	0		0	802	81	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	148	754	0		0	0	12		0	0	0		0	802	81	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	148	754	0		0	0	12		0	0	0		0	802	81	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	148	754	0		0	0	12		0	0	0		0	802	81	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.54	0.86	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	2.00	2.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.63	0.37	
Final Sat.:	2034	3249	0		0	0	2558		0	0	0		0	5574	563	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.14	0.14	
Crit Moves:		****			****									****		
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.54		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.14	0.43	0.00		0.00	0.00	0.01		0.00	0.00	0.00		0.00	0.40	0.40	
Uniform Del:	6.5	7.9	0.0		0.0	0.0	6.1		0.0	0.0	0.0		0.0	13.5	13.5	
IncremntDel:	0.3	0.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.6	0.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	6.8	8.6	0.0		0.0	0.0	6.1		0.0	0.0	0.0		0.0	14.1	14.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	6.8	8.6	0.0		0.0	0.0	6.1		0.0	0.0	0.0		0.0	14.1	14.1	
HCM2k95th:	2	8	0		0	0	0		0	0	0		0	6	6	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.636
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.7
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	40	40	0	0	0	60	60	60	0	0	0
Lanes:	0 0	1 1	1	0 0	0 0	0	1 1	3 0	1	0 0	0 0	0
Volume Module: >> Count Date: 13 Jan 2005 << 7:45												
Base Vol:	0	260	274	0	0	0	680	2325	96	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	260	274	0	0	0	680	2325	96	0	0	0
Added Vol:	0	2	1	0	0	0	0	172	39	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	262	275	0	0	0	680	2497	135	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	262	275	0	0	0	680	2497	135	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	262	275	0	0	0	680	2497	135	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	262	275	0	0	0	680	2497	135	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.79	0.79	1.00	1.00	1.00	0.70	0.70	0.77	1.00	1.00	1.00
Lanes:	0.00	1.46	1.54	0.00	0.00	0.00	1.07	3.93	1.00	0.00	0.00	0.00
Final Sat.:	0	2195	2304	0	0	0	1416	5198	1454	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.12	0.12	0.00	0.00	0.00	0.48	0.48	0.09	0.00	0.00	0.00
Crit Moves:		****					****					
Green/Cycle:	0.00	0.38	0.38	0.00	0.00	0.00	0.57	0.57	0.57	0.00	0.00	0.00
Volume/Cap:	0.00	0.32	0.32	0.00	0.00	0.00	0.85	0.85	0.16	0.00	0.00	0.00
Uniform Del:	0.0	23.3	23.3	0.0	0.0	0.0	19.2	19.2	11.0	0.0	0.0	0.0
IncremntDel:	0.0	0.5	0.5	0.0	0.0	0.0	2.6	2.6	0.4	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	23.8	23.8	0.0	0.0	0.0	21.8	21.8	11.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.8	23.8	0.0	0.0	0.0	21.8	21.8	11.4	0.0	0.0	0.0
HCM2k95th:	0	8	8	0	0	0	37	37	5	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.243
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.1
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	40	40	0	0	0	40	0	0	0	0	30	30
Lanes:	1 0	3 0	0	0 0	0 0	2	0 0	0 0	0	0 0	3 1	0
Volume Module: >> Count Date: 13 Jan 2085 << 8												
Base Vol:	76	483	0	0	0	98	0	0	0	0	514	93
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	483	0	0	0	98	0	0	0	0	514	93
Added Vol:	1	3	0	0	0	39	0	0	0	0	70	0
2-way Adj:	-30	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	486	0	0	0	137	0	0	0	0	584	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	486	0	0	0	137	0	0	0	0	584	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	486	0	0	0	137	0	0	0	0	584	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	47	486	0	0	0	137	0	0	0	0	584	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.82	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1.00	0.80	0.80
Lanes:	1.00	3.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	3.45	0.55
Final Sat.:	1315	4668	0	0	0	2558	0	0	0	0	5257	837
Capacity Analysis Module:												
Vol/Sat:	0.04	0.10	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.11	0.11
Crit Moves:		****									****	
Green/Cycle:	0.51	0.51	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.38	0.38
Volume/Cap:	0.07	0.21	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.29	0.29
Uniform Del:	10.0	10.7	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0	17.1	17.1
IncremntDel:	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.3
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00
Delay/Veh:	10.2	10.9	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	17.4	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.2	10.9	0.0	0.0	0.0	10.3	0.0	0.0	0.0	0.0	17.4	17.4
HCM2k95th:	2	5	0	0	0	2	0	0	0	0	6	6

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.280
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		17	35	0		0	18	18	
Lanes:	2	0	2	1 0	0	0	0	0	2	0	2	0 0	0	0	2	1 0
Volume Module: >> Count Date: 13 Jan 2005 << 8																
Base Vol:	126	297	60		0	0	0		491	354	0		0	96	37	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	126	297	60		0	0	0		491	354	0		0	96	37	
Added Vol:	25	1	42		0	0	0		3	330	0		0	76	0	
2-way Adj:	0	0	0		0	0	0		-30	0	0		0	0	0	
Initial Fut:	151	298	102		0	0	0		464	684	0		0	172	37	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	151	298	102		0	0	0		464	684	0		0	172	37	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	151	298	102		0	0	0		464	684	0		0	172	37	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	151	298	102		0	0	0		464	684	0		0	172	37	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.84	0.79	0.79		1.00	1.00	1.00		0.83	0.86	1.00		1.00	0.80	0.80	
Lanes:	2.00	2.23	0.77		0.00	0.00	0.00		2.00	2.00	0.00		0.00	2.47	0.53	
Final Sat.:	3191	3346	1145		0	0	0		3152	3249	0		0	3738	804	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.09	0.09		0.00	0.00	0.00		0.15	0.21	0.00		0.00	0.05	0.05	
Crit Moves:	****									****			****			
Green/Cycle:	0.46	0.46	0.46		0.00	0.00	0.00		0.22	0.46	0.00		0.00	0.24	0.24	
Volume/Cap:	0.10	0.19	0.19		0.00	0.00	0.00		0.66	0.46	0.00		0.00	0.19	0.19	
Uniform Del:	11.6	12.1	12.1		0.0	0.0	0.0		26.9	14.0	0.0		0.0	23.2	23.2	
IncremntDel:	0.1	0.2	0.2		0.0	0.0	0.0		4.8	1.0	0.0		0.0	0.4	0.4	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00	
Delay/Veh:	11.7	12.3	12.3		0.0	0.0	0.0		31.6	15.0	0.0		0.0	23.6	23.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	11.7	12.3	12.3		0.0	0.0	0.0		31.6	15.0	0.0		0.0	23.6	23.6	
HCM2k95th:	3	4	4		0	0	0		12	11	0		0	3	3	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.318
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	0	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Jan 2005 <<																
Base Vol:	0	619	193		0	0	0		63	523	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	619	193		0	0	0		63	523	0		0	0	0	
Added Vol:	0	68	0		0	0	0		0	25	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	687	193		0	0	0		63	548	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	687	193		0	0	0		63	548	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	687	193		0	0	0		63	548	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	687	193		0	0	0		63	548	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.88	0.88		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.34	0.66		0.00	0.00	0.00		0.31	2.69	0.00		0.00	0.00	0.00	
Final Sat.:	0	3916	1100		0	0	0		535	4652	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.18	0.18		0.00	0.00	0.00		0.12	0.12	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.38	0.38		0.00	0.00	0.00		0.26	0.26	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	13.4	13.4		0.0	0.0	0.0		12.5	12.5	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.5	0.5		0.0	0.0	0.0		0.3	0.3	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.9	13.9		0.0	0.0	0.0		12.8	12.8	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.9	13.9		0.0	0.0	0.0		12.8	12.8	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		6	6	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.376
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	0	0		0	20	20	
Lanes:	0	1	2	0 0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module: >> Count Date: 21 Apr 2005 << 7:45																
Base Vol:	178	704	0		0	0	0		0	0	0		0	413	237	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	178	704	0		0	0	0		0	0	0		0	413	237	
Added Vol:	1	59	0		0	0	0		0	0	0		0	104	9	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	179	763	0		0	0	0		0	0	0		0	517	246	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	179	763	0		0	0	0		0	0	0		0	517	246	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	179	763	0		0	0	0		0	0	0		0	517	246	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	179	763	0		0	0	0		0	0	0		0	517	246	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.87	0.87	
Lanes:	0.57	2.43	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.03	0.97	
Final Sat.:	986	4201	0		0	0	0		0	0	0		0	3346	1592	
Capacity Analysis Module:																
Vol/Sat:	0.18	0.18	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.15	0.15	
Crit Moves:	****													****		
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.34	0.34	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.43	0.43	
Uniform Del:	7.4	7.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.7	13.7	
IncremntDel:	0.3	0.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.8	0.8	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	7.7	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.5	14.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.7	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.5	14.5	
HCM2k95th:	7	7	0		0	0	0		0	0	0		0	8	8	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.481
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	19	19		0	0	0		31	31	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 26 Apr 2005 << 7:30																
Base Vol:	0	311	49		0	0	0		560	1633	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	311	49		0	0	0		560	1633	0		0	0	0	
Added Vol:	0	0	0		0	0	0		60	552	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	311	49		0	0	0		620	2185	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	311	49		0	0	0		620	2185	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	311	49		0	0	0		620	2185	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	311	49		0	0	0		620	2185	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.59	0.41		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4391	692		0	0	0		1729	5187	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.07	0.07		0.00	0.00	0.00		0.36	0.42	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.21	0.21		0.00	0.00	0.00		0.65	0.76	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	13.2	13.2		0.0	0.0	0.0		8.7	9.6	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.3	0.3		0.0	0.0	0.0		0.8	1.5	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.4	13.4		0.0	0.0	0.0		9.5	11.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.4	13.4		0.0	0.0	0.0		9.5	11.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	4	4		0	0	0		14	17	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.305
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	23	23			0	0	0	0	27	27		0
Lanes:	0	0	0	0	0	2	0	2	0	0	0	0	1	1	2	0
Volume Module: >> Count Date: 30 Sep 2004 << 8																
Base Vol:	0	0	0	0	266	218			0	0	0	0	253	701		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	266	218			0	0	0	0	253	701		0
Added Vol:	0	0	0	0	96	1			0	0	0	0	0	49		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	0	362	219		0	0	0	0	253	750		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	362	219			0	0	0	0	253	750		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	362	219			0	0	0	0	253	750		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	0	362	219			0	0	0	0	253	750		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.01	2.99	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	0	3249	2558			0	0	0	0	1570	4654		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.09	0.00	0.00	0.00	0.16	0.16	0.00	0.00	0.00	0.00	0.00
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.00	0.48	0.48	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.27	0.21	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	0.0	0.0	0.0	10.9	10.6	0.0	0.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	11.4	11.1	0.0	0.0	0.0	9.3	9.3	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	11.4	11.1	0.0	0.0	0.0	9.3	9.3	0.0	0.0	0.0	0.0	0.0
HCM2k95th:	0	0	0	0	5	3			0	0	0	0	6	6		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.615
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	35	35		0	0	65	65		0	0		0
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1	1	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	0	0	156	254		0	0	1986	280		0	0		0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	156	254		0	0	1986	280		0	0		0	
Added Vol:	0	0	0	18	78		0	0	161	42		0	0		0	
PasserByVol:	0	0	0	0	0		0	0	0	0		0	0		0	
Initial Fut:	0	0	0	174	332		0	0	2147	322		0	0		0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	174	332		0	0	2147	322		0	0		0	
Reduct Vol:	0	0	0	0	0		0	0	0	0		0	0		0	
Reduced Vol:	0	0	0	174	332		0	0	2147	322		0	0		0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	174	332		0	0	2147	322		0	0		0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	2.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	1556	3112		0	4580	1527		0	0		0		
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.47	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.33	0.33	0.00	0.00	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.00	0.00	0.34	0.32	0.00	0.00	0.76	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Del:	0.0	0.0	0.0	26.8	26.6	0.0	0.0	14.9	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.6	0.5	0.0	0.0	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	0.0	0.0	27.4	27.2	0.0	0.0	16.7	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	27.4	27.2	0.0	0.0	16.7	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HCM2k95th:	0	0	0	9	8		0	30	10		0	0		0		

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.331
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29			0	0	0	0	21	21		0
Lanes:	0	0	0	0 0	0	2	1	0	0	0	0	0 0	1	0	3	0 0
Volume Module: >> Count Date: 7 Dec 2005 << 8																
Base Vol:	0	0	0	0	334	175			0	0	0		188	662		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	0	0	334	175			0	0	0		188	662		0
Added Vol:	0	0	0	0	117	4			0	0	0		76	52		0
PasserByVol:	0	0	0	0	0	0			0	0	0		0	0		0
Initial Fut:	0	0	0	0	451	179			0	0	0		264	714		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Volume:	0	0	0	0	451	179			0	0	0		264	714		0
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0		0
Reduced Vol:	0	0	0	0	451	179			0	0	0		264	714		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	0	0	0	0	451	179			0	0	0		264	714		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78			1.00	1.00	1.00		0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.15	0.85			0.00	0.00	0.00		1.00	3.00		0.00
Final Sat.:	0	0	0	0	3198	1269			0	0	0		1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.14	0.14			0.00	0.00	0.00		0.15	0.15		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52			0.00	0.00	0.00		0.38	0.38		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.27	0.27			0.00	0.00	0.00		0.41	0.41		0.00
Uniform Del:	0.0	0.0	0.0	0.0	7.6	7.6			0.0	0.0	0.0		12.9	12.9		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.3	0.3			0.0	0.0	0.0		1.9	0.7		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00		1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	7.9	7.9			0.0	0.0	0.0		14.9	13.6		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.9	7.9			0.0	0.0	0.0		14.9	13.6		0.0
HCM2k95th:	0	0	0	0	5	5			0	0	0		8	7		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.303
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0			0	0	0		0	25		25
Lanes:	1	1	2	0 0	0	0	0	0	0	0	0	0 0	0	0	2	1 0
Volume Module:																
Base Vol:	121	329		0	0	0			0	0	0		0	851		126
Growth Adj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	121	329		0	0	0			0	0	0		0	851		126
Added Vol:	32	36		0	0	0			0	0	0		0	17		3
PasserByVol:	0	0		0	0	0			0	0	0		0	0		0
Initial Fut:	153	365		0	0	0			0	0	0		0	868		129
User Adj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Volume:	153	365		0	0	0			0	0	0		0	868		129
Reduct Vol:	0	0		0	0	0			0	0	0		0	0		0
Reduced Vol:	153	365		0	0	0			0	0	0		0	868		129
PCE Adj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	153	365		0	0	0			0	0	0		0	868		129
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	0.91	0.91		1.00	1.00	1.00			1.00	1.00	1.00		1.00	0.89		0.89
Lanes:	1.18	2.82		0.00	0.00	0.00			0.00	0.00	0.00		0.00	2.61		0.39
Final Sat.:	2043	4873		0	0	0			0	0	0		0	4430		658
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07		0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.20		0.20
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45		0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.45		0.45
Volume/Cap:	0.17	0.17		0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.44		0.44
Uniform Del:	9.3	9.3		0.0	0.0	0.0			0.0	0.0	0.0		0.0	10.7		10.7
IncremntDel:	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.1		0.1
InitQueuDel:	0.0	0.0		0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	1.00	1.00		0.00	0.00	0.00			0.00	0.00	0.00		0.00	1.00		1.00
Delay/Veh:	9.3	9.3		0.0	0.0	0.0			0.0	0.0	0.0		0.0	10.8		10.8
User DelAdj:	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	9.3	9.3		0.0	0.0	0.0			0.0	0.0	0.0		0.0	10.8		10.8
HCM2k95th:	3	3		0	0	0			0	0	0		0	8		8

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.374
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.0
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		65	65	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1	1	2	0 0	0 0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	0	304	151		0	0	0		256	1880	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	304	151		0	0	0		256	1880	0		0	0	0	
Added Vol:	0	63	119		0	0	0		5	174	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	367	270		0	0	0		261	2054	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	367	270		0	0	0		261	2054	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	367	270		0	0	0		261	2054	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	367	270		0	0	0		261	2054	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.77	0.77		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.00	1.00		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	2913	1457		0	0	0		1556	4668	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.13	0.19		0.00	0.00	0.00		0.17	0.44	0.00		0.00	0.00	0.00	
Crit Moves:			****						****							
Green/Cycle:	0.00	0.33	0.33		0.00	0.00	0.00		0.61	0.61	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.38	0.56		0.00	0.00	0.00		0.27	0.72	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	27.2	29.2		0.0	0.0	0.0		9.5	14.2	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.7	2.0		0.0	0.0	0.0		0.1	1.4	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	27.9	31.2		0.0	0.0	0.0		9.6	15.6	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	27.9	31.2		0.0	0.0	0.0		9.6	15.6	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	14		0	0	0		8	26	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.299
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0		0	0	0		0	0	0		0	21	21	
Lanes:	1 0	2	0	0	0 0	0	0	0	0	0	0	0 0	0 0	2	1	1
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	111	308	0		0	0	0		0	0	0		0	740	165	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	111	308	0		0	0	0		0	0	0		0	740	165	
Added Vol:	0	81	0		0	0	0		0	0	0		0	128	170	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	111	389	0		0	0	0		0	0	0		0	868	335	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	111	389	0		0	0	0		0	0	0		0	868	335	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	111	389	0		0	0	0		0	0	0		0	868	335	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	111	389	0		0	0	0		0	0	0		0	868	335	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.86	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.78	0.78	
Lanes:	1.00	2.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.89	1.11	
Final Sat.:	1710	3249	0		0	0	0		0	0	0		0	4302	1661	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.12	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.20	0.20	
Crit Moves:	****													****		
Green/Cycle:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.38	0.38	
Volume/Cap:	0.13	0.23	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.54	0.54	
Uniform Del:	7.0	7.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	13.7	13.7	
IncremntDel:	0.3	0.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.9	0.9	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	7.3	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.6	14.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	7.3	7.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.6	14.6	
HCM2k95th:	2	4	0		0	0	0		0	0	0		0	9	9	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.334
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 13.1
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	22	22			0	0	0	0	28	28		0
Lanes:	0	0	0	0	0	0	2	1 0	0	0	0	0	1	0	3	0 0
Volume Module: >> Count Date: 12 Jan 2006 << 7:45																
Base Vol:	0	0	0	0	214	192			0	0	0	0	137	853		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	214	192			0	0	0	0	137	853		0
Added Vol:	0	0	0	0	124	0			0	0	0	0	101	20		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	338	192			0	0	0	0	238	873		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	338	192			0	0	0	0	238	873		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	338	192			0	0	0	0	238	873		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	338	192			0	0	0	0	238	873		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.77	0.77			1.00	1.00	1.00	1.00	0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00			0.00	0.00	0.00	0.00	1.00	3.00		0.00
Final Sat.:	0	0	0	0	2944	1472			0	0	0	0	1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.11	0.13			0.00	0.00	0.00	0.00	0.14	0.19		0.00
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.35	0.35			0.00	0.00	0.00	0.00	0.45	0.45		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.32	0.37			0.00	0.00	0.00	0.00	0.31	0.41		0.00
Uniform Del:	0.0	0.0	0.0	0.0	14.6	14.8			0.0	0.0	0.0	0.0	10.8	11.5		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.5	0.7			0.0	0.0	0.0	0.0	1.0	0.6		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	15.1	15.6			0.0	0.0	0.0	0.0	11.9	12.1		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	15.1	15.6			0.0	0.0	0.0	0.0	11.9	12.1		0.0
HCM2k95th:	0	0	0	0	6	6			0	0	0	0	6	8		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.596
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.0
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	40	40	0			0	60	60		0	0		0
Lanes:	0	0	0	0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module: >> Count Date: 12 Jan 2005 << 7:45																
Base Vol:	0	0	0	71	278	0			0	1527	179		0	0		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	0	71	278	0			0	1527	179		0	0		0
Added Vol:	0	0	0	0	225	0			0	135	158		0	0		0
PasserByVol:	0	0	0	0	0	0			0	0	0		0	0		0
Initial Fut:	0	0	0	71	503	0			0	1662	337		0	0		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Volume:	0	0	0	71	503	0			0	1662	337		0	0		0
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0		0
Reduced Vol:	0	0	0	71	503	0			0	1662	337		0	0		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	0	0	0	71	503	0			0	1662	337		0	0		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00			1.00	0.80	0.80		1.00	1.00		1.00
Lanes:	0.00	0.00	0.00	0.37	2.63	0.00			0.00	2.49	0.51		0.00	0.00		0.00
Final Sat.:	0	0	0	577	4091	0			0	3784	767		0	0		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.12	0.12	0.00			0.00	0.44	0.44		0.00	0.00		0.00
Crit Moves:				****						****						
Green/Cycle:	0.00	0.00	0.00	0.38	0.38	0.00			0.00	0.57	0.57		0.00	0.00		0.00
Volume/Cap:	0.00	0.00	0.00	0.33	0.33	0.00			0.00	0.78	0.78		0.00	0.00		0.00
Uniform Del:	0.0	0.0	0.0	23.4	23.4	0.0			0.0	17.8	17.8		0.0	0.0		0.0
IncremntDel:	0.0	0.0	0.0	0.5	0.5	0.0			0.0	2.4	2.4		0.0	0.0		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	0.00			0.00	1.00	1.00		0.00	0.00		0.00
Delay/Veh:	0.0	0.0	0.0	23.9	23.9	0.0			0.0	20.2	20.2		0.0	0.0		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	23.9	23.9	0.0			0.0	20.2	20.2		0.0	0.0		0.0
HCM2k95th:	0	0	0	9	9	0			0	28	28		0	0		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.314
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21			0	0	0	0	29	29		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	255	146			0	0	0	0	264	969		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	255	146			0	0	0	0	264	969		0
Added Vol:	0	0	0	0	151	10			0	0	0	0	1	288		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	0	406	156		0	0	0	0	265	1257		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	406	156			0	0	0	0	265	1257		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	406	156			0	0	0	0	265	1257		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	406	156			0	0	0	0	265	1257		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78			1.00	1.00	1.00	1.00	0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.17	0.83			0.00	0.00	0.00	0.00	1.00	3.00		0.00
Final Sat.:	0	0	0	0	3231	1241			0	0	0	0	1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.13	0.13			0.00	0.00	0.00	0.00	0.15	0.27		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38			0.00	0.00	0.00	0.00	0.52	0.52		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.34	0.34			0.00	0.00	0.00	0.00	0.30	0.52		0.00
Uniform Del:	0.0	0.0	0.0	0.0	12.5	12.5			0.0	0.0	0.0	0.0	7.7	8.9		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.5	0.5			0.0	0.0	0.0	0.0	0.9	0.8		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	13.0	13.0			0.0	0.0	0.0	0.0	8.6	9.7		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	13.0	13.0			0.0	0.0	0.0	0.0	8.6	9.7		0.0
HCM2k95th:	0	0	0	0	6	6			0	0	0	0	6	10		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.370
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10		0		0	0	0	0	0	10		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	458	133			0	0	0	0	108	592		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	458	133			0	0	0	0	108	592		0
Added Vol:	0	0	0	0	263	6			0	0	0	0	45	63		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	721	139			0	0	0	0	153	655		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	721	139			0	0	0	0	153	655		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	721	139			0	0	0	0	153	655		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	721	139			0	0	0	0	153	655		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.52	0.48			0.00	0.00	0.00	0.00	0.57	2.43		0.00
Final Sat.:	0	0	0	0	4244	818			0	0	0	0	982	4205		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.17	0.17			0.00	0.00	0.00	0.00	0.16	0.16		0.00
Crit Moves:					****									****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.46	0.46			0.00	0.00	0.00	0.00	0.42	0.42		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.37	0.37			0.00	0.00	0.00	0.00	0.37	0.37		0.00
Uniform Del:	0.0	0.0	0.0	0.0	8.8	8.8			0.0	0.0	0.0	0.0	9.9	9.9		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.1	0.1			0.0	0.0	0.0	0.0	0.1	0.1		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	8.9	8.9			0.0	0.0	0.0	0.0	10.0	10.0		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.9	8.9			0.0	0.0	0.0	0.0	10.0	10.0		0.0
HCM2k95th:	0	0	0	0	6	6			0	0	0	0	6	6		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	3	1 0	0	0	0	0
Volume Module:																
Base Vol:	0	0	0		169	391	0		0	1288	113		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		169	391	0		0	1288	113		0	0	0	
Added Vol:	0	0	0		12	295	0		0	11	366		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		181	686	0		0	1299	479		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		181	686	0		0	1299	479		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		181	686	0		0	1299	479		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		181	686	0		0	1299	479		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.63	2.37	0.00		0.00	3.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	0	0		1083	4104	0		0	4980	1660		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.17	0.17	0.00		0.00	0.26	0.29		0.00	0.00	0.00	
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.37	0.37	0.00		0.00	0.58	0.65		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		10.3	10.3	0.0		0.0	11.6	12.1		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.3	0.5		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	11.9	12.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	11.9	12.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	12	14		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.466
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	26	26	0		0	0	0		0	0	0		0	24	24	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module: >> Count Date: 7 Dec 2005 << 7:45																
Base Vol:	176	510	0		0	0	0		0	0	0		0	787	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	510	0		0	0	0		0	0	0		0	787	130	
Added Vol:	0	10	0		0	0	0		0	0	0		0	121	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	176	520	0		0	0	0		0	0	0		0	908	130	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	520	0		0	0	0		0	0	0		0	908	130	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	520	0		0	0	0		0	0	0		0	908	130	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	176	520	0		0	0	0		0	0	0		0	908	130	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.76	2.24	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.62	0.38	
Final Sat.:	1180	3488	0		0	0	0		0	0	0		0	4006	574	
Capacity Analysis Module:																
Vol/Sat:	0.15	0.15	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.23	0.23	
Crit Moves:	****													****		
Green/Cycle:	0.42	0.42	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.39	0.39	
Volume/Cap:	0.36	0.36	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.59	0.59	
Uniform Del:	12.3	12.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.1	15.1	
IncremntDel:	0.5	0.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	1.4	1.4	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	12.8	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.8	12.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
HCM2k95th:	7	7	0		0	0	0		0	0	0		0	12	12	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.527
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	40	40	0	0	0	60	60	0	0	0	0
Lanes:	0 0	2	1 1	0 0	0 0	0	0 1	2	0 0	0 0	0 0	0
Volume Module: >> Count Date: 8 Dec 2005 << 8												
Base Vol:	0	464	200	0	0	0	278	1254	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	464	200	0	0	0	278	1254	0	0	0	0
Added Vol:	0	10	0	0	0	0	0	135	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	474	200	0	0	0	278	1389	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	474	200	0	0	0	278	1389	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	474	200	0	0	0	278	1389	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	474	200	0	0	0	278	1389	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.78	0.78	1.00	1.00	1.00	0.82	0.82	1.00	1.00	1.00	1.00
Lanes:	0.00	2.81	1.19	0.00	0.00	0.00	0.50	2.50	0.00	0.00	0.00	0.00
Final Sat.:	0	4180	1764	0	0	0	779	3890	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.00	0.00	0.00	0.36	0.36	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green/Cycle:	0.00	0.36	0.36	0.00	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.32	0.32	0.00	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00
Uniform Del:	0.0	26.1	26.1	0.0	0.0	0.0	18.8	18.8	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.4	0.4	0.0	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	26.5	26.5	0.0	0.0	0.0	20.2	20.2	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.5	26.5	0.0	0.0	0.0	20.2	20.2	0.0	0.0	0.0	0.0
HCM2k95th:	0	9	9	0	0	0	23	23	0	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.615
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	21	21	0	0	0	0	0	0	0	0	29	29
Lanes:	0 1	2	0 0	0 0	0 0	0	0 0	0	0 0	0 0	2	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 8												
Base Vol:	244	685	0	0	0	0	0	0	0	0	1020	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	244	685	0	0	0	0	0	0	0	0	1020	271
Added Vol:	54	10	0	0	0	0	0	0	0	0	235	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	298	695	0	0	0	0	0	0	0	0	1255	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	695	0	0	0	0	0	0	0	0	1255	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	695	0	0	0	0	0	0	0	0	1255	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	298	695	0	0	0	0	0	0	0	0	1255	272
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80
Lanes:	0.90	2.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47	0.53
Final Sat.:	1401	3267	0	0	0	0	0	0	0	0	3733	809
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34
Crit Moves:	****										****	
Green/Cycle:	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52
Volume/Cap:	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.65
Uniform Del:	13.9	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	9.8
IncremntDel:	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Delay/Veh:	15.2	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.2	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	11.2
HCM2k95th:	10	10	0	0	0	0	0	0	0	0	14	14

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.494
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	0	0		0	0	0		0	25	25	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module:																
Base Vol:	130	1243	0		0	0	0		0	0	0		0	519	202	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	130	1243	0		0	0	0		0	0	0		0	519	202	
Added Vol:	38	57	0		0	0	0		0	0	0		0	70	-1	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	168	1300	0		0	0	0		0	0	0		0	589	201	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	168	1300	0		0	0	0		0	0	0		0	589	201	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	168	1300	0		0	0	0		0	0	0		0	589	201	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	168	1300	0		0	0	0		0	0	0		0	589	201	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.88	0.88	
Lanes:	0.34	2.66	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.24	0.76	
Final Sat.:	594	4593	0		0	0	0		0	0	0		0	3720	1270	
Capacity Analysis Module:																
Vol/Sat:	0.28	0.28	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.16	0.16	
Crit Moves:	****													****		
Green/Cycle:	0.45	0.45	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.45	0.45	
Volume/Cap:	0.63	0.63	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.35	0.35	
Uniform Del:	12.0	12.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.2	10.2	
IncremntDel:	0.6	0.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.1	0.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	12.5	12.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	12.5	12.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	10.3	10.3	
HCM2k95th:	13	13	0		0	0	0		0	0	0		0	6	6	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.472
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	876	91		0	0	0		375	1083	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	876	91		0	0	0		375	1083	0		0	0	0	
Added Vol:	0	95	0		0	0	0		1	23	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	971	91		0	0	0		376	1106	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	971	91		0	0	0		376	1106	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	971	91		0	0	0		376	1106	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	971	91		0	0	0		376	1106	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.74	0.26		0.00	0.00	0.00		1.01	2.99	0.00		0.00	0.00	0.00	
Final Sat.:	0	4681	439		0	0	0		1755	5161	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21	0.21		0.00	0.00	0.00		0.21	0.21	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.46	0.46		0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	10.8	10.8		0.0	0.0	0.0		10.9	10.9	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.2	0.2		0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
HCM2k95th:	0	9	9		0	0	0		9	9	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.460
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0	0
Volume Module: >> Count Date: 23 Mar 2005 << 7:30																
Base Vol:	0	0	0		288	1260	0		0	419	40		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		288	1260	0		0	419	40		0	0	0	
Added Vol:	0	0	0		0	154	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		288	1414	0		0	419	40		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		288	1414	0		0	419	40		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		288	1414	0		0	419	40		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		288	1414	0		0	419	40		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.51	2.49	0.00		0.00	2.74	0.26		0.00	0.00	0.00	
Final Sat.:	0	0	0		878	4309	0		0	4673	446		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.33	0.33	0.00		0.00	0.09	0.09		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.80	0.80	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		17.2	17.2	0.0		0.0	9.1	9.1		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		3.3	3.3	0.0		0.0	0.2	0.2		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		20.5	20.5	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		20.5	20.5	0.0		0.0	9.2	9.2		0.0	0.0	0.0	
HCM2k95th:	0	0	0		21	21	0		0	4	4		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.548
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 6.6
Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0	0	0	2	1	0	0	0	0	0	1	2	0
Volume Module: >> Count Date: 8 Dec 2005 << 7:45																
Base Vol:	0	0	0		0	804	356		0	0	0		61	627	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	804	356		0	0	0		61	627	0	
Added Vol:	0	0	0		0	55	100		0	0	0		0	1	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	859	456		0	0	0		61	628	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	859	456		0	0	0		61	628	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	859	456		0	0	0		61	628	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	859	456		0	0	0		61	628	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.86	0.86		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.00	1.00		0.00	0.00	0.00		0.27	2.73	0.00	
Final Sat.:	0	0	0		0	3278	1639		0	0	0		459	4728	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.26	0.28		0.00	0.00	0.00		0.13	0.13	0.00	
Crit Moves:							****							****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.46	0.46		0.00	0.00	0.00		0.29	0.29	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.57	0.61		0.00	0.00	0.00		0.46	0.46	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	4.8	4.9		0.0	0.0	0.0		6.9	6.9	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	1.0	1.3		0.0	0.0	0.0		1.0	1.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	5.8	6.2		0.0	0.0	0.0		7.9	7.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	5.8	6.2		0.0	0.0	0.0		7.9	7.9	0.0	
HCM2k95th:	0	0	0		0	7	8		0	0	0		5	5	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.609
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0 0	0	0	1	1 0	2	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 8																
Base Vol:	0	0	114		323	503	0		0	1292	149		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	114		323	503	0		0	1292	149		0	0	0	
Added Vol:	0	0	0		9	46	0		0	154	19		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	114		332	549	0		0	1446	168		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	114		332	549	0		0	1446	168		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	114		332	549	0		0	1446	168		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	114		332	549	0		0	1446	168		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.69	0.31		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4573	531		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.23	0.15	0.00		0.00	0.32	0.32		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.13		0.41	0.27	0.00		0.00	0.93	0.93		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	6.0		7.2	6.6	0.0		0.0	17.9	17.9		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.3		1.5	0.3	0.0		0.0	10.6	10.6		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	6.3		8.8	6.9	0.0		0.0	28.5	28.5		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	6.3		8.8	6.9	0.0		0.0	28.5	28.5		0.0	0.0	0.0	
HCM2k95th:	0	0	2		9	6	0		0	24	24		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.478
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 13.3
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	0 1	0	0	0	0 0	0	1	1	0 0	0	0	0	0 1	1	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 8																
Base Vol:	5	1	0		0	1	549		0	0	0		3	743	152	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	1	0		0	1	549		0	0	0		3	743	152	
Added Vol:	0	0	0		0	0	65		0	0	0		0	171	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	5	1	0		0	1	614		0	0	0		3	914	152	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	1	0		0	1	614		0	0	0		3	914	152	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	1	0		0	1	614		0	0	0		3	914	152	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	1	0		0	1	614		0	0	0		3	914	152	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.92	1.00		1.00	0.85	0.85		1.00	1.00	1.00		0.87	0.87	0.87	
Lanes:	0.83	0.17	0.00		0.00	0.01	1.99		0.00	0.00	0.00		0.01	2.56	0.43	
Final Sat.:	1454	291	0		0	5	3225		0	0	0		14	4251	707	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.19	0.19		0.00	0.00	0.00		0.22	0.22	0.22	
Crit Moves:						****							****			
Green/Cycle:	0.42	0.42	0.00		0.00	0.42	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.01	0.00		0.00	0.45	0.45		0.00	0.00	0.00		0.51	0.51	0.51	
Uniform Del:	9.8	9.8	0.0		0.0	12.1	12.1		0.0	0.0	0.0		12.5	12.5	12.5	
IncremntDel:	0.0	0.0	0.0		0.0	1.1	1.1		0.0	0.0	0.0		0.9	0.9	0.9	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	1.00	
Delay/Veh:	9.9	9.9	0.0		0.0	13.2	13.2		0.0	0.0	0.0		13.4	13.4	13.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.9	9.9	0.0		0.0	13.2	13.2		0.0	0.0	0.0		13.4	13.4	13.4	
HCM2k95th:	0	0	0		0	8	8		0	0	0		10	10	10	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.271
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1 0	0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 7:30																
Base Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		31	559	0		0	346	209		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		31	559	0		0	346	209		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		31	559	0		0	346	209		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		31	559	0		0	346	209		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		31	559	0		0	346	209		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.86	0.86		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.16	2.84	0.00		0.00	2.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	0	0		273	4914	0		0	3261	1630		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.11	0.13		0.00	0.00	0.00	
Crit Moves:					****						****					
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.25	0.25	0.00		0.00	0.24	0.29		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.6	9.8		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.1	0.1		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.7	9.7	0.0		0.0	9.7	9.9		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	4	5		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.473
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1 0	0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 8																
Base Vol:	0	0	0		140	604	0		0	896	328		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		140	604	0		0	896	328		0	0	0	
Added Vol:	0	0	0		0	0	0		0	104	58		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		140	604	0		0	1000	386		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		140	604	0		0	1000	386		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		140	604	0		0	1000	386		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		140	604	0		0	1000	386		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.56	2.44	0.00		0.00	2.16	0.84		0.00	0.00	0.00	
Final Sat.:	0	0	0		976	4211	0		0	3585	1384		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.14	0.00		0.00	0.28	0.28		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.32	0.32	0.00		0.00	0.62	0.62		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		10.0	10.0	0.0		0.0	11.9	11.9		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.6	0.6		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	12.5	12.5		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.1	10.1	0.0		0.0	12.5	12.5		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	14	14		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.425
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30			0	0	0	0	20	20		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	0	0	0	0	635	185			0	0	0	0	59	834		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	635	185			0	0	0	0	59	834		0
Added Vol:	0	0	0	0	54	5			0	0	0	0	0	165		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	689	190			0	0	0	0	59	999		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	689	190			0	0	0	0	59	999		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	689	190			0	0	0	0	59	999		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	689	190			0	0	0	0	59	999		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.35	0.65			0.00	0.00	0.00	0.00	0.17	2.83		0.00
Final Sat.:	0	0	0	0	3936	1085			0	0	0	0	289	4898		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.18	0.18			0.00	0.00	0.00	0.00	0.20	0.20		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54			0.00	0.00	0.00	0.00	0.36	0.36		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.33	0.33			0.00	0.00	0.00	0.00	0.57	0.57		0.00
Uniform Del:	0.0	0.0	0.0	0.0	7.3	7.3			0.0	0.0	0.0	0.0	14.5	14.5		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.1	0.1			0.0	0.0	0.0	0.0	0.4	0.4		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	7.4	7.4			0.0	0.0	0.0	0.0	15.0	15.0		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	7.4	7.4			0.0	0.0	0.0	0.0	15.0	15.0		0.0
HCM2k95th:	0	0	0	0	6	6			0	0	0	0	10	10		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.409
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28			0	0	0	0	22	22		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	530	168			0	0	0	0	107	943		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	530	168			0	0	0	0	107	943		0
Added Vol:	0	0	0	0	52	2			0	0	0	0	0	68		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	582	170			0	0	0	0	107	1011		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	582	170			0	0	0	0	107	1011		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	582	170			0	0	0	0	107	1011		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	582	170			0	0	0	0	107	1011		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.88	0.88			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.32	0.68			0.00	0.00	0.00	0.00	0.29	2.71		0.00
Final Sat.:	0	0	0	0	3878	1133			0	0	0	0	496	4691		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.15	0.15			0.00	0.00	0.00	0.00	0.22	0.22		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50			0.00	0.00	0.00	0.00	0.39	0.39		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.30	0.30			0.00	0.00	0.00	0.00	0.55	0.55		0.00
Uniform Del:	0.0	0.0	0.0	0.0	8.2	8.2			0.0	0.0	0.0	0.0	13.2	13.2		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.1	0.1			0.0	0.0	0.0	0.0	0.3	0.3		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	8.3	8.3			0.0	0.0	0.0	0.0	13.5	13.5		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.3	8.3			0.0	0.0	0.0	0.0	13.5	13.5		0.0
HCM2k95th:	0	0	0	0	5	5			0	0	0	0	10	10		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.311
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	23	23		0	0	0	
Lanes:	0	0	0	0 0	0	1	2	0 0	0	0	2	1 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	0	0		108	553	0		0	571	117		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		108	553	0		0	571	117		0	0	0	
Added Vol:	0	0	0		5	47	0		0	23	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		113	600	0		0	594	117		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		113	600	0		0	594	117		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		113	600	0		0	594	117		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		113	600	0		0	594	117		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.48	2.52	0.00		0.00	2.51	0.49		0.00	0.00	0.00	
Final Sat.:	0	0	0		822	4365	0		0	4225	832		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.14	0.00		0.00	0.14	0.14		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.29	0.29	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		8.7	8.7	0.0		0.0	11.3	11.3		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.1	0.1		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		8.8	8.8	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		8.8	8.8	0.0		0.0	11.4	11.4		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	5	5		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.231
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	32	32		0	0	0		38	38	0	
Lanes:	0	0	0	0 0	0	0	3	1 0	0	0	0	0 0	1	1	2	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																
Base Vol:	0	0	0		0	585	19		0	0	0		205	871	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	585	19		0	0	0		205	871	0	
Added Vol:	0	0	0		0	37	5		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	622	24		0	0	0		205	871	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	622	24		0	0	0		205	871	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	622	24		0	0	0		205	871	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	622	24		0	0	0		205	871	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	3.85	0.15		0.00	0.00	0.00		1.00	3.00	0.00	
Final Sat.:	0	0	0		0	6619	255		0	0	0		1729	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.09	0.09		0.00	0.00	0.00		0.12	0.17	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.42	0.42		0.00	0.00	0.00		0.50	0.50	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.22	0.22		0.00	0.00	0.00		0.24	0.34	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	14.1	14.1		0.0	0.0	0.0		10.8	11.4	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.1	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	14.1	14.1		0.0	0.0	0.0		10.8	11.5	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	14.1	14.1		0.0	0.0	0.0		10.8	11.5	0.0	
HCM2k95th:	0	0	0		0	5	5		0	0	0		6	8	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.439
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.5
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	14	14		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1	1	2	0 0	0	0	1	1 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 7:45																
Base Vol:	0	483	23		317	369	0		0	558	91		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	483	23		317	369	0		0	558	91		0	0	0	
Added Vol:	0	0	0		37	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	483	23		354	369	0		0	558	91		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	483	23		354	369	0		0	558	91		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	483	23		354	369	0		0	558	91		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	483	23		354	369	0		0	558	91		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		0.89	0.89	1.00		1.00	0.93	0.93		1.00	1.00	1.00	
Lanes:	0.00	2.86	0.14		1.96	2.04	0.00		0.00	1.72	0.28		0.00	0.00	0.00	
Final Sat.:	0	4917	234		3305	3445	0		0	3039	496		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.10	0.10		0.11	0.11	0.00		0.00	0.18	0.18		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.18	0.18		0.30	0.30	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.55	0.55		0.35	0.35	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Uniform Del:	0.0	29.7	29.7		21.4	21.4	0.0		0.0	17.1	17.1		0.0	0.0	0.0	
IncremntDel:	0.0	0.8	0.8		0.1	0.1	0.0		0.0	0.2	0.2		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	30.4	30.4		21.5	21.5	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.4	30.4		21.5	21.5	0.0		0.0	17.4	17.4		0.0	0.0	0.0	
HCM2k95th:	0	9	9		7	7	0		0	12	12		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.387
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		16	25	0		0	0	9	
Lanes:	0 0	2	1	0	0	0	0	0 0	2	1	0	0 0	0	0	0	1
Volume Module: >> Count Date: 6 Dec 2005 << 7:30																
Base Vol:	0	995	22		0	0	0		144	254	0		0	0	39	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	995	22		0	0	0		144	254	0		0	0	39	
Added Vol:	0	66	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1061	22		0	0	0		144	254	0		0	0	39	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1061	22		0	0	0		144	254	0		0	0	39	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1061	22		0	0	0		144	254	0		0	0	39	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1061	22		0	0	0		144	254	0		0	0	39	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.98	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.94	0.06		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5066	105		0	0	0		3620	1866	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21	0.21		0.00	0.00	0.00		0.04	0.14	0.00		0.00	0.00	0.02	
Crit Moves:		****								****			****			
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.29	0.45	0.00		0.00	0.00	0.16	
Volume/Cap:	0.00	0.47	0.47		0.00	0.00	0.00		0.14	0.30	0.00		0.00	0.00	0.15	
Uniform Del:	0.0	10.9	10.9		0.0	0.0	0.0		14.9	9.9	0.0		0.0	0.0	20.2	
IncremntDel:	0.0	0.2	0.2		0.0	0.0	0.0		0.0	0.1	0.0		0.0	0.0	0.3	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	1.00	
Delay/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	11.0	11.0		0.0	0.0	0.0		14.9	10.1	0.0		0.0	0.0	20.5	
HCM2k95th:	0	8	8		0	0	0		2	6	0		0	0	1	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.375
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	0	0	25	25		
Lanes:	1	1	2	0 0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 7:45																
Base Vol:	314	828	0	0	0	0	0	0	0	0	637	168				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	314	828	0	0	0	0	0	0	0	0	637	168				
Added Vol:	1	66	0	0	0	0	0	0	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	315	894	0	0	0	0	0	0	0	0	637	168				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	315	894	0	0	0	0	0	0	0	0	637	168				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	315	894	0	0	0	0	0	0	0	0	637	168				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	315	894	0	0	0	0	0	0	0	0	637	168				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88				
Lanes:	1.04	2.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.63				
Final Sat.:	1802	5114	0	0	0	0	0	0	0	0	3977	1049				
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.36				
Uniform Del:	10.4	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	10.2				
IncremntDel:	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	10.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	10.3				
HCM2k95th:	7	7	0	0	0	0	0	0	0	0	7	7				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.481
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	1	1	2	0 0	0	0	0	0
Volume Module: >> Count Date: 30 Sep 2004 << 7:45																
Base Vol:	0	1299	136		0	0	0		194	1003	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1299	136		0	0	0		194	1003	0		0	0	0	
Added Vol:	0	6	3		0	0	0		60	44	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1305	139		0	0	0		254	1047	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1305	139		0	0	0		254	1047	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1305	139		0	0	0		254	1047	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1305	139		0	0	0		254	1047	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.71	0.29		0.00	0.00	0.00		1.00	3.00	0.00		0.00	0.00	0.00	
Final Sat.:	0	4622	492		0	0	0		1729	5187	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.28	0.28		0.00	0.00	0.00		0.15	0.20	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.63	0.63		0.00	0.00	0.00		0.33	0.45	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	12.0	12.0		0.0	0.0	0.0		10.1	10.8	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.6	0.6		0.0	0.0	0.0		0.0	0.1	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	12.5	12.5		0.0	0.0	0.0		10.1	10.9	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.5	12.5		0.0	0.0	0.0		10.1	10.9	0.0		0.0	0.0	0.0	
HCM2k95th:	0	14	14		0	0	0		5	8	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.381
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	0	0	25	25		
Lanes:	1 0	3 0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	0	
Volume Module: >> Count Date: 20 Jan 2005 << 7:45																
Base Vol:	242	1214	0	0	0	0	0	0	0	0	628	128				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	242	1214	0	0	0	0	0	0	0	0	628	128				
Added Vol:	92	24	0	0	0	0	0	0	0	0	73	5				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	334	1238	0	0	0	0	0	0	0	0	701	133				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	334	1238	0	0	0	0	0	0	0	0	701	133				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	334	1238	0	0	0	0	0	0	0	0	701	133				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	334	1238	0	0	0	0	0	0	0	0	701	133				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52	0.48				
Final Sat.:	1900	5187	0	0	0	0	0	0	0	0	4255	807				
Capacity Analysis Module:																
Vol/Sat:	0.18	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.39	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.37				
Uniform Del:	10.4	11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	10.3				
IncremntDel:	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	10.7	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	10.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.7	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	10.4				
HCM2k95th:	8	11	0	0	0	0	0	0	0	0	7	7				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.599
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.8
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0	0	0	0	0	0	0	0	0	0	21	21		
Lanes:	0 1	2 0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	0	
Volume Module:																
Base Vol:	192	1355	0	0	0	0	0	0	0	0	875	149				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	192	1355	0	0	0	0	0	0	0	0	875	149				
Added Vol:	-1	93	0	0	0	0	0	0	0	0	69	18				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	191	1448	0	0	0	0	0	0	0	0	944	167				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	191	1448	0	0	0	0	0	0	0	0	944	167				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	191	1448	0	0	0	0	0	0	0	0	944	167				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	191	1448	0	0	0	0	0	0	0	0	944	167				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.35	2.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	0.45				
Final Sat.:	604	4583	0	0	0	0	0	0	0	0	4310	763				
Capacity Analysis Module:																
Vol/Sat:	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22				
Crit Moves:	****										****					
Green/Cycle:	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38				
Volume/Cap:	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58				
Uniform Del:	9.5	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	14.0				
IncremntDel:	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	14.5				
HCM2k95th:	13	13	0	0	0	0	0	0	0	0	12	12				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.555
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	0	1	1	0 0	0	0	0	0
Volume Module:																
Base Vol:	0	1273	42		0	0	0		272	506	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1273	42		0	0	0		272	506	0		0	0	0	
Added Vol:	0	91	0		0	0	0		2	26	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1364	42		0	0	0		274	532	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1364	42		0	0	0		274	532	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1364	42		0	0	0		274	532	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1364	42		0	0	0		274	532	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.95	0.95	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.91	0.09		0.00	0.00	0.00		0.68	1.32	0.00		0.00	0.00	0.00	
Final Sat.:	0	5012	154		0	0	0		1227	2383	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.27	0.27		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.61	0.61		0.00	0.00	0.00		0.50	0.50	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	11.8	11.8		0.0	0.0	0.0		11.0	11.0	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.5	0.5		0.0	0.0	0.0		0.2	0.2	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	12.3	12.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	12.3	12.3		0.0	0.0	0.0		11.3	11.3	0.0		0.0	0.0	0.0	
HCM2k95th:	0	13	13		0	0	0		10	10	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.415
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.0
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	16	16		0	24	24	
Lanes:	1	1	2	0 0	0	0	0	0	0	0	2	1 0	0	0	1	1 1
Volume Module: >> Count Date: 14 Dec 2005 << 7:45																
Base Vol:	97	1007	0		0	0	0		0	515	157		0	286	594	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	97	1007	0		0	0	0		0	515	157		0	286	594	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	91	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	97	1007	0		0	0	0		0	515	157		0	286	685	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	97	1007	0		0	0	0		0	515	157		0	286	685	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	97	1007	0		0	0	0		0	515	157		0	286	685	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	97	1007	0		0	0	0		0	515	157		0	286	685	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	0.88	0.88		1.00	0.85	0.85	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	2.30	0.70		0.00	1.00	2.00	
Final Sat.:	1729	5187	0		0	0	0		0	3836	1169		0	1614	3227	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.19	0.00		0.00	0.00	0.00		0.00	0.13	0.13		0.00	0.18	0.21	
Crit Moves:	****									****				****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.20	0.20		0.00	0.30	0.30	
Volume/Cap:	0.15	0.51	0.00		0.00	0.00	0.00		0.00	0.66	0.66		0.00	0.58	0.70	
Uniform Del:	16.1	18.9	0.0		0.0	0.0	0.0		0.0	29.0	29.0		0.0	23.3	24.3	
IncremntDel:	0.0	0.2	0.0		0.0	0.0	0.0		0.0	1.7	1.7		0.0	0.5	1.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00		0.00	1.00	1.00	
Delay/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	25.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.1	19.1	0.0		0.0	0.0	0.0		0.0	30.7	30.7		0.0	23.8	25.9	
HCM2k95th:	3	12	0		0	0	0		0	12	12		0	13	16	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.385
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	35	35	0	0	0	35	35	0	0	0	0
Lanes:	0 0	3 1	0	0 0	0 0	0	2 0	2 0	0	0 0	0 0	0
Volume Module: >> Count Date: 14 Dec 2005 << 7:30												
Base Vol:	0	1243	62	0	0	0	606	732	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1243	62	0	0	0	606	732	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	37	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1243	62	0	0	0	606	769	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1243	62	0	0	0	606	769	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1243	62	0	0	0	606	769	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1243	62	0	0	0	606	769	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.90	0.90	1.00	1.00	1.00	0.97	0.95	1.00	1.00	1.00	1.00
Lanes:	0.00	3.81	0.19	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00
Final Sat.:	0	6541	326	0	0	0	3686	3610	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.00	0.00	0.00	0.16	0.21	0.00	0.00	0.00	0.00
Crit Moves:		****					****					
Green/Cycle:	0.00	0.46	0.46	0.00	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.41	0.41	0.00	0.00	0.00	0.36	0.46	0.00	0.00	0.00	0.00
Uniform Del:	0.0	13.7	13.7	0.0	0.0	0.0	13.2	14.1	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	13.7	13.7	0.0	0.0	0.0	13.4	14.3	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	13.7	13.7	0.0	0.0	0.0	13.4	14.3	0.0	0.0	0.0	0.0
HCM2k95th:	0	10	10	0	0	0	9	12	0	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.625
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 34.1
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	18	18	0	26	26	0	0	26	26	0	0	0
Lanes:	0 1	2 0	0	0 1	1 0	0	0 0	2 1	0	0 0	0 0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:30												
Base Vol:	47	271	0	426	595	0	0	568	250	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	271	0	426	595	0	0	568	250	0	0	0
Added Vol:	0	16	0	0	104	0	0	30	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	47	287	0	426	699	0	0	598	250	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	287	0	426	699	0	0	598	250	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	287	0	426	699	0	0	598	250	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	47	287	0	426	699	0	0	598	250	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	1.00	0.93	0.93	1.00	1.00	0.87	0.87	1.00	1.00	1.00
Lanes:	0.42	2.58	0.00	0.76	1.24	0.00	0.00	2.12	0.88	0.00	0.00	0.00
Final Sat.:	725	4426	0	1341	2200	0	0	3497	1462	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.00	0.32	0.32	0.00	0.00	0.17	0.17	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.23	0.23	0.00	0.33	0.33	0.00	0.00	0.33	0.33	0.00	0.00	0.00
Volume/Cap:	0.28	0.28	0.00	0.97	0.97	0.00	0.00	0.52	0.52	0.00	0.00	0.00
Uniform Del:	25.2	25.2	0.0	26.1	26.1	0.0	0.0	21.4	21.4	0.0	0.0	0.0
IncremntDel:	0.6	0.6	0.0	19.2	19.2	0.0	0.0	1.2	1.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	25.8	25.8	0.0	45.3	45.3	0.0	0.0	22.6	22.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.8	25.8	0.0	45.3	45.3	0.0	0.0	22.6	22.6	0.0	0.0	0.0
HCM2k95th:	5	5	0	32	32	0	0	12	12	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.298
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.6
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	31		0	0		0	39	39		0	0	0		0
Lanes:	0 0	2	1	0	0 0	0	0	0	1 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 7:45																
Base Vol:	0	395	173		0	0		0	242	812		0	0	0		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	0	395	173		0	0		0	242	812		0	0	0		0
Added Vol:	0	67	32		0	0		0	0	30		0	0	0		0
PasserByVol:	0	0	0		0	0		0	0	0		0	0	0		0
Initial Fut:	0	462	205		0	0		0	242	842		0	0	0		0
User Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Volume:	0	462	205		0	0		0	242	842		0	0	0		0
Reduct Vol:	0	0	0		0	0		0	0	0		0	0	0		0
Reduced Vol:	0	462	205		0	0		0	242	842		0	0	0		0
PCE Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	0	462	205		0	0		0	242	842		0	0	0		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	1.00	0.87	0.87		1.00	1.00		1.00	0.91	0.91		1.00	1.00	1.00		1.00
Lanes:	0.00	2.08	0.92		0.00	0.00		0.00	1.00	3.00		0.00	0.00	0.00		0.00
Final Sat.:	0	3428	1521		0	0		0	1729	5187		0	0	0		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.13	0.13		0.00	0.00		0.00	0.14	0.16		0.00	0.00	0.00		0.00
Crit Moves:		****							****							
Green/Cycle:	0.00	0.41	0.41		0.00	0.00		0.00	0.51	0.51		0.00	0.00	0.00		0.00
Volume/Cap:	0.00	0.33	0.33		0.00	0.00		0.00	0.27	0.32		0.00	0.00	0.00		0.00
Uniform Del:	0.0	15.4	15.4		0.0	0.0		0.0	10.5	10.8		0.0	0.0	0.0		0.0
IncremntDel:	0.0	0.1	0.1		0.0	0.0		0.0	0.0	0.1		0.0	0.0	0.0		0.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	0.00	1.00	1.00		0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		0.00
Delay/Veh:	0.0	15.5	15.5		0.0	0.0		0.0	10.5	10.8		0.0	0.0	0.0		0.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	15.5	15.5		0.0	0.0		0.0	10.5	10.8		0.0	0.0	0.0		0.0
HCM2k95th:	0	7	7		0	0		0	6	7		0	0	0		0

Scenario Report

Scenario:	PM BaselineProj
Command:	BaseProjPM
Volume:	Baseline PM
Geometry:	Baseline PM
Impact Fee:	Default Impact Fee
Trip Generation:	PM Base+PP
Trip Distribution:	Project
Paths:	Project
Routes:	Default Routes
Configuration:	Default Configuration

Cathedral Square Traffic Study
Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 3rd St/J St

Cycle (sec):	0	Critical Vol./Cap. (X):	0.744
Loss Time (sec):	9 (Y+R = 4 sec)	Average Delay (sec/veh):	18.3
Optimal Cycle:	46	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	4		4	4	0		4	4	4		4	4	4	
Lanes:	0 0	0	0	2	2 0	1	0	0	0 1	2	1	0	0 1	1	1	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	184		219	318	0		2	353	59		10	858	407	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	184		219	318	0		2	353	59		10	858	407	
Added Vol:	0	0	0		0	9	0		0	125	43		0	113	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	184		219	327	0		2	478	102		10	971	407	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	184		219	327	0		2	478	102		10	971	407	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	184		219	327	0		2	478	102		10	971	407	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	184		219	327	0		2	478	102		10	971	407	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.67		0.56	0.90	1.00		0.80	0.80	0.80		0.78	0.78	0.78	
Lanes:	0.00	0.00	2.00		2.00	1.00	0.00		0.01	3.29	0.70		0.02	2.10	0.88	
Final Sat.:	0	0	2558		2117	1710	0		21	4979	1063		32	3122	1309	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.07		0.10	0.19	0.00		0.10	0.10	0.10		0.31	0.31	0.31	
Crit Moves:						****				****			****			
Green/Cycle:	0.00	0.00	0.26		0.26	0.26	0.00		0.13	0.13	0.13		0.42	0.42	0.42	
Volume/Cap:	0.00	0.00	0.28		0.40	0.74	0.00		0.74	0.74	0.74		0.74	0.74	0.74	
Uniform Del:	0.0	0.0	13.7		14.2	15.7	0.0		19.3	19.3	19.3		11.3	11.3	11.3	
IncremntDel:	0.0	0.0	1.1		2.2	10.9	0.0		6.3	6.3	6.3		2.7	2.7	2.7	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	0.0	0.0	14.7		16.4	26.6	0.0		25.6	25.6	25.6		14.0	14.0	14.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	14.7		16.4	26.6	0.0		25.6	25.6	25.6		14.0	14.0	14.0	
HCM2k95th:	0	0	3		5	12	0		8	8	8		14	14	14	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 3rd St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.902
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 44.0
Optimal Cycle: 85 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	10	30	0	0	20	20	0	0	0	40	40	0				
Lanes:	1 0	2 0	0	0 0	2 1	0	0 0	0 0	0	1 1	1 0	1				
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	445	306	0	0	0	360	1353	99				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	445	306	0	0	0	360	1353	99				
Added Vol:	82	0	0	0	89	0	0	0	0	83	140	0				
2-way Adj:	0	70	0	0	0	0	0	0	0	0	0	-70				
Initial Fut:	82	70	0	0	534	306	0	0	0	443	1493	29				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	82	70	0	0	534	306	0	0	0	443	1493	29				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	82	70	0	0	534	306	0	0	0	443	1493	29				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	82	70	0	0	534	306	0	0	0	443	1493	29				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.86	0.86	1.00	1.00	0.77	0.77	1.00	1.00	1.00	0.73	0.73	0.77				
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	2.00	1.00				
Final Sat.:	1625	3249	0	0	2941	1471	0	0	0	1381	2762	1454				
Capacity Analysis Module:																
Vol/Sat:	0.05	0.02	0.00	0.00	0.18	0.21	0.00	0.00	0.00	0.32	0.54	0.02				
Crit Moves:	****					****					****					
Green/Cycle:	0.13	0.38	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.51	0.51	0.51				
Volume/Cap:	0.40	0.06	0.00	0.00	0.72	0.82	0.00	0.00	0.00	0.63	1.07	0.04				
Uniform Del:	31.7	15.5	0.0	0.0	26.9	27.8	0.0	0.0	0.0	14.2	19.5	9.8				
IncremntDel:	5.7	0.1	0.0	0.0	3.8	7.4	0.0	0.0	0.0	1.0	41.9	0.1				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00				
Delay/Veh:	37.4	15.6	0.0	0.0	30.7	35.3	0.0	0.0	0.0	15.2	61.4	9.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	37.4	15.6	0.0	0.0	30.7	35.3	0.0	0.0	0.0	15.2	61.4	9.9				
HCM2k95th:	5	1	0	0	14	17	0	0	0	17	54	1				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 3rd St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.631
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 23.3
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Prot+Permit			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	29	29	0	14	21	0	20	27	0				
Lanes:	0 0	0 0	0	0 1	1 1	1	1 0	3 0	0	1 0	1 1	0				
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0	43	760	0	0	466	0	167	467	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	43	760	0	0	466	0	167	467	0				
Added Vol:	0	0	0	95	103	89	106	71	0	195	170	98				
2-way Adj:	0	0	0	0	0	0	70	-70	0	0	0	0				
Initial Fut:	0	0	0	138	863	89	176	467	0	362	637	98				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	138	863	89	176	467	0	362	637	98				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	138	863	89	176	467	0	362	637	98				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	138	863	89	176	467	0	362	637	98				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.80	0.80	0.80	0.86	0.82	1.00	0.86	0.84	0.84				
Lanes:	0.00	0.00	0.00	0.41	2.59	1.00	1.00	3.00	0.00	1.00	1.73	0.27				
Final Sat.:	0	0	0	628	3929	1519	1625	4668	0	1625	2759	425				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.22	0.22	0.06	0.11	0.10	0.00	0.22	0.23	0.23				
Crit Moves:				****			****				****					
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.18	0.27	0.00	0.56	0.34	0.34				
Volume/Cap:	0.00	0.00	0.00	0.60	0.60	0.16	0.61	0.38	0.00	0.60	0.68	0.68				
Uniform Del:	0.0	0.0	0.0	20.3	20.3	16.8	30.0	23.7	0.0	10.4	22.3	22.3				
IncremntDel:	0.0	0.0	0.0	1.5	1.5	0.1	9.3	0.9	0.0	4.4	3.4	3.4				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00				
Delay/Veh:	0.0	0.0	0.0	21.7	21.7	16.9	39.3	24.5	0.0	14.8	25.6	25.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	21.7	21.7	16.9	39.3	24.5	0.0	14.8	25.6	25.6				
HCM2k95th:	0	0	0	14	14	4	10	7	0	13	16	16				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 3rd St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.486
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 79 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	16	16		36	36	0		0	18	18		0	0	0	
Lanes:	0 0	0	1	0	0	1 2	0	0	0	1	1	0	0	0	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	79	25		128	898	0		0	129	184		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	79	25		128	898	0		0	129	184		0	0	0	
Added Vol:	0	0	0		12	286	0		0	9	9		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	79	25		140	1184	0		0	138	193		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	79	25		140	1184	0		0	138	193		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	79	25		140	1184	0		0	138	193		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	79	25		140	1184	0		0	138	193		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.97	0.97		0.91	0.91	1.00		1.00	0.87	0.87		1.00	1.00	1.00	
Lanes:	0.00	0.76	0.24		0.32	2.68	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Final Sat.:	0	1397	442		546	4615	0		0	1648	1648		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.06	0.06		0.26	0.26	0.00		0.00	0.08	0.12		0.00	0.00	0.00	
Crit Moves:		****				****					****					
Green/Cycle:	0.00	0.20	0.20		0.46	0.46	0.00		0.00	0.23	0.23		0.00	0.00	0.00	
Volume/Cap:	0.00	0.28	0.28		0.56	0.56	0.00		0.00	0.37	0.51		0.00	0.00	0.00	
Uniform Del:	0.0	26.6	26.6		15.7	15.7	0.0		0.0	25.7	26.7		0.0	0.0	0.0	
IncremntDel:	0.0	1.9	1.9		1.0	1.0	0.0		0.0	1.2	2.9		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	28.5	28.5		16.7	16.7	0.0		0.0	26.9	29.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	28.5	28.5		16.7	16.7	0.0		0.0	26.9	29.6		0.0	0.0	0.0	
HCM2k95th:	0	5	5		14	14	0		0	7	9		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 3rd St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.862
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 27.6
Optimal Cycle: 63 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	19	19		0	0	0		31	31	0	
Lanes:	0 0	0	0	0	0	1 1	2	0	0	0	0	0	0	1	2	0 0
Volume Module: >> Count Date: 28 Sep 2004 << 4:30																
Base Vol:	0	0	0		0	417	677		0	0	0		151	2129	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	417	677		0	0	0		151	2129	0	
Added Vol:	0	0	0		0	0	157		0	0	0		0	624	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	417	834		0	0	0		151	2753	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	417	834		0	0	0		151	2753	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	417	834		0	0	0		151	2753	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	417	834		0	0	0		151	2753	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.86	0.75		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	1.22	2.78		0.00	0.00	0.00		0.16	2.84	0.00	
Final Sat.:	0	0	0		0	1986	3971		0	0	0		270	4917	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.21	0.21		0.00	0.00	0.00		0.56	0.56	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.34	0.34		0.00	0.00	0.00		0.55	0.55	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.62	0.62		0.00	0.00	0.00		1.01	1.01	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	15.5	15.5		0.0	0.0	0.0		12.5	12.5	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	1.4	1.4		0.0	0.0	0.0		19.6	19.6	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	16.9	16.9		0.0	0.0	0.0		32.1	32.1	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	16.9	16.9		0.0	0.0	0.0		32.1	32.1	0.0	
HCM2k95th:	0	0	0		0	11	11		0	0	0		35	35	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 3rd St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.280
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		19	19	0		0	31	31		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	3	1 0	0	0	0	0
Volume Module: >> Count Date: 28 Sep 2004 << 4:45																
Base Vol:	0	0	0		160	442	0		0	525	72		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		160	442	0		0	525	72		0	0	0	
Added Vol:	0	0	0		0	0	0		0	317	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		160	442	0		0	842	72		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		160	442	0		0	842	72		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		160	442	0		0	842	72		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		160	442	0		0	842	72		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.80	2.20	0.00		0.00	3.68	0.32		0.00	0.00	0.00	
Final Sat.:	0	0	0		1379	3808	0		0	6295	538		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.12	0.12	0.00		0.00	0.13	0.13		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.55	0.55		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.34	0.34	0.00		0.00	0.24	0.24		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		13.8	13.8	0.0		0.0	6.4	6.4		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.5	0.5	0.0		0.0	0.2	0.2		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.6	6.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		14.4	14.4	0.0		0.0	6.6	6.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		6	6	0		0	5	5		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 5th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 20.6
Optimal Cycle: 106 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	21		0	0	0		0	79	79	
Lanes:	2	0	2	0	0	0	0	2	0	0	0	0 0	0	0	3	1 0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	419	347	0		0	0	0		0	0	0		0	2640	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	419	347	0		0	0	0		0	0	0		0	2640	55	
Added Vol:	0	3	0		0	0	0		0	0	0		0	105	0	
5th St Conv:	0	0	0		0	0	46		0	0	0		0	0	0	
Initial Fut:	419	350	0		0	0	46		0	0	0		0	2745	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	419	350	0		0	0	46		0	0	0		0	2745	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	419	350	0		0	0	46		0	0	0		0	2745	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	419	350	0		0	0	46		0	0	0		0	2745	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.54	0.86	1.00		1.00	1.00	0.67		1.00	1.00	1.00		1.00	0.82	0.82	
Lanes:	2.00	2.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.00	3.92	0.08	
Final Sat.:	2063	3249	0		0	0	2558		0	0	0		0	6084	122	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.11	0.00		0.00	0.00	0.02		0.00	0.00	0.00		0.00	0.45	0.45	
Crit Moves:		****			****									****		
Green/Cycle:	0.20	0.20	0.00		0.00	0.00	0.20		0.00	0.00	0.00		0.00	0.75	0.75	
Volume/Cap:	1.03	0.54	0.00		0.00	0.00	0.09		0.00	0.00	0.00		0.00	0.61	0.61	
Uniform Del:	42.5	38.2	0.0		0.0	0.0	34.7		0.0	0.0	0.0		0.0	6.3	6.3	
IncremntDel:	51.1	3.3	0.0		0.0	0.0	0.4		0.0	0.0	0.0		0.0	0.6	0.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	1.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	93.6	41.5	0.0		0.0	0.0	35.1		0.0	0.0	0.0		0.0	6.9	6.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	93.6	41.5	0.0		0.0	0.0	35.1		0.0	0.0	0.0		0.0	6.9	6.9	
HCM2k95th:	18	10	0		0	0	2		0	0	0		0	19	19	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 5th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.472
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	25	25	0	0	0	25	25	25	0	0	0
Lanes:	0 0	1 1	1	0 0	0 0	0	1 1	3 0	1	0 0	0 0	0
Volume Module: >> Count Date: 20 Jan 2005 << 4:45												
Base Vol:	0	449	407	0	0	0	324	1112	130	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	449	407	0	0	0	324	1112	130	0	0	0
Added Vol:	0	3	5	0	0	0	0	87	113	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	452	412	0	0	0	324	1199	243	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	452	412	0	0	0	324	1199	243	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	452	412	0	0	0	324	1199	243	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	452	412	0	0	0	324	1199	243	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.79	0.79	1.00	1.00	1.00	0.70	0.70	0.77	1.00	1.00	1.00
Lanes:	0.00	1.57	1.43	0.00	0.00	0.00	1.06	3.94	1.00	0.00	0.00	0.00
Final Sat.:	0	2366	2157	0	0	0	1407	5206	1454	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.19	0.19	0.00	0.00	0.00	0.23	0.23	0.17	0.00	0.00	0.00
Crit Moves:		****					****					
Green/Cycle:	0.00	0.45	0.45	0.00	0.00	0.00	0.45	0.45	0.45	0.00	0.00	0.00
Volume/Cap:	0.00	0.43	0.43	0.00	0.00	0.00	0.52	0.52	0.37	0.00	0.00	0.00
Uniform Del:	0.0	10.6	10.6	0.0	0.0	0.0	11.1	11.1	10.3	0.0	0.0	0.0
IncremntDel:	0.0	0.7	0.7	0.0	0.0	0.0	0.6	0.6	1.7	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	11.3	11.3	0.0	0.0	0.0	11.8	11.8	12.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.3	11.3	0.0	0.0	0.0	11.8	11.8	12.0	0.0	0.0	0.0
HCM2k95th:	0	7	7	0	0	0	10	10	7	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 5th St/L St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.548
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.4
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	45	45	0	0	0	45	0	0	0	0	25	25
Lanes:	1 0	3 0	0	0 0	0 0	2	0 0	0 0	0	0 0	3 1	0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45												
Base Vol:	320	664	0	0	0	59	0	0	0	0	1484	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	320	664	0	0	0	59	0	0	0	0	1484	140
Added Vol:	9	8	0	0	0	113	0	0	0	0	150	0
2-way Adj:	-70	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	259	672	0	0	0	172	0	0	0	0	1634	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	259	672	0	0	0	172	0	0	0	0	1634	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	259	672	0	0	0	172	0	0	0	0	1634	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	259	672	0	0	0	172	0	0	0	0	1634	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.69	0.82	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1.00	0.81	0.81
Lanes:	1.00	3.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	3.68	0.32
Final Sat.:	1315	4668	0	0	0	2558	0	0	0	0	5664	485
Capacity Analysis Module:												
Vol/Sat:	0.20	0.14	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.29	0.29
Crit Moves:	****										****	
Green/Cycle:	0.57	0.57	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.32	0.32
Volume/Cap:	0.35	0.25	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.91	0.91
Uniform Del:	9.1	8.5	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	25.9	25.9
IncremntDel:	1.3	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	7.9	7.9
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00
Delay/Veh:	10.4	8.8	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	33.9	33.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	8.8	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	33.9	33.9
HCM2k95th:	9	6	0	0	0	2	0	0	0	0	24	24

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #10 5th St/Capitol Mall

Cycle (sec): 70 Critical Vol./Cap. (X): 0.276
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 19.0
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		17	35	0		0	18	18	
Lanes:	2	0	2	1 0	0	0	0	0	2	0	2	0 0	0	0	2	1 0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	244	626	43		0	0	0		340	262	0		0	329	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	244	626	43		0	0	0		340	262	0		0	329	55	
Added Vol:	166	9	21		0	0	0		8	158	0		0	296	0	
2-way Adj:	0	0	0		0	0	0		-70	0	0		0	0	0	
Initial Fut:	410	635	64		0	0	0		278	420	0		0	625	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	410	635	64		0	0	0		278	420	0		0	625	55	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	410	635	64		0	0	0		278	420	0		0	625	55	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	410	635	64		0	0	0		278	420	0		0	625	55	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.86	0.81	0.81		1.00	1.00	1.00		0.83	0.86	1.00		1.00	0.81	0.81	
Lanes:	2.00	2.73	0.27		0.00	0.00	0.00		2.00	2.00	0.00		0.00	2.76	0.24	
Final Sat.:	3271	4182	421		0	0	0		3152	3249	0		0	4239	373	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.15	0.15		0.00	0.00	0.00		0.09	0.13	0.00		0.00	0.15	0.15	
Crit Moves:	****									****			****			
Green/Cycle:	0.46	0.46	0.46		0.00	0.00	0.00		0.22	0.46	0.00		0.00	0.24	0.24	
Volume/Cap:	0.27	0.33	0.33		0.00	0.00	0.00		0.39	0.28	0.00		0.00	0.62	0.62	
Uniform Del:	12.6	13.0	13.0		0.0	0.0	0.0		25.1	12.7	0.0		0.0	26.0	26.0	
IncremntDel:	0.4	0.4	0.4		0.0	0.0	0.0		1.7	0.5	0.0		0.0	2.7	2.7	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00	
Delay/Veh:	13.1	13.5	13.5		0.0	0.0	0.0		26.8	13.2	0.0		0.0	28.6	28.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	13.1	13.5	13.5		0.0	0.0	0.0		26.8	13.2	0.0		0.0	28.6	28.6	
HCM2k95th:	7	8	8		0	0	0		7	7	0		0	11	11	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #11 5th St/N St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.328
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	35	35		0	0	0		35	35	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	0	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Jan 2005 << 4:45																
Base Vol:	0	710	124		0	0	0		72	427	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	710	124		0	0	0		72	427	0		0	0	0	
Added Vol:	0	195	0		0	0	0		0	21	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	905	124		0	0	0		72	448	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	905	124		0	0	0		72	448	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	905	124		0	0	0		72	448	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	905	124		0	0	0		72	448	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.64	0.36		0.00	0.00	0.00		0.42	2.58	0.00		0.00	0.00	0.00	
Final Sat.:	0	4480	614		0	0	0		718	4469	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.20	0.20		0.00	0.00	0.00		0.10	0.10	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.46	0.46		0.00	0.00	0.00		0.46	0.46	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.44	0.44		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	13.9	13.9		0.0	0.0	0.0		12.3	12.3	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.6	0.6		0.0	0.0	0.0		0.2	0.2	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	14.5	14.5		0.0	0.0	0.0		12.5	12.5	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	14.5	14.5		0.0	0.0	0.0		12.5	12.5	0.0		0.0	0.0	0.0	
HCM2k95th:	0	11	11		0	0	0		5	5	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 5th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.742
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0	0	0	0	0	0	0	0	0	0	29	29		
Lanes:	0	1	2	0 0	0	0	0	0	0	0	0	0	0	2	1	0
Volume Module: >> Count Date: 21 Apr 2005 << 4:30																
Base Vol:	336	551	0	0	0	0	0	0	0	0	1392	288				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	336	551	0	0	0	0	0	0	0	0	1392	288				
Added Vol:	15	163	0	0	0	0	0	0	0	0	609	33				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	351	714	0	0	0	0	0	0	0	0	2001	321				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	351	714	0	0	0	0	0	0	0	0	2001	321				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	351	714	0	0	0	0	0	0	0	0	2001	321				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	351	714	0	0	0	0	0	0	0	0	2001	321				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.99	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	0.41				
Final Sat.:	1710	3477	0	0	0	0	0	0	0	0	4376	702				
Capacity Analysis Module:																
Vol/Sat:	0.21	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.46				
Crit Moves:	****										****					
Green/Cycle:	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52				
Volume/Cap:	0.55	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88				
Uniform Del:	13.8	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	12.0				
IncremntDel:	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	4.7				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	14.9	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	16.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	14.9	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	16.7				
HCM2k95th:	10	10	0	0	0	0	0	0	0	0	26	26				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #13 5th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.309
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 56 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	21	21	0	0	0	29	29	0	0	0	0				
Lanes:	0	0	2	1 0	0	0	0	0	1	1	2	0 0	0	0	0	0
Volume Module: >> Count Date: 26 Apr 2005 << 4:30																
Base Vol:	0	550	73	0	0	0	259	484	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	550	73	0	0	0	259	484	0	0	0	0				
Added Vol:	0	0	0	0	0	0	178	139	0	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	550	73	0	0	0	437	623	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	550	73	0	0	0	437	623	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	550	73	0	0	0	437	623	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	550	73	0	0	0	437	623	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.89	0.89	1.00	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00				
Lanes:	0.00	2.65	0.35	0.00	0.00	0.00	1.65	2.35	0.00	0.00	0.00	0.00				
Final Sat.:	0	4497	597	0	0	0	2851	4065	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	0.00				
Crit Moves:		****					****									
Green/Cycle:	0.00	0.38	0.38	0.00	0.00	0.00	0.52	0.52	0.00	0.00	0.00	0.00				
Volume/Cap:	0.00	0.33	0.33	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.00				
Uniform Del:	0.0	12.5	12.5	0.0	0.0	0.0	7.7	7.7	0.0	0.0	0.0	0.0				
IncremntDel:	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00				
Delay/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	12.9	12.9	0.0	0.0	0.0	7.9	7.9	0.0	0.0	0.0	0.0				
HCM2k95th:	0	6	6	0	0	0	6	6	0	0	0	0				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 7th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.339
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.6
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	34	34	0	0	0	66	66	0				
Lanes:	0 0	0 0	0	0 0	2 0	2	0 0	0 0	0	1 1	2 0	0				
Volume Module: >> Count Date: 30 Sep 2004 << 4:45																
Base Vol:	0	0	0	0	368	496	0	0	0	191	1618	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	368	496	0	0	0	191	1618	0				
Added Vol:	0	0	0	0	41	9	0	0	0	0	97	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	0	409	505	0	0	0	191	1715	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	409	505	0	0	0	191	1715	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	0	409	505	0	0	0	191	1715	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	0	409	505	0	0	0	191	1715	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	1.00	0.86	0.67	1.00	1.00	1.00	0.82	0.82	1.00				
Lanes:	0.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	1.00	3.00	0.00				
Final Sat.:	0	0	0	0	3249	2558	0	0	0	1556	4668	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.13	0.20	0.00	0.00	0.00	0.12	0.37	0.00				
Crit Moves:						****				****						
Green/Cycle:	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.62	0.62	0.00				
Volume/Cap:	0.00	0.00	0.00	0.00	0.39	0.62	0.00	0.00	0.00	0.20	0.59	0.00				
Uniform Del:	0.0	0.0	0.0	0.0	28.0	30.5	0.0	0.0	0.0	8.6	11.9	0.0				
IncremntDel:	0.0	0.0	0.0	0.0	1.1	3.4	0.0	0.0	0.0	0.0	0.8	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00				
Delay/Veh:	0.0	0.0	0.0	0.0	29.1	33.9	0.0	0.0	0.0	8.6	12.7	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	0.0	29.1	33.9	0.0	0.0	0.0	8.6	12.7	0.0				
HCM2k95th:	0	0	0	0	10	14	0	0	0	6	20	0				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 7th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.579
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	22	22	0	0	28	28	0	0	0				
Lanes:	0 0	0 0	0	0 1	2 0	0	0 0	2 1	0	0 0	0 0	0				
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	83	471	0	0	1289	294	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	83	471	0	0	1289	294	0	0	0				
Added Vol:	0	0	0	9	32	0	0	164	21	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	0	0	0	92	503	0	0	1453	315	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	92	503	0	0	1453	315	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	0	0	92	503	0	0	1453	315	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	0	0	0	92	503	0	0	1453	315	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	0.80	0.80	1.00	1.00	1.00				
Lanes:	0.00	0.00	0.00	0.46	2.54	0.00	0.00	2.47	0.53	0.00	0.00	0.00				
Final Sat.:	0	0	0	722	3946	0	0	3733	809	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.39	0.39	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.39	0.39	0.00	0.00	0.50	0.50	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.78	0.78	0.00	0.00	0.00				
Uniform Del:	0.0	0.0	0.0	11.8	11.8	0.0	0.0	11.5	11.5	0.0	0.0	0.0				
IncremntDel:	0.0	0.0	0.0	0.5	0.5	0.0	0.0	2.7	2.7	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	12.3	12.3	0.0	0.0	14.2	14.2	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	12.3	12.3	0.0	0.0	14.2	14.2	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	18	18	0	0	0				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 7th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.289
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 15.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	29	29			0	0	0	0	21	21		0
Lanes:	0	0	0	0	0	2	1	0	0	0	0	0	1	0	3	0
Volume Module: >> Count Date: 7 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	469	214			0	0	0		121	1306		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	0	0	469	214			0	0	0		121	1306		0
Added Vol:	0	0	0	0	43	11			0	0	0		37	94		0
PasserByVol:	0	0	0	0	0	0			0	0	0		0	0		0
Initial Fut:	0	0	0	0	0	225			0	0	0		158	1400		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Volume:	0	0	0	0	512	225			0	0	0		158	1400		0
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0		0
Reduced Vol:	0	0	0	0	512	225			0	0	0		158	1400		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	0	0	0	0	512	225			0	0	0		158	1400		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.78	0.78			1.00	1.00	1.00		0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.08	0.92			0.00	0.00	0.00		1.00	3.00		0.00
Final Sat.:	0	0	0	0	3094	1360			0	0	0		1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.17	0.17			0.00	0.00	0.00		0.09	0.30		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.52	0.52			0.00	0.00	0.00		0.38	0.38		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.32	0.32			0.00	0.00	0.00		0.25	0.80		0.00
Uniform Del:	0.0	0.0	0.0	0.0	7.8	7.8			0.0	0.0	0.0		12.1	15.6		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.4			0.0	0.0	0.0		0.9	3.9		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00		1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	8.2	8.2			0.0	0.0	0.0		13.0	19.6		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	8.2	8.2			0.0	0.0	0.0		13.0	19.6		0.0
HCM2k95th:	0	0	0	0	6	6			0	0	0		5	17		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 8th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.527
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 18.4
Optimal Cycle: 106 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	34	34	0	0	0	0			0	0	0		0	66		66
Lanes:	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module:																
Base Vol:	359	472	0	0	0	0			0	0	0		0	1666		83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	359	472	0	0	0	0			0	0	0		0	1666		83
Added Vol:	93	165	0	0	0	0			0	0	0		0	3		0
PasserByVol:	0	0	0	0	0	0			0	0	0		0	0		0
Initial Fut:	452	637	0	0	0	0			0	0	0		0	1669		83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
PHF Volume:	452	637	0	0	0	0			0	0	0		0	1669		83
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0		0
Reduced Vol:	452	637	0	0	0	0			0	0	0		0	1669		83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	452	637	0	0	0	0			0	0	0		0	1669		83
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900		1900
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	0.90		0.90
Lanes:	1.66	2.34	0.00	0.00	0.00	0.00			0.00	0.00	0.00		0.00	2.86		0.14
Final Sat.:	2871	4045	0	0	0	0			0	0	0		0	4907		244
Capacity Analysis Module:																
Vol/Sat:	0.16	0.16	0.00	0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.34		0.34
Crit Moves:	****													****		
Green/Cycle:	0.32	0.32	0.00	0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.62		0.62
Volume/Cap:	0.49	0.49	0.00	0.00	0.00	0.00			0.00	0.00	0.00		0.00	0.55		0.55
Uniform Del:	29.0	29.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	11.4		11.4
IncremntDel:	0.2	0.2	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.2		0.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00		0.00	1.00		1.00
Delay/Veh:	29.2	29.2	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	11.6		11.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	29.2	29.2	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	11.6		11.6
HCM2k95th:	14	14	0	0	0	0			0	0	0		0	19		19

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 8th S/tJ St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.510
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	25	25	0	0	0	25	25	0	0	0	0
Lanes:	0 0	2 1	0	0 0	0 0	0	1 1	2 0	0	0 0	0 0	0
Volume Module: >> Count Date: 7 Dec 2005 << 5												
Base Vol:	0	417	208	0	0	0	108	1297	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	417	208	0	0	0	108	1297	0	0	0	0
Added Vol:	0	243	338	0	0	0	15	158	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	660	546	0	0	0	123	1455	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	660	546	0	0	0	123	1455	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	660	546	0	0	0	123	1455	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	660	546	0	0	0	123	1455	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.76	0.76	1.00	1.00	1.00	0.82	0.82	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	0.00	0.00	0.00	1.00	3.00	0.00	0.00	0.00	0.00
Final Sat.:	0	2901	1450	0	0	0	1556	4668	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.38	0.00	0.00	0.00	0.08	0.31	0.00	0.00	0.00	0.00
Crit Moves:			****				****					
Green/Cycle:	0.00	0.45	0.45	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.84	0.00	0.00	0.00	0.18	0.70	0.00	0.00	0.00	0.00
Uniform Del:	0.0	11.1	13.8	0.0	0.0	0.0	9.3	12.5	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.8	6.2	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	11.9	20.0	0.0	0.0	0.0	9.4	14.3	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	11.9	20.0	0.0	0.0	0.0	9.4	14.3	0.0	0.0	0.0	0.0
HCM2k95th:	0	9	20	0	0	0	3	13	0	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 8th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.457
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	29	29	0	0	0	0	0	0	0	0	21	21
Lanes:	1 0	2 0	0	0 0	0 0	0	0 0	0 0	0	0 0	2 1	1
Volume Module: >> Count Date: 7 Dec 2005 << 4:45												
Base Vol:	158	335	0	0	0	0	0	0	0	0	1319	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	335	0	0	0	0	0	0	0	0	1319	81
Added Vol:	0	175	0	0	0	0	0	0	0	0	131	77
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	510	0	0	0	0	0	0	0	0	1450	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	510	0	0	0	0	0	0	0	0	1450	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	510	0	0	0	0	0	0	0	0	1450	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	158	510	0	0	0	0	0	0	0	0	1450	158
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81
Lanes:	1.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	1.00
Final Sat.:	1710	3249	0	0	0	0	0	0	0	0	4598	1533
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.10
Crit Moves:	****										****	
Green/Cycle:	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38
Volume/Cap:	0.18	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.27
Uniform Del:	7.2	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	12.2
IncremntDel:	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Delay/Veh:	7.6	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.6	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	12.3
HCM2k95th:	4	6	0	0	0	0	0	0	0	0	19	5

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #20 9th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.426
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 20.8
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	35	35			0	0	0	0	65	65		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:30																
Base Vol:	0	0	0	0	385	330			0	0	0	0	223	1445		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	385	330			0	0	0	0	223	1445		0
Added Vol:	0	0	0	0	30	0			0	0	0	0	39	4		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	0	415	330		0	0	0	0	262	1449		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	415	330			0	0	0	0	262	1449		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	415	330			0	0	0	0	262	1449		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	415	330			0	0	0	0	262	1449		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.76	0.76			1.00	1.00	1.00	1.00	0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.00	1.00			0.00	0.00	0.00	0.00	1.00	3.00		0.00
Final Sat.:	0	0	0	0	2907	1453			0	0	0	0	1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.14	0.23			0.00	0.00	0.00	0.00	0.15	0.31		0.00
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.31	0.31			0.00	0.00	0.00	0.00	0.58	0.58		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.46	0.73			0.00	0.00	0.00	0.00	0.26	0.53		0.00
Uniform Del:	0.0	0.0	0.0	0.0	30.9	34.2			0.0	0.0	0.0	0.0	11.6	14.3		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.9	4.5			0.0	0.0	0.0	0.0	0.6	0.8		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	31.8	38.7			0.0	0.0	0.0	0.0	12.3	15.1		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	31.8	38.7			0.0	0.0	0.0	0.0	12.3	15.1		0.0
HCM2k95th:	0	0	0	0	11	19			0	0	0	0	9	18		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #21 9th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.593
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	25	25		0	0	25	25		0	0		0
Lanes:	0 0	0	0	0	0 1	2	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 12 Jan 2006 << 4:45																
Base Vol:	0	0	0	93	480		0	0	1159	129		0	0		0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	93	480		0	0	1159	129		0	0		0	
Added Vol:	0	0	0	0	70		0	0	331	165		0	0		0	
PasserByVol:	0	0	0	0	0		0	0	0	0		0	0		0	
Initial Fut:	0	0	0	93	550		0	0	1490	294		0	0		0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	93	550		0	0	1490	294		0	0		0	
Reduct Vol:	0	0	0	0	0		0	0	0	0		0	0		0	
Reduced Vol:	0	0	0	93	550		0	0	1490	294		0	0		0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	93	550		0	0	1490	294		0	0		0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	0.82	0.82	1.00	1.00	1.00	0.80	0.80	1.00	1.00	1.00	1.00		1.00
Lanes:	0.00	0.00	0.00	0.43	2.57	0.00	0.00	2.51	0.49	0.00	0.00	0.00				
Final Sat.:	0	0	0	675	3993		0	0	3801	750		0	0		0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.00	0.00	0.39	0.39	0.00	0.00	0.00				
Crit Moves:				****				****								
Green/Cycle:	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.45	0.45	0.00	0.00	0.00				
Volume/Cap:	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.88	0.88	0.00	0.00	0.00				
Uniform Del:	0.0	0.0	0.0	10.0	10.0	0.0	0.0	14.1	14.1	0.0	0.0	0.0				
IncremntDel:	0.0	0.0	0.0	0.4	0.4	0.0	0.0	5.8	5.8	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00				
Delay/Veh:	0.0	0.0	0.0	10.3	10.3	0.0	0.0	19.9	19.9	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	10.3	10.3	0.0	0.0	19.9	19.9	0.0	0.0	0.0				
HCM2k95th:	0	0	0	5	5	0	0	19	19	0	0	0				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #22 9th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.580
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 12.0
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	21	21			0	0	0	0	29	29		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	1 0	3	0	0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	564	127			0	0	0	0	569	1123		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	564	127			0	0	0	0	569	1123		0
Added Vol:	0	0	0	0	115	32			0	0	0	0	0	176		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	679	159			0	0	0	0	569	1299		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	679	159			0	0	0	0	569	1299		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	679	159			0	0	0	0	569	1299		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	679	159			0	0	0	0	569	1299		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.80	0.80			1.00	1.00	1.00	1.00	0.90	0.82		1.00
Lanes:	0.00	0.00	0.00	0.00	2.43	0.57			0.00	0.00	0.00	0.00	1.00	3.00		0.00
Final Sat.:	0	0	0	0	3677	861			0	0	0	0	1710	4668		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.18	0.18			0.00	0.00	0.00	0.00	0.33	0.28		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.38	0.38			0.00	0.00	0.00	0.00	0.52	0.52		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.49	0.49			0.00	0.00	0.00	0.00	0.64	0.54		0.00
Uniform Del:	0.0	0.0	0.0	0.0	13.4	13.4			0.0	0.0	0.0	0.0	9.8	9.0		0.0
IncremntDel:	0.0	0.0	0.0	0.0	1.0	1.0			0.0	0.0	0.0	0.0	3.6	0.9		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	14.4	14.4			0.0	0.0	0.0	0.0	13.3	9.9		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	14.4	14.4			0.0	0.0	0.0	0.0	13.3	9.9		0.0
HCM2k95th:	0	0	0	0	9	9			0	0	0	0	13	10		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #23 9th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.626
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 32 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	10	0			0	0	0	0	0	10		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	1015	240			0	0	0	0	200	1090		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	1015	240			0	0	0	0	200	1090		0
Added Vol:	0	0	0	0	182	20			0	0	0	0	12	57		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	1197	260			0	0	0	0	212	1147		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	1197	260			0	0	0	0	212	1147		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	1197	260			0	0	0	0	212	1147		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	1197	260			0	0	0	0	212	1147		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.46	0.54			0.00	0.00	0.00	0.00	0.47	2.53		0.00
Final Sat.:	0	0	0	0	4146	901			0	0	0	0	809	4378		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.29	0.29			0.00	0.00	0.00	0.00	0.26	0.26		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.46	0.46			0.00	0.00	0.00	0.00	0.42	0.42		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.63	0.63			0.00	0.00	0.00	0.00	0.63	0.63		0.00
Uniform Del:	0.0	0.0	0.0	0.0	10.2	10.2			0.0	0.0	0.0	0.0	11.4	11.4		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.5	0.5			0.0	0.0	0.0	0.0	0.6	0.6		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	10.7	10.7			0.0	0.0	0.0	0.0	12.0	12.0		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.7	10.7			0.0	0.0	0.0	0.0	12.0	12.0		0.0
HCM2k95th:	0	0	0	0	13	13			0	0	0	0	11	11		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #24 9th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.455
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	3	1 0	0	0	0	0
Volume Module:																
Base Vol:	0	0	0		159	1116	0		0	569	103		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		159	1116	0		0	569	103		0	0	0	
Added Vol:	0	0	0		29	165	0		0	61	90		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		188	1281	0		0	630	193		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		188	1281	0		0	630	193		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		188	1281	0		0	630	193		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		188	1281	0		0	630	193		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.38	2.62	0.00		0.00	3.06	0.94		0.00	0.00	0.00	
Final Sat.:	0	0	0		664	4523	0		0	5109	1565		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.12	0.12		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.63	0.63	0.00		0.00	0.28	0.28		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	12.0	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.6	0.6	0.0		0.0	0.1	0.1		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		12.6	12.6	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		12.6	12.6	0.0		0.0	9.8	9.8		0.0	0.0	0.0	
HCM2k95th:	0	0	0		12	12	0		0	5	5		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #25 10th St/I St

Cycle (sec): 100 Critical Vol./Cap. (X): 0.592
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.9
Optimal Cycle: 112 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	35	35	0		0	0	0		0	0	0		0	65	65	
Lanes:	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																
Base Vol:	246	477	0		0	0	0		0	0	0		0	1552	77	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	246	477	0		0	0	0		0	0	0		0	1552	77	
Added Vol:	0	62	0		0	0	0		0	0	0		0	43	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	246	539	0		0	0	0		0	0	0		0	1595	77	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	246	539	0		0	0	0		0	0	0		0	1595	77	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	246	539	0		0	0	0		0	0	0		0	1595	77	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	246	539	0		0	0	0		0	0	0		0	1595	77	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.81	0.81	
Lanes:	0.94	2.06	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.86	0.14	
Final Sat.:	1463	3205	0		0	0	0		0	0	0		0	4422	213	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.17	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Crit Moves:	****													****		
Green/Cycle:	0.31	0.31	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Volume/Cap:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.62	0.62	
Uniform Del:	31.8	31.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.4	15.4	
IncremntDel:	1.4	1.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	1.1	1.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	33.2	33.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	33.2	33.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	16.5	16.5	
HCM2k95th:	14	14	0		0	0	0		0	0	0		0	22	22	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #26 10th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.646
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 62 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	26	26		0	0	0		24	24	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	571	151		0	0	0		129	1163	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	571	151		0	0	0		129	1163	0		0	0	0	
Added Vol:	0	62	0		0	0	0		0	331	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	633	151		0	0	0		129	1494	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	633	151		0	0	0		129	1494	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	633	151		0	0	0		129	1494	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	633	151		0	0	0		129	1494	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.80	0.80		1.00	1.00	1.00		0.82	0.82	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.42	0.58		0.00	0.00	0.00		0.24	2.76	0.00		0.00	0.00	0.00	
Final Sat.:	0	3660	873		0	0	0		371	4297	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.17	0.17		0.00	0.00	0.00		0.35	0.35	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.42	0.42		0.00	0.00	0.00		0.39	0.39	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.41	0.41		0.00	0.00	0.00		0.90	0.90	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	12.6	12.6		0.0	0.0	0.0		17.9	17.9	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.7	0.7		0.0	0.0	0.0		7.5	7.5	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	13.3	13.3		0.0	0.0	0.0		25.4	25.4	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	13.3	13.3		0.0	0.0	0.0		25.4	25.4	0.0		0.0	0.0	0.0	
HCM2k95th:	0	8	8		0	0	0		18	18	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #27 10th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.701
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	21	21	0		0	0	0		0	0	0		0	29	29	
Lanes:	0 1	2	0	0	0 0	0	0	0	0 0	0	0	0	0 0	2	1	0
Volume Module: >> Count Date: 30 Apr 2000 <<																
Base Vol:	181	641	0		0	0	0		0	0	0		0	1490	313	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	181	641	0		0	0	0		0	0	0		0	1490	313	
Added Vol:	21	71	0		0	0	0		0	0	0		0	154	4	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	202	712	0		0	0	0		0	0	0		0	1644	317	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	202	712	0		0	0	0		0	0	0		0	1644	317	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	202	712	0		0	0	0		0	0	0		0	1644	317	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	202	712	0		0	0	0		0	0	0		0	1644	317	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.82	0.82	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.80	0.80	
Lanes:	0.66	2.34	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.52	0.48	
Final Sat.:	1032	3637	0		0	0	0		0	0	0		0	3820	737	
Capacity Analysis Module:																
Vol/Sat:	0.20	0.20	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.43	0.43	
Crit Moves:	****													****		
Green/Cycle:	0.38	0.38	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.52	0.52	
Volume/Cap:	0.52	0.52	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.83	0.83	
Uniform Del:	13.6	13.6	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	11.4	11.4	
IncremntDel:	1.1	1.1	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	3.6	3.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	14.7	14.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.0	15.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.7	14.7	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.0	15.0	
HCM2k95th:	9	9	0		0	0	0		0	0	0		0	21	21	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #28 10th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.440
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.9
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	0	0		0	10	0	
Lanes:	0	1	2	0 0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module:																
Base Vol:	155	472	0		0	0	0		0	0	0		0	1131	130	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	155	472	0		0	0	0		0	0	0		0	1131	130	
Added Vol:	33	29	0		0	0	0		0	0	0		0	36	2	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	188	501	0		0	0	0		0	0	0		0	1167	132	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	188	501	0		0	0	0		0	0	0		0	1167	132	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	188	501	0		0	0	0		0	0	0		0	1167	132	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	188	501	0		0	0	0		0	0	0		0	1167	132	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.90	0.90	
Lanes:	0.82	2.18	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.70	0.30	
Final Sat.:	1415	3772	0		0	0	0		0	0	0		0	4590	519	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.13	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.25	0.25	
Crit Moves:		****												****		
Green/Cycle:	0.30	0.30	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.58	0.58	
Volume/Cap:	0.44	0.44	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.44	0.44	
Uniform Del:	14.0	14.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.0	6.0	
IncremntDel:	0.2	0.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.1	0.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	14.2	14.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.1	6.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	14.2	14.2	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	6.1	6.1	
HCM2k95th:	6	6	0		0	0	0		0	0	0		0	7	7	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #29 10th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.304
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 8.8
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	10	0		0	0	0		0	10	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	0	1	2	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	619	125		0	0	0		40	437	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	619	125		0	0	0		40	437	0		0	0	0	
Added Vol:	0	59	0		0	0	0		3	87	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	678	125		0	0	0		43	524	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	678	125		0	0	0		43	524	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	678	125		0	0	0		43	524	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	678	125		0	0	0		43	524	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.53	0.47		0.00	0.00	0.00		0.23	2.77	0.00		0.00	0.00	0.00	
Final Sat.:	0	4279	789		0	0	0		393	4794	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.16	0.16		0.00	0.00	0.00		0.11	0.11	0.00		0.00	0.00	0.00	
Crit Moves:		****								****						
Green/Cycle:	0.00	0.52	0.52		0.00	0.00	0.00		0.36	0.36	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.30	0.30		0.00	0.00	0.00		0.30	0.30	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	6.8	6.8		0.0	0.0	0.0		11.5	11.5	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.1	0.1		0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	6.9	6.9		0.0	0.0	0.0		11.6	11.6	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	6.9	6.9		0.0	0.0	0.0		11.6	11.6	0.0		0.0	0.0	0.0	
HCM2k95th:	0	5	5		0	0	0		4	4	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #30 12th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.470
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 66 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	33	33		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1 0	0	0	0	0
Volume Module: >> Count Date: 23 Mar 2005 << 4:30																
Base Vol:	0	0	0		231	897	0		0	969	27		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		231	897	0		0	969	27		0	0	0	
Added Vol:	0	0	0		0	87	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		231	984	0		0	969	27		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		231	984	0		0	969	27		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		231	984	0		0	969	27		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		231	984	0		0	969	27		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.91	0.91		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.57	2.43	0.00		0.00	2.92	0.08		0.00	0.00	0.00	
Final Sat.:	0	0	0		986	4201	0		0	5026	140		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.23	0.23	0.00		0.00	0.19	0.19		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.41	0.41	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.57	0.57	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		15.0	15.0	0.0		0.0	10.2	10.2		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		1.1	1.1	0.0		0.0	0.4	0.4		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		16.2	16.2	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		16.2	16.2	0.0		0.0	10.7	10.7		0.0	0.0	0.0	
HCM2k95th:	0	0	0		13	13	0		0	9	9		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #31 12th St/I St

Cycle (sec): 0 Critical Vol./Cap. (X): 0.582
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 7.6
Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	7	7		0	0	0		3	7	0	
Lanes:	0	0	0	0	0	0	2	1 0	0	0	0	0 0	0	1	2	0 0
Volume Module: >> Count Date: 8 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	774	268		0	0	0		66	1077	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	774	268		0	0	0		66	1077	0	
Added Vol:	0	0	0		0	48	39		0	0	0		0	1	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	822	307		0	0	0		66	1078	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	822	307		0	0	0		66	1078	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	822	307		0	0	0		66	1078	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	822	307		0	0	0		66	1078	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.87	0.87		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	2.18	0.82		0.00	0.00	0.00		0.17	2.83	0.00	
Final Sat.:	0	0	0		0	3622	1353		0	0	0		299	4888	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.23	0.23		0.00	0.00	0.00		0.22	0.22	0.00	
Crit Moves:						****								****		
Green/Cycle:	0.00	0.00	0.00		0.00	0.39	0.39		0.00	0.00	0.00		0.38	0.38	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.58	0.58		0.00	0.00	0.00		0.58	0.58	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	6.3	6.3		0.0	0.0	0.0		6.4	6.4	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	1.3	1.3		0.0	0.0	0.0		1.3	1.3	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.7	7.7	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	7.5	7.5		0.0	0.0	0.0		7.7	7.7	0.0	
HCM2k95th:	0	0	0		0	7	7		0	0	0		7	7	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #32 12th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.610
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	31		31	31	31		0	19	19		0	0	0	
Lanes:	0 0	0	0	1	1 0	2	0	0	0 0	2	1	0	0 0	0	0	0
Volume Module: >> Count Date: 8 Dec 2005 << 5																
Base Vol:	0	0	243		318	516	0		0	1203	131		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	243		318	516	0		0	1203	131		0	0	0	
Added Vol:	0	0	0		7	40	0		0	314	3		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	243		325	556	0		0	1517	134		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	243		325	556	0		0	1517	134		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	243		325	556	0		0	1517	134		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	243		325	556	0		0	1517	134		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	0.87		0.77	0.95	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	0.00	1.00		1.00	2.00	0.00		0.00	2.76	0.24		0.00	0.00	0.00	
Final Sat.:	0	0	1644		1461	3610	0		0	4709	416		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.15		0.22	0.15	0.00		0.00	0.32	0.32		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.55		0.55	0.55	0.00		0.00	0.34	0.34		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.27		0.40	0.28	0.00		0.00	0.95	0.95		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	6.5		7.2	6.6	0.0		0.0	18.0	18.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.7		1.5	0.3	0.0		0.0	12.5	12.5		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	7.3		8.7	6.9	0.0		0.0	30.6	30.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	7.3		8.7	6.9	0.0		0.0	30.6	30.6		0.0	0.0	0.0	
HCM2k95th:	0	0	5		9	6	0		0	25	25		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #33 12th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.589
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 14.6
Optimal Cycle: 59 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0		0	25	25		0	0	0		25	25	25	
Lanes:	1 0	0	0	0	0 0	0	1	1	0 0	0	0	0	0 1	1	1	0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	5	0	0		0	0	712		0	0	0		1	1082	136	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	0	0		0	0	712		0	0	0		1	1082	136	
Added Vol:	0	0	0		0	0	43		0	0	0		0	115	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	5	0	0		0	0	755		0	0	0		1	1197	136	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	0	0		0	0	755		0	0	0		1	1197	136	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	0	0		0	0	755		0	0	0		1	1197	136	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	5	0	0		0	0	755		0	0	0		1	1197	136	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	1.00		1.00	1.00	0.85		1.00	1.00	1.00		0.88	0.88	0.88	
Lanes:	1.00	0.00	0.00		0.00	0.00	2.00		0.00	0.00	0.00		0.01	2.69	0.30	
Final Sat.:	1758	0	0		0	0	3230		0	0	0		4	4516	513	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.00	0.23		0.00	0.00	0.00		0.27	0.27	0.27	
Crit Moves:							****						****			
Green/Cycle:	0.42	0.00	0.00		0.00	0.00	0.42		0.00	0.00	0.00		0.42	0.42	0.42	
Volume/Cap:	0.01	0.00	0.00		0.00	0.00	0.55		0.00	0.00	0.00		0.63	0.63	0.63	
Uniform Del:	9.8	0.0	0.0		0.0	0.0	12.8		0.0	0.0	0.0		13.3	13.3	13.3	
IncremntDel:	0.0	0.0	0.0		0.0	0.0	1.6		0.0	0.0	0.0		1.4	1.4	1.4	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	0.00		0.00	0.00	1.00		0.00	0.00	0.00		1.00	1.00	1.00	
Delay/Veh:	9.8	0.0	0.0		0.0	0.0	14.4		0.0	0.0	0.0		14.7	14.7	14.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.8	0.0	0.0		0.0	0.0	14.4		0.0	0.0	0.0		14.7	14.7	14.7	
HCM2k95th:	0	0	0		0	0	10		0	0	0		12	12	12	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #34 15th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.467
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0	0
Volume Module: >> Count Date: 7 Dec 2005 << 4:30																
Base Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		69	585	0		0	1151	310		0	0	0	
Added Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		69	585	0		0	1151	310		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		69	585	0		0	1151	310		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		69	585	0		0	1151	310		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		69	585	0		0	1151	310		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.32	2.68	0.00		0.00	2.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	0	0		547	4640	0		0	3956	1065		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.13	0.13	0.00		0.00	0.29	0.29		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.65	0.65		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		9.8	9.8	0.0		0.0	12.1	12.1		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.7	0.7		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		9.9	9.9	0.0		0.0	12.8	12.8		0.0	0.0	0.0	
HCM2k95th:	0	0	0		5	5	0		0	15	15		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #35 15th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.760
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 49.0
Optimal Cycle: 56 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		25	25	0		0	25	25		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1	0	0	0	0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		229	764	0		0	1605	507		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		229	764	0		0	1605	507		0	0	0	
Added Vol:	0	0	0		0	0	0		0	226	95		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		229	764	0		0	1831	602		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		229	764	0		0	1831	602		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		229	764	0		0	1831	602		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		229	764	0		0	1831	602		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.88	0.88		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.69	2.31	0.00		0.00	2.26	0.74		0.00	0.00	0.00	
Final Sat.:	0	0	0		1196	3991	0		0	3759	1236		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.19	0.19	0.00		0.00	0.49	0.49		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.45	0.45		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.43	0.43	0.00		0.00	1.09	1.09		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		10.6	10.6	0.0		0.0	15.5	15.5		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.1	0.1	0.0		0.0	49.1	49.1		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	64.6	64.6		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	64.6	64.6		0.0	0.0	0.0	
HCM2k95th:	0	0	0		8	8	0		0	45	45		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #36 15th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.605
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	30	30			0	0	0	0	20	20		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module: >> Count Date: 14 Dec 2005 << 4:45																
Base Vol:	0	0	0	0	1285	293			0	0	0	0	155	809		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	1285	293			0	0	0	0	155	809		0
Added Vol:	0	0	0	0	100	7			0	0	0	0	0	108		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	1385	300			0	0	0	0	155	917		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	1385	300			0	0	0	0	155	917		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	1385	300			0	0	0	0	155	917		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	1385	300			0	0	0	0	155	917		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.47	0.53			0.00	0.00	0.00	0.00	0.43	2.57		0.00
Final Sat.:	0	0	0	0	4148	899			0	0	0	0	750	4437		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.33	0.33			0.00	0.00	0.00	0.00	0.21	0.21		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.54	0.54			0.00	0.00	0.00	0.00	0.36	0.36		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.62	0.62			0.00	0.00	0.00	0.00	0.58	0.58		0.00
Uniform Del:	0.0	0.0	0.0	0.0	9.1	9.1			0.0	0.0	0.0	0.0	14.6	14.6		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.5	0.5			0.0	0.0	0.0	0.0	0.5	0.5		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	9.5	9.5			0.0	0.0	0.0	0.0	15.0	15.0		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	9.5	9.5			0.0	0.0	0.0	0.0	15.0	15.0		0.0
HCM2k95th:	0	0	0	0	15	15			0	0	0	0	10	10		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #37 15th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.538
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.3
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	28	28			0	0	0	0	22	22		0
Lanes:	0 0	0	0	0	0 0	2	1	0	0 0	0	0	0	0 1	2	0	0
Volume Module:																
Base Vol:	0	0	0	0	1188	224			0	0	0	0	163	746		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Initial Bse:	0	0	0	0	1188	224			0	0	0	0	163	746		0
Added Vol:	0	0	0	0	98	2			0	0	0	0	0	36		0
PasserByVol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Initial Fut:	0	0	0	0	1286	226			0	0	0	0	163	782		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
PHF Volume:	0	0	0	0	1286	226			0	0	0	0	163	782		0
Reduct Vol:	0	0	0	0	0	0			0	0	0	0	0	0		0
Reduced Vol:	0	0	0	0	1286	226			0	0	0	0	163	782		0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
Final Vol.:	0	0	0	0	1286	226			0	0	0	0	163	782		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900	1900	1900	1900		1900
Adjustment:	1.00	1.00	1.00	1.00	0.89	0.89			1.00	1.00	1.00	1.00	0.91	0.91		1.00
Lanes:	0.00	0.00	0.00	0.00	2.55	0.45			0.00	0.00	0.00	0.00	0.52	2.48		0.00
Final Sat.:	0	0	0	0	4315	758			0	0	0	0	895	4292		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.00	0.30	0.30			0.00	0.00	0.00	0.00	0.18	0.18		0.00
Crit Moves:					****								****			
Green/Cycle:	0.00	0.00	0.00	0.00	0.50	0.50			0.00	0.00	0.00	0.00	0.39	0.39		0.00
Volume/Cap:	0.00	0.00	0.00	0.00	0.60	0.60			0.00	0.00	0.00	0.00	0.46	0.46		0.00
Uniform Del:	0.0	0.0	0.0	0.0	10.0	10.0			0.0	0.0	0.0	0.0	12.6	12.6		0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.4	0.4			0.0	0.0	0.0	0.0	0.2	0.2		0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00	0.00	1.00	1.00			0.00	0.00	0.00	0.00	1.00	1.00		0.00
Delay/Veh:	0.0	0.0	0.0	0.0	10.4	10.4			0.0	0.0	0.0	0.0	12.8	12.8		0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	10.4	10.4			0.0	0.0	0.0	0.0	12.8	12.8		0.0
HCM2k95th:	0	0	0	0	13	13			0	0	0	0	8	8		0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #38 15th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.536
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.4
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		27	27	0		0	23	23		0	0	0	
Lanes:	0	0	0	0	0	1	2	0	0	0	2	1 0	0	0	0	0
Volume Module:																
Base Vol:	0	0	0		139	1203	0		0	802	132		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		139	1203	0		0	802	132		0	0	0	
Added Vol:	0	0	0		5	93	0		0	87	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		144	1296	0		0	889	132		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		144	1296	0		0	889	132		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		144	1296	0		0	889	132		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		144	1296	0		0	889	132		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		0.91	0.91	1.00		1.00	0.89	0.89		1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00		0.30	2.70	0.00		0.00	2.61	0.39		0.00	0.00	0.00	
Final Sat.:	0	0	0		519	4668	0		0	4431	658		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.28	0.28	0.00		0.00	0.20	0.20		0.00	0.00	0.00	
Crit Moves:					****					****						
Green/Cycle:	0.00	0.00	0.00		0.48	0.48	0.00		0.00	0.41	0.41		0.00	0.00	0.00	
Volume/Cap:	0.00	0.00	0.00		0.58	0.58	0.00		0.00	0.49	0.49		0.00	0.00	0.00	
Uniform Del:	0.0	0.0	0.0		10.4	10.4	0.0		0.0	12.2	12.2		0.0	0.0	0.0	
IncremntDel:	0.0	0.0	0.0		0.3	0.3	0.0		0.0	0.2	0.2		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		10.7	10.7	0.0		0.0	12.3	12.3		0.0	0.0	0.0	
HCM2k95th:	0	0	0		11	11	0		0	8	8		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #39 15th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.519
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	38	38		0	0	0		32	32	0	
Lanes:	0	0	0	0	0	0	3	1 0	0	0	0	0 0	1	1	2	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	1604	148		0	0	0		361	1074	0	
Added Vol:	0	0	0		0	85	7		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	0		0	1689	155		0	0	0		361	1074	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	0		0	1689	155		0	0	0		361	1074	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		0	1689	155		0	0	0		361	1074	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	0	0		0	1689	155		0	0	0		361	1074	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	1.00	1.00		1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00	
Lanes:	0.00	0.00	0.00		0.00	3.66	0.34		0.00	0.00	0.00		1.01	2.99	0.00	
Final Sat.:	0	0	0		0	6252	574		0	0	0		1740	5176	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.00	0.27	0.27		0.00	0.00	0.00		0.21	0.21	0.00	
Crit Moves:						****							****			
Green/Cycle:	0.00	0.00	0.00		0.00	0.50	0.50		0.00	0.00	0.00		0.42	0.42	0.00	
Volume/Cap:	0.00	0.00	0.00		0.00	0.54	0.54		0.00	0.00	0.00		0.49	0.49	0.00	
Uniform Del:	0.0	0.0	0.0		0.0	13.0	13.0		0.0	0.0	0.0		16.1	16.1	0.0	
IncremntDel:	0.0	0.0	0.0		0.0	0.2	0.2		0.0	0.0	0.0		0.1	0.1	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	0.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00	
Delay/Veh:	0.0	0.0	0.0		0.0	13.2	13.2		0.0	0.0	0.0		16.2	16.2	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	0.0	0.0		0.0	13.2	13.2		0.0	0.0	0.0		16.2	16.2	0.0	
HCM2k95th:	0	0	0		0	15	15		0	0	0		12	12	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #40 15th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.661
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 32.0
Optimal Cycle: 82 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	17	17		24	24	0		0	32	32		0	0	0	
Lanes:	0 0	2	1	0	1	1	2	0 0	0	0	1	1 0	0	0	0	0 0
Volume Module: >> Count Date: 13 Dec 2005 << 4:45																
Base Vol:	0	535	67		766	1001	0		0	459	217		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	535	67		766	1001	0		0	459	217		0	0	0	
Added Vol:	0	0	0		85	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	535	67		851	1001	0		0	459	217		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	535	67		851	1001	0		0	459	217		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	535	67		851	1001	0		0	459	217		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	535	67		851	1001	0		0	459	217		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.89	0.89		0.89	0.89	1.00		1.00	0.90	0.90		1.00	1.00	1.00	
Lanes:	0.00	2.67	0.33		1.84	2.16	0.00		0.00	1.36	0.64		0.00	0.00	0.00	
Final Sat.:	0	4531	567		3108	3656	0		0	2334	1103		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.12	0.12		0.27	0.27	0.00		0.00	0.20	0.20		0.00	0.00	0.00	
Crit Moves:		****				****				****						
Green/Cycle:	0.00	0.21	0.21		0.29	0.29	0.00		0.00	0.39	0.39		0.00	0.00	0.00	
Volume/Cap:	0.00	0.57	0.57		0.94	0.94	0.00		0.00	0.50	0.50		0.00	0.00	0.00	
Uniform Del:	0.0	29.2	29.2		28.2	28.2	0.0		0.0	19.0	19.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.7	0.7		9.0	9.0	0.0		0.0	0.3	0.3		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		1.00	1.00	0.00		0.00	1.00	1.00		0.00	0.00	0.00	
Delay/Veh:	0.0	30.0	30.0		37.3	37.3	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	30.0	30.0		37.3	37.3	0.0		0.0	19.3	19.3		0.0	0.0	0.0	
HCM2k95th:	0	10	10		24	24	0		0	13	13		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #41 16th St/H St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.758
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 21.5
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		19	25	0		0	0	6	
Lanes:	0 0	2	1	0	0	0	0	0	2	1	0	0 0	0	0	0	1
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	0	2028	20		0	0	0		794	413	0		0	0	46	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	2028	20		0	0	0		794	413	0		0	0	46	
Added Vol:	0	161	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	2189	20		0	0	0		794	413	0		0	0	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	2189	20		0	0	0		794	413	0		0	0	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	2189	20		0	0	0		794	413	0		0	0	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	2189	20		0	0	0		794	413	0		0	0	46	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		1.00	1.00	1.00		0.94	0.97	1.00		1.00	1.00	0.87	
Lanes:	0.00	2.97	0.03		0.00	0.00	0.00		2.00	1.00	0.00		0.00	0.00	1.00	
Final Sat.:	0	5135	47		0	0	0		3568	1839	0		0	0	1644	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.43	0.43		0.00	0.00	0.00		0.22	0.22	0.00		0.00	0.00	0.03	
Crit Moves:		****							****						****	
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.34	0.45	0.00		0.00	0.00	0.11	
Volume/Cap:	0.00	0.95	0.95		0.00	0.00	0.00		0.66	0.50	0.00		0.00	0.00	0.26	
Uniform Del:	0.0	15.0	15.0		0.0	0.0	0.0		15.7	11.1	0.0		0.0	0.0	23.0	
IncremntDel:	0.0	10.2	10.2		0.0	0.0	0.0		0.9	0.2	0.0		0.0	0.0	0.8	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	1.00	
Delay/Veh:	0.0	25.1	25.1		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	25.1	25.1		0.0	0.0	0.0		16.6	11.2	0.0		0.0	0.0	23.8	
HCM2k95th:	0	26	26		0	0	0		11	10	0		0	0	2	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #42 16th St/I St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.389
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.7
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	30	30	0		0	0	0		0	0	0		0	20	20	
Lanes:	1	1	2	0 0	0	0	0	0	0	0	0	0	0	0	2	1 0
Volume Module: >> Count Date: 6 Dec 2005 << 4:45																
Base Vol:	179	1647	0		0	0	0		0	0	0		0	708	398	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	179	1647	0		0	0	0		0	0	0		0	708	398	
Added Vol:	1	161	0		0	0	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	180	1808	0		0	0	0		0	0	0		0	708	398	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	180	1808	0		0	0	0		0	0	0		0	708	398	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	180	1808	0		0	0	0		0	0	0		0	708	398	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	180	1808	0		0	0	0		0	0	0		0	708	398	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	0.91	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.86	0.86	
Lanes:	1.00	3.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	2.00	1.00	
Final Sat.:	1729	5187	0		0	0	0		0	0	0		0	3271	1636	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.35	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.22	0.24	
Crit Moves:	****														****	
Green/Cycle:	0.54	0.54	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.36	0.36	
Volume/Cap:	0.19	0.65	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	0.61	0.68	
Uniform Del:	6.7	9.3	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	14.8	15.3	
IncremntDel:	0.0	0.5	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.6	1.2	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	0.00		0.00	0.00	0.00		0.00	0.00	0.00		0.00	1.00	1.00	
Delay/Veh:	6.7	9.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.4	16.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	6.7	9.8	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	15.4	16.5	
HCM2k95th:	3	14	0		0	0	0		0	0	0		0	12	14	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #43 16th St/J St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.694
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 13.5
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	25	25		0	0	0		25	25	0		0	0	0	
Lanes:	0	0	2	1 0	0	0	0	0	1	1	2	0 0	0	0	0	0 0
Volume Module: >> Count Date: 30 Sep 2004 << 4:15																
Base Vol:	0	1627	136		0	0	0		379	1287	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1627	136		0	0	0		379	1287	0		0	0	0	
Added Vol:	0	8	4		0	0	0		154	72	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1635	140		0	0	0		533	1359	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1635	140		0	0	0		533	1359	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1635	140		0	0	0		533	1359	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1635	140		0	0	0		533	1359	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.90	0.90		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.76	0.24		0.00	0.00	0.00		1.13	2.87	0.00		0.00	0.00	0.00	
Final Sat.:	0	4721	404		0	0	0		1948	4968	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.35	0.35		0.00	0.00	0.00		0.27	0.27	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.45	0.45		0.00	0.00	0.00		0.45	0.45	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.78	0.78		0.00	0.00	0.00		0.61	0.61	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	13.1	13.1		0.0	0.0	0.0		11.8	11.8	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	1.7	1.7		0.0	0.0	0.0		0.4	0.4	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	14.9	14.9		0.0	0.0	0.0		12.2	12.2	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	14.9	14.9		0.0	0.0	0.0		12.2	12.2	0.0		0.0	0.0	0.0	
HCM2k95th:	0	20	20		0	0	0		11	11	0		0	0	0	

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #44 16th St/L St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.379
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 11.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	25	25	0	0	0	0	0	0	0	0	0	0	25	25		
Lanes:	1 0	3 0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	0	
Volume Module: >> Count Date: 20 Jan 2005 << 4:45																
Base Vol:	260	1515	0	0	0	0	0	0	0	0	645	195				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	260	1515	0	0	0	0	0	0	0	0	645	195				
Added Vol:	36	20	0	0	0	0	0	0	0	0	72	4				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	296	1535	0	0	0	0	0	0	0	0	717	199				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	296	1535	0	0	0	0	0	0	0	0	717	199				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	296	1535	0	0	0	0	0	0	0	0	717	199				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	296	1535	0	0	0	0	0	0	0	0	717	199				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88				
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	0.65				
Final Sat.:	1900	5187	0	0	0	0	0	0	0	0	3926	1090				
Capacity Analysis Module:																
Vol/Sat:	0.16	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18				
Crit Moves:	****										****					
Green/Cycle:	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45				
Volume/Cap:	0.35	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.41				
Uniform Del:	10.2	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	10.5				
IncremntDel:	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	10.4	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	10.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	10.4	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	10.6				
HCM2k95th:	7	15	0	0	0	0	0	0	0	0	8	8				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 16th St/P St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.491
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 56 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	29	29	0	0	0	0	0	0	0	0	0	0	21	21		
Lanes:	0 1	2 0	0	0	0 0	0	0	0	0 0	0	0	0	0 2	1	0	
Volume Module:																
Base Vol:	125	1105	0	0	0	0	0	0	0	0	770	159				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	125	1105	0	0	0	0	0	0	0	0	770	159				
Added Vol:	1	42	0	0	0	0	0	0	0	0	35	10				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	126	1147	0	0	0	0	0	0	0	0	805	169				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	126	1147	0	0	0	0	0	0	0	0	805	169				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	126	1147	0	0	0	0	0	0	0	0	805	169				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	126	1147	0	0	0	0	0	0	0	0	805	169				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.89				
Lanes:	0.30	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48	0.52				
Final Sat.:	513	4674	0	0	0	0	0	0	0	0	4176	877				
Capacity Analysis Module:																
Vol/Sat:	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19				
Crit Moves:	****										****					
Green/Cycle:	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38				
Volume/Cap:	0.47	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.51				
Uniform Del:	8.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5	13.5				
IncremntDel:	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00				
Delay/Veh:	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8				
HCM2k95th:	9	9	0	0	0	0	0	0	0	0	10	10				

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 16th St/Q St

Cycle (sec): 50 Critical Vol./Cap. (X): 0.507
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 10.2
Optimal Cycle: 26 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	10	0	0	0	0	0	10	0	0	0	0
Lanes:	0 0	2 1	0	0 0	0 0	0	1 1	1 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	1028	63	0	0	0	204	726	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1028	63	0	0	0	204	726	0	0	0	0
Added Vol:	0	42	0	0	0	0	1	90	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1070	63	0	0	0	205	816	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1070	63	0	0	0	205	816	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1070	63	0	0	0	205	816	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	1070	63	0	0	0	205	816	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.90	0.90	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Lanes:	0.00	2.83	0.17	0.00	0.00	0.00	1.00	2.00	0.00	0.00	0.00	0.00
Final Sat.:	0	4859	286	0	0	0	1805	3610	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.00	0.00	0.00	0.11	0.23	0.00	0.00	0.00	0.00
Crit Moves:		****						****				
Green/Cycle:	0.00	0.43	0.43	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.51	0.00	0.00	0.00	0.25	0.51	0.00	0.00	0.00	0.00
Uniform Del:	0.0	10.3	10.3	0.0	0.0	0.0	8.7	9.9	0.0	0.0	0.0	0.0
IncremntDel:	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00
Delay/Veh:	0.0	10.5	10.5	0.0	0.0	0.0	8.7	10.1	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	10.5	10.5	0.0	0.0	0.0	8.7	10.1	0.0	0.0	0.0	0.0
HCM2k95th:	0	9	9	0	0	0	4	9	0	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 16th St/W St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.458
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	31	31	0	0	0	0	0	23	23	0	16	16
Lanes:	1 1	2 0	0	0 0	0 0	0	0 0	2 1	0	0 0	1 1	1
Volume Module: >> Count Date: 14 Dec 2005 << 5												
Base Vol:	151	644	0	0	0	0	0	786	105	0	287	380
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	151	644	0	0	0	0	0	786	105	0	287	380
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	42
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	151	644	0	0	0	0	0	786	105	0	287	422
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	151	644	0	0	0	0	0	786	105	0	287	422
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	644	0	0	0	0	0	786	105	0	287	422
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	151	644	0	0	0	0	0	786	105	0	287	422
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.91	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.87	0.87
Lanes:	1.00	3.00	0.00	0.00	0.00	0.00	0.00	2.65	0.35	0.00	1.21	1.79
Final Sat.:	1729	5187	0	0	0	0	0	4493	600	0	1997	2936
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.00	0.00	0.00	0.00	0.00	0.17	0.17	0.00	0.14	0.14
Crit Moves:	****							****			****	
Green/Cycle:	0.39	0.39	0.00	0.00	0.00	0.00	0.00	0.29	0.29	0.00	0.20	0.20
Volume/Cap:	0.22	0.32	0.00	0.00	0.00	0.00	0.00	0.60	0.60	0.00	0.71	0.71
Uniform Del:	16.0	16.6	0.0	0.0	0.0	0.0	0.0	24.1	24.1	0.0	29.3	29.3
IncremntDel:	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	2.4	2.4
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00
Delay/Veh:	16.0	16.7	0.0	0.0	0.0	0.0	0.0	24.8	24.8	0.0	31.7	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.0	16.7	0.0	0.0	0.0	0.0	0.0	24.8	24.8	0.0	31.7	31.7
HCM2k95th:	5	7	0	0	0	0	0	13	13	0	13	13

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #48 16th St/X St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.478
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 16.3
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	35	35	0	0	0	35	35	0	0	0	0
Lanes:	0 0	3 1	0	0 0	0 0	0	1 0	2 0	1	0 0	0 0	0
Volume Module: >> Count Date: 14 Dec 2005 << 5												
Base Vol:	0	656	66	0	0	0	540	1066	265	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	656	66	0	0	0	540	1066	265	0	0	0
Added Vol:	0	0	0	0	0	0	0	85	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	656	66	0	0	0	540	1151	265	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	656	66	0	0	0	540	1151	265	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	656	66	0	0	0	540	1151	265	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	656	66	0	0	0	540	1151	265	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.90	0.90	1.00	1.00	1.00	0.85	0.95	0.85	1.00	1.00	1.00
Lanes:	0.00	3.63	0.37	0.00	0.00	0.00	1.00	2.00	1.00	0.00	0.00	0.00
Final Sat.:	0	6196	623	0	0	0	1615	3610	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.11	0.00	0.00	0.00	0.33	0.32	0.16	0.00	0.00	0.00
Crit Moves:		****					****					
Green/Cycle:	0.00	0.46	0.46	0.00	0.00	0.00	0.46	0.46	0.46	0.00	0.00	0.00
Volume/Cap:	0.00	0.23	0.23	0.00	0.00	0.00	0.73	0.69	0.36	0.00	0.00	0.00
Uniform Del:	0.0	12.4	12.4	0.0	0.0	0.0	16.6	16.2	13.2	0.0	0.0	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	3.6	1.3	0.3	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	0.0	12.4	12.4	0.0	0.0	0.0	20.2	17.5	13.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.4	12.4	0.0	0.0	0.0	20.2	17.5	13.5	0.0	0.0	0.0
HCM2k95th:	0	5	5	0	0	0	22	20	8	0	0	0

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #49 29th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.595
Loss Time (sec): 9 (Y+R = 4 sec) Average Delay (sec/veh): 22.8
Optimal Cycle: 79 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	18	18	0	18	18	0	0	34	34	0	0	0
Lanes:	0 1	2 0	0	0 1	1 0	0	0 0	2 1	0	0 0	0 0	0
Volume Module: >> Count Date: 7 Jun 2005 << 5												
Base Vol:	55	303	0	217	274	0	0	1089	349	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	303	0	217	274	0	0	1089	349	0	0	0
Added Vol:	0	9	0	0	59	0	0	69	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	312	0	217	333	0	0	1158	349	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	312	0	217	333	0	0	1158	349	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	312	0	217	333	0	0	1158	349	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	55	312	0	217	333	0	0	1158	349	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	1.00	0.93	0.93	1.00	1.00	0.88	0.88	1.00	1.00	1.00
Lanes:	0.45	2.55	0.00	0.79	1.21	0.00	0.00	2.31	0.69	0.00	0.00	0.00
Final Sat.:	772	4379	0	1397	2144	0	0	3846	1159	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.16	0.16	0.00	0.00	0.30	0.30	0.00	0.00	0.00
Crit Moves:	****				****			****				
Green/Cycle:	0.23	0.23	0.00	0.23	0.23	0.00	0.00	0.43	0.43	0.00	0.00	0.00
Volume/Cap:	0.31	0.31	0.00	0.68	0.68	0.00	0.00	0.70	0.70	0.00	0.00	0.00
Uniform Del:	25.4	25.4	0.0	27.9	27.9	0.0	0.0	18.3	18.3	0.0	0.0	0.0
IncremntDel:	0.2	0.2	0.0	2.4	2.4	0.0	0.0	1.0	1.0	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Delay/Veh:	25.5	25.5	0.0	30.3	30.3	0.0	0.0	19.4	19.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.5	25.5	0.0	30.3	30.3	0.0	0.0	19.4	19.4	0.0	0.0	0.0
HCM2k95th:	5	5	0	14	14	0	0	20	20	0	0	0

Traffix 7.7.0515 (c) 2005 Dowling Assoc. Licensed to DOWLING ASSOCIATES, INC.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #50 30th St/J St

Cycle (sec): 70 Critical Vol./Cap. (X): 0.504
Loss Time (sec): 6 (Y+R = 4 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	31	31		0	0	0		39	39	0		0	0	0	
Lanes:	0 0	2	1	0	0 0	0	0	0	1	1	2	0 0	0 0	0	0	0
Volume Module: >> Count Date: 7 Jun 2005 << 5																
Base Vol:	0	927	182		0	0	0		383	978	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	927	182		0	0	0		383	978	0		0	0	0	
Added Vol:	0	128	61		0	0	0		0	69	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	1055	243		0	0	0		383	1047	0		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1055	243		0	0	0		383	1047	0		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1055	243		0	0	0		383	1047	0		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	0	1055	243		0	0	0		383	1047	0		0	0	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.88	0.88		1.00	1.00	1.00		0.91	0.91	1.00		1.00	1.00	1.00	
Lanes:	0.00	2.44	0.56		0.00	0.00	0.00		1.07	2.93	0.00		0.00	0.00	0.00	
Final Sat.:	0	4098	944		0	0	0		1852	5064	0		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.26	0.26		0.00	0.00	0.00		0.21	0.21	0.00		0.00	0.00	0.00	
Crit Moves:		****							****							
Green/Cycle:	0.00	0.41	0.41		0.00	0.00	0.00		0.51	0.51	0.00		0.00	0.00	0.00	
Volume/Cap:	0.00	0.63	0.63		0.00	0.00	0.00		0.40	0.40	0.00		0.00	0.00	0.00	
Uniform Del:	0.0	17.9	17.9		0.0	0.0	0.0		11.4	11.4	0.0		0.0	0.0	0.0	
IncremntDel:	0.0	0.6	0.6		0.0	0.0	0.0		0.1	0.1	0.0		0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	0.00	1.00	1.00		0.00	0.00	0.00		1.00	1.00	0.00		0.00	0.00	0.00	
Delay/Veh:	0.0	18.6	18.6		0.0	0.0	0.0		11.4	11.4	0.0		0.0	0.0	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	18.6	18.6		0.0	0.0	0.0		11.4	11.4	0.0		0.0	0.0	0.0	
HCM2k95th:	0	17	17		0	0	0		10	10	0		0	0	0	

Cathedral Square Traffic Study
Trip Generation

Trip Generation	Amount	Source	Trips Generated							Distribution			
Land Use Category			Weekday	AM Peak Hour			PM Peak Hour			AM Peak		PM Peak	
				In	Out	Total	In	Out	Total	In	Out	In	Out
Cathedral Square (11th & J)													
Retail (Shopping Center)	10.1 KSF	ITE (820)	1,530	24	16	40	66	72	138	61%	39%	48%	52%
High Rise Residential Condominium	233 Units	ITE (232)	1,102	18	78	96	59	36	95	19%	81%	62%	38%
Other													
Total Project Trips			2,632	42	94	136	125	108	233				
Transit Adjustments													
Office (-11.1%)			0	0	0	0	0	0	0				
Retail (-2.2%)			-34	-1	0	-1	-1	-2	-3				
Residential (Daily -2.6%, a.m. -3.4%, p.m. -3.1%)			-29	-1	-2	-3	-2	-1	-3				
Other													
Total Transit Adjustments			-63	-2	-2	-4	-3	-3	-6				
Walk, Bike & Other Non-Auto Travel Adjustments													
Office (-2.8%)			0	0	0	0	0	0	0				
Retail (-11.6%)			-177	-3	-2	-5	-8	-8	-16				
Residential (Daily -9.6%, a.m. -7.9%, p.m. -8.6%)			-106	-2	-6	-8	-5	-3	-8				
Other													
Total Walk, Bike & Other Non-Auto Travel Adjustments			-283	-5	-8	-13	-13	-11	-24				
Internal Trips Within This Project			-264	-3	-3	-7	-13	-13	-25				
Trips To-From Other Proposed Projects			-57	-2	-2	-4	-2	-2	-3				
New External Trips													
Retail (Shopping Center)				17	12	29	51	53	104				
High Rise Residential Condominium				13	67	79	44	26	70				
Total			1,965	30	79	108	95	80	174				
New External Trips Percent of Total Project Trips			75%	71%	84%	80%	76%	74%	75%				
Transit Trips													
Office (12.5%)			0	0	0	0	0	0	0				
Retail (2.6%)			40	1	0	1	2	2	4				
Residential (Daily 3.2%, a.m. 4.1%, p.m. 3.7%)			35	1	3	4	2	2	4				
Total Transit Trips			75	2	3	5	4	4	8				

Cathedral Square Traffic Study
Trip Generation for Existing Land Uses

Trip Generation Land Use Category	Amount	Source	Trips Generated							Distribution			
			Weekday	AM Peak Hour			PM Peak Hour			AM Peak		PM Peak	
				In	Out	Total	In	Out	Total	In	Out	In	Out
Cathedral Square (11th & J)													
Retail (Shopping Center)	12.8 KSF	ITE (820)	1,786	28	18	46	77	84	161	61%	39%	48%	52%
Storage (Warehousing)	11.5 KSF	ITE (150)	57	4	1	5	1	4	5	82%	18%	25%	75%
Total Project Trips			1,843	32	19	51	78	88	166				
Transit Adjustments													
Retail/Storage (-2.2%)			-41	-1	0	-1	-2	-2	-4				
Total Transit Adjustments			-41	-1	0	-1	-2	-2	-4				
Walk, Bike & Other Non-Auto Travel Adjustments													
Retail/Storage (-11.6%)			-214	-4	-2	-6	-9	-10	-19				
Total Walk, Bike & Other Non-Auto Travel Adjustments			-214	-4	-2	-6	-9	-10	-19				
Internal Trips													
Existing External Trips													
0													
Retail (Shopping Center)			1,588	27	17	44	67	76	143				
0													
Total			1,588	27	17	44	67	76	143				
Existing External Trips Percent of Total Project Trips			86%	84%	89%	86%	86%	86%	86%				
Transit Trips													
Retail/Storage (2.6%)			48	1	0	1	2	2	4				
Total Transit Trips			48	1	0	1	2	2	4				

Downtown Sacramento Traffic Study
Adjustments to ITE Trip Generation Rates for High Non-Auto Travel

Shares of Total Trips				
Transit Shares	**Work Trips[a]**	**Non-Work Trips[b]**		**Total**
Walk Access				
Downtown	7.4%	1.8%		
Suburban	1.4%	0.3%		
Increase Above Suburban Conditions	6.0%	1.5%		
Drive Access				
Downtown	6.2%	1.2%		
Suburban	0.1%	0.3%		
Increase Above Suburban Conditions	6.1%	0.9%		
Walk, Bike & Other Non-Auto Shares				
Downtown	4.5%	18.8%		
Suburban	2.8%	6.5%		
Increase Above Suburban Conditions	1.7%	12.3%		
Adjustments for Higher Transit Use Downtown				
Office[1]	10.9%	0.2%		11.1%
Retail[2]	0.8%	1.4%		2.2%
Residential[3,c]	**Home-Work**	**Home-Non-Work**	**Non Home-Based**	
AM Peak Hour	2.5%	0.7%	0.2%	3.4%
PM Peak Hour	2.1%	0.6%	0.4%	3.1%
Daily	1.5%	0.7%	0.4%	2.6%
Adjustments for Higher Walk, Bike & Other Non-Auto Travel Downtown				
Office[1]	1.5%	1.2%		2.8%
Retail[2]	0.1%	11.4%		11.6%
Residential[c]	**Home-Work**	**Home-Non-Work**	**Non Home-Based**	
AM Peak Hour	0.7%	5.4%	1.8%	7.9%
PM Peak Hour	0.6%	4.7%	3.4%	8.6%
Daily	0.4%	5.6%	3.6%	9.6%
Transit Trips				
	Work Trips	**Non-Work Trips**		
Office[1]	12.2%	0.3%		12.5%
Retail[2]	1.0%	1.7%		2.6%
Residential[c]	**Home-Work**	**Home-Non-Work**	**Non Home-Based**	
AM Peak Hour	3.1%	0.8%	0.3%	4.1%
PM Peak Hour	2.6%	0.7%	0.5%	3.7%
Daily	1.9%	0.8%	0.5%	3.2%

[1] Assumes 90 percent of office trips are work trips.

[2] Assumes 7 percent of retail trips are work trips. Non-work trips would only include walk trips to transit.

[3] Transit adjustments for residential uses only include walk trips to transit.

Source: *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* , DKS, 2001.
Table references from the source are provided as follows:

[a] Table A26

[a] Table A27

[c] The amount of transit use for each trip purpose is based on the following data from Table A33:

Travel Hours	**Home-Work**	**Home-Non-Work**	**Non Home-Based**	**Total**
AM Peak Hour	73,190	78,124	25,868	177,182
PM Peak Hour	60,563	67,068	47,784	175,415
Daily	473,704	861,535	557,764	1,893,003

Analyst: Dowling

Date: 6/8/2006

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Cathedral Square (11th & J)

Name of Development: Downtown Study

Time Period: AM Peak Hour

Land Use B: Retail (Shopping Center)

ITE LU Code	ITE (820)		
Size	10.1 KSF		
	Total	Internal	External
Enter	20	2	18
Exit	14	2	12
Total	34	3	31
%	100	10%	90%

Exit to External: 12
Enter from External: 18

Note: PM peak hour internal capture rates were used for the AM peak hour.

Demand 3% 0 | Balanced 0 | Demand 31% 0 | Demand 2% 0 | Balanced 0 | Demand 23% 0 | Demand 12% 2 | Balanced 2 | Demand 31% 5 | Demand 9% 2 | Balanced 2 | Demand 53% 37

Land Use A: 0

ITE LU Code	0		
Size	0.0		0.0
	Total	Internal	External
Enter	0	0	0
Exit	0	0	0
Total	0	0	0
%	100	#DIV/0!	#DIV/0!

Exit to External: 0
Enter from External: 0

Demand 0% 0 | Balanced 0 | Demand 0% 0 | Demand 2% 0 | Balanced 0 | Demand 2% 0

Land Use C: High Rise Residential Condominium

ITE LU Code	ITE (232)		
Size	233.0 Units		
	Total	Internal	External
Enter	15	2	13
Exit	70	2	68
Total	85	3	82
%	100	4%	96%

Enter from External: 13
Exit to External: 68

Net External Trips for Multi-use Development

	LAND USE A	*LAND USE B*	*LAND USE C*	*TOTAL*	
Enter	0	18	13	32	
Exit	0	12	68	81	
Total	0	31	82	112	*INTERNAL CAPTURE*
Single-Use Trip	0	34	85	119	6%

Time Period: PM Peak Hour

Land Use B: Retail (Shopping Center)

ITE LU Code	ITE (820)		
Size	10.1 KSF		
	Total	Internal	External
Enter	57	5	52
Exit	62	7	55
Total	119	13	106
%	100	11%	89%

Exit to External: 55
Enter from External: 52

Demand 3% 2 | Balanced 0 | Demand 31% 0 | Demand 2% 1 | Balanced 0 | Demand 23% 0 | Demand 12% 7 | Balanced 7 | Demand 31% 16 | Demand 9% 5 | Balanced 5 | Demand 53% 17

Land Use A: 0

ITE LU Code	0		
Size	0.0		0.0
	Total	Internal	External
Enter	0	0	0
Exit	0	0	0
Total	0	0	0
%	100	#DIV/0!	#DIV/0!

Exit to External: 0
Enter from External: 0

Demand 0% 0 | Balanced 0 | Demand 0% 0 | Demand 2% 0 | Balanced 0 | Demand 2% 1

Land Use C: High Rise Residential Condominium

ITE LU Code	ITE (232)		
Size	233.0 Units		
	Total	Internal	External
Enter	52	7	45
Exit	32	5	27
Total	84	13	71
%	100	15%	85%

Enter from External: 45
Exit to External: 27

Net External Trips for Multi-use Development

	LAND USE A	*LAND USE B*	*LAND USE C*	*TOTAL*	
Enter	0	52	45	96	
Exit	0	55	27	81	
Total	0	106	71	178	*INTERNAL CAPTURE*
Single-Use Trip	0	119	84	203	12%

Analyst: Dowling

Date: 6/8/2006

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY
Cathedral Square (11th & J)

Name of Development: Downtown Study

Time Period: Daily

Land Use B: Retail (Shopping Center)

ITE LU Code	ITE (820)		
Size	10.1 KSF		
	Total	Internal	External
Enter	660	59	601
Exit	660	73	587
Total	1320	132	1188
%	100	10%	90%

Exit to External: 587

Enter from External: 601

Demand 3% 20

Balanced 0

Demand 15% 0

Demand 4% 26

Balanced 0

Demand 22% 0

Demand 11% 73

Balanced 73

Demand 33% 160

Demand 9% 59

Balanced 59

Demand 38% 184

Land Use A: 0

ITE LU Code	0		
Size	0.0		0.0
	Total	Internal	External
Enter	0	0	0
Exit	0	0	0
Total	0	0	0
%	100	#DIV/0!	#DIV/0!

Exit to External: 0

Enter from External: 0

Demand 0% 0

Balanced 0

Demand 0% 0

Demand 2% 0

Balanced 0

Demand 3% 15

Land Use C: High Rise Residential Condominium

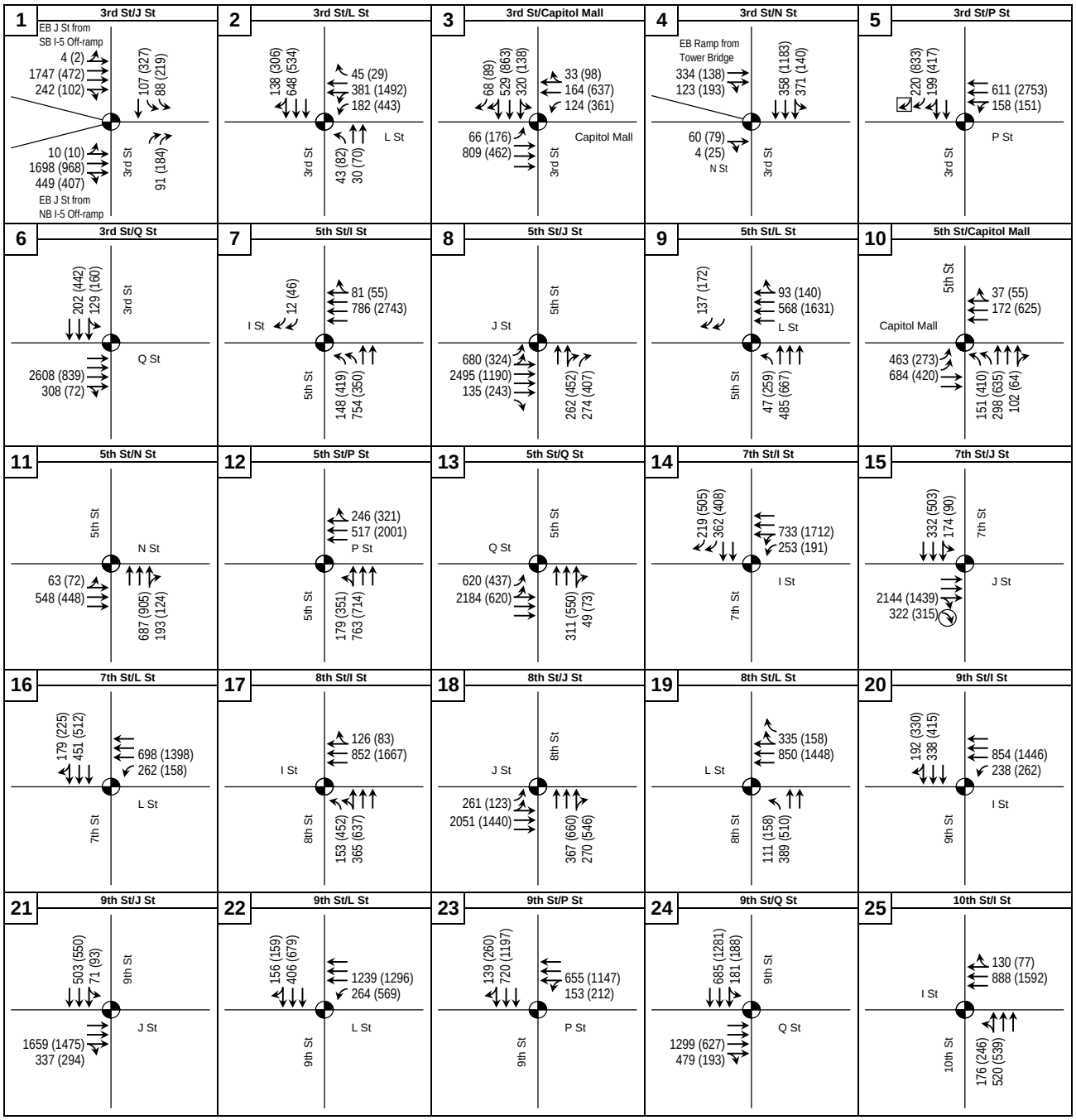
ITE LU Code	ITE (232)		
Size	233.0 Units		
	Total	Internal	External
Enter	484	73	411
Exit	484	59	425
Total	968	132	836
%	100	14%	86%

Enter from External: 411

Exit to External: 425

Net External Trips for Multi-use Development

	LAND USE A	*LAND USE B*	*LAND USE C*	*TOTAL*	
Enter	0	601	411	1012	
Exit	0	587	425	1012	
Total	0	1188	836	2024	*INTERNAL CAPTURE*
Single-Use Trip	0	1320	968	2288	12%



KEY

31 (27) = AM (PM) peak hour traffic volume

◐ = Signalized intersection

↙ = Intersection approach lane

(↙) = Lane provided during AM peak, only

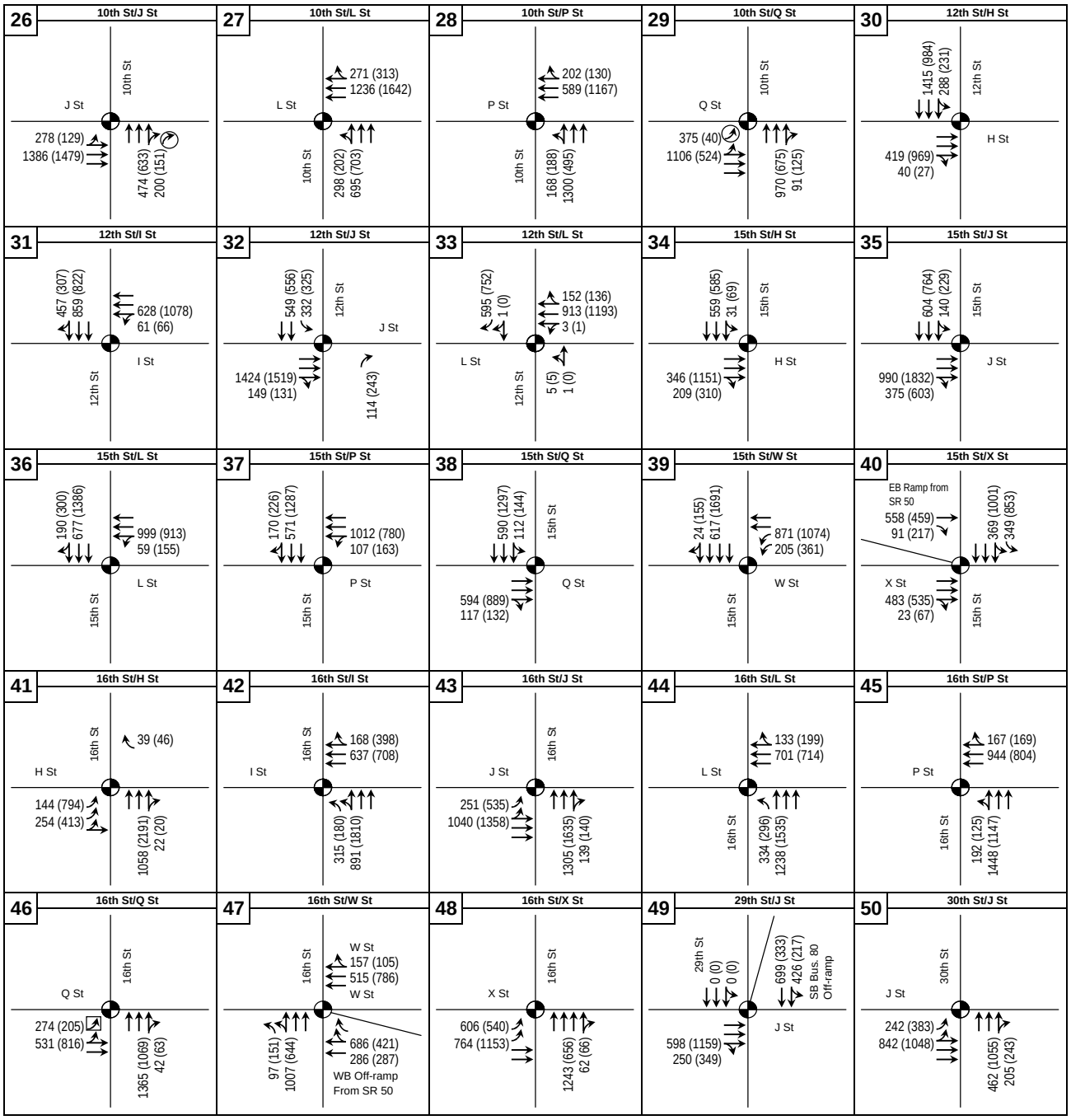
☑ = Lane provided during PM peak, only

Dowling Associates, Inc.

Cathedral Square Traffic Study

N W E S

Figure C.1
BASELINE TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

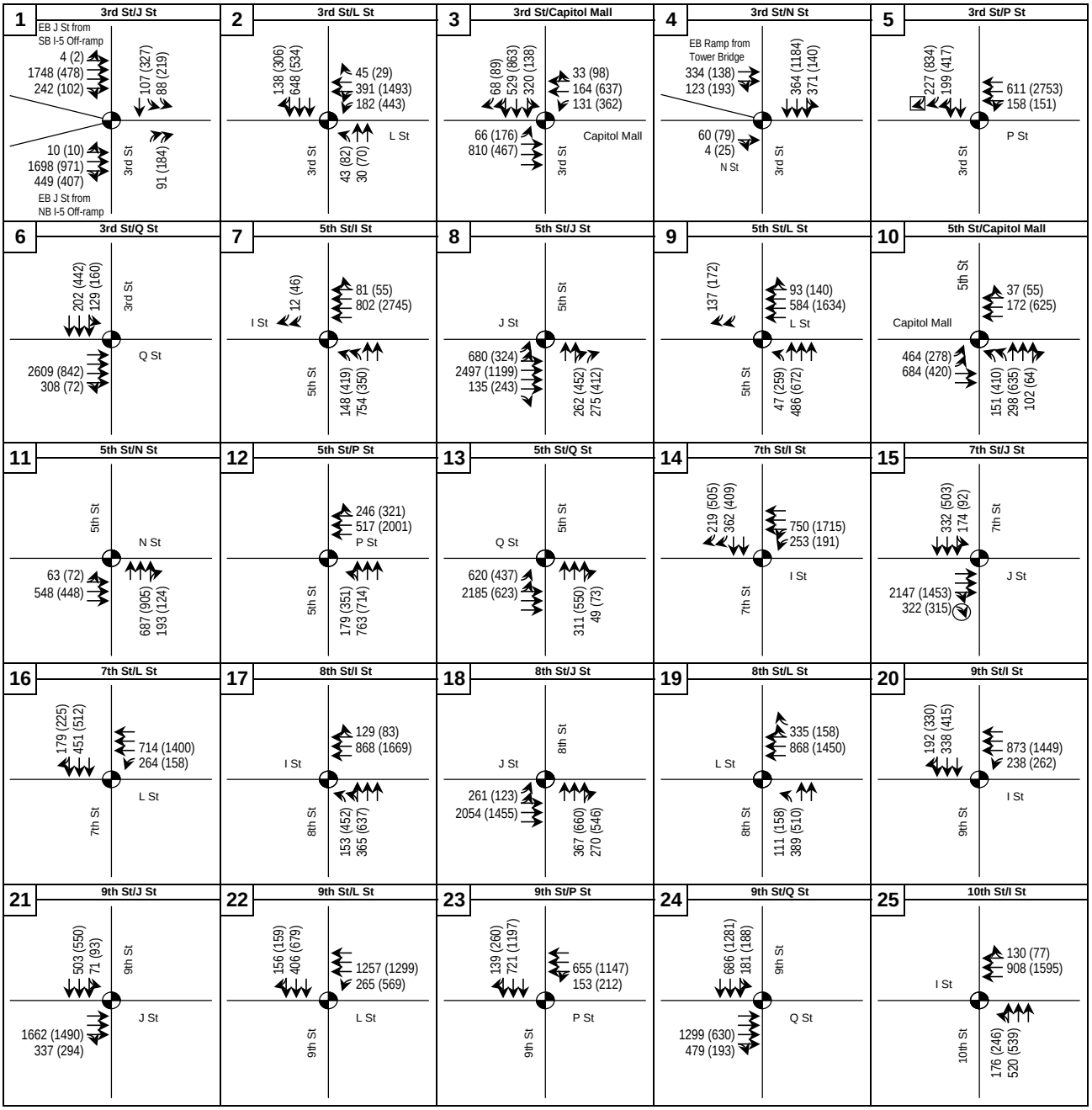
= Lane provided during AM peak, only

= Lane provided during PM peak, only

Dowling Associates, Inc.

Cathedral Square Traffic Study

Figure C.1
BASELINE TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

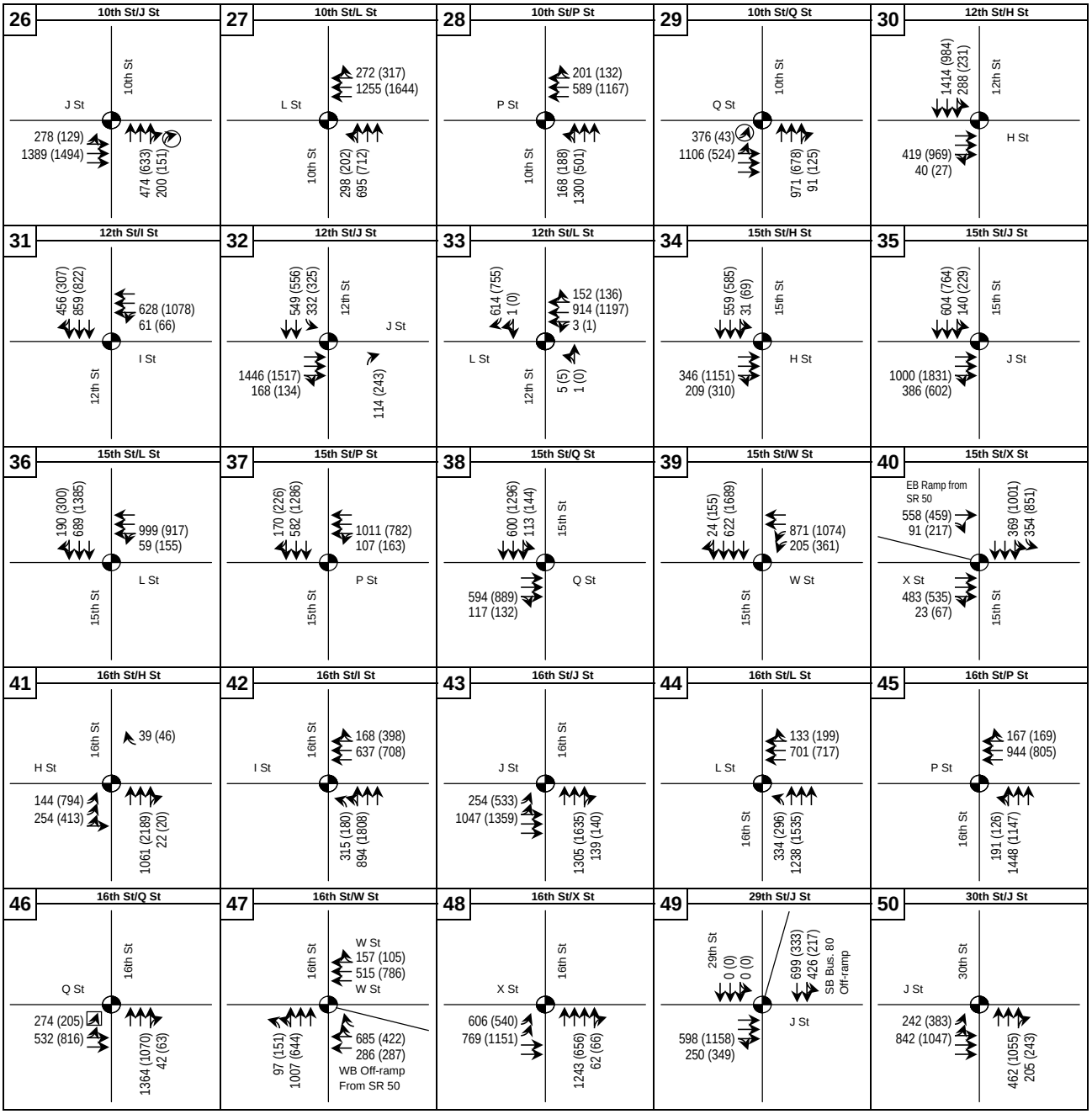
= Lane provided during AM peak, only

= Lane provided during PM peak, only

Dowling Associates, Inc.

Cathedral Square Traffic Study

Figure C.2
BASELINE WITH PROPOSED PROJECT TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS



KEY

31 (27) = AM (PM) peak hour traffic volume

= Signalized intersection

= Intersection approach lane

= Lane provided during AM peak, only

= Lane provided during PM peak, only

Dowling Associates, Inc.

Cathedral Square Traffic Study

N W E S

Figure C.2
BASELINE WITH PROPOSED PROJECT TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS

APPENDIX J

GEOTECHNICAL INVESTIGATION
11TH & J STREETS
Sacramento, California

St. Anton Partners
Sacramento, California

14 April 2006
Project No. 4255.01

Treadwell&Rollo
Environmental and Geotechnical Consultants

Treadwell&Rollo

14 April 2006
Project No. 4255.01

Mr. Steve Eggert
St. Anton Partners
18001 "I" Street, Suite 201
Sacramento, California 95814

Subject: Geotechnical Investigation
11th & J Streets
Sacramento, California

Dear Mr. Eggert:

Enclosed are six copies of our geotechnical report for the proposed development located southwest of the intersection of 11th & J Streets in Sacramento, California. The work described in this report is in fulfillment of our proposal dated 11 August 2005.

It is our understanding that the plans are to demolish the existing buildings at the site and construct a new building with a 25-story tower. The tower will be constructed over a common two-level below-grade parking garage that will occupy the entire project site. The tower footprint will be somewhat smaller than that of the garage. Excavation for the below-grade parking garage and building foundation is anticipated to be on the order of 15 to 25 feet.

This report contains information regarding subsurface conditions, foundation design criteria, temporary shoring design criteria, and a discussion of dewatering issues. On the basis of our subsurface investigation for this site, we conclude the proposed building can be constructed as planned. The primary geotechnical issues that should be addressed during the design include the presence of loose silts and sands, localized potentially liquefiable sands that underlie the proposed structure, and a fluctuating and potentially high groundwater table. We judge the proposed building can be supported on driven steel HP 14x73 piles, drilled displacement piles (Tubex or torque-down) that gain support through a combination of skin friction and end bearing, or large diameter drilled shafts that gain support through skin friction in the stiff and dense soil underlying the loose silts and sands, and potentially liquefiable sand lenses.

Our conclusions and recommendations are based on limited subsurface exploration and laboratory testing programs. Consequently, variations between expected and actual soil conditions may be found at localized areas during construction. Therefore, we should be retained to observe the installation of new foundations, shoring, and dewatering systems, during which time we may make changes to our recommendations, if deemed necessary.

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We appreciate the opportunity to work with you on this project. If you have any questions, please call.

Sincerely yours,
TREADWELL & ROLLO, INC.

Haze Rodgers
Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
HAZE M. RODGERS
No. 66161
Exp. 6/30/06
CIVIL
STATE OF CALIFORNIA

Dean H. Iwasa
Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
DEAN H. IWASA
GE 2285
Exp. 3/31/08
GEOTECHNICAL
STATE OF CALIFORNIA

42550101.OAK

GEOTECHNICAL INVESTIGATION
11TH & J STREETS
Sacramento, California

St. Anton Partners
Sacramento, California

14 April 2006
Project No. 4255.01

Treadwell&Rollo
Environmental and Geotechnical Consultants

Treadwell&Rollo

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 SCOPE OF SERVICES 2

3.0 FIELD INVESTIGATION 3

4.0 LABORATORY TESTS 4

5.0 PREVIOUS INVESTIGATIONS 4

6.0 SUBSURFACE CONDITION 4

7.0 REGIONAL SEISMICITY 5

8.0 DISCUSSION AND CONCLUSIONS 7
- 8.1 Seismic Hazards 8
  - 8.1.1 Soil Liquefaction and Associated Hazards 8
  - 8.1.2 Cyclic Densification 9
  - 8.1.3 Fault Rupture 9
- 8.2 Foundation Types 10
- 8.3 Corrosion Potential 12
- 8.4 Dewatering and Uplift Pressure 13
  - 8.4.1 Passive Dewatering System 13
  - 8.4.2 Active Dewatering System 15
- 8.5 Temporary Shoring 16
- 8.6 Underpinning 17
- 8.7 Excavation and Monitoring 17

9.0 RECOMMENDATIONS 18
- 9.1 Site Preparation and Excavation 18
- 9.2 Pile Foundations 20
  - 9.2.1 Axial Capacity 20
  - 9.2.2 Lateral Capacity 21
  - 9.2.3 Indicator Piles, Pile-Load Tests, Pile Driving Analyzer Programs 23
- 9.3 Permanent Below-Grade Wall Design 24
- 9.4 Floor Slab 25
- 9.5 Seismic Design 25
- 9.6 Temporary Dewatering 25
- 9.7 Temporary Shoring Design 26
  - 9.7.1 Tieback Design Criteria and Installation Procedure 27
  - 9.7.2 Tieback Testing 28

TABLE OF CONTENTS (Cont.

9.8 Underpinning 29
9.9 Construction Monitoring.....30

10.0 GEOTECHNICAL SERVICES DURING CONSTRUCTION 31

11.0 LIMITATIONS.....31

FIGURES

APPENDIX A – Logs Treadwell & Rollo, Inc. Borings

APPENDIX B – Laboratory Tests

APPENDIX C – Previous Boring Logs Prepared by Raney Geotechnical, Inc.

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LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Modified Mercalli Intensity Scale
Figure 4	Axial Compression Pile Capacity Versus Tip Elevation
Figure 5	Axial Uplift Pile Capacity Versus Tip Elevation
Figure 6	Pile Deflection Profiles, Steel HP 14x73 Pile
Figure 7	Bending Moment Profiles, Steel HP 14x73 Pile
Figure 8	Pile Deflection Profiles, 16-inch Diameter Tubex Pile
Figure 9	Bending Moment Profiles, 16-inch Diameter Tubex Pile
Figure 10	Pile Deflection Profiles, 12 3/4-inch Diameter Torque-down Pile
Figure 11	Bending Moment Profiles, 12 3/4-inch Diameter Torque-down Pile
Figure 12	Pile Deflection Profiles, 42-inch Diameter CIDH Pile
Figure 13	Bending Moment Profiles, 42-inch Diameter CIDH Pile
Figure 14	Design Parameters for Temporary Shoring Systems with Passive Dewatering
Figure 15	Design Parameters for Temporary Shoring Systems with Active Dewatering

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APPENDIX A

Figures A-1a through A-1d	Log of Boring B-1
Figures A-2a through A-2d	Log of Boring B-2
Figure A-3	Classification Chart

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GEOTECHNICAL INVESTIGATION
11th & J STREETS PROJECT
Sacramento, California

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for the development proposed for the site at the southwest corner of 11th and J Streets in Sacramento, California. The site encompasses approximately a quarter of the city block bound by J Street to the north, 11th Street to the east, an alleyway to the south, and existing 2- to 3-story buildings to the west, as shown on the Site Location Map, Figure 1.

The site is currently occupied by three 2- to 3- story brick and concrete buildings along J and 11th Streets, and asphalt and gravel paved parking lots along the alleyway to the south. At least one of the buildings has a basement. The elevations of the basements and existing building foundations were not known at the time this report was being prepared. However, we believe the basements and foundations extend roughly 10 feet below the elevation of J Street. A topographic survey of the site indicates the ground surface of the alleyway and parking lots along the southern portion of the site is approximately six to eight feet lower than the elevation of J Street along the northern edge of the site. Several 3- to 6-story brick buildings lie immediately south of the alleyway.

Plans are to demolish the existing buildings and construct a new structure with a 25-story tower. The tower will be constructed over two levels of below-grade parking that will occupy most of the project site. To accommodate the construction of new building foundations and below-grade parking, we estimate a 20- to 25-foot-deep excavation will be required. To accomplish the excavation, the perimeter of the property will need to be shored and the site dewatered.

2.0 SCOPE OF SERVICES

The scope of our services was outlined in our proposal dated 11 August 2005, and consisted of reviewing subsurface data developed by others and confirming the subsurface conditions at the site by drilling two additional borings. In addition, our scope of services included performing laboratory tests and engineering analyses to develop conclusions and recommendations regarding:

- soil and groundwater conditions at the site
- appropriate foundation type(s) for the proposed structure
- design criteria for the recommended foundation type(s), including vertical (compression and uplift) and lateral capacities
- recommendations for basement floor slabs
- estimates of total and differential settlement under the anticipated foundation loads
- seismic hazards, including liquefaction potential and estimated ground settlement due to liquefaction, if applicable
- design criteria for below-grade walls, including recommendations for lateral earth pressures, seismic increment, and hydrostatic pressures on below grade walls
- design criteria for shoring and dewatering systems (where appropriate) for the proposed excavation
- subgrade preparation for exterior concrete flatwork
- site grading and excavation, including criteria for fill quality and compaction
- 2001 California Building Code and soil profile type and near-source factors
- soil corrosivity and measures to mitigate corrosion potential, if appropriate
- construction considerations.

3.0 FIELD INVESTIGATION

Subsurface conditions at the site were explored by drilling two borings, designated as B-1 and B-2. The approximate locations of the borings are shown on Figure 2.

Prior to performing our field investigation, we obtained a drilling permit from the County of Sacramento Environmental Management Department and an encroachment permit from the City of Sacramento, contacted Underground Service Alert (USA), and retained a private utility locator to check that the locations of exploratory points were clear of existing utilities.

The borings were drilled by Major Drilling Company of Rocklin. Borings B-1 and B-2 were drilled to depths of 100.3 and 101 feet below the existing ground surface (bgs), respectively, using a truck-mounted drill rig equipped with rotary wash drilling equipment. During drilling, our field engineer logged the soil encountered and obtained samples for visual classification and laboratory testing. The logs of borings B-1 and B-2 are presented in Appendix A on Figures A-1 and A-2. The materials encountered are classified according to the soil classification system described on Figure A-3.

Soil samples were obtained using two types of split-barrel samplers: a Sprague and Henwood (S&H) sampler with a 3.0-inch-outside diameter and 2.43-inch-inside diameter, and a Standard Penetration Test (SPT) sampler with a 2.0-inch-outside diameter and a 1.5-inch-inside diameter. Both samplers were driven with a 140-pound, above-ground safety hammer falling 30 inches. The blow counts required to drive the S&H sampler the final 12 inches of an 18-inch drive were converted to approximate SPT N-values using a factor of 0.6 and are shown on the boring logs. Where the SPT sampler was used, the actual blow counts are shown on the boring logs. Also, samples of soft soil were collected using thin-walled Shelby tubes with a 2.5-inch-outside diameter. The Shelby tubes were pushed into the ground using hydraulic pressure from the drill rig. After completion, the boreholes were backfilled with cement grout. The soil cuttings generated from the borings were placed in 55-gallon drums and transported off-site for proper disposal.

4.0 LABORATORY TESTS

We re-examined the samples obtained from the borings to confirm field classification and select samples for laboratory testing. Samples were tested to measure moisture content, density, plasticity index, fines content, particle size distribution, and strength. These laboratory test results are presented in Appendix B and are summarized on the boring logs.

5.0 PREVIOUS INVESTIGATIONS

Raney Geotechnical Inc. (RGI) previously performed a subsurface investigation at the project site in July 2005. The RGI investigation consisted of advancing five borings to a maximum depth of approximately 111 feet bgs. The approximate locations of these borings are illustrated on Figure 2, and copies of the RGI boring logs are included in Appendix C.

6.0 SUBSURFACE CONDITION

Based on the results of our subsurface investigation and review of subsurface data developed by RGI, we conclude the site is blanketed by fill that extends to depth of between 5 and 16 feet bgs. The fill consists of loose to medium dense silts, sands, silty sands, and poorly graded gravels with varying amounts of sand and silt. Debris consisting of brick fragments and wood was encountered in the fill.

The fill is underlain by two distinct soil deposit zones. The upper zone is characterized by loose to medium dense silt, sandy silt, and soft clay, interbedded with lenses of loose to medium dense sand, gravel, and silty sand extending to a depth of approximately 45 feet bgs in the northwest corner of the project site and 53 feet bgs in the southern half of the project site, corresponding to approximate elevations of -17.5 to -32 feet[1] respectively. The top of the lower zone coincides

[1] Elevation based on site survey titled *11th Street Sacramento, Sacramento County, California*, prepared by Morrow Surveying, dated 18 October 2004.

with these elevations and can generally be identified by a medium dense to very dense gravel and sand layer that ranges from 0 to 10 feet thick. Below the dense to very dense sand and gravel layer, the soil consists of medium stiff to hard silts, and clays with varying amounts of sand and gravel; these layers are interbedded with lenses of dense to very dense silty sand to the maximum depth explored by this investigation (101 feet bgs).

Groundwater levels were measured during drilling at the approximate depths of 32.5 and 19.5 feet bgs in borings B-1 and B-2, respectively. These groundwater levels correspond to elevations of approximately -6.2 and 1.4 feet, respectively. Based on our experience with other projects in the vicinity, we expect the groundwater level at the site to be influenced by the river stage levels of the nearby Sacramento and American Rivers. When the rivers are at elevated stages for extended periods of time (several weeks to a month or more), groundwater level at the site may rise significantly.

Groundwater level measurements in the site vicinity indicate seasonal high groundwater levels at about Elevation 4 feet[2] (about 21 feet bgs). For planning and design purposes, a groundwater level of at least Elevation 4 feet should be anticipated at the site. If rare flooding or life-safety issues are a concern, a higher groundwater level of at least Elevation 5 feet (about 20 feet bgs) should be used.

7.0 REGIONAL SEISMICITY

The project site is located near the eastern side of the Central Valley. The seismicity of this region of California is relatively low. The major active faults in the area are listed in Table 1. For each of the active faults within 100 kilometer (km) of the site, the distance from the site and

[2] Groundwater elevations referenced to City of Sacramento datum.

estimated maximum Moment magnitude[3], M_w, [Working Group on California Earthquake Probabilities (WGCEP) (2003) and Cao et al. (2003)] are summarized in Table 1.

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approx. Distance from fault (km)	Direction from Site	Mean Characteristic Moment Magnitude
Great Valley 4	43	West	6.6
Great Valley 3	46	West	6.8
Great Valley 5	47	Southwest	6.5
Hunting Creek-Berryessa	63	West	6.9
Great Valley 6	63	West	6.7
Concord/Green Valley	64	Southwest	6.7
West Napa	78	West	6.5
Greenville	83	Southwest	6.9
Great Valley 2	90	Northwest	6.4
Mt Diablo	92	Southwest	6.7
Great Valley 7	94	South	6.7
Total Calaveras	96	Southwest	6.9
Bartlett Springs-fault system	96	West	7.1
Rodgers Creek	99	West	7.0
Total Hayward-Rodgers Creek	99	West	7.3
North Hayward	99	West	6.5
Total Hayward	99	West	6.9

[3] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

In 1861, an earthquake of unknown magnitude (probably a M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake (M_w = 6.2). Reportedly, earthquakes that have occurred in Northern California since the 1800s have had only moderate effects in the Sacramento area with intensities not exceeding about VI on the Modified Mercalli (MM) scale (Figure 3). For example, the 1906 earthquake on the San Andreas Fault, which had a maximum intensity of XI (MM) and a M_w of about 7.9 in the San Francisco Bay Area, produced only an intensity of V (MM) in the Sacramento area.

8.0 DISCUSSION AND CONCLUSIONS

On the basis of our subsurface investigation for this site and review of the subsurface data collected by R.G.I., we conclude the proposed structure with a 25-story tower can be constructed as planned. The primary geotechnical issues for this project include:

- site seismicity and seismic hazards
- selection of an appropriate foundation type(s)
- total and differential settlement of recommended foundation type(s)
- hydrostatic uplift pressures on floor slabs
- lateral earth and water pressures on temporary shoring and below-grade walls
- construction dewatering.

A major concern is the minimization of vibrations caused to adjacent buildings during foundation installation. Our discussion of these and other issues are presented in the remainder of this report.

8.1 Seismic Hazards

During a major earthquake, low to moderate shaking is expected to occur at the site. Shaking during an earthquake can result in ground failure such as that associated with soil liquefaction[4], lateral spreading[5], and cyclic densification[6]. Based on our knowledge of the seismicity of faults that may impact the Sacramento area, we selected a design earthquake with a M_w of 6.5 and a peak ground acceleration of 0.18 times gravity (g) for use in the seismic hazard evaluation.

8.1.1 Soil Liquefaction and Associated Hazards

We evaluated liquefaction potential at the site by performing analyses in accordance with the methodology presented in publications prepared by Professor T.L. Youd and others (Youd, 1997, 2001) for the National Center for Earthquake Engineering Research (NCEER). Our liquefaction analyses were performed using data from our borings B-1 and B-2. In our analyses, we used a seasonal high groundwater at Elevation 5 feet.

Based on our analyses, we conclude that a localized zone of saturated, loose to medium dense silty sand encountered in boring B-2 between the depths of 21 and 33 feet bgs is marginally susceptible to liquefaction during a major earthquake generating a peak ground acceleration of 0.18g at the site. The results of our analysis indicate this layer has a factor of safety of approximately 1.1 against liquefaction. Our qualitative review of the RGI boring logs indicates that an approximately 6-foot-thick layer of potentially liquefiable, loose silty sand was encountered in boring RGI-5 at an approximate depth of 35 feet bgs, which corresponds to about

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4 Liquefaction is a phenomenon in which saturated, cohesionless soil experiences a temporary loss of strength due to the buildup of excess pore water pressure, especially during cyclic loading such as that induced by earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand and silt of low plasticity that is relatively free of clay.

5 Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

6 Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing differential settlement.

Elevation -10 feet. According to results of our evaluation, this potentially liquefiable soil layer appears to be isolated to the northeast portion of the site, since potentially liquefiable material was not observed in the other borings.

We estimate ground surface settlement associated with post-liquefaction reconsolidation will vary between 1 to 5 inches, with differential settlement of up to 5 inches over a horizontal distance of about 20 feet. After the building is constructed, there will be no slopes or free-faces at the site or vicinity. Therefore, we conclude the potential for lateral spreading at the site will be very low. Due to the relatively deep depths of potentially liquefiable layers, we believe the potential for sand boils and lurch cracking to develop at the ground surface around the perimeter of the site following a seismic event is low. However if ground surface settlement does occur at the site, some damage to near-surface site improvements, such as roadways, sidewalks, and exterior slabs, should be expected. Consequently, repairs to surface improvements that lie adjacent to the building may be required after a large seismic event.

8.1.2 Cyclic Densification

Seismically-induced compaction or densification of non-saturated granular soil (such as sand above the groundwater table) due to earthquake vibrations can result in settlement of the ground surface. Based on the results of this investigation, we conclude the site is underlain by fill, and loose to medium dense sands, silty sands and low plasticity silts that extend to the groundwater table (approximately 21 feet bgs). We estimate the near-surface fill and the soil below the fill may experience low to moderate ground surface settlement due to cyclic densification; settlement from this phenomenon is estimated to be less than 1/2 inch.

8.1.3 Fault Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake

Fault Zoning Act, and no known active or potentially active faults exist on the site. Consequently, we conclude the risk of surface faulting and secondary ground failure to be very low.

8.2 Foundation Types

An approximately 20- to 25-foot-deep excavation will be required to accommodate the proposed below-grade parking levels and building foundation. On the basis of our subsurface investigation, we conclude loose to medium dense silt and localized areas of loose to medium dense sand and silty sand will be exposed at the bottom of the proposed excavation. These deposits are relatively weak and are not capable of providing adequate bearing support for the proposed high-rise tower.

A localized saturated, loose to medium dense sand with variable amounts of silt lies beneath the silt layer. This sand layer is potentially liquefiable in localized areas and extends to a depth of about 33 feet bgs. As previously discussed, we estimate liquefaction-induced settlement at the site will be on the order of 1 to 5 inches with differential settlement of up to 5 inches across a horizontal distance of 20 feet. Based on these conditions, we judge the proposed structure cannot be supported on shallow foundations without experiencing excessive settlement. Therefore, we conclude a deep foundation is the most appropriate foundation system for this project. A deep foundation will transfer the building loads to soil layers which can support high compression loads and provide resistance to uplift loads associated with seismic and hydrostatic forces.

We believe the most economical type of deep foundation would be driven pre-cast concrete piles. However, we understand that vibrations that would be generated during installation of driven displacement pile would be unacceptable. Therefore, we conclude that H-piles (small displacement), drilled displacement piles, or large diameter cast in drilled hole (CIDH) piles would be suitable alternatives. The piles would gain support through a combination of skin friction and end bearing in dense to very dense layers of gravel, sand, silty sand and stiff to hard

clays and silts. On the basis of our subsurface investigation, we expect that the piles will begin to encounter significant resistance in the range of Elevation -20 to -29 feet. In some instances, we anticipate the piles will meet practical refusal by penetrating approximately 5 to 10 feet into the underlying dense gravel and sand layer, which corresponds to a pile tip elevation of approximately -25 to
-39 feet. In other areas of the site, such as near borings RGI-1 and B-2, the dense to very dense gravel and sand layer was not encountered and piles will need to extend into the dense silty sand and hard clay at the approximate elevations of -35 to -40 feet. In summary, piles could vary in length between approximately 30 and 50 feet (pile tip elevation minus the depth of the below-grade parking level and pile caps). More precise lengths and where each length will be installed should be determined by and indicator pile and test program.

Steel H-piles, drilled displacement, and CIDH piles can be used for support of the building. The primary benefit of using steel H-piles is the capability of cutting off or welding on additional lengths of piling to suit conditions encountered during installation. This capability allows the foundation contractor to drive the H-pile until penetration refusal is encountered and full pile capacity is developed. The primary disadvantages of driven H-piles are that although vibrations would be less for an H-pile than a concrete pile, there will be ground vibrations and noise associated with the installation of the piles. Drilled displacement and CIDH piles have the advantage being drilled to their design tip elevations possibly obtaining more embedment than driven piles into the dense to very dense gravels and sands and hard clays gaining more capacity than shallower driven H-piles and less ground vibration associated with their installation. However equipment limitations with regard to maximum torque the piles can withstand may limit the embedment of drilled displacement piles in the dense to very dense gravel, sands, and hard clays. The equipment limitations and practical pile embedment should be discussed with a foundation contractor who specializes in the installation of drilled displacement piles. A further disadvantage to drilled displacement piles is that there are only two types available (Tubex and Torque-down) and they are both proprietary and available through one contractor each. An advantage of CIDH piles is that large diameter piles may be installed to develop high uplift resistance, however the presence of loose to medium dense sands will require the use of a

polymer drilling fluid and/or casing to prevent the pile excavations from collapsing. Care should be exercised to prevent the buildup (caking) of the drilling fluid on the excavation side walls, as this will reduce the allowable frictional resistance between the CIDH pile and the surrounding soil. The determining factor of which pile is most appropriate will likely be cost.

Differential foundation settlement can be a significant design issue. We estimate the settlement associated with the weight of a 25-story tower supported on a pile foundation system will be approximately 1 inch with differential settlement of about 1/2 inch between columns. Because the settlement is primarily due to elastic shortening of the foundation piles, and the elastic settlement of the underlying dense sand and gravel layers under heavy building loads, we anticipate most of the settlement will occur during the construction of the tower. The proposed pile cap and grade beam system should be designed to accommodate the potential for differential settlement. Also, differential settlement will become more observable after rigid finishes have been installed. For example, if tile surfacing or other rigid flooring is used at building entryways and plazas. Damage to finished surfaces can be reduced by installing rigid finishes after the construction of the tower is complete, or by using separation joints and flexible surfacing materials.

8.3 Corrosion Potential

Caltrans Corrosion Guidelines, published in September 2003, characterizes the soil as being corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples taken at the site:

- chloride concentration is greater than or equal to 500 parts per million (ppm),
- sulfate concentration is greater than or equal to 2000 ppm, or
- the pH is 5.5 or less.

Our experience from recent nearby projects indicates the soil in downtown Sacramento is typically non-corrosive to concrete and steel reinforcement as defined by the Caltrans Corrosion Guidelines.

8.4 Dewatering and Uplift Pressure

An approximately 15- to 25-foot-deep excavation will be needed to construct the proposed below-grade parking levels, pile caps, and grade beams. The local groundwater level was measured at depths of about 32.5 and 19.5 feet bgs during our field investigation. However, the groundwater level at the site will be influence by the water levels of the nearby Sacramento and American Rivers. When the rivers are at elevated stages for extended periods of time (several weeks to a month or more), the groundwater level at the site will rise significantly. Groundwater level measurements in the site vicinity indicate seasonal high groundwater levels at about Elevation 4 feet, which corresponds to about 21 feet bgs. Consequently, the water level will be below the bottom of the proposed excavation for a majority of the year; however, the water level will likely rise during the late winter and early spring, resulting in water levels near or above the bottom of the excavation. The rising groundwater level will also impose a hydrostatic pressure against the bottom portions of the temporary shoring and permanent below-grade walls, and an uplift pressure against the bottom of the building. Therefore, during construction, the contractor should be prepared to dewater the excavation when the rivers rise. Because of the seasonal rise in the groundwater level, the basement walls and floor should be waterproofed and designed for a water level at a minimum of Elevation 5 feet (approximately 20 feet below street grade). The foundation system should be checked for potential uplift conditions during and after building construction.

Pumped groundwater is typically discharged into a de-silting tank and subsequently directed to the municipal sewer or storm drain. Regulatory agencies may require that pumped water be sampled and chemically tested to verify that it meets regulatory discharge requirements. The dewatering contractor should check and implement local water discharge requirements.

8.4.1 Passive Dewatering System

To facilitate the planned excavation during periods of high groundwater level, a passive dewatering system consisting of a series of subdrains, sumps, and pumps can be installed at the bottom of the planned excavation. The performance of a passive dewatering system is sensitive

to changes in groundwater level and the depth of the excavation, especially where excavations, such as for elevator pits, extend below the foundation subgrade level. Special dewatering may be required for local excavations. We should evaluate whether special dewatering recommendations are needed once the excavation and grading plan, and construction schedule are completed.

The primary advantage of a passive dewatering system is that the flow rate of water entering the excavation will be related to the river levels and the permeability of the silty, sandy, and gravelly soil adjacent to and beneath the proposed excavation. During periods of low river levels, little or no dewatering may be required. As the rivers rise, the flow rate of water entering the excavation will be relatively slow due to the low permeability of the soil exposed in bottom and sides of the excavation. Consequently, the rate at which water will need to be collected and removed from the proposed excavation could be less than an active dewatering system that is designed to locally suppress the groundwater table.

The disadvantages of a passive dewatering system during periods of high river levels are:

- potential for the upward flow of water through penetrations at the bottom of the excavation, such as predrilled holes for piles and elevator shaft excavations
- potential for soil heave at the bottom of the excavation, and rapid inflow of water if the underlying silt layer becomes fissured or ruptured due to bottom heave
- potential for lateral flow of water through permeable shoring, such as soldier piles and lagging
- potential for “piping” of fine-grained soil through the permeable shoring systems, such as soldier piles and lagging, resulting in settlement of the ground surface behind the shoring; alternative shoring systems, such as interlocking sheetpiles and soil-cement columns, can cut off the lateral flow of water and have a low potential for piping
- seasonal variations in the groundwater level will change the soil and water pressures on the temporary shoring system; lateral pressures can significantly increase due to a rise in

groundwater level; soil resistance at the toe of the shoring can significantly decrease due to the buoyant weight of soil at the bottom the excavation.

All of these conditions should be considered before selecting a passive dewatering system, and taken into account in its design if selected.

8.4.2 Active Dewatering System

An active dewatering system can be used to facilitate the proposed excavation and building construction. A typical active dewatering system consists of a series of groundwater extraction wells that are positioned around the perimeter and/or interior of the site. The wells should be screened within the saturated zone and pumped to draw the groundwater down to a depth of at least three feet below the bottom of the proposed excavation.

The primary advantage of using an active dewatering system is that the proposed shoring system will not need to be designed to resist hydrostatic pressures because the groundwater at the site and surrounding area can be continually depressed by the active dewatering system. Our discussion of temporary shoring systems is presented in a subsequent section of this report.

Disadvantages of using an active dewatering system include:

- The cost of pumping and disposing a large volume of water from the site could be high. Also, if chemical contaminants are present in the water beneath or adjacent to the site, groundwater treatment and disposal could result in correspondingly higher dewatering costs then for a passive system which conceivably would produce less water.
- An active dewatering system has the potential for causing subsidence of the immediate area; we anticipate settlement due to dewatering may be on the order of 1/2 to 1 inch.

8.5 Temporary Shoring

During excavation for the below-grade parking, shoring will be required to laterally restrain the sides of the excavation and limit the movement of adjacent improvements, such as the existing adjacent buildings, streets and sidewalks. Several methods of shoring can be used at the project site. The most appropriate shoring system should take into account the requirements for protecting adjacent properties, as well as cost. We have qualitatively evaluated the following systems:

- conventional soldier pile and lagging
- sheetpiles
- soil-cement columns

A soldier pile and lagging system with or without tiebacks or internal bracing can be used to laterally restrain the sides of the excavation. However, this system will not prevent groundwater from flowing into the excavation during periods of high groundwater level, unless used in conjunction with a dewatering system which will draw down the groundwater outside the shoring. If tiebacks cannot be used because of offsite restrictions or obstructions, internal braces can be used. Soldier piles should be placed in predrilled holes that will be backfilled with concrete. Drilling of the shafts for the soldier piles may require casing and/or the use of drilling mud to prevent caving. Filter fabric should be placed between the soil and timber lagging boards to reduce the potential for “piping” of fine-graded soil into the excavation.

An interlocking sheetpile shoring system with or without tiebacks or internal bracing may also be used to retain the excavation sides. This system has an advantage of being capable of reducing the lateral flow of groundwater into the excavation, and therefore reducing the amount of water to be pumped during construction. This system can be used in conjunction with either a passive or active dewatering system; however the shoring should be designed for the appropriate soil and water pressures consistent with the selected dewatering system.

Mixed-in-place tangent or secant soil-cement columns can be used to provide a relatively rigid shoring system, capable of significantly limiting lateral deformations and ground subsidence adjacent to the shoring system. This system is also relatively impermeable and has advantages similar to the sheetpile shoring system in limiting the flow of groundwater into the excavation.

8.6 Underpinning

At the time of this report the type and depth of the foundations for the existing 2 to 3 story brick and concrete building adjacent to the western edge of the project site are not known. It is anticipated that this building is supported on shallow foundations and the proposed excavation will extend below the bottom of the foundations for this building, requiring the building be underpinned. Steel piles installed in slant-drilled shafts may be used to underpin the building. The face of the excavation between the underpinning piles should be retained using timber lagging or soil-cement columns, provided the existing footing can span between piles. The underpinning piles should be designed to resist vertical building loads, vertical tieback loads (if tiebacks are used), and the appropriate lateral earth pressures.

8.7 Excavation and Monitoring

The soil to be excavated from the site consists of silts and sands that can be excavated with conventional earth-moving equipment, such as loaders and backhoes. Removal of existing on-site improvements, including the foundations of the existing building, may require equipment capable of breaking concrete.

The shoring system is expected to deform during construction as the basement excavation progresses. The magnitude of shoring movement is difficult to estimate because it depends on many factors, including the type of system used and the contractor's skill in installing the system. For a properly designed and constructed shoring system, we judge lateral movements will be within ordinarily accepted limits of about 0.005 times the height of the shoring system, which corresponds to about one to two inches for the excavation depths expected. The contractor

should establish survey points on the shoring, adjacent streets and sidewalks, and neighboring buildings to monitor the movement of these buildings and improvements during and immediately after construction.

9.0 RECOMMENDATIONS

Recommendations for foundation design, temporary shoring, and other geotechnical aspects of this project are presented in the following sections.

9.1 Site Preparation and Excavation

Existing pavements, trees, abandoned utilities and other obstructions should be removed from the area to be excavated. We anticipate the excavation for this project can be made using conventional earth-moving equipment. It should be noted that wood and brick debris was encountered during the field explorations and that old foundations and other obstructions may be encountered during the installation of shoring and during excavation.

Because the bottom of the excavation will expose fine-grained soil that is near or below the groundwater level (which varies depending on seasonal conditions), the soil at subgrade level is likely to be saturated or near saturation. Considering that heavy pile installation equipment and forklifts will be used at the site, we recommend stabilizing the bottom of the proposed excavation by either:

- lime-treating the soil subgrade to a depth of at least 18 inches, and compacting the lime-treated soil to at least 90 percent relative compaction[7]; quick lime should be added at concentration of 4 to 5 percent of the dry weight of soil; the waterproofing consultant should be notified that lime is being used to stabilize the soil subgrade

[7] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by ASTM D1557-00 laboratory compaction procedure.

- constructing a gravel working pad consisting of at least an 18-inch-thick layer of gravel or crushed rock (1/2- to 3/4-inch gradation) underlain by a layer of geotextile tensile fabric (Mirafi 500X or equivalent).

Alternatively, the pile installation equipment can be temporarily supported on timber mats or other materials that will spread out the equipment loads and temporarily support the equipment over areas of weak subgrade.

We recommend the basement be waterproofed. A waterproofing consultant should be retained to determine the most appropriate system for this project. We recommend placing the waterproofing material on the stabilized subgrade, then covering it with the structural concrete floor slab for the below-grade parking level. The contractor should protect the waterproofing material from damage during foundation and floor slab construction.

We anticipate fill placement at the site will consist primarily of backfill for utility trenches outside the building footprint and possibly some backfill around the upper portion of the below-grade walls. We anticipate the soil excavated during construction will be acceptable for use as fill and backfill provided it is free of organic material and contains no rocks or lumps larger than three inches in greatest dimension. Soil excavated near the groundwater table, may require significant drying before it can be used as fill and compacted to the specified relative compaction. If imported fill is used, it should be free of organic matter or other deleterious material, contain no rocks or lumps larger than three inches in greatest dimension, and have low expansion potential (defined by liquid limit less than 40 and a plasticity index lower than 12). Fill placed in public right-of-ways (i.e., streets and sidewalks) should meet City of Sacramento requirements.

Where fill is required, such as for sidewalks and exterior slabs, the exposed subgrade should be scarified to a depth of six inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. Excavated on-site soil that is to be used for fill should be moisture-conditioned to near optimum moisture content, placed in horizontal lifts

not exceeding eight inches in uncompacted thickness, and compacted to at least 90 percent relative compaction. Where the fill thickness will be five feet or more, the fill should be compacted to at least 95 percent relative compaction. Imported granular fill should be placed in accordance with our previous recommendations, except for sand or gravel with less than 10 percent fines (material passing the No. 200 sieve), which should be compacted to at least 95 percent relative compaction, even for depths less than five feet.

9.2 Pile Foundations

9.2.1 Axial Capacity

We conclude the proposed building can be supported on a deep foundation system consisting of either driven steel H-piles, drilled displacement piles, or large diameter cast in drilled hole (CIDH) piles. Driven piles and drilled displacement piles should be designed to gain support through a combination of skin friction and end bearing in layers of dense to very dense gravel, sand, silty sand and stiff to hard clays and silts below Elevation-20 feet. As previously discussed, some piles may not encounter or will pass through the upper gravel and sand layers and could penetrate an additional 20 to 30 feet. Consequently, the length of the piles will vary between approximately 30 and 50 feet. As described in a subsequent section of this report, an indicator pile, pile load test, and pile driving analyzer (PDA) program (if driven piles are used) are recommended to evaluate the behavior of piles across the site, evaluate the driving/drilling refusal depth of piles, and determine the maximum load capacity of piles for support of the new building. If Tubex or Torque-down piles are used, a load test program should be included to confirm the desired capacities can be attained.

For preliminary design purposes, we have estimated the allowable axial compressive and uplift capacities versus tip elevation for steel H-piles (HP 14x73), drilled displacement piles (Tubex, Torque-down), and 42-inch diameter CIDH piles. The estimated capacity versus depth for these piles is shown in Figures 4 and 5 for axial compressive and uplift capacity respectively. These figures are based on the conservative assumption that piles will not encounter dense sand or gravel, or hard clay above Elevation -40 feet.

The allowable capacities shown on Figures 4 and 5 include factors of safety of at least 2.0 and 1.5 for compression and uplift respectively. The compressive values may be increased by one-third for total loads that include wind or seismic. It should be noted, however, that because Tubex and Torque-down piles are proprietary piles, they are design-build and the values shown on Figures 4 and 5 are for preliminary design only and subject to verification by the pile contractor's designer.

Piles should be spaced no closer than three pile diameters, center-to-center, to avoid reductions to the axial capacity of the piles due to group effects. As discussed earlier we anticipate some piles may reach driving/drilling refusal in dense to very dense layers of sand or gravel prior to reaching their design tip elevation. If this condition occurs, the compression and uplift capacities of the piles should be evaluated on a case-by-case basis, and revised if necessary.

9.2.2 Lateral Capacity

Lateral load resistance can be mobilized by the individual piles in combination with other foundation elements embedded below the ground surface. Lateral resistance of piles will depend on the stiffness of the pile, the strength of the surrounding soil, allowable deflection of the pile top, and the moment induced in the pile. Lateral loads and corresponding moments have been calculated for steel HP 14x73, Tubex, Torque-down and 42-inch Diameter CIDH piles for both free- and fixed-head conditions, assuming a pile head deflection of 1/2 inch, an embedded length of 50 feet, and an applied axial compression load of 300 kips. The results of our analyses are summarized in Tables 2.

Plots of pile deflection and bending moment profiles for the piles analyzed are presented in Figures 6 through 13. The values for the selected pile can be revised once the length, load and actual dimensions of the pile are determined.

Table 2
Preliminary Lateral Pile Analysis
for Pile Head Deflection of ½ inch

Pile Type	Pile Head Condition	Lateral Load (kips)	Maximum Moment (kip-feet)	Depth to Maximum Moment (feet)
HP 14x73	Free-head	5.8	34.9	6.5
	Fixed-head	17.0	91.1	0
16-inch Tubex	Free-head	11.2	67.5	8.5
	Fixed-head	30.5	191.9	0
12 ¾ inch Torque-down	Free-head	7.2	41.4	7.5
	Fixed-head	21.0	116.0	0
42-inch CIDH	Free-head	60.0	501.1	14
	Fixed-head	140.0	1426.3	0

For pile groups where the center-to-center spacing is approximately three diameters in the direction of loading, single–pile lateral capacities should be reduced in accordance with laterally loaded pile studies performed by Mokwa and Duncan (2001). Reduction factors, corresponding to the rows of piles in a group, are given in Table 3.

TABLE 3
Pile Group Reduction Factors

Numbers of Piles in Pile Group	Reduction Factor
leading row	0.82
first trailing row	0.67
second trailing row	0.58
third and subsequent trailing row	0.53

Where piles have center-to-center spacing of at least six pile diameters in the direction of loading, no group reduction factors need to be applied. Reduction for other pile group spacing can be provided once the number and arrangement of piles are known.

Additional lateral load resistance can be obtained from passive pressure acting against the vertical faces of pile caps and grade beams. To compute passive pressure, we recommend using a uniform pressure (rectangular distribution) of 500 pounds per square feet (psf) for transient loads and an equivalent fluid weight (triangular distribution) of 75 pounds per cubic feet (pcf) for sustained loads. These values include a factor of safety of at least 1.5 and 2.0 for transient and sustained loads, respectively.

9.2.3 Indicator Piles, Pile-Load Tests, Pile Driving Analyzer Programs

H-piles should be driven continuously to refusal using a hammer delivering at least 50,000 foot-pounds of energy. The refusal blow count will be determined from the results of the indicator pile and PDA programs, and the size of the hammer used.

For pile types other than CIDH, we recommend that before production pile lengths are selected, 10 indicator piles be installed within the building footprint to: 1) provide blow count or drilling resistance data to correlate with information obtained from the borings, 2) aid in evaluating predrilling requirements, and 3) aid in estimating production pile lengths. Indicator piles should be located at column lines and around the perimeter of the building, and near the locations of test borings. The upper 15 to 25 feet (depending upon the location of the pile) of the soil subgrade should be predrilled with a 12-inch-diameter auger to facilitate pile installation and reduce the potential for soil heave. The indicator piles should be installed with the same equipment that will be used to install the production piles. We recommend using indicator piles that are at least 60 feet long. The indicator piles can be used for support of the proposed structure if installed in the proper location and are not damaged during installation. Driven indicator piles should be monitored using a PDA to check stresses in the pile during driving. Four of the 10 driven

indicator piles should be retapped one week later and a CAPWAP analysis should be performed on each of the retapped piles.

We recommend performing a pile load test on two indicator piles to confirm the recommended axial capacities. The test piles should be selected by the geotechnical engineer and approved by the structural engineer. The load tests should be performed in accordance with ASTM D1143, Standard Loading Procedure. Equipment used for the test (load frame, jacks, and reaction piles) should be capable of applying at least 2.5 times the allowable dead plus live design load used in design. The Davisson Method will be used to interpret the ultimate capacities of the piles.

9.3 Permanent Below-Grade Wall Design

Below-grade walls should be designed to resist both static lateral earth pressures and lateral pressures cause by earthquakes. We recommend the permanent below-grade walls at the site be designed for the more critical of the following criteria:

- at-rest equivalent fluid weight of 65 pcf above the design groundwater level (Elevation 5 feet) and 95 pcf below, plus a traffic increment where permanent walls are within 10 feet of adjacent streets, and an additional surcharge load due to any nearby structures founded on shallow foundations that lie within a horizontal distance equal to two times the height of the wall. The surcharge due to adjacent foundations may be estimated as 0.55 times the bearing pressure, or can be determined more specifically on a case by case basis. The traffic increment should be taken as a uniform (rectangular distribution) lateral pressure of 100 psf applied to the upper 10 feet of the wall.

- active pressure of 45 pcf above the design groundwater elevation (Elevation 5 feet) and 85 pcf below, plus any surcharge due to any nearby structures founded on shallow foundations that lie within a horizontal distance equal to two times the height of the wall, plus a seismic increment of 12 times the height of the wall in psf, where the height is in feet. Traffic loads may be neglected for this condition.

Lateral forces can also be resisted by passive resistance against the vertical faces of the below-grade walls. We recommend using a uniform pressure (rectangular distribution) of 500 psf for transient loads and an equivalent fluid weight (triangular distribution) of 75 pcf for sustained loads. These values include a factor of safety of at least 1.5 and 2.0 for transient and sustained loads, respectively.

To protect against moisture migration, below-grade walls should be waterproofed and water stops should be placed at all construction joints.

9.4 Floor Slab

Because of the anticipated seismically induced ground settlement, the basement floor should be a structurally supported slab. The floor slab should be waterproofed and designed to resist a hydrostatic uplift force associated with a design groundwater level at Elevation 5 feet.

9.5 Seismic Design

If the building will be designed in accordance with the 2001 California Building Code, the requirements for Zone 3 should be used as a minimum. The closest distances to known faults are 43 kilometers to the Great Valley 4 fault (B-type fault). Although potentially liquefiable soil is present beneath the site, we believe that the potentially liquefiable layers are not continuous, and because the building will be founded on deep foundations, we recommend that the a soil profile type of S_D be used for seismic design of the proposed structure in accordance with the 1997 Uniform Building Code.

9.6 Temporary Dewatering

The groundwater level at the site will fluctuate due to seasonal conditions and river stage levels. During periods of high groundwater level, temporary dewatering will be required during construction of the project. We recommend the groundwater be drawn down to at least 3 feet below the bottom of the proposed excavation, including proposed pile cap excavations, and

maintained there until either the groundwater level subsides or sufficient building weight is available to resist the hydrostatic uplift pressure of the groundwater once it is allowed to rise to its normal elevation.

Either an active or passive dewatering system can be used at site. Certain advantages and disadvantages apply to each system as discussed in Section 7.4. The general contractor should determine which system is most appropriate for his/her construction of this project.

The dewatering system should be designed, installed and maintained by an experienced dewatering contractor. We should have the opportunity to check the dewatering system design proposed by the contractor prior to installation.

If dewatering wells or piping are used that penetrate the planned floor slab, special attention should be given to properly sealing and waterproofing the penetrations when they are abandoned or removed from site. Groundwater should be prevented from seeping through the penetrations and into the below-grade parking level.

9.7 Temporary Shoring Design

Temporary shoring will be required to maintain vertical cuts higher than approximately four feet. The safety of workers and equipment in or near excavations is the responsibility of the contractor. We should review plans for temporary shoring prior to construction. During construction, we should observe installation of the shoring system and check the soil conditions encountered during excavation.

Figures 14 and 15 present the recommended lateral pressures for soldier pile and lagging, sheetpile, or soil-cement column walls with tied back soil anchors and/or internal bracing for passive and active dewatering, respectively. Figure 14 assumes hydrostatic pressures are allowed to build up against the exterior of the shoring and Figure 15 assumes they are not.

Irrespective of which shoring system is used, the penetration of the soldier piles, sheetpiles, or soil-cement columns must be sufficient to insure lateral stability and resist the downward loading of tiebacks if used. For lateral resistance below the bottom of the excavation, we recommend using an equivalent fluid weight of 100 psf to compute passive pressure. Passive pressures can be assumed to act over an area of three soldier pile widths, or the actual width soil-cement or sheetpile wall, depending upon which shoring system is selected. The passive pressure value includes a factor of safety of about 1.5.

Vertical loads can be resisted by skin friction along the portion of the soldier piles below the excavation. The recommended allowable skin friction value is 500 psf. End bearing should be neglected.

9.7.1 Tieback Design Criteria and Installation Procedure

Temporary tiebacks may be used to restrain the shoring. The vertical load from the temporary tiebacks should be accounted for in the design. Design criteria for tiebacks are presented on Figures 14 and 15.

Tiebacks should have a minimum unbonded length of 15 feet. All tiebacks should have a minimum bonded length of 15 feet and spaced at least four feet on center. The bottom of the excavation should not extend more than two feet below a row of unsecured tiebacks.

Tieback allowable capacity will depend upon the drilling method, hole diameter, grout pressure, and workmanship. The existing onsite soil will likely cave, therefore, solid flight augers should not be used for tieback installation. We recommend a smooth cased tieback installation method (such as a Klemm type rig) be used. For estimating purposes, we recommend using the skin friction values presented on Figures 14 and 15. These values include a factor of safety of about 1.5. Higher skin friction values may be used if confirmed with pre-production performance tests.

The contractor should be responsible for determining the actual length of tiebacks required to resist the lateral earth and water pressures imposed on the temporary retaining systems. Determination of the tieback length should be based on the contractor's familiarity with his installation method. The computed bond length should be confirmed by a performance- and proof-testing program under the observation of an engineer experienced in this type of work. Replacement tiebacks should be installed for tiebacks that fail the load test.

Recommendations for tieback testing are presented in Section 9.7.2. The performance tests will be used to determine the load carrying capacity of the tiebacks and the residual movement. The performance-tested tiebacks should be checked 24 hours after initial lock off to confirm stress relaxation has not occurred. The geotechnical engineer should evaluate the results of the performance tests and determine if creep testing is required and select the tiebacks that should be creep tested. If any tiebacks fail to meet the proof-testing requirements, additional tiebacks should be added to compensate for the deficiency, as determined by the shoring designer.

9.7.2 Tieback Testing

We should observe tieback testing. The first two production tiebacks and two percent of the remaining tiebacks should be performance-tested to at least 1.25 times the design load. The remaining tiebacks should be confirmed by proof tests also to at least 1.25 times the design load.

The movement of each tieback should be monitored with a free-standing, tripod-mounted dial gauge during performance and proof testing. The performance test is used to verify the capacity and the load-deformation behavior of the tiebacks. It is also used to separate and identify the causes of tieback movement, and to check that the designed unbonded length has been established. In the performance test, the load is applied to the tieback in several cycles of incremental loading and unloading. During the test, the tieback load and movement are measured. The maximum test load should be held for a minimum of 10 minutes, with readings taken at 0, 1, 3, 6, and 10 minutes. If the difference between the 1- and 10-minute reading is less than 0.04 inch during the loading, the test is discontinued. If the difference is more than

0.04 inch, the holding period is extended by 50 minutes to 60 minutes, and the movements should be recorded at 15, 20, 25, 30, 45, and 60 minutes.

A proof test is a simple test used to measure the total movement of the tieback during one cycle of incremental loading. The maximum test load should be held for a minimum of 10 minutes, with readings taken at 0, 1, 2, 3, 6, and 10 minutes. If the difference between the 1- and 10-minute reading is less than 0.04 inch, the test is discontinued. If the difference is more than 0.04 inch, the holding period is extended by 50 minutes to 60 minutes, and the movements should be recorded at 15, 20, 25, 30, 45, and 60 minutes.

We should evaluate the tieback test results and determine whether the tiebacks are acceptable. A performance- or proof-tested tieback with a ten-minute hold is acceptable if the tieback carries the maximum test load with less than 0.04 inch movement between one and 10 minutes, and total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.

A performance- or proof-tested tieback with a 60-minute hold is acceptable if the tieback carries the maximum test load with less than 0.08 inch movement between six and 60 minutes, and total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length. Tiebacks that failed to meet the first criterion will be assigned a reduced capacity.

If the total movement of the tiebacks at the maximum test load does not exceed 80 percent of the theoretical elastic elongation of the unbonded length, the contractor should replace the tiebacks.

9.8 Underpinning

The adjacent 2 to 3 story brick and concrete building to west is expected to require underpinning as discussed above. Steel piles installed in slant-drilled shafts may be used to underpin the

existing structure. If intermittent piers are used the excavation face between the underpinning piles should be retained using lagging provided the existing footing can span between piles.

The underpinning piles should be designed to resist the vertical building loads, vertical tieback loads (if tiebacks are used), and the appropriate lateral earth pressures. The lateral earth pressures may be resisted by passive resistance against the embedded portion of the piles. The passive resistance is presented on figures 14 and 15. This value includes a safety factor of about 1.5.

Underpinning piles should extend at least 10 feet below the bottom of the planned excavation. Recommendations for computing the penetration depth of the underpinning piles are the same as for soldier piles and are presented in Section 8.7.

To reduce movement and provide adequate foundation support during installation of the underpinning piers, adjacent piles should not be installed concurrently. We recommend the underpinning piles be preloaded prior to dry packing to reduce settlement as the foundation load is transferred to the piles.

9.9 Construction Monitoring

We recommend that the contractor document site conditions with photographs, and establish survey points to monitor adjacent structures and surface improvements within 100 feet of the excavation perimeter prior to the start of construction. These survey points should be used to monitor the movement of the shoring and surrounding facilities during shoring installation, underpinning, soil excavation, and pile installation. These survey points should be monitored on a daily basis during pile installation. The contractor should notify the owner, shoring designer, structural engineer, and geotechnical engineer if movement occurs. In addition, photographs and a thorough crack survey of adjacent buildings should be performed prior to the start of construction to show that shoring, soil excavation, dewatering, and building construction activities did not damage or detrimentally affect nearby structures.

10.0 GEOTECHNICAL SERVICES DURING CONSTRUCTION

We should review the final foundation, shoring, and dewatering plans and specifications to check that they are in general conformance with the intent of our recommendations. During construction, we should observe the installation of the temporary shoring system, including installation of soldier piles and tiebacks, underpinning, the installation of indicator piles, the performance of PDA and pile load testing, and the installation of production piles. In addition, our field engineer should observe the condition of the subgrade exposed at the bottom of the excavation and the installation of the temporary dewatering system. We should review survey data pertaining to shoring system performance and settlement of adjacent structures. These observations will allow us to compare actual with anticipated soil conditions, check that the contractor's work conforms with the geotechnical aspects of the plans and specifications, and confirm that the shoring and dewatering systems are performing as planned.

11.0 LIMITATIONS

The conclusions and recommendations presented in this report are the result from limited engineering studies based on our interpretation of the existing geotechnical conditions and available subsurface data. Actual subsurface conditions may vary. If any variations or unforeseen conditions are encountered during construction, or if the proposed construction differs from that which is described in this report, Treadwell & Rollo should be notified so that supplemental recommendations can be made.

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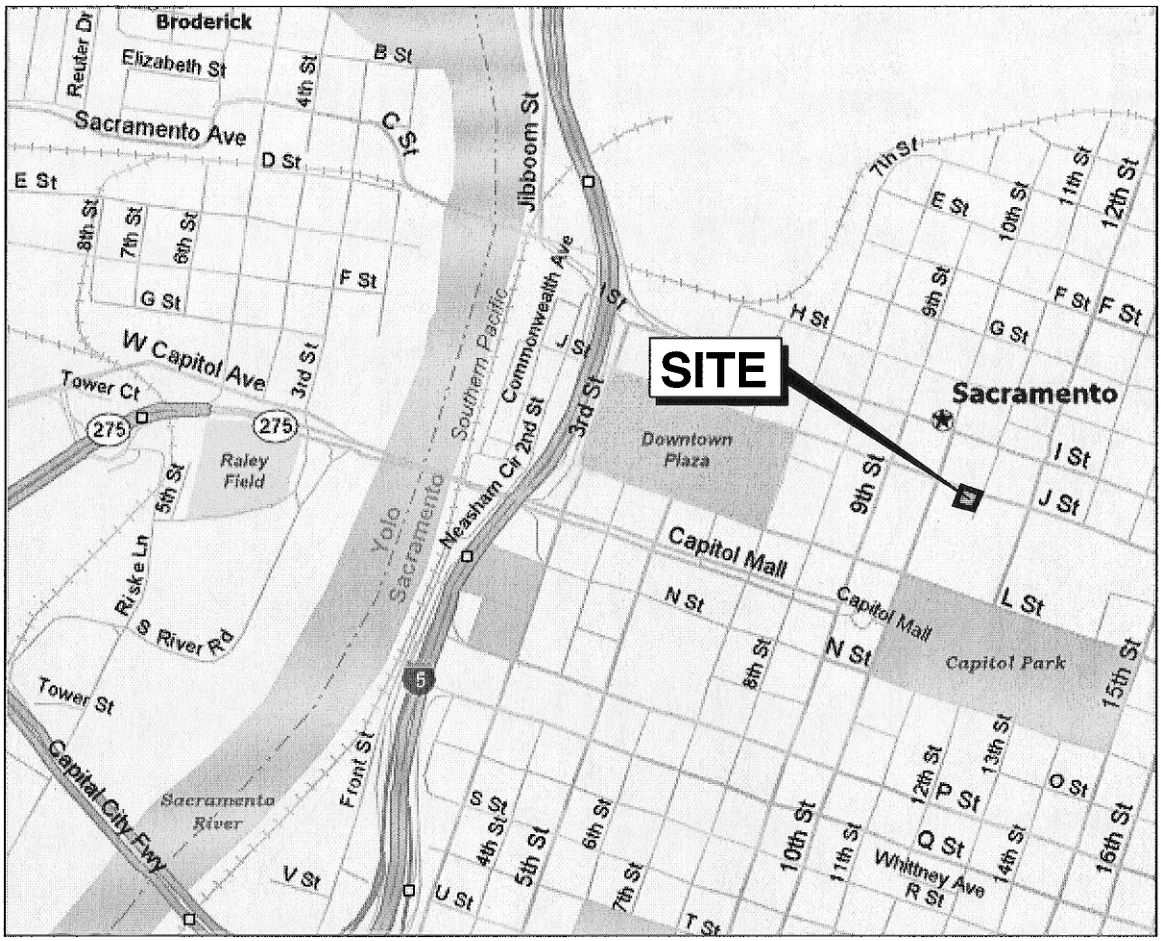
FIGURES



Base map: 2005 MapQuest.com, Inc.; @2005 NAVTEQ
Sacramento County

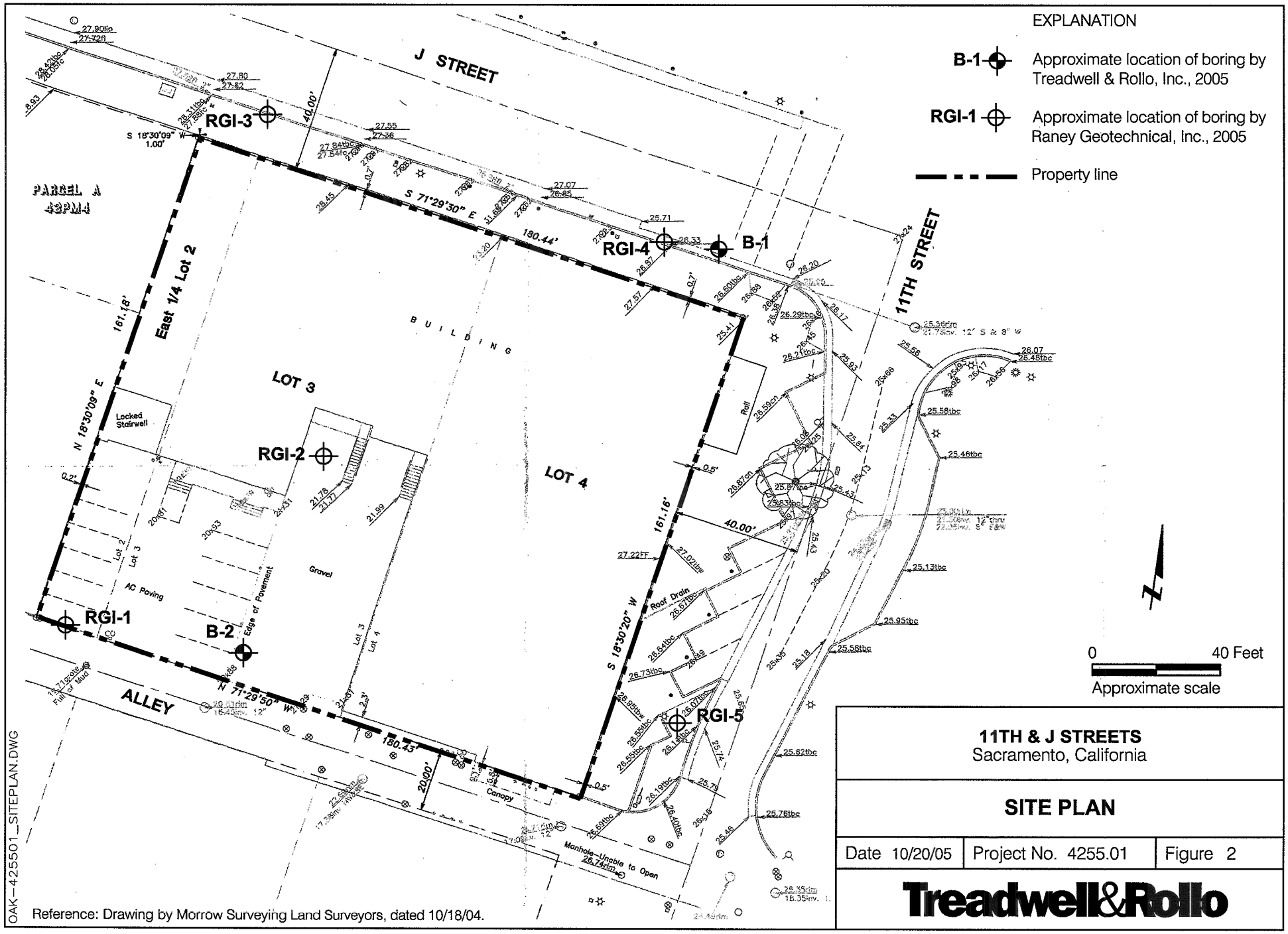
No scale

11TH & J STREETS
Sacramento, California

SITE LOCATION MAP

Treadwell&Rollo

Date 11/18/05	Project No. 4255.01	Figure 1



11TH & J STREETS
Sacramento, California

SITE PLAN

Date 10/20/05	Project No. 4255.01	Figure 2

Treadwell&Rollo

I **Not felt by people, except under especially favorable circumstances. However, dizziness or nausea may be experienced.**
Sometimes birds and animals are uneasy or disturbed. Trees, structures, liquids, bodies of water may sway gently, and doors may swing very slowly.

II **Felt indoors by a few people, especially on upper floors of multi-story buildings, and by sensitive or nervous persons.**
As in Grade I, birds and animals are disturbed, and trees, structures, liquids and bodies of water may sway. Hanging objects swing, especially if they are delicately suspended.

III **Felt indoors by several people, usually as a rapid vibration that may not be recognized as an earthquake at first. Vibration is similar to that of a light, or lightly loaded trucks, or heavy trucks some distance away. Duration may be estimated in some cases.**
Movements may be appreciable on upper levels of tall structures. Standing motor cars may rock slightly.

IV **Felt indoors by many, outdoors by a few. Awakens a few individuals, particularly light sleepers, but frightens no one except those apprehensive from previous experience. Vibration like that due to passing of heavy, or heavily loaded trucks. Sensation like a heavy body striking building, or the falling of heavy objects inside.**
Dishes, windows and doors rattle; glassware and crockery clink and clash. Walls and house frames creak, especially if intensity is in the upper range of this grade. Hanging objects often swing. Liquids in open vessels are disturbed slightly. Stationary automobiles rock noticeably.

V **Felt indoors by practically everyone, outdoors by most people. Direction can often be estimated by those outdoors. Awakens many, or most sleepers. Frightens a few people, with slight excitement; some persons run outdoors.**
Buildings tremble throughout. Dishes and glassware break to some extent. Windows crack in some cases, but not generally. Vases and small or unstable objects overturn in many instances, and a few fall. Hanging objects and doors swing generally or considerably. Pictures knock against walls, or swing out of place. Doors and shutters open or close abruptly. Pendulum clocks stop, or run fast or slow. Small objects move, and furnishings may shift to a slight extent. Small amounts of liquids spill from well-filled open containers. Trees and bushes shake slightly.

VI **Felt by everyone, indoors and outdoors. Awakens all sleepers. Frightens many people; general excitement, and some persons run outdoors.**
Persons move unsteadily. Trees and bushes shake slightly to moderately. Liquids are set in strong motion. Small bells in churches and schools ring. Poorly built buildings may be damaged. Plaster falls in small amounts. Other plaster cracks somewhat. Many dishes and glasses, and a few windows break. Knickknacks, books and pictures fall. Furniture overturns in many instances. Heavy furnishings move.

VII **Frightens everyone. General alarm, and everyone runs outdoors.**
People find it difficult to stand. Persons driving cars notice shaking. Trees and bushes shake moderately to strongly. Waves form on ponds, lakes and streams. Water is muddied. Gravel or sand stream banks cave in. Large church bells ring. Suspended objects quiver. Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary buildings; considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Plaster and some stucco fall. Many windows and some furniture break. Loosened brickwork and tiles shake down. Weak chimneys break at the roofline. Cornices fall from towers and high buildings. Bricks and stones are dislodged. Heavy furniture overturns. Concrete irrigation ditches are considerably damaged.

VIII **General fright, and alarm approaches panic.**
Persons driving cars are disturbed. Trees shake strongly, and branches and trunks break off (especially palm trees). Sand and mud erupts in small amounts. Flow of springs and wells is temporarily and sometimes permanently changed. Dry wells renew flow. Temperatures of spring and well waters varies. Damage slight in brick structures built especially to withstand earthquakes; considerable in ordinary substantial buildings, with some partial collapse; heavy in some wooden houses, with some tumbling down. Panel walls break away in frame structures. Decayed pilings break off. Walls fall. Solid stone walls crack and break seriously. Wet grounds and steep slopes crack to some extent. Chimneys, columns, monuments and factory stacks and towers twist and fall. Very heavy furniture moves conspicuously or overturns.

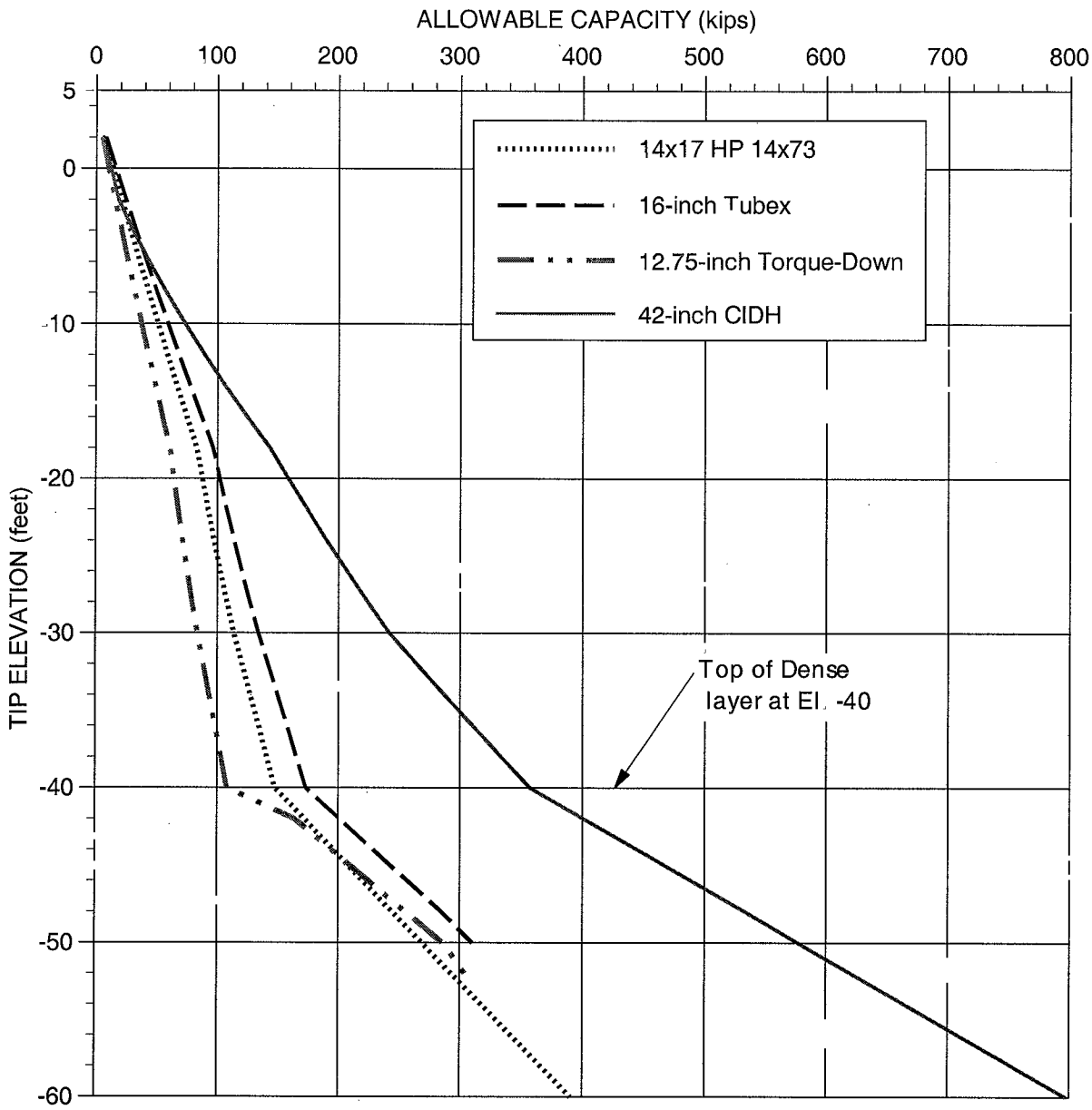
IX **Panic is general.**
Ground cracks conspicuously. Damage is considerable in masonry structures built especially to withstand earthquakes; great in other masonry buildings - some collapse in large part. Some wood frame houses built especially to withstand earthquakes are thrown out of plumb, others are shifted wholly off foundations. Reservoirs are seriously damaged and underground pipes sometimes break.

X **Panic is general.**
Ground, especially when loose and wet, cracks up to widths of several inches; fissures up to a yard in width run parallel to canal and stream banks. Landsliding is considerable from river banks and steep coasts. Sand and mud shifts horizontally on beaches and flat land. Water level changes in wells. Water is thrown on banks of canals, lakes, rivers, etc. Dams, dikes, embankments are seriously damaged. Well-built wooden structures and bridges are severely damaged, and some collapse. Dangerous cracks develop in excellent brick walls. Most masonry and frame structures, and their foundations are destroyed. Railroad rails bend slightly. Pipe lines buried in earth tear apart or are crushed endwise. Open cracks and broad wavy folds open in cement pavements and asphalt road surfaces.

XI **Panic is general.**
Disturbances in ground are many and widespread, varying with the ground material. Broad fissures, earth slumps, and land slips develop in soft, wet ground. Water charged with sand and mud is ejected in large amounts. Sea waves of significant magnitude may develop. Damage is severe to wood frame structures, especially near shock centers, great to dams, dikes and embankments, even at long distances. Few if any masonry structures remain standing. Supporting piers or pillars of large, well-built bridges are wrecked. Wooden bridges that "give" are less affected. Railroad rails bend greatly and some thrust endwise. Pipe lines buried in earth are put completely out of service.

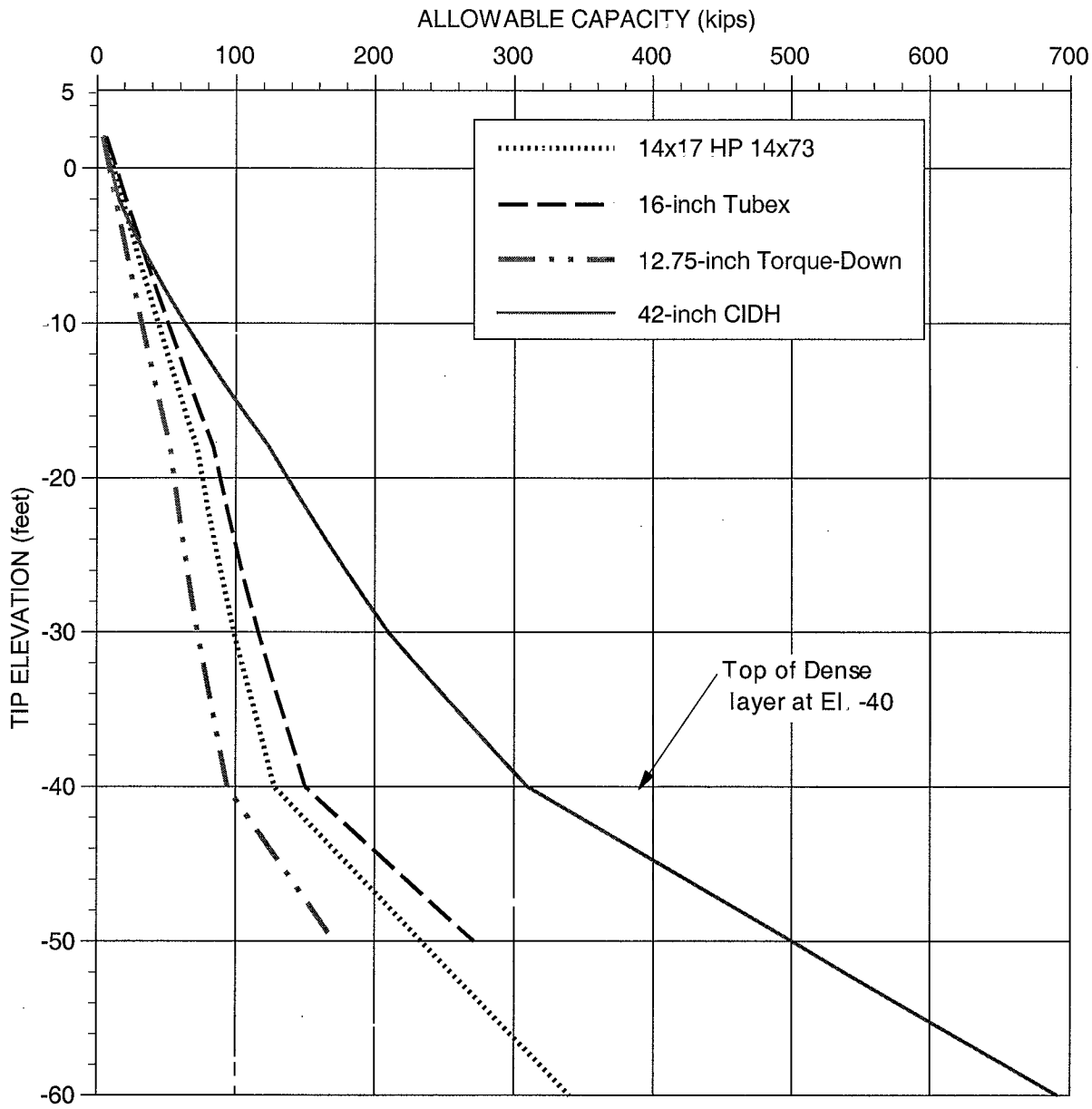
XII **Panic is general.**
Damage is total, and practically all works of construction are damaged greatly or destroyed. Disturbances in the ground are great and varied, and numerous shearing cracks develop. Landslides, rock falls, and slumps in river banks are numerous and extensive. Large rock masses are wrenched loose and torn off. Fault slips develop in firm rock, and horizontal and vertical offset displacements are notable. Water channels, both surface and underground, are disturbed and modified greatly. Lakes are dammed, new waterfalls are produced, rivers are deflected, etc. Surface waves are seen on ground surfaces. Lines of sight and level are distorted. Objects are thrown upward into the air.

11TH & J STREET Sacramento, California	**MODIFIED MERCALLI INTENSITY SCALE**
Treadwell&Rollo	Date 12/09/05 | Project No. 4255.01 | Figure 3



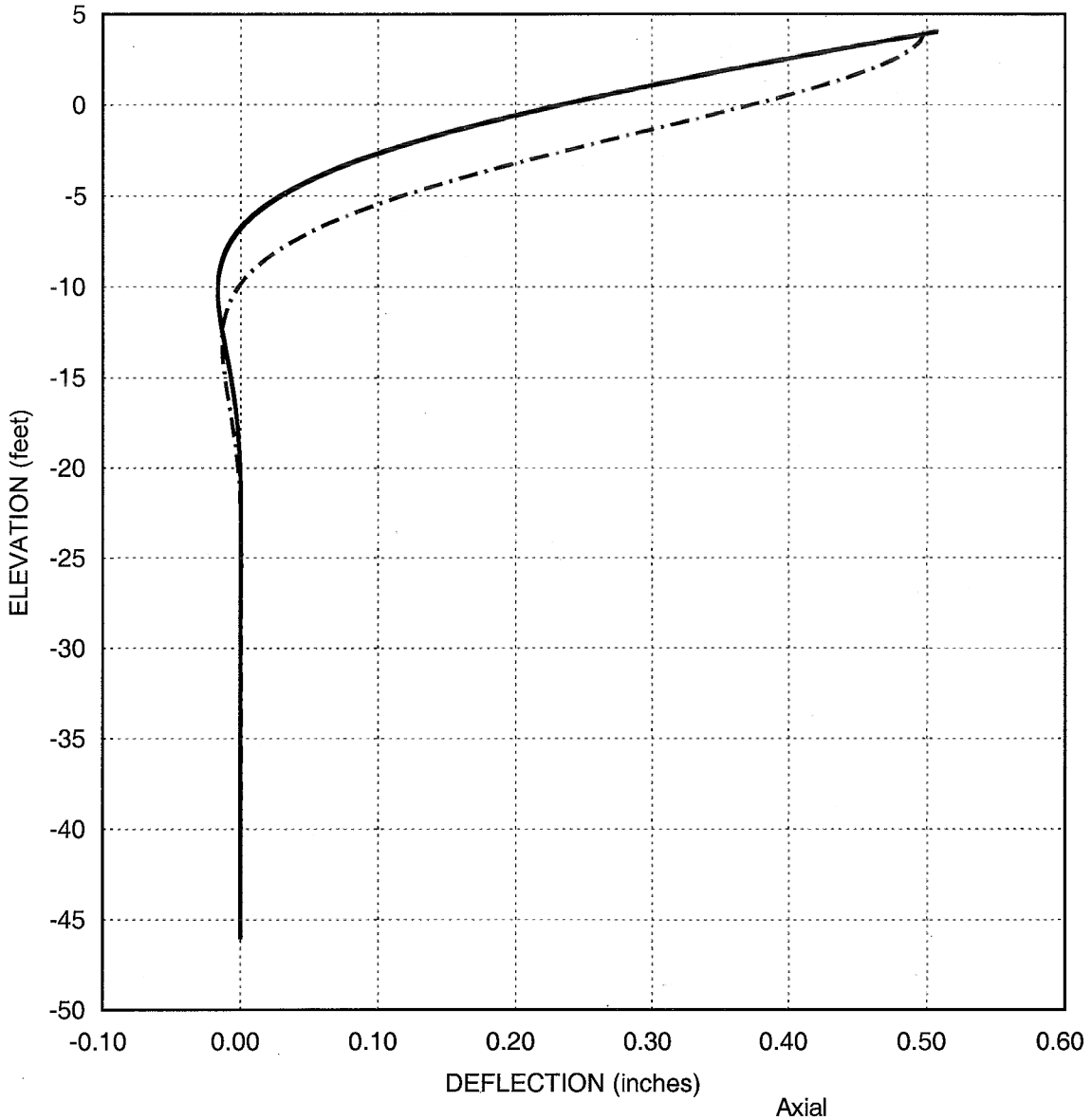
Notes:
1. The indicated capacities are for dead plus live loads and may be increased by one-third for total loads.
2. Capacities are based on the allowable strength of the supporting soil; the structural capacity of the pile may govern.
3. Piles should be spaced no closer than three diameters center to center.
4. Elevation datum: Site survey by Morrow Surveying, dated 18 October 2004.
5. Tubex and Torque-down pile capacity limited to 300 Kips subject to field test; higher allowable may be difficult to acheive because of equipment limitations.

11TH AND J STREETS Sacramento, California	**PILE AXIAL COMPRESSION CAPACITY VERSUS TIP ELEVATION**
Treadwell&Rollo	Date 04/18/06 | Project No. 4255.01 | Figure 4



Notes:
1. The indicated capacities are for dead plus live loads and include a factor of safety of 1.5.
2. Capacities are based on the allowable strength of the supporting soil; the structural capacity of the pile may govern.
3. Piles should be spaced no closer than three diameters center to center
4. Elevation datum: Site survey by Morrow Surveying, dated 18 October 2004.

11TH AND J STREETS Sacramento, California	**AXIAL COMPRESSION PILE UPLIFT PILE CAPACITY VERSUS TIP ELEVATION**
Treadwell&Rollo	Date 04/14/06 | Project No. 4255.01 | Figure 5



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	5.8	300
—·—·—·—	Fixed	17.0	300

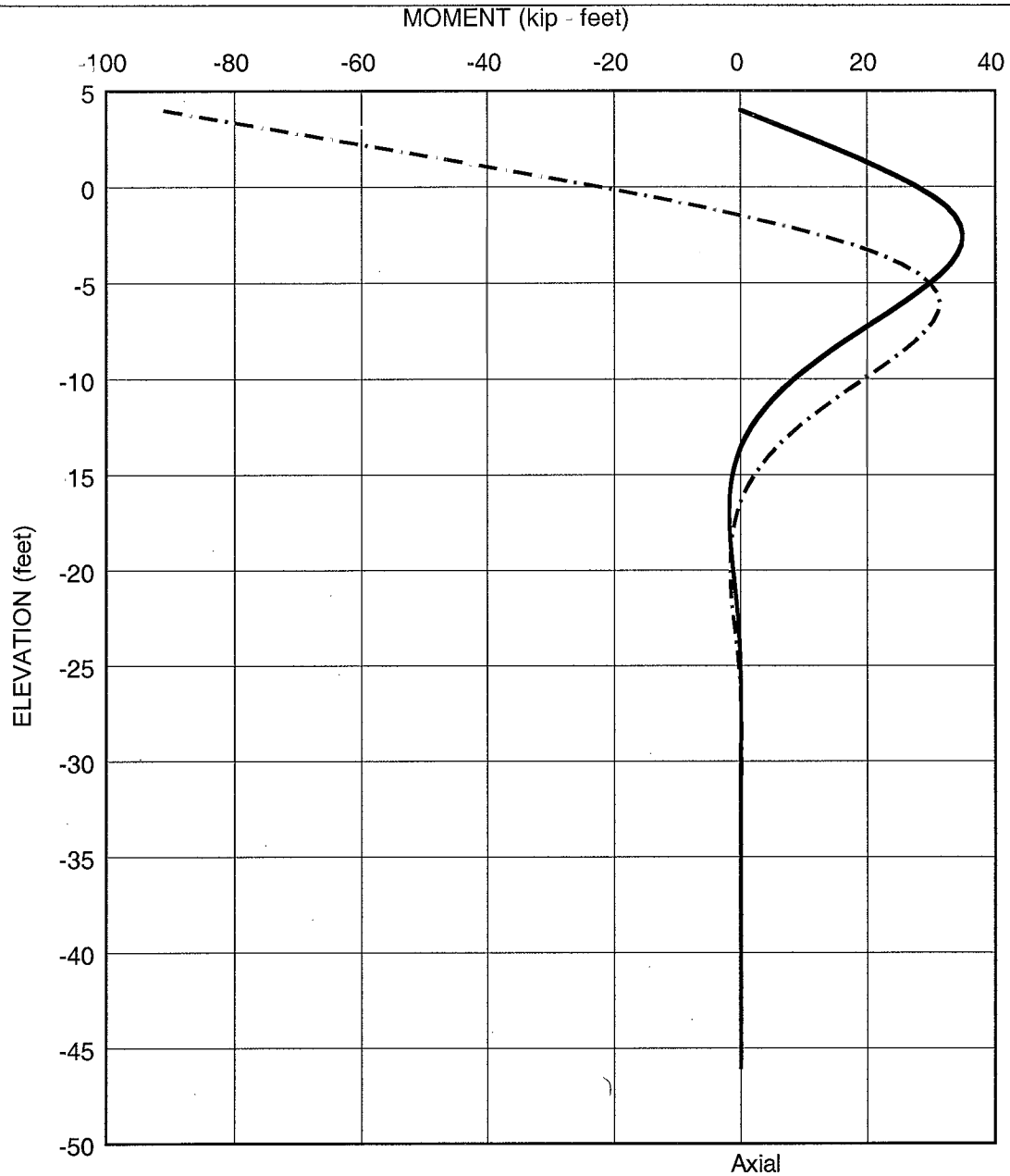
Notes:
1. Assumes center to center spacing of piles is at least 6 diameters; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

DEFLECTION PROFILES FOR STEEL HP 14x73 PILE

Treadwell&Rollo

Date 04/18/06	Project No 4255.01	Figure 6



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	5.8	300
—·—·—·—	Fixed	17.0	300

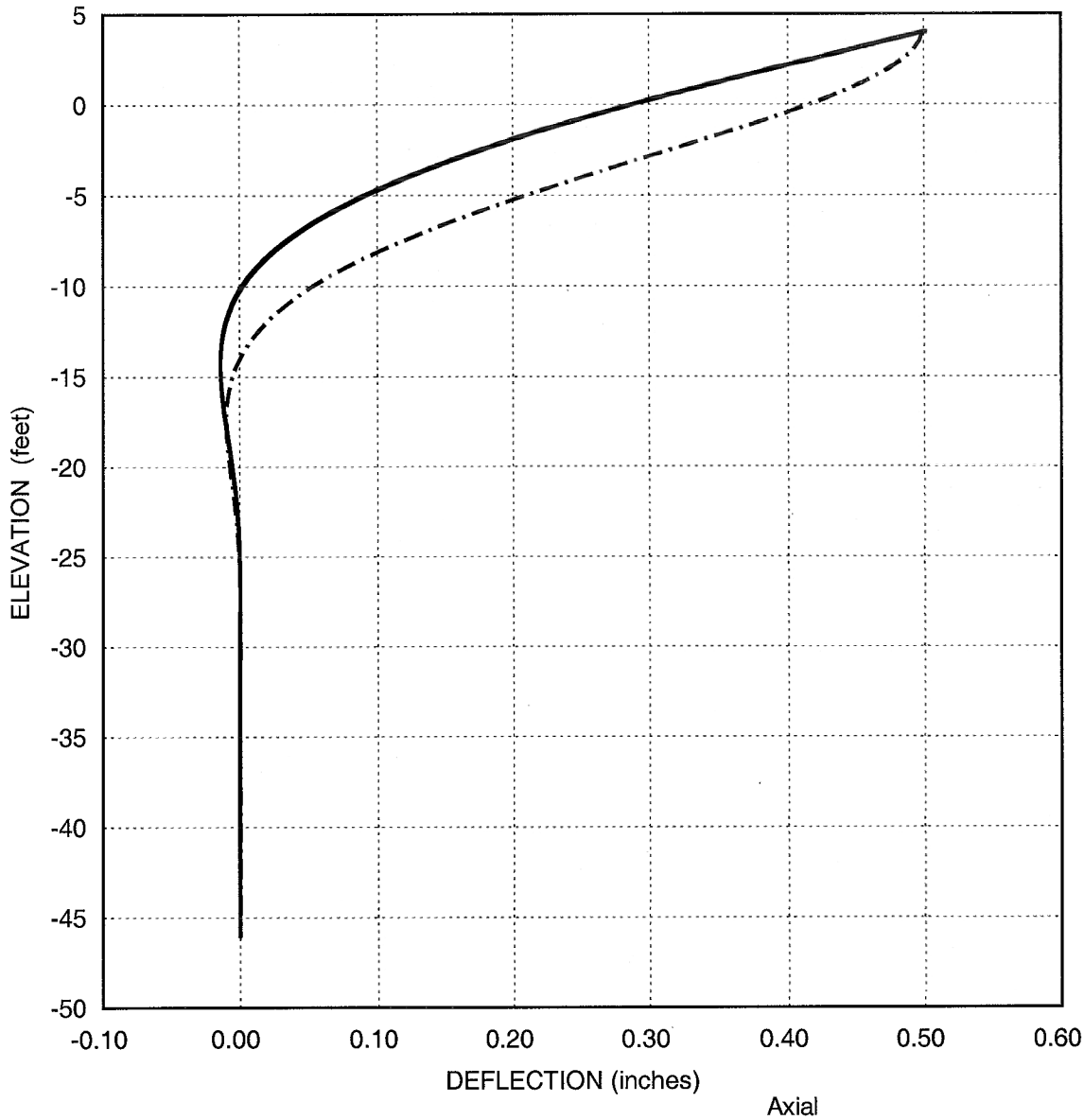
Note: 1. Does not consider group effects; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

BENDING MOMENT PROFILES
STEEL HP 14x73 PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 7



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	11.2	300
—·—·—	Fixed	30.5	300

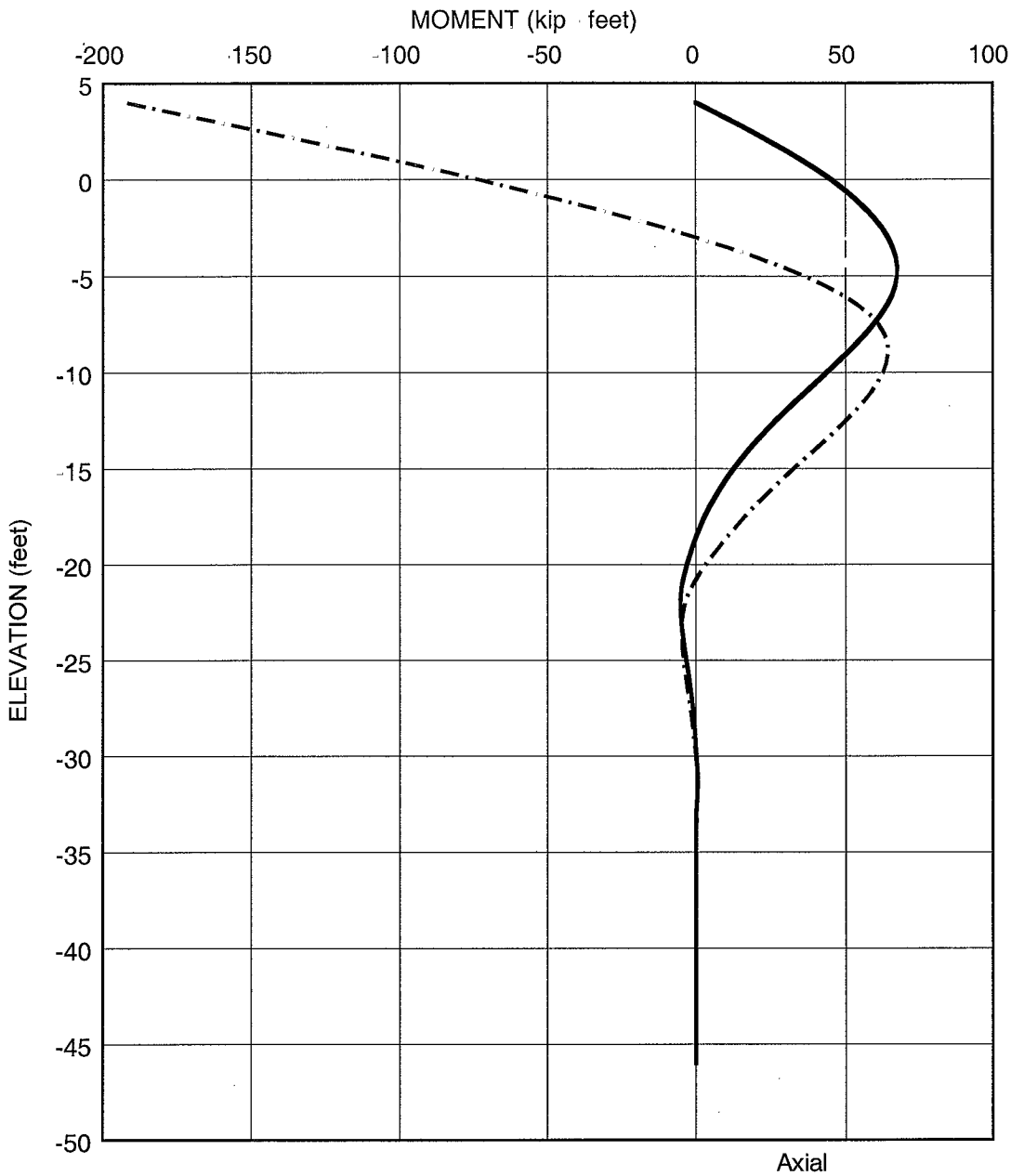
Notes:
1. Assumes center to center spacing of piles is at least 6 diameters; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

DEFLECTION PROFILES FOR 16-INCH DIAMETER TUBEX PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 8



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	11.2	300
—·—·—·—	Fixed	30.5	300

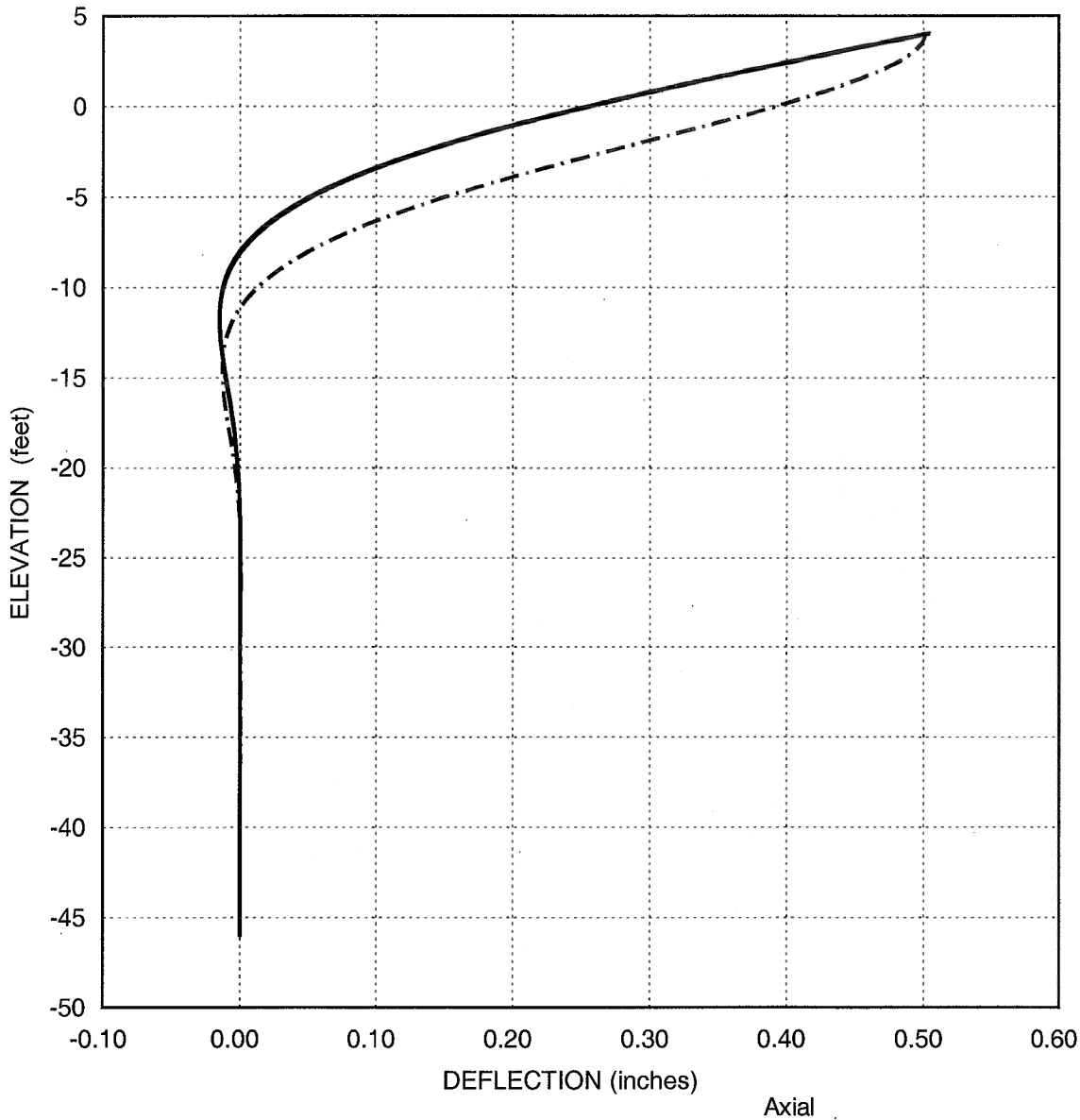
Note: 1. Does not consider group effects; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

BENDING MOMENT PROFILES
16-INCH DIAMETER TUBEX PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 9



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	7.2	300
—·—·—	Fixed	21.0	300

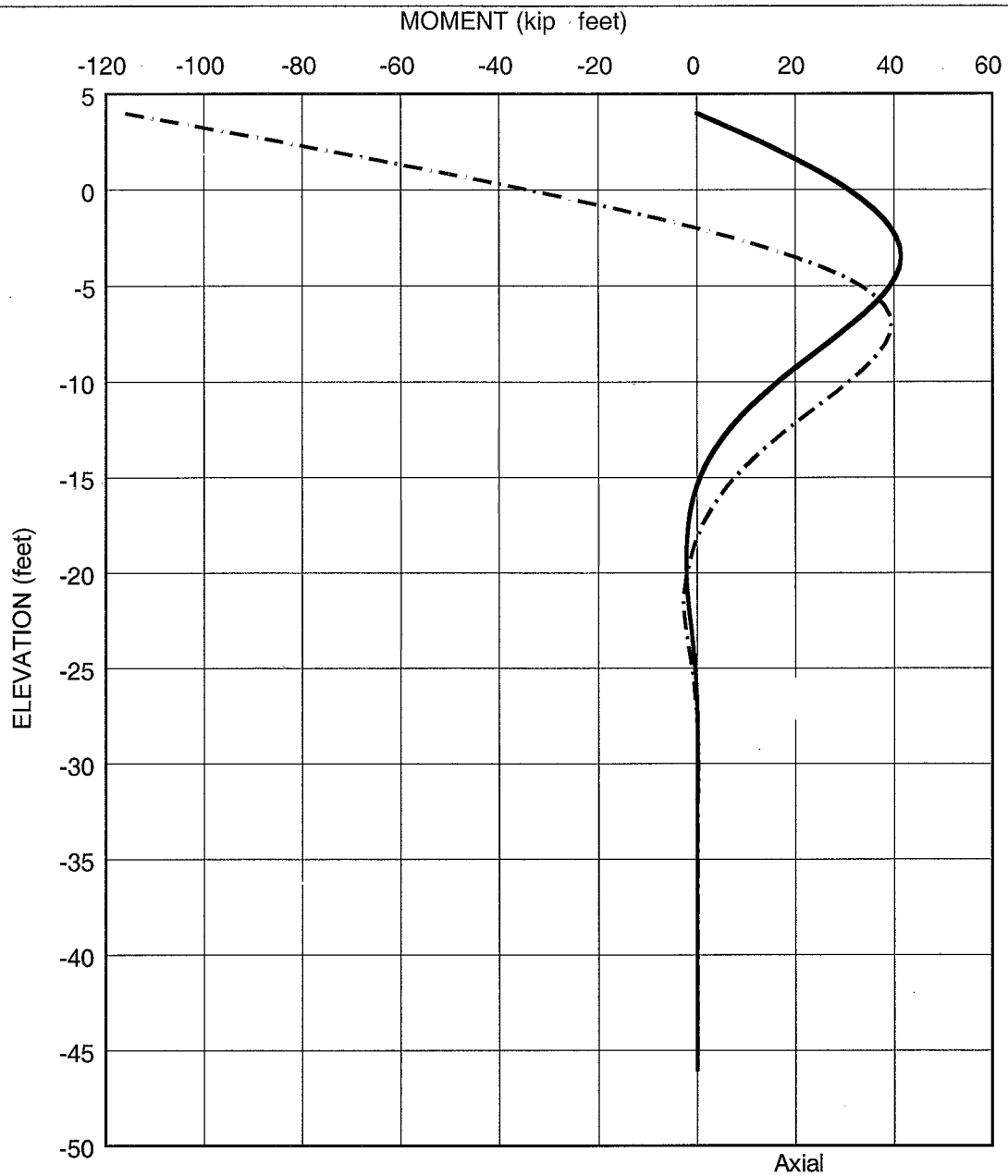
Notes:
1. Assumes center to center spacing of piles is at least 6 diameters, See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

DEFLECTION PROFILES FOR 12 3/4-INCH DIAMETER TORQUE-DOWN PILE

Treadwell&Rollo

Date 04/14/06	Project No. 4255.01	Figure 10



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	7.2	300
—·—·—	Fixed	21.0	300

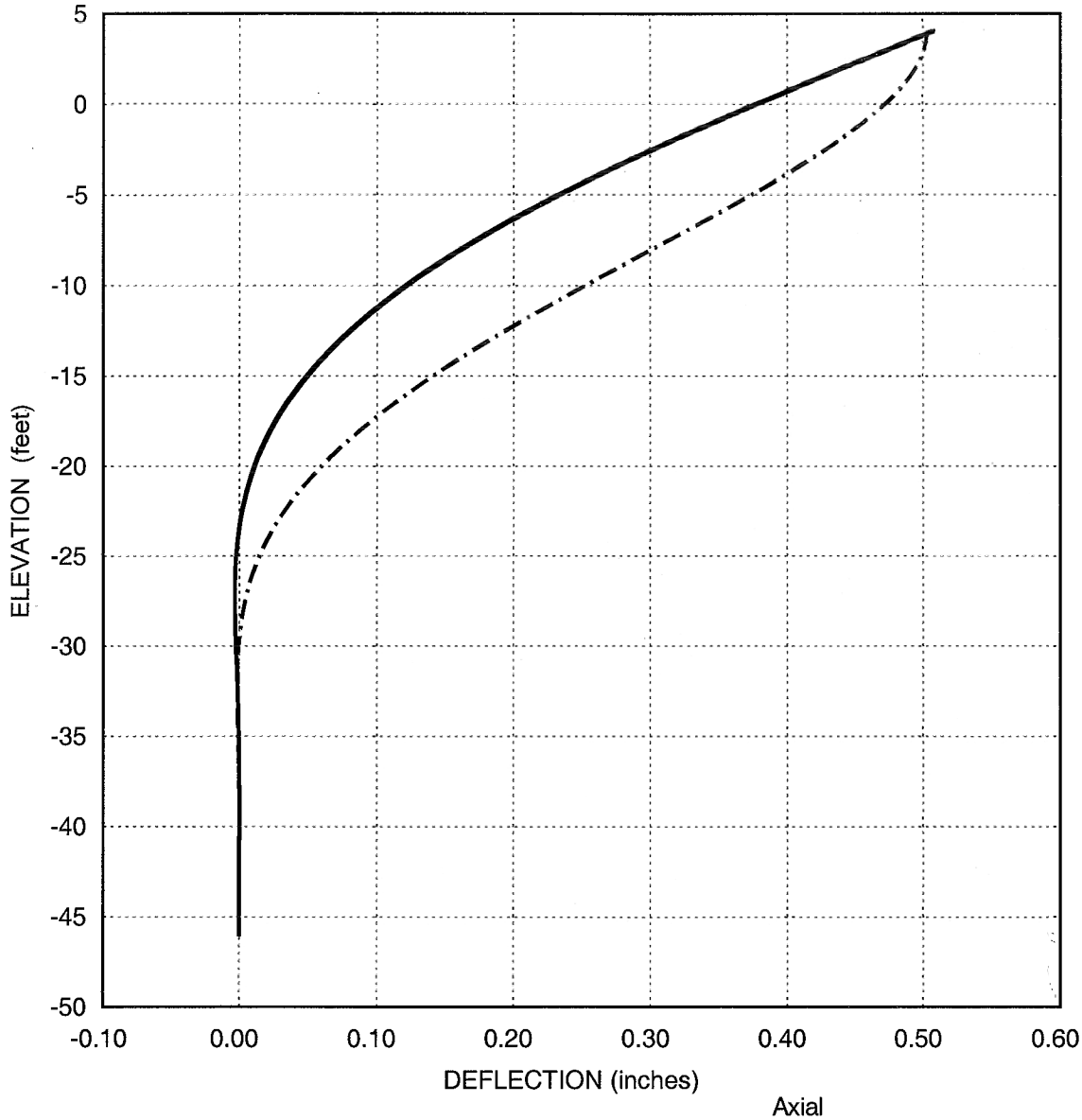
Note: 1. Does not consider group effects; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October

11TH AND J STREETS
Sacramento, California

BENDING MOMENT PROFILES
12 3/4-INCH DIAMETER
TORQUE-DOWN PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 11



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	60	300
—·—·—	Fixed	140	300

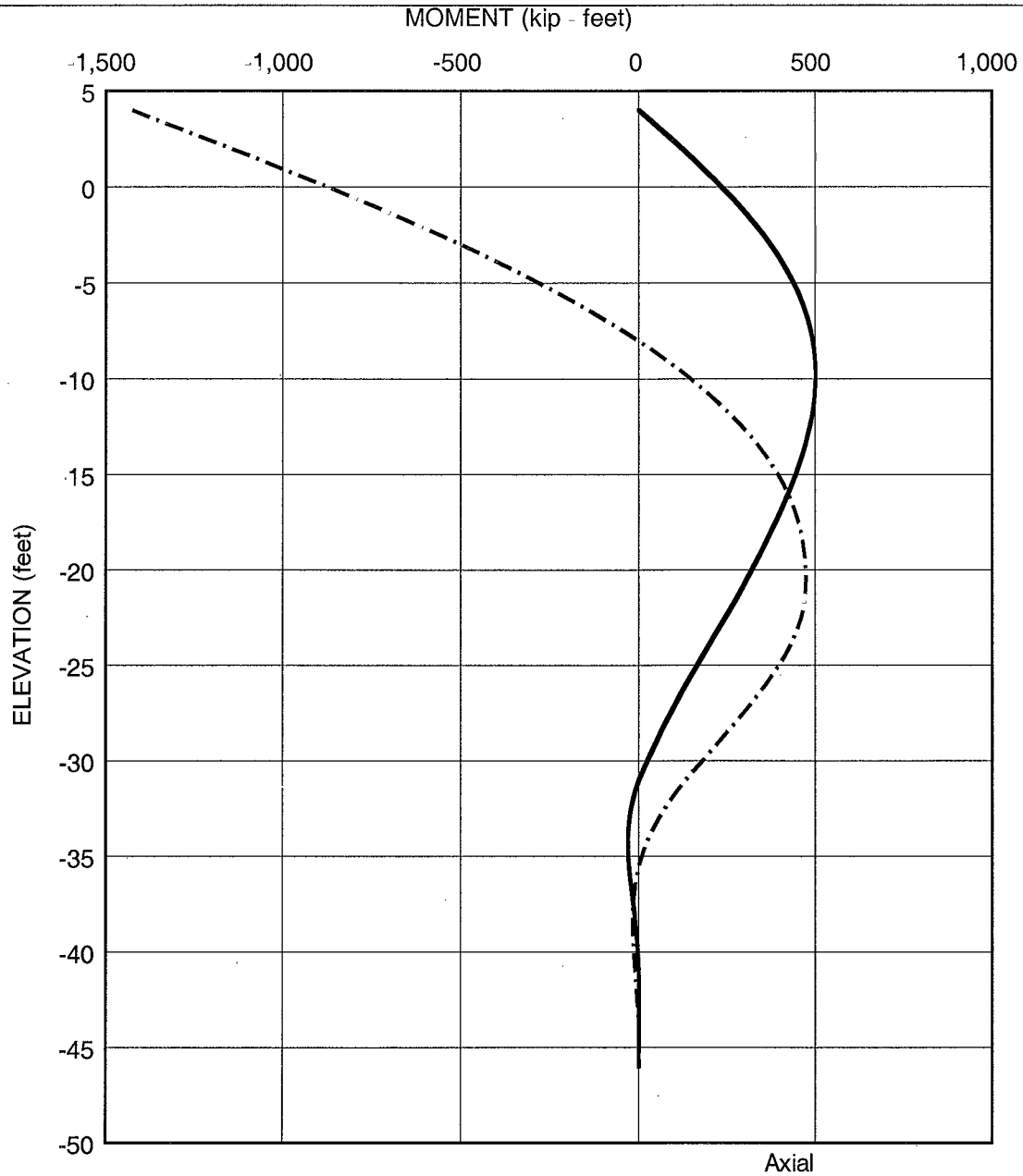
Notes:
1. Assumes center to center spacing of piles is at least 6 diameters; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

DEFLECTION PROFILES FOR 42-INCH DIAMETER PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 12



Curve	Pile Head Connection	Lateral Load (kips)	Axial Compressive Load (kips)
———	Free	60	300
— · — · —	Fixed	140	300

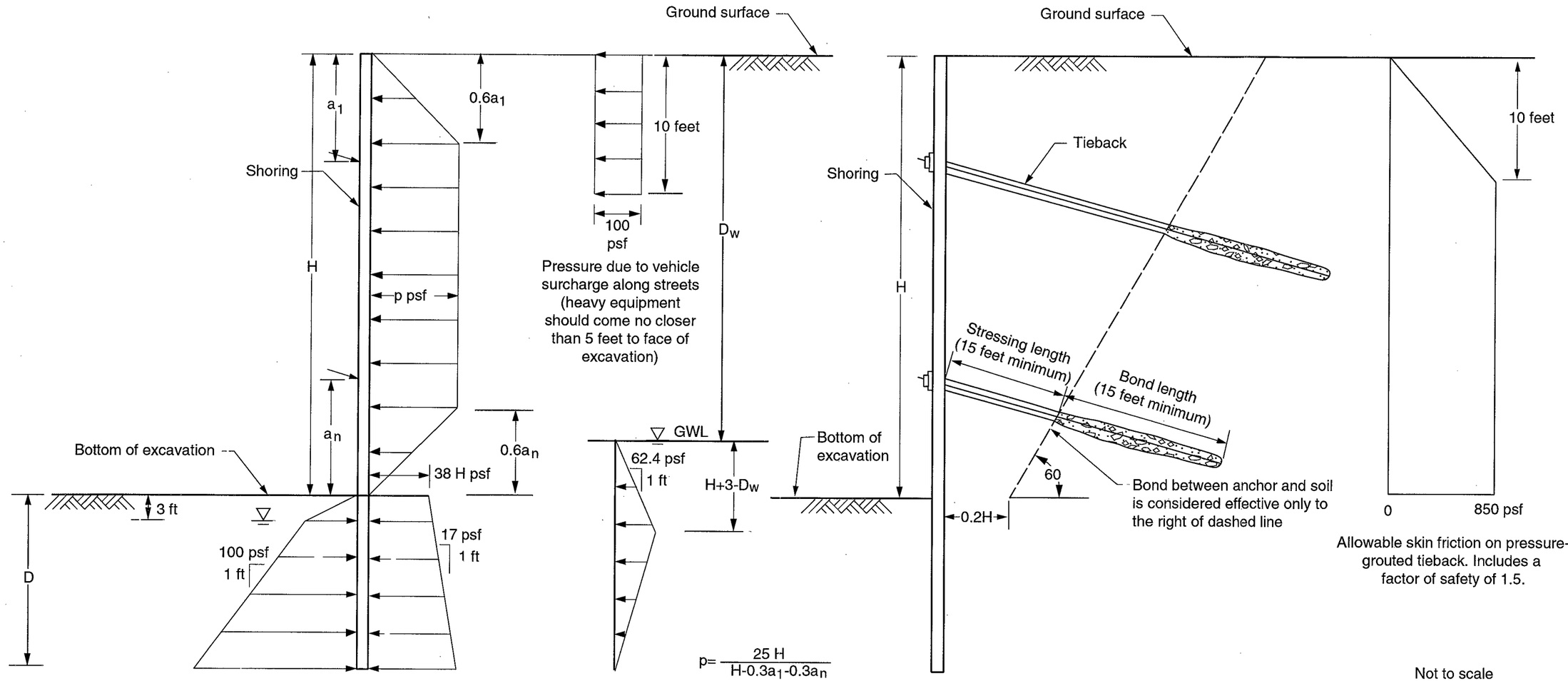
Note: 1. Does not consider group effects; See Table 3 of text for closer spacing.
2. Assumes there is no applied moment at the pile head.
3. Elevation datum: Site survey by Morrow Surveying, dated 18 October.

11TH AND J STREETS
Sacramento, California

BENDING MOMENT PROFILES
42-INCH DIAMETER CIDH PILE

Treadwell&Rollo

Date 04/18/06	Project No. 4255.01	Figure 13



$$p = \frac{25\,H}{H-0.3a_1-0.3a_n}$$

For shoring only

$$p = \frac{45\,H}{H-0.3a_1-0.3a_n}$$

For combined shoring and underpinning

Not to scale

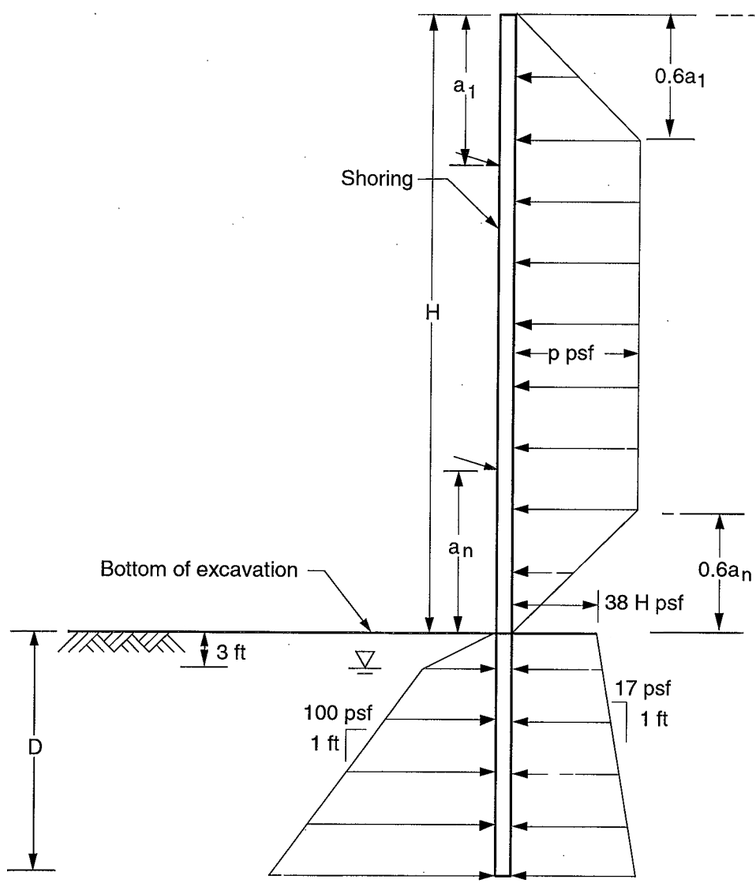
Notes:
1. Passive pressure includes a factor of safety of about 1.5.
2. For soldier piles spaced at more than three times the soldier pile diameter, the passive pressure should be assumed to act over three diameters.
3. Active pressure should be assumed to act over one pile diameter.

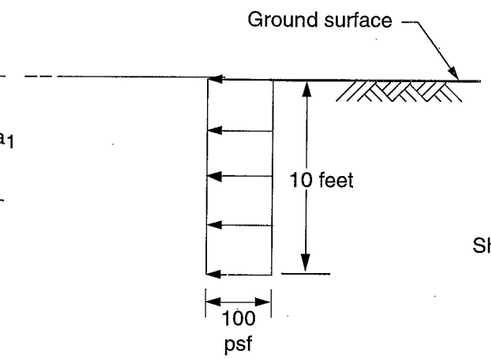
11TH & J STREETS
Sacramento, California

DESIGN PARAMETERS FOR TEMPORARY SHORING WITH PASSIVE DEWATERING SYSTEM

Date 04/17/06	Project No. 4255.01	Figure 14

Treadwell&Rollo





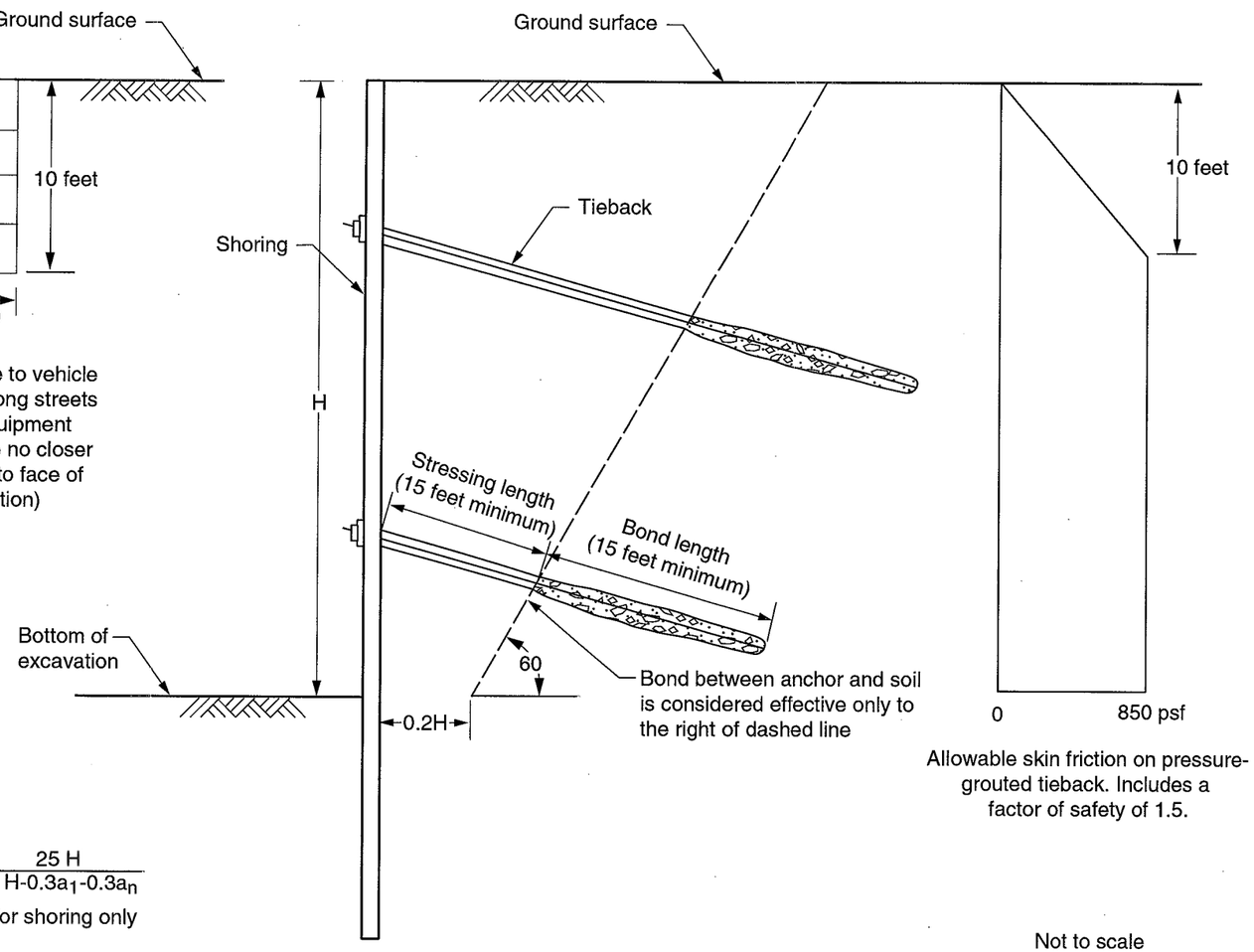
Pressure due to vehicle surcharge along streets (heavy equipment should come no closer than 5 feet to face of excavation)

$$\frac{25\ H}{H-0.3a_1-0.3a_n}$$

For shoring only

$$\frac{45\ H}{H-0.3a_1-0.3a_n}$$

For combined shoring and underpinning



Allowable skin friction on pressure-grouted tieback. Includes a factor of safety of 1.5.

Not to scale

Notes:
1. Passive pressure includes a factor of safety of about 1.5.
2. For soldier piles spaced at more than three times the soldier pile diameter, the passive pressure should be assumed to act over three diameters.
3. Active pressure should be assumed to act over one pile diameter.

11TH & J STREETS
Sacramento, California

DESIGN PARAMETERS FOR TEMPORARY SHORING WITH ACTIVE DEWATERING SYSTEMS

Date 04/18/06	Project No. 4255.01	Figure 15

Treadwell&Rollo

Treadwell&Rollo

APPENDIX A
Logs of Treadwell & Rollo, Inc. Borings

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-1

Boring location: See Site Plan, Figure 2
Logged by: H. M. Rodgers
Date started: 9/26/05 | Date finished: 9/27/05
Drilling method: Rotary wash
Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

Ground Surface Elevation: 26.3 feet[2]

DEPTH (feet)	SAMPLES: Sampler Type	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
				6-inch-thick asphalt concrete						
1				Hand augered from 0 to 5.5 feet						
2				SILTY SAND (SM) brown, medium dense, moist, with gravel						
3										
4			SM							
5				brick fragments (FILL)						
6										
7	S&H	14						41.4		
8										
9				SANDY SILT (ML) gray-brown with orange mottling, medium stiff, moist						
10										
11	S&H	7						66.4		
12										
13			ML							
14										
15				black, soft, moist						
16	ST	push								
17										
18										
19				SILTY SAND (SM) brown, very loose, moist						
20										
21	ST	push								
22										
23										
24			SM							
25	ST	push		medium dense, moist						
26										
27										
28										
29										
30										

LABORATORY TEST DATA

Treadwell&Rollo

Project No.: 4255.01 | Figure: A-1a

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H		6	SM	SILTY SAND (SM) (continued) loose						
32					∇ (09/26/05, unstabilized)						
33				ML	SANDY SILT (ML) brown, stiff to very stiff, wet, trace sand						
34											
35											
36	S&H		11			TxCU	1,970	2,290	89.6	38.0	84
37											
38											
39											
40											
41	S&H		14								
42											
43				SM	SILTY SAND (SM) brown, medium dense, wet						
44											
45											
46	S&H		16						20.4		
47											
48				SP	SAND (SP) brown, dense, wet, some gravel						
49											
50											
51	SPT		37								
52											
53				GP	GRAVEL (GP) brown and gray, medium dense, wet, 3/4 to 1-inch-diameter						
54											
55											
56	SPT		19								
57											
58				ML	SANDY SILT (ML) brown, hard, wet, some gravel						
59											
60											

Treadwell&Rollo

Project No.: 4255.01 | Figure: A-1b

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	SPT		60	ML	SANDY SILT (ML) (continued)				61.9		
62–64				CL	CLAY (CL) brown, hard, wet						
65–66	S&H		28			TxCU	3,440	4,560		36.8	84
67–69											
70–71	S&H		30/ 6"								
72–73											
74–76				SM	SILTY SAND (SM) brown, very dense, wet				32.8		
77–78											
79–81	S&H		43	SC	CLAYEY SAND (SC) light olive-green, dense, wet	TxCU	4,050	5,110		33.1	89
82–83											
84–86	S&H		30/ 5.5"	SM	SILTY SAND (SM) brown, very dense, wet						
87–90											

Treadwell&Rollo

Project No.: 4255.01 | Figure: A-1c

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	S&H		30/ 6"	SM	SILTY SAND (SM) (continued)				37.6		
91											
92											
93				ML	SILT (ML) gray-brown, hard, wet						
94											
95	S&H		30/ 4"								
96											
97											
98											
99											
100	S&H		30/ 6"								
101											
102											
103											
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114											
115											
116											
117											
118											
119											
120											

Boring terminated at a depth of 101 feet.
Boring backfilled with cement grout.
Groundwater was encountered at a depth 32.5 feet

[1] S&H blow counts converted to SPT N-values with a factor of 0.6.
[2] Elevation based on site survey titled "J Street and 11th Street Sacramento, Sacramento County, California prepared by Morrow Surveying, dated 18 October 2004.

Treadwell&Rollo

Project No.: 4255.01
Figure: A-1d

TEST GEOTECH LOG 425501.GPJ TR.GDT 4/17/06

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-2

Boring location: See Site Plan, Figure 2
Logged by: H. M. Rodgers
Date started: 9/27/05 | Date finished: 9/28/05
Drilling method: Rotary wash
Hammer weight/drop: 140 lbs./30 inches | Hammer type: Automatic
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

Ground Surface Elevation: 20.9 feet[2]

DEPTH (feet)	SAMPLES: Sampler Type	Sample	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
				GP	GRAVEL (GP)						
1–4				ML	SILT (ML) black, soft, moist — FILL						
5–6	S&H		3	ML	SILT (ML) brown, soft, moist LL = 38, PI = 7						
10–12	ST		push	ML							
14–17	ST		push	CL	CLAY with SAND (CL) brown, soft, moist						
19					∇ (09/28/05, unstabilized)						
20–21	S&H		13	CL	very stiff	TxUU	1,500	2,870		22.7	104
25–26	S&H		5	CL	medium stiff						

Treadwell&Rollo

Project No.: 4255.01 | Figure: A-2a

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	SPT		push	CL	CLAY (CL) (continued) no recovery						
32											
33				ML	SANDY SILT (ML) reddish brown, stiff, wet						
34											
35					LL = 29, PI = 3						
36	S&H		12						60.8		
37				SM	SILTY SAND (SM) reddish brown, medium dense, wet						
38											
39											
40											
41	SPT		14						35.9		
42					encountered gravel						
43											
44											
45											
46	SPT		22								
47											
48											
49					caving borehole						
50											
51											
52											
53				SC	CLAYEY SAND (SC) light olive-brown, dense, wet						
54											
55											
56	S&H		45						37.9		
57											
58											
59											
60											

Treadwell&Rollo

Project No.: 4255.01

Figure: A-2b

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	S&H		44	CL	SANDY CLAY (CL) olive-brown, hard, wet						
62											
63											
64											
65	S&H		30/ 6"			TxCU	2,840	4,430	93.6	35.3	86
66											
67											
68											
69											
70	S&H		30/ 6"								
71											
72											
73				ML	SANDY SILT (ML) olive, hard, wet						
74											
75					LL = 59, PI = 26						
76	S&H		48								
77											
78				SP	SAND with SILT (SP) light gray-brown, very dense, wet						
79											
80	S&H		30/ 6"						8.0		
81											
82											
83											
84											
85	S&H		30/ 4"								
86											
87											
88				CL	CLAY (CL) olive-brown, hard, wet						
89											
90											

Treadwell&Rollo

Project No.: 4255.01

Figure: A-2c

TEST GEOTECH LOG 425501.GPJ TR.GDT 4/17/06

PROJECT: **11TH & J STREETS**
Sacramento, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91	SPT		84/ 11"	CL	CLAY (CL) (continued)						
92											
93											
94				SM	SILTY SAND (SM) brown, very dense, wet						
95	S&H		30/ 3"								
96											
97											
98				CL	CLAY (CL) light olive-brown, hard, wet						
99											
100	S&H		30/ 4"								
101											
102											
103											
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114											
115											
116											
117											
118											
119											
120											

Boring terminated at a depth of 101 feet.
Boring backfilled with cement grout.
Groundwater was encountered at a depth 19.5 feet.

[1] S&H blow counts converted to SPT N-values with a factor of 0.6.
[2] Elevation based on site survey titled "J Street and 11th Street Sacramento, Sacramento County, California prepared by Morrow Surveying, dated 18 October 2004.

Treadwell&Rollo

Project No.: 4255.01
Figure: A-2d

TEST GEOTECH LOG 425501.GPJ TR.GDT 4/17/06

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size	**Gravels** (More than half of coarse fraction > no. 4 sieve size)	**GW**	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	**SW**	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	**Silts and Clays** LL = < 50	**ML**	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	**MH**	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		**PT**	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes: U.S. Standard Sieve Size	Range of Grain Sizes: Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.074
Silt and Clay	Below No. 200	Below 0.074

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with split-barrel sampler other than Standard Penetration Test sampler. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push sampler

SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

S&H Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

11TH & J STREET
Sacramento, California

Treadwell&Rollo

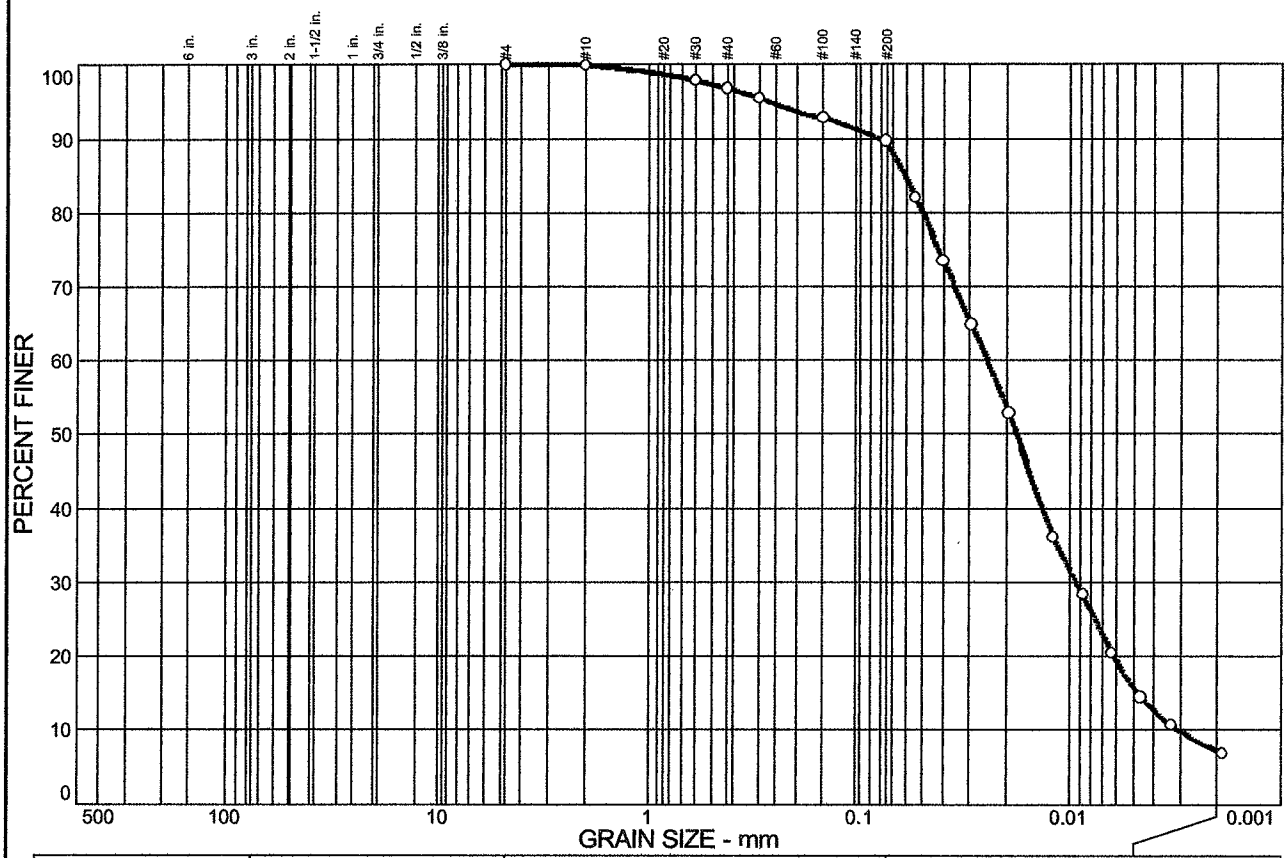
CLASSIFICATION CHART

Date 10/12/05 | Project No. 4255.01 | Figure A-3

Treadwell&Rollo

APPENDIX B
Laboratory Tests

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	3.2	7.1	82.4	7.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.9		
#30	97.8		
#40	96.7		
#50	95.4		
#100	92.8		
#200	89.6		
0.0545 mm.	82.0		
0.0402 mm.	73.4		
0.0295 mm.	64.8		
0.0196 mm.	52.8		
0.0120 mm.	36.1		
0.0087 mm.	28.4		
0.0064 mm.	20.5		
0.0046 mm.	14.5		
0.0033 mm.	10.7		
0.0019 mm.	6.9		

* (no specification provided)

Soil Description

Brown SILT, trace Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0614 D_{60}= 0.0248 D_{50}= 0.0181
D_{30}= 0.0093 D_{15}= 0.0048 D_{10}= 0.0030
C_u= 8.19 C_c= 1.16

Classification

USCS= AASHTO=

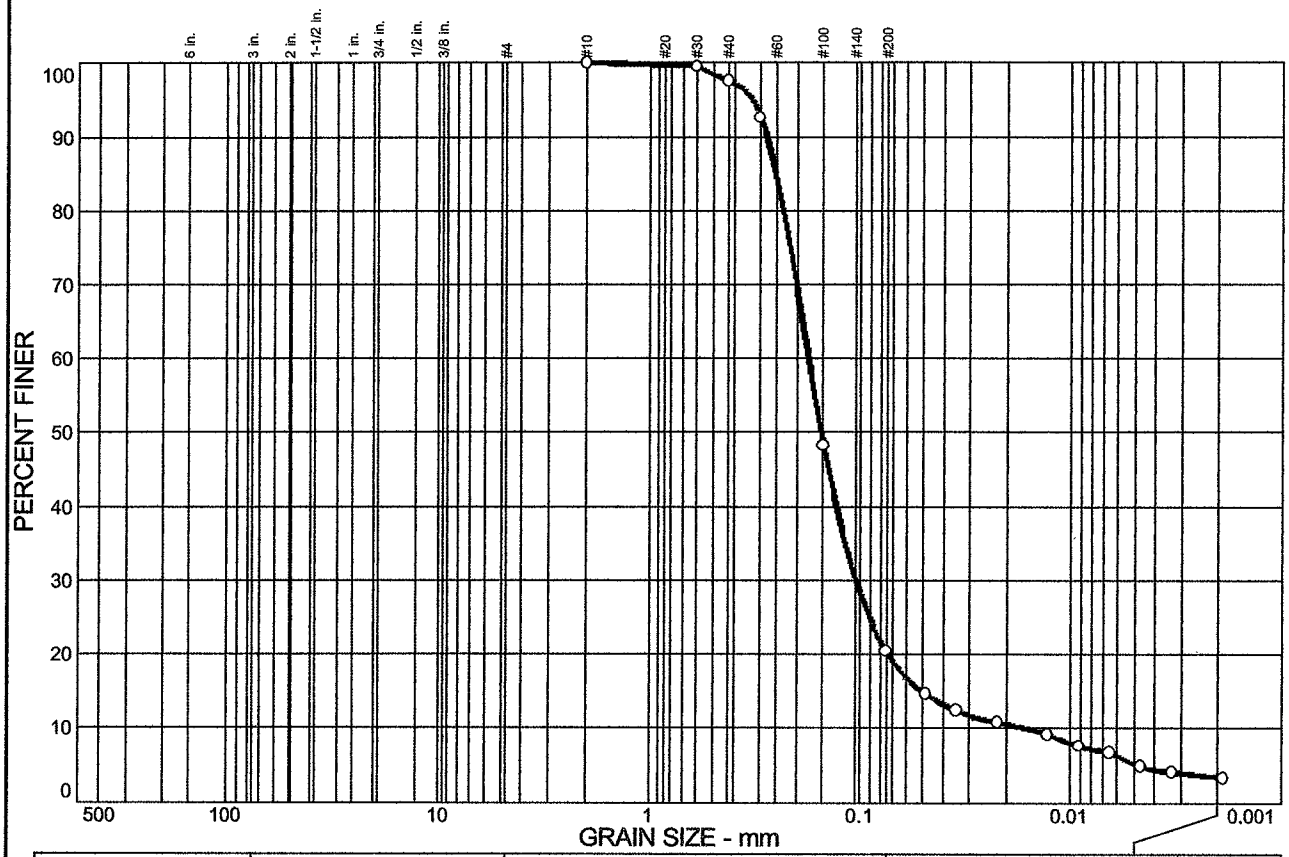
Remarks

Sample No.: 7 **Source of Sample:** B-1 **Date:** 10/28/05
Location: **Elev./Depth:** 35.0'

COOPER TESTING LABORATORY

Client: Treadwell & Rollo
Project: 11th & J Streets, Sacramento - 4255.01
Project No: 010-939 **Figure**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	2.5	77.1	17.0	3.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	99.5		
#40	97.5		
#50	92.5		
#100	48.3		
#200	20.4		
0.0486 mm.	14.7		
0.0347 mm.	12.4		
0.0221 mm.	10.8		
0.0128 mm.	9.2		
0.0091 mm.	7.6		
0.0065 mm.	6.7		
0.0046 mm.	4.9		
0.0033 mm.	4.1		
0.0019 mm.	3.3		

* (no specification provided)

Soil Description

Brown Silty SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.255 D_{60}= 0.177 D_{50}= 0.154
D_{30}= 0.105 D_{15}= 0.0503 D_{10}= 0.0160
C_u= 11.10 C_c= 3.86

Classification

USCS= AASHTO=

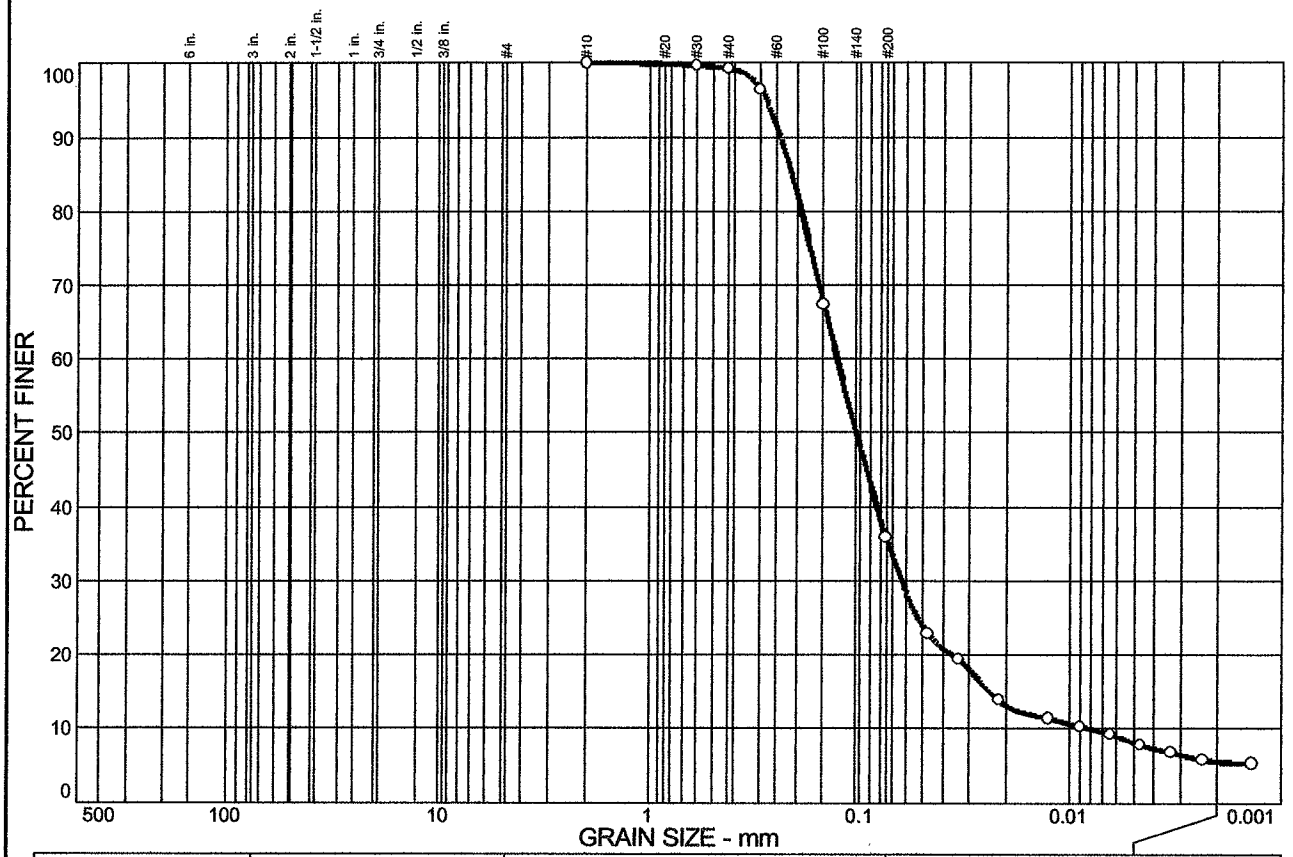
Remarks

Sample No.: 9 **Source of Sample:** B-1 **Date:** 10/28/05
Location: **Elev./Depth:** 45.0'

COOPER TESTING LABORATORY

Client: Treadwell & Rollo
Project: 11th & J Streets, Sacramento - 4255.01
Project No: 010-939 **Figure**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.8	63.3	30.4	5.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	99.6		
#40	99.2		
#50	96.4		
#100	67.4		
#200	35.9		
0.0476 mm.	22.9		
0.0340 mm.	19.4		
0.0218 mm.	13.9		
0.0127 mm.	11.4		
0.0090 mm.	10.3		
0.0064 mm.	9.3		
0.0046 mm.	7.8		
0.0033 mm.	6.8		
0.0024 mm.	5.8		
0.0014 mm.	5.3		

* (no specification provided)

Soil Description

Reddish Brown Silty SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.214 D_{60}= 0.129 D_{50}= 0.105
D_{30}= 0.0634 D_{15}= 0.0241 D_{10}= 0.0081
C_u= 16.02 C_c= 3.84

Classification

USCS= AASHTO=

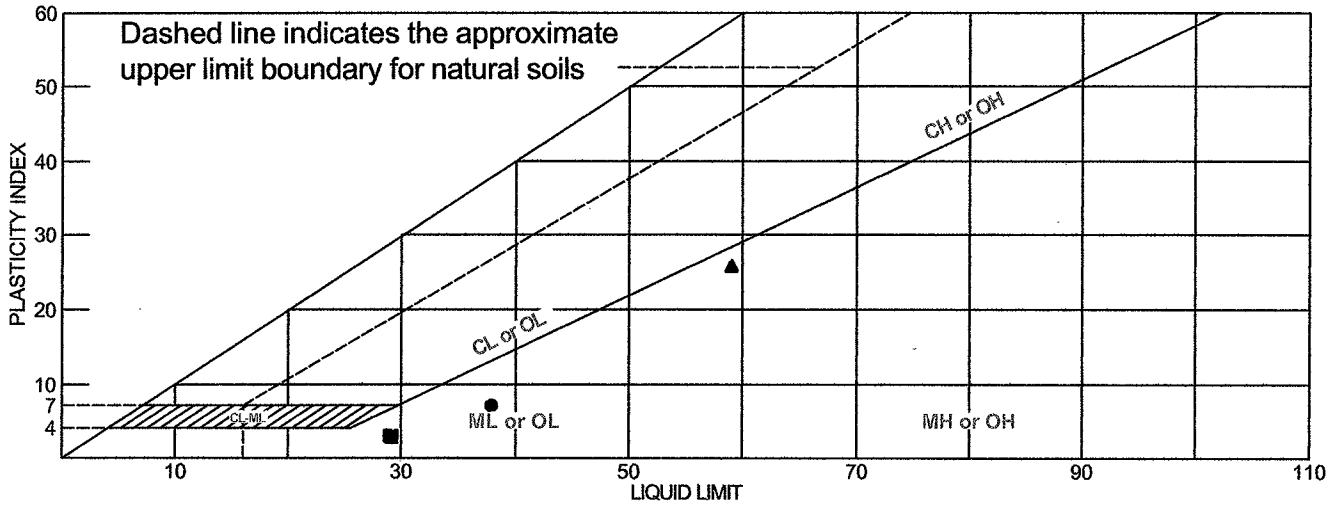
Remarks

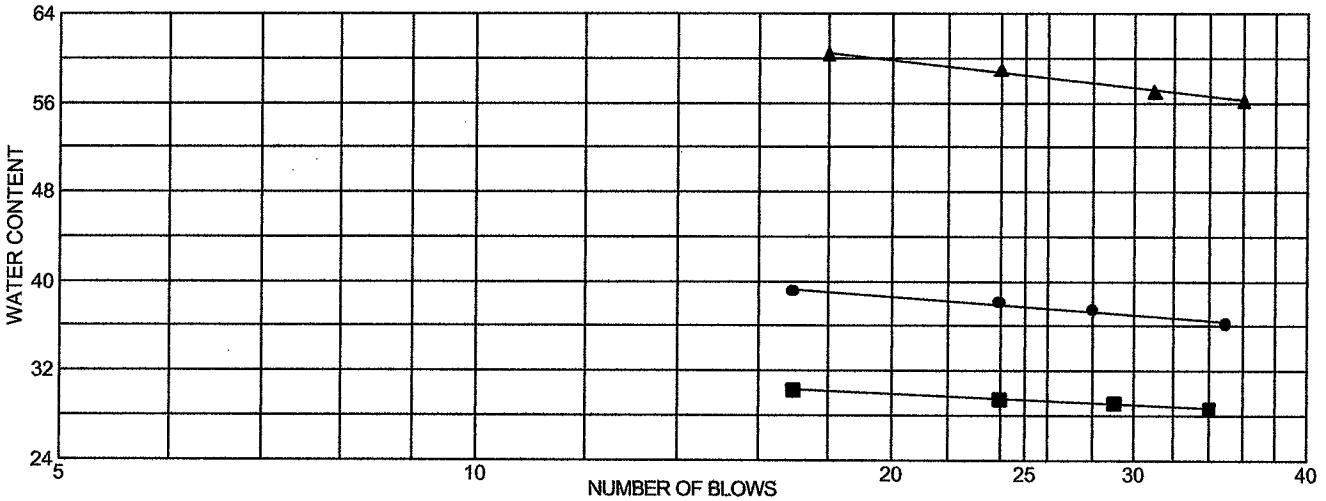
Sample No.: 7 **Source of Sample:** B-2 **Date:** 10/28/05
Location: **Elev./Depth:** 40.0'

COOPER TESTING LABORATORY

Client: Treadwell & Rollo
Project: 11th & J Streets, Sacramento - 4255.01
Project No: 010-939 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown SILT	38	31	7			
■	Redidsh Brown Sandy SILT	29	26	3			
▲	Olive Sandy Elastic SILT	59	33	26			

Project No. 010-939 **Client:** Treadwell & Rollo

Project: 11th & J Streets, Sacramento - 4255.01

● **Source:** B-2 **Sample No.:** 1 **Elev./Depth:** 5.0'

■ **Source:** B-2 **Sample No.:** 6 **Elev./Depth:** 35.0'

▲ **Source:** B-2 **Sample No.:** 12 **Elev./Depth:** 75.0'

Remarks:

●

■

▲

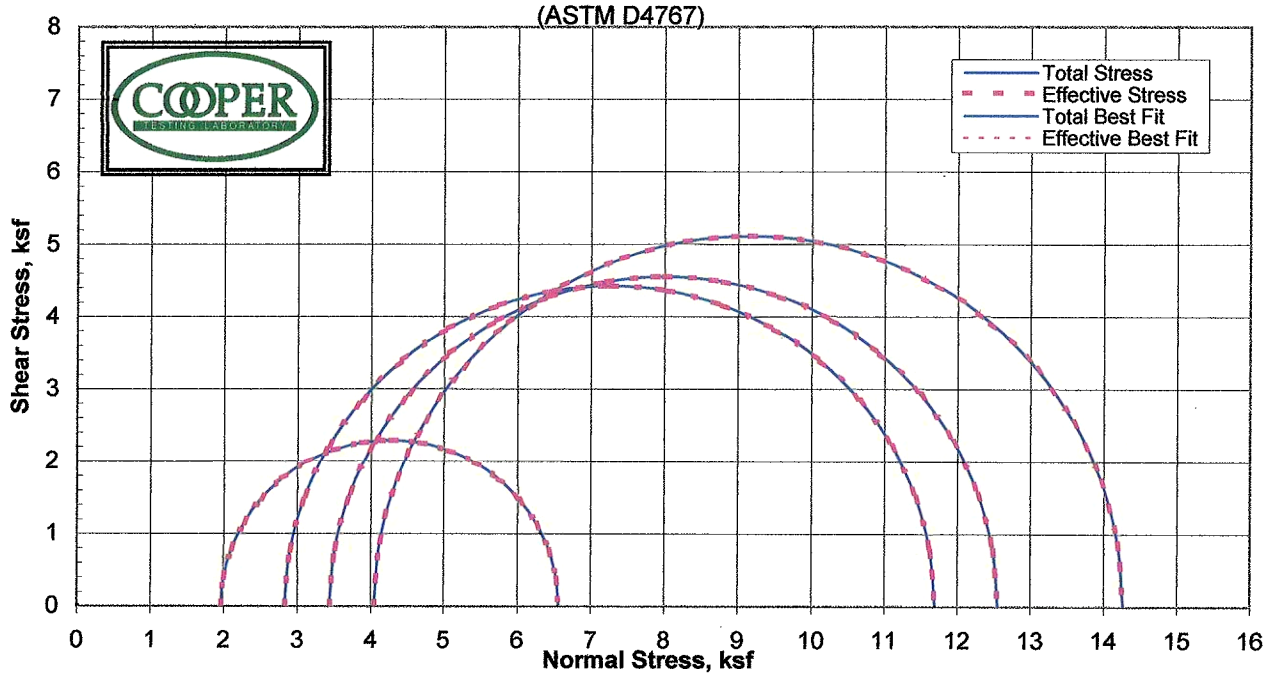
LIQUID AND PLASTIC LIMITS TEST REPORT

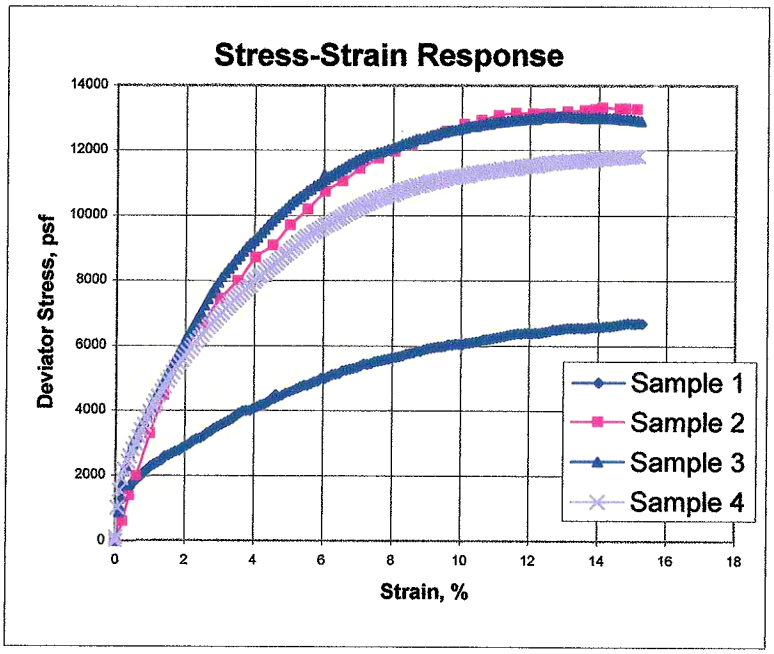
COOPER TESTING LABORATORY

Figure

Triaxial Consolidated Undrained

(ASTM D4767)





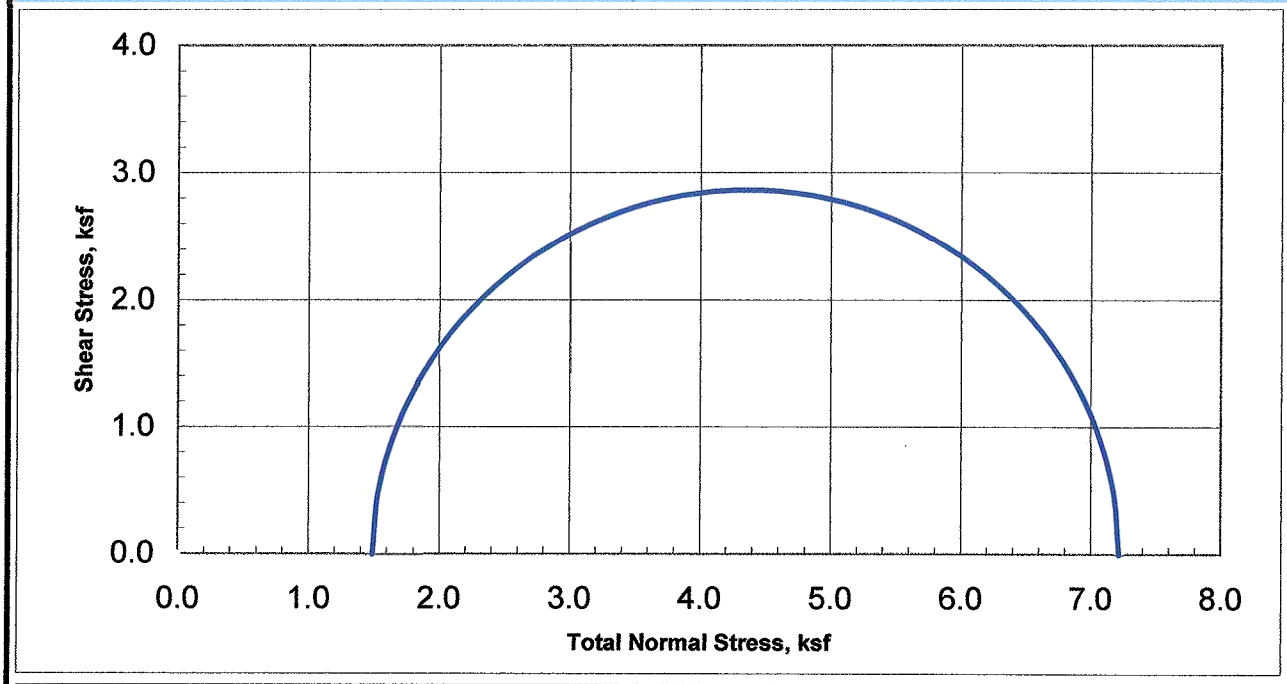
Sample:	1	2	3	4
MC, %	38.0	36.8	33.1	35.3
Dry Dens, pcf	83.9	83.9	88.5	85.8
Sat. %	99.9	98.5	98.7	98.7
Void Ratio	1.045	1.009	0.905	0.965
Diameter in	2.43	2.42	2.42	2.42
Height, in	5.01	5.01	5.06	5.05
	Final			
MC, %	36.0	36.5	34.4	36.0
Dry Dens, pcf	86.2	84.8	87.3	85.4
Sat. %	100.0	100.0	100.0	100.0
Void Ratio	0.990	0.986	0.929	0.972
Diameter, in	2.40	2.42	2.45	2.44
Height, in	4.97	4.96	4.98	5.01
Cell, psi	53.0	60.7	64.9	59.3
BP, psi	39.3	36.8	36.8	39.6
	Effective Stresses At:			
Strain, %	5.0	5.0	5.0	5.0
Deviator ksf	4.585	9.112	10.223	8.857
Excess PP	0.000	0.000	0.000	0.000
Sigma 1	6.558	12.554	14.270	11.694
Sigma 3	1.973	3.442	4.046	2.837
P, ksf	4.265	7.998	9.158	7.266
Q, ksf	2.293	4.556	5.112	4.429
Stress Ratio	3.324	3.648	3.526	4.122
Rate in/min	0.002	0.002	0.002	0.002
Total C	N/A	ksf		
Total Phi	N/A	Degrees		
Eff. C	N/A	ksf		
Eff. Phi	N/A	Degrees		

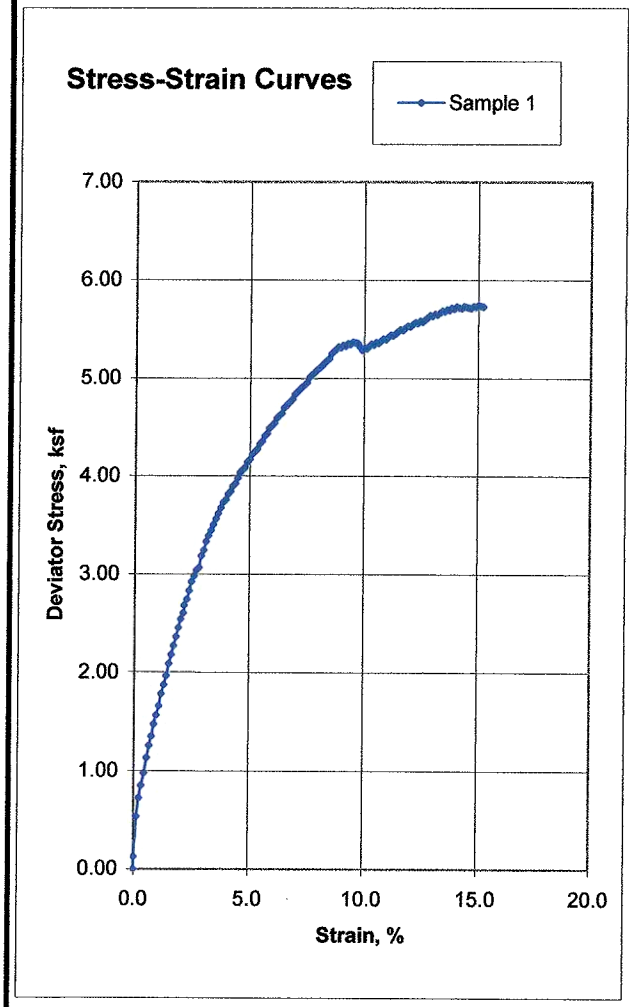
Job No.:	010-939	Date:	10/28/2005
Client:	Treadwell & Rollo		BY:MJ
Project:	11th & J Streets-Sacramento - 4255.01		
Sample 1)	B-1, S-7 @ 35.0'	Brown SILT, trace Sand	
Sample 2)	B-1, S-13 @ 65.0'	Brown CLAY (silty)	
Sample 3)	B-1, S-16 @ 80.0'	Light Greenish Gray Clayey SAND	
Sample 4)	B-2, S-10 @ 65.0'	Olive Brown Sandy CLAY (silty)	

REMARKS: Strengths picked at 5% strain.

Unconsolidated-Undrained Triaxial Test

ASTM D-2850





Sample Data	1	2	3	4
Moisture %	22.7			
Dry Den,pcf	104.3			
Void Ratio	0.616			
Saturation %	99.5			
Height in	4.99			
Diameter in	2.41			
Cell psi	10.4			
Strain %	15.00			
Deviator, ksf	5.740			
Rate %/min	1.00			
in/min	0.050			
Job No.:	010-939			
Client:	Treadwell & Rollo			
Project:	11th & J Streets, Sacramento - 4255.01			
Boring:	B-2			
Sample:	4			
Depth ft:	20.0			

Visual Soil Description	
Sample #	
1	Brown CLAY w/ Sand (silty)
2	
3	
4	

Remarks:

Treadwell&Rollo

APPENDIX C
Previous Boring Logs Prepared by Raney Geotechnical Inc.

BORING 1

ELEVATION: 18.2 ± FEET
DRILLED: 5/1/05

Depth (ft)	Dry Density - PCF	Moisture Content - %	Unconfined Strength - TSF	Blows	Symbol	Description
						3" ASPHALT CONCRETE
					ML	8" AGGREGATE BASE
						BROWN SLIGHTLY CLAYEY FINE SANDY SILT WITH SIGNIFICANT BRICK RUBBLE--SOFT, MOIST (FILL)
				3		
10	94	28.4	0.2	7		NATIVE, NO RUBBLE MEDIUM STIFF
	109	19.5		3		GRADING WITH MORE CLAY, VERY SOFT
20	110	21.4	0.9	33		RED-BROWN, STIFF FREE GROUNDWATER DURING DRILLING
	105	22.1		8		GRADING WITH MORE FINE SAND, MEDIUM STIFF
30	86 86	37.0 36.0		16		GRADING VERY CLAYEY
	100	26.1		20	SM	RUST-BROWN SILTY FINE SAND--MEDIUM DENSE
40				20		SAND FRACTION FINE TO MEDIUM, LESS SILTY
	105	22.1		26		GRADING WITH MORE SILT
50		18.1		11	CL	GRAY-TAN WITH RUST STAINS FINE SANDY SILTY CLAY--STIFF
	113	15.1		37	SM ML	TAN WITH RUST STAINS SLIGHTLY CLAYEY SILTY FINE SAND/SLIGHTLY CLAYEY FINE SANDY SILT--MEDIUM DENSE/STIFF
60				46	SM	ORANGE-BROWN SILTY FINE SAND--DENSE
	96	27.4		69	ML	GRAY-TAN WITH RUST SPOTS CLAYEY SILT--HARD
70	89	33.3		32	CL	OLIVE-TAN SILTY CLAY--VERY STIFF TO HARD
	92	30.3		44		HARD
80		30.0		60	SM	BROWN SILTY FINE SAND--DENSE
	90	29.6	3.0	88/9"	ML	GRAY FINE SANDY SILT--VERY DENSE, CEMENTED
90						
100						

DEPTH IN FEET

DRY DENSITY - PCF
MOISTURE CONTENT - %
UNCONFINED STRENGTH - TSF

PROJECT NUMBER: 1333-027
PLATE NUMBER: 2
DRAWN BY: PMG DATE: 6/17/05
CHECKED BY: DATE:

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. UNDISTURBED SAMPLE OBTAINED USING 2" I.D. MODIFIED CALIFORNIA SAMPLER.
4. UNDISTURBED SAMPLE OBTAINED USING STANDARD PENETRATION SAMPLER.
5. SAMPLER PENETRATION RESISTANCE IN BLOWS PER FOOT OR FRACTION THEREOF; 140 POUND HAMMER, 30 INCH DROP.

LOG OF BORING

BORING 2

ELEVATION: 19.5 ± . FEET

DRILLED: 5/10/05

PROJECT NUMBER: 1333-027

PLATE NUMBER: 3

DRAWN BY: RM DATE: 7/1/05

CHECKED BY: DATE:

DEPTH IN FEET

Depth	Dry Density - PCF	Moisture Content - %	Unconfined Strength - TSF
0			
	81	35.4	
10		19.0	
	88	20.8	
20			
30	85	31.1	
40	91	29.6	
		35.7	0.6
50			
60		25.4	
		38.8	
70		37.0	
80			
90			
100			

Blows	Symbol	Description
	GM	BROWN FINE SANDY SILTY FINE GRAVEL- LOOSE (FILL)
6	ML	GRADING WITH LESS SILT DARK BROWN FINE SANDY SILT- MEDIUM STIFF, MOIST
10		BROWN, STIFF
5		SOFT
		GRADING CLAYEY AND WITH LESS FINE SAND
9		SLIGHTLY CLAYEY AND FINE SAND -- MEDIUM STIFF, SATURATED
	SM	BROWN AND RUST BROWN SILTY FINE SAND- MEDIUM DENSE
18		
	GM	BROWN SILTY FINE TO MEDIUM SANDY FINE GRAVEL- MEDIUM DENSE
5	CL ML	TAN WITH RUST SPOTS VERY FINE SANDY SILTY CLAY/CLAYEY SILT- MEDIUM STIFF
		GRADING FINE TO MEDIUM SAND
	CL	BROWN FINE SANDY SILTY CLAY- VERY STIFF
30	SC	ORANGE-BROWN SILTY CLAYEY FINE SAND- DENSE
17	CL	OLIVE-TAN VERY SILTY CLAY- VERY STIFF
42	ML	TAN WITH RUST BROWN SPOTS VERY FINE SANDY SILT- DENSE
42 33 51 115		GRADES OLIVE-TAN

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. PROBING PERFORMED WITH A STANDARD PENETRATION SAMPLER.
4. SEE NOTES ON PLATE 2.

LOG OF BORING

BORING 3

ELEVATION: 27.7 ± FEET

DRILLED: 5/31/05

DEPTH IN FEET	DRY DENSITY - PCF	MOISTURE CONTENT - %	UNCONFINED STRENGTH - TSF			
0						10.5" CONCRETE GUTTER PAN (FILL)
					GM	GRAY-BROWN SILTY FINE SANDY GRAVEL- LOOSE
					ML	BROWN FINE SANDY SILTY SAND WITH FINE GRAVEL AND SOME RUBBLE-LOOSE
	93	14.8		7	SM	RUST BROWN SILTY FINE SAND WITH CONCRETE RUBBLE - LOOSE TO MEDIUM DENSE
10	105	6.6		18		MEDIUM DENSE, NATIVE
	102	22.2		22	ML	GRAY-BROWN WITH RUST SPOTS SLIGHTLY CLAYEY SILT- VERY STIFF, MOIST
20	97	4.4		22	SP	TAN-BROWN SLIGHTLY SILTY FINE SAND - MEDIUM DENSE
						FREE GROUNDWATER DURING DRILLING. GRONDWATER SAMPLE OBTAINED
30					ML	BROWN CLAYEY FINE SANDY SILT- MEDIUM STIFF
	88	33.3		7		
40	95	27.6		11	SM ML	TAN SILTY VERY FINE SAND- LOOSE
					GM	GRAY SILTY FINE TO MEDIUM GRAVEL- MEDIUM DENSE TO DENSE
					SP	BROWN FINE SAND- MEDIUM DENSE
50	102	21.8		84/11"	GM	BROWN SILTY FINE SANDY GRAVEL- VERY DENSE
					SP	BROWN FINE TO COARSE SAND- DENSE
	98	21.8		82	GM	BROWN AND GRAY SILTY FINE SANDY FINE GRAVEL- VERY DENSE
60		18.6		34	SM	BROWN WITH RUST SPOTS SILTY VERY FINE SAND- MEDIUM DENSE
					ML	OLIVE BROWN FINE SANDY CLAYEY SILT- HARD
70	76	42.9	2.1	37		TAN, GRADING WITH LESS SILT AND CLAY

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. SEE NOTES ON PLATE 2.

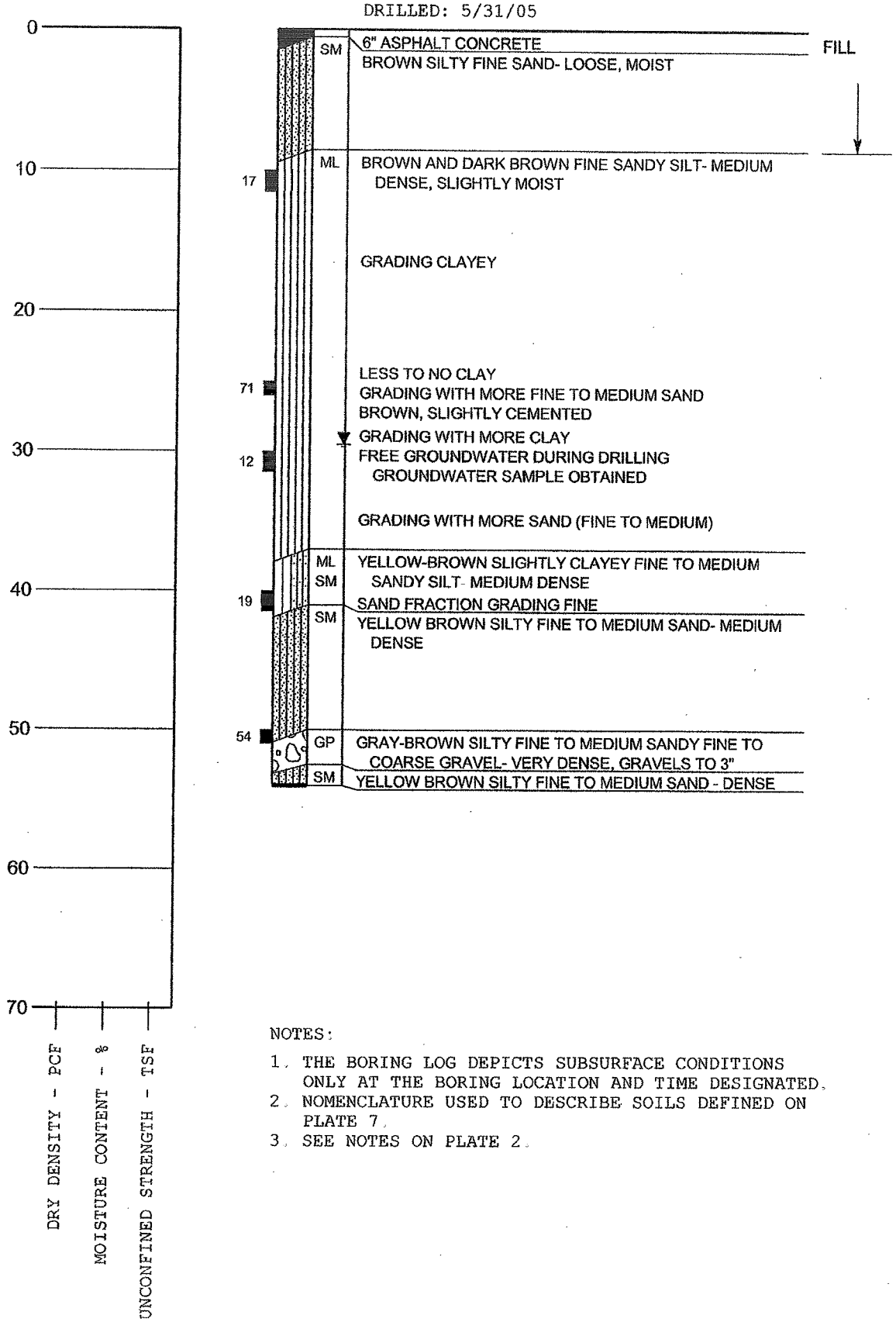
PROJECT NUMBER: 1333-027
PLATE NUMBER: 4

DRAWN BY: RM DATE: 7/1/05
CHECKED BY: DATE:

LOG OF BORING

BORING 4

ELEVATION: 26.7 ± FEET
DRILLED: 5/31/05



PROJECT NUMBER: 1333-027
PLATE NUMBER: 5

DRAWN BY: RM DATE: 7/1/05
CHECKED BY: DATE:

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. SEE NOTES ON PLATE 2.

LOG OF BORING

BORING 5

ELEVATION: 26.1 ± FEET

DRILLED: 6/24/05

PROJECT NUMBER: 1333-027

PLATE NUMBER: 6A

DRAWN BY: RM DATE: 7/1/05

CHECKED BY: DATE:

DEPTH IN FEET

Depth	Dry Density - PCF	Moisture Content - %	Unconfined Strength - TSF
0			
	96	11.0	
10	80	34.9	
20			
30	82	36.1	
	90	31.7	
40			
	95	22.8	
50	94	29.0	0.6
60	102	23.9	
70	87	34.9	1.6
	92	29.5	2.3
80	85	36.6	5.0
90		38.9	
100	87	34.0	

DRY DENSITY - PCF

MOISTURE CONTENT - %

UNCONFINED STRENGTH - TSF

Blows	Soil Type	Description
	ML	LIGHT BROWN SLIGHTLY CLAYEY FINE SANDY SILT - SOFT
6	SP	RUST-BROWN FINE TO MEDIUM SAND - LOOSE
12	ML	GRAY-BROWN SLIGHTLY CLAYEY FINE SANDY SILT - MEDIUM-STIFF BLACK WITH DECAYED WOOD DEBRIS IN SAMPLE BECOMES BROWN, WITH RUST STAINS
7		MINOR WOOD DEBRIS, GRADING WITH MORE CLAY
		GRADING WITH FINE GRAVEL
8		FREE GROUNDWATER DURING DRILLING
6		LIGHT BROWN VERY SANDY SILT
8	SM	LIGHT RUST-BROWN WITH RUST STAINS SLIGHTLY CLAYEY SILTY VERY FINE SAND - LOOSE
		GRADING WITH SOME FINE GRAVEL
37	GM	GRAY SILTY FINE SANDY FINE TO MEDIUM GRAVEL - MEDIUM DENSE LESS TO NO MEDIUM GRAVEL
	SP	GRAY FINE TO MEDIUM SAND - MEDIUM DENSE GRADING CLAYEY
10	CL	GRAY-BROWN WITH RUST STAINS FINE SANDY SILTY CLAY - MEDIUM STIFF
	SM	YELLOW-BROWN WITH RUST STAINS CLAYEY SILTY FINE SAND - MEDIUM DENSE
12		GRADING WITHOUT CLAY
		GRADING WITH LESS SAND AND MORE SILT
41	ML	GRAY-BROWN WITH RUST STAINING FINE SANDY CLAYEY SILT - VERY STIFF BECOMES HARD
66	CL	YELLOW-BROWN WITH RUST STAINS FINE SANDY SILTY CLAY - HARD, VARIABLY CEMENTED
48		GRADES OLIVE GREEN-BROWN
50/4"	ML	OLIVE GREEN-LIGHT BROWN FINE SANDY SILT - HARD
	SM	GRAY-BROWN SILTY VERY FINE SAND - DENSE
63		CONTINUED ON PLATE 6B

FILL

NOTES:

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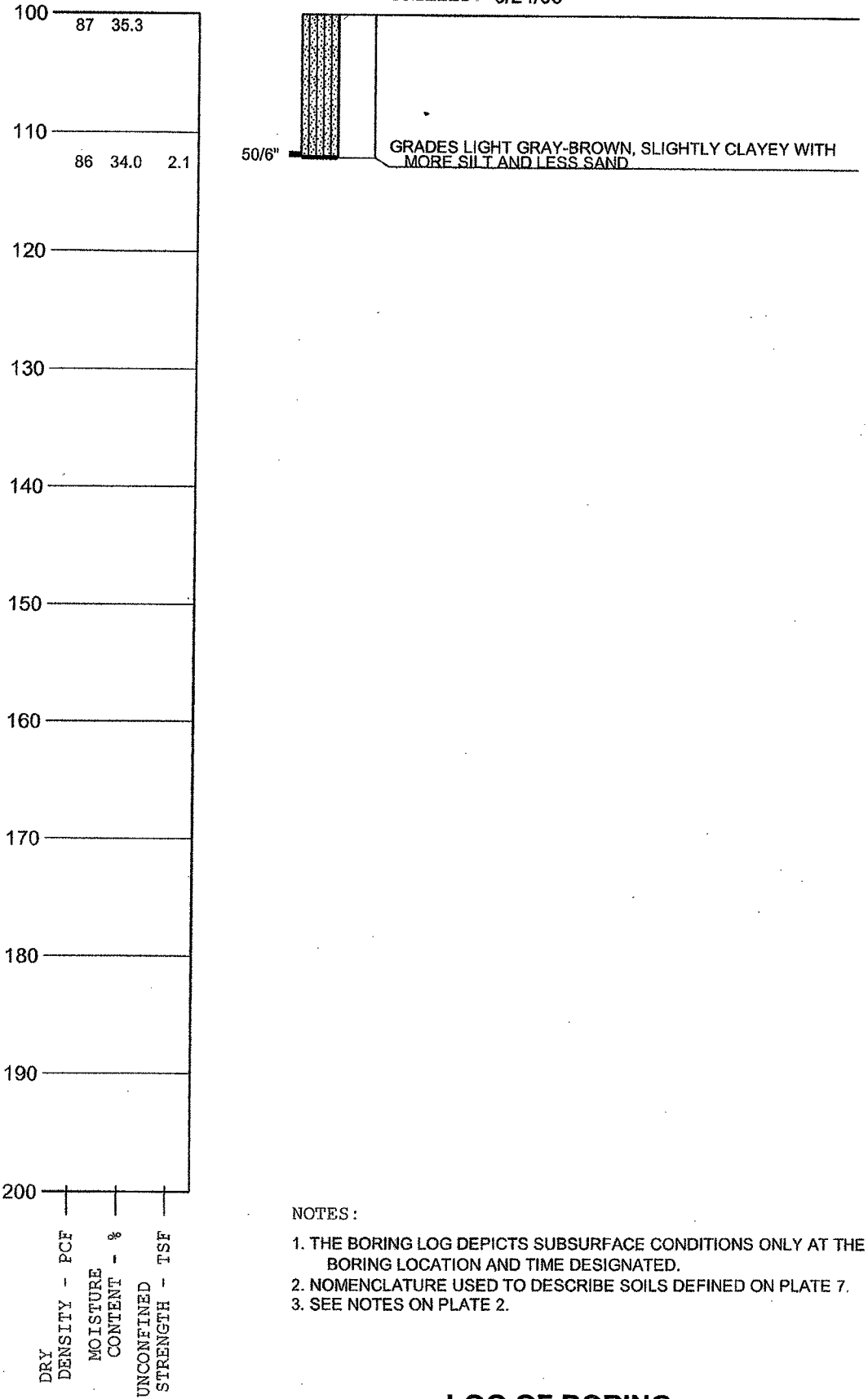
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. SEE NOTES ON PLATE 2.

LOG OF BORING

BORING 5

ELEVATION: 26.1 [illegible] FEET

DRILLED: 6/24/05



PROJECT NUMBER: 1333-027

PLATE NUMBER: 6B

DRAWN BY: RM DATE: 7/1/05

CHECKED BY: DATE:

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 7.
3. SEE NOTES ON PLATE 2.

LOG OF BORING

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