APPENDIX A

TRAFFIC, SAFETY, AND TRANSIT

SUMMARY

NORTHGATE BOULEVARD TRANSPORTATION PLAN
TRAFFIC

Historic Traffic Volumes

Today, Northgate Blvd.’s traveled way, or the space between sidewalks, is used primarily by people driving cars, buses, and trucks. Understanding how that space is being used provides a baseline to build future alternatives.

Historic ADT was available for 2017 and 2018 (right). ADT was higher north of San Juan Blvd., likely due to traffic accessing I-80. South of San Juan Blvd., ADT indicates that lane reallocation is worth exploring. This means the street could function effectively even with less travel lanes. This project will use community input and traffic modeling to verify any changes to travel lanes.

Data Collection

New data was collected during a weekday in fall 2021. Data collection included:

• Speed and volume of cars at Jefferson Ave., Haggan Ave., and Rosin Ct. during a 24-hour period
• Turning movements of drivers and counts of bicyclists and pedestrians at Arden Garden Connector, El Camino Ave., Haggan Ave., and San Juan Rd. Counts were collected from 7-9 am and 2:45-7:15 pm. The long afternoon collection time captured both school and commute traffic.

Lane Reallocation

Communities find that streets need to accommodate growing and changing needs within the same space. Reallocating a vehicle lane (often called a “road diet”) is an opportunity to rethink how that space is used.

Traffic volumes are a starting point to see if lane reallocation is feasible. Many agencies use an ADT of 15,000-25,000 as a threshold for a street that can operate with one lane per direction. Peak hour volumes of 1,000 per hour is another threshold often used.

Traffic volumes alone are not the only consideration. Other critical factors include:
• Availability of alternate routes
• Availability of alternate means of getting around
• How the change meets larger city goals and policies

The decision to change the design of a street rests on how the city and community weigh the tradeoffs of decisions. Lane reallocation may inconvenience drivers but make Northgate Boulevard safer for people walking or bicycling.
Peak Hour Conditions

The 2021 peak volumes were compared to 2018 to understand trends. Data was not available at the exact same intersections, but can still be used for an overall identification of trends.

Note that since turn movement counts, used for this graphic, were taken at slightly different locations than the ADT counts on the previous page, the totals differ slightly. This is due to drivers turning on and off the corridor.

Key Findings

• Similar to the previous comparison of historic ADT, the peak volumes at Rosin Ct. decreased slightly from 2018 to 2021, while volumes around El Camino and Haggin Aves. increased.

• The time when the peak hour occurs differs by location. The evening peak hour at Arden Garden Connector and El Camino Ave. was 4:30-5:30 pm. At Haggin Ave. and San Juan Rd., the peak hour was 2:45-3:45 pm, likely due to school traffic from Smythe Academy K-6.
Intersection Movements

Often times capacity is added at intersections in the form of right or left turn lanes to process traffic.

Volumes of through and turn movements at intersections reveal opportunities to rethink use of street space.

Key Findings

Arden Garden Connector
There is a strong travel pattern of people driving south on Northgate Blvd. turning left onto Arden Garden Connector eastbound, as well as the opposite pattern – people driving west on Arden Garden Connector and turning right on Northgate Blvd.

El Camino Ave.
There are high turning movements in all directions, right and left, at this location. El Camino Ave. is a primary east-west route.

Haggin Ave.
Turn volumes are low at this intersection. Access to Smythe Academy is on Northgate Blvd., meaning school traffic likely does not use Haggin Ave.

San Juan Rd.
This intersection has two left turn lanes on Northgate Blvd. Volumes of left turns are much higher on the north side of the intersection. U-turns are allowed and are fairly common southbound. There were zero northbound U-turns.

Walking/Bicycling Activity
The highest amount of pedestrian activity was at Haggin Ave., where an average of 71 people were counted during morning and evening peak hours.

Bike activity was highest at Arden Garden Connector, likely due to connections to several trails.

Full traffic data collection sheets can be found in Appendix F
SAFETY

Are Crashes More Common At Intersections Or Midblock?

Crashes on Northgate Blvd. were equally likely to occur at an intersection versus not at an intersection (police reports classify these as midblock, though they don’t necessarily occur at the midblock point of an intersection).

Most Common Movements Preceding Collisions

What movement were travelers making just prior to the collision? Examining the movement preceding a crash can help in identifying potential countermeasures to reduce the frequency and severity of crashes. The top five movements preceding collisions for all modes and all injury crashes on Northgate Blvd. were:

- Proceeding straight
- Making a left turn
- Making a right turn
- Entering traffic, or
- Other unsafe turning

Sources: (1) Statewide Integrated Traffic Records System (SWITRS), January 2016 to December 2021 and (2) Crossroads, March 2020 to March 2021

Location of Crashes Along Northgate Blvd.

Total Movements Before a Crashes Along Northgate Blvd.

Other includes Changing Lanes, Traveling Wrong Way, Ran Off Road, Other; Not Stated, Merging, Making U-Turn, Slowing/Stopping, Passing Other Vehicle
What Causes Killed or Seriously Injured (KSI) Crashes?

Police reports from crashes typically report a Primary Crash Factor (PCF). The PCF is the “best describes the primary or main cause of the collision,”* according to the reporting officer.

The top three PCF for crashes occurring along Northgate Blvd. are:
- Automobile Right of Way (ROW)**
- Unsafe Speed
- Improper Turning

**Driver had the right of way and that was infringed upon by another traveler (driver, pedestrian, or cyclist)

When Do Crashes Occur?

Crashes were examined by mode of travel involved in the crash and the time of day the crash occurred. 38% of bicycle-involved crashes on Northgate Blvd. occur between 6 and 9 p.m., while 33% of pedestrian-involved crashes occur between 3 and 6 p.m.
**Crashes Involving People Biking**

From January 2016 to March 2021, twenty-six (26) crashes along Northgate Blvd. involved people riding bikes. The most common types of crashes were:

- Motor vehicle proceeding straight; bicyclist proceeding straight (58%)
- Motor vehicle making left turn; bicyclist proceeding straight (16%)
- Motor vehicle proceeding straight; bicyclist proceeding wrong way (16%)

In the most common crash type involving people biking (motor vehicle proceeding straight and bicyclist proceeding straight), approximately half take place at intersections and half occur elsewhere along the street segment.

Potential countermeasures that could be considered to reduce this crash risk are:

- Bicycle signal phase
- New traffic signals at previously unsignalized intersection
- Protected bike lane
- Education and enforcement

**Crashes Involving People Walking**

From January 2016 to March 2021, sixteen (16) crashes along Northgate Blvd. involved people walking. The most common types of crashes were:

- Motor vehicle making left turn; pedestrian crossing in crosswalk at intersection (13%)
- Motor vehicle making right turn; pedestrian crossing in crosswalk at intersection (13%)
- Motor vehicle proceeding straight; pedestrian not crossing in crosswalk (13%)

Two of the most common crash types involving people walking occur when vehicles are turning left or right at intersections while pedestrians are in the crosswalk.

Potential countermeasures that could be considered to reduce this crash risk are:

- Leading pedestrian interval (LPI)
- Right-turn-on-red restrictions
- Curb extensions or radius reductions
- Median or centerline hardening
The 2018 Vision Zero Action Plan identified the ten most frequently seen KSI crash profiles seen in the City of Sacramento. The table below highlights the degree to which the Top 10 crash profiles occur on Northgate Blvd. Crashes may fall under multiple crash profiles (e.g., broadside crashes involving a bicyclist also occurred in a commercial area), therefore column totals may exceed 100%.

### Top 10 Vision Zero Action Plan Crash Profiles On Northgate

<table>
<thead>
<tr>
<th>Top 10 KSI Crash Profiles</th>
<th>Percent of crashes on Northgate</th>
<th>Percent of KSI crashes on Northgate</th>
<th>Percent of citywide KSI crashes*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe Speed on Non-Local Streets – Northgate is classified as an arterial</td>
<td>--</td>
<td>--</td>
<td>10</td>
</tr>
<tr>
<td>Alcohol Involved</td>
<td>22</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>35+ MPH Streets (Northgate is 40 mph for length of study area)</td>
<td>100</td>
<td>100</td>
<td>65</td>
</tr>
<tr>
<td>30+ MPH Streets – Bicycle Involved</td>
<td>9</td>
<td>29</td>
<td>85</td>
</tr>
<tr>
<td>Broadside Crashes – Bicycle Involved</td>
<td>6</td>
<td>25</td>
<td>44</td>
</tr>
<tr>
<td>Driver Making Left or Right Turn – Bicycle/Pedestrian Involved</td>
<td>4</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Crashes in Commercial Areas</td>
<td>65</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>60+ Year Old Pedestrians</td>
<td>11</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Pedestrian Crossing Outside of an Intersection or Crosswalk</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Pedestrian Crashes Near Transit Stops (within 200’)</td>
<td>62</td>
<td>6</td>
<td>17</td>
</tr>
</tbody>
</table>

*City of Sacramento’s Vision Zero Action Plan analyzed 2009 to 2015 crash data

There are several KSI crash profiles that occur more frequently on Northgate Blvd. than city-wide that are important to point out, for example driver making left or right turn – bicycle/pedestrian involved (18% of KSI crashes on Northgate Blvd.) and crashes involving pedestrians 60 and older (12% of KSI crashes on Northgate Blvd.). These findings highlight important areas to focus on for infrastructure improvements, awareness and education along the corridor.
### TRANSIT OPPORTUNITIES

#### Methodology

- An interview was conducted with SacRT facilities staff to understand opportunities to improve access to stops along Northgate Boulevard.
- This appendix details stop-by-stop discussions.
- Each page shows the existing stops (in red) and proposed relocation, if applicable (in blue).

NOTE: The locations noted as “proposed” were provided in discussion with Sacramento Regional Transit. These will require additional analysis and community engagement.

#### Route Hours of Operation Service Area Major Destinations Frequency (min)

<table>
<thead>
<tr>
<th>Route</th>
<th>Hours of Operation</th>
<th>Service Area</th>
<th>Major Destinations</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 – Natomas/Arden</td>
<td>Mon – Fri: 6 a.m. – 9 p.m.</td>
<td>North Sacramento</td>
<td>Arden Fair Mall Transit Center, Arden/Del Paso Blue Line, Walmart on Truxel</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Sat: 7:30 a.m. - 9:30 p.m.</td>
<td>El Centro &amp; Del Paso to Butano &amp; El Camino</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Sun: 7:30 a.m. - 7:30 p.m.</td>
<td></td>
<td>Arden/Del Paso Blue Line, Gateway Park</td>
<td></td>
</tr>
<tr>
<td>113 – North Market Commuter</td>
<td>Mon – Fri: 7:00 a.m. - 5:30 p.m.</td>
<td>Truxel &amp; Gateway Park to Arden/Del Paso</td>
<td></td>
<td>4 round trips per day</td>
</tr>
</tbody>
</table>

Northgate Boulevard Service Summary
EXISTING CONDITIONS

Jefferson

• Northbound
  o Stop is between driveways
  o Move stop south closer to intersection
    (might not be enough room)

• Southbound
  o Stop is far from Jefferson. Bus turns left at Arden.
  o Move stop closer to intersection
**EXISTING CONDITIONS**

**El Camino Ave.**

- **Northbound**
  - Stop is between driveways
  - Move stop south closer to intersection in front of Texaco
  - Due to landscaping pinch point, may not meet ADA

- **Southbound**
  - Far from intersection due to poles in sidewalk
  - Would like to be closer to intersection, but concerned about high speed right turning drivers from El Camino to Northgate southbound hitting bus

![Location Map](image_url)

**Northbound**

**Southbound**
**EXISTING CONDITIONS**

**Haggin Ave.**

- **Northbound**
  - Far from intersection
  - Move stop closer to intersection

- **Southbound**
  - Must stay near side
  - Rolled curb only

*Location Map*
EXISTING CONDITIONS

Sontano Dr. / Wisconsin Ave.

- Northbound
  o Near side, far from intersection
  o Move far side just past Jimboy’s driveway

- Southbound
  o Far from intersection
  o Move closer to intersection, put 5’x8’ landing in a wave in the wall
**EXISTING CONDITIONS**

**Tenaya Ave. / Senator**

- Northbound
  - Serves grocery
  - No crossing – remove unless can add a crossing

- Southbound
  - Serves grocery opposite side
  - No crossing – remove unless can add crossing
**Exist​ing Conditions**

**Wintergarden**

- **Northbound**
  - Stop requested to serve housing complex
  - Low ridership
  - No crossing

- **Southbound**
  - No Southbound stop
  - City to build new signal at Rio Tierra/Winterhaven
  - Remove Wintergarden stop
  - Create new stop pair at Rio Tierra/Winterhaven

**Location Map**

- **Existing**
- **Proposed**

**Northbound**
EXISTING CONDITIONS

San Juan Ave.

- Northbound
  - Far from intersection
  - Only stop with a shelter on corridor
  - Move to Quick Quack car wash

- Southbound
  - Far from intersection
  - Concern about high speed drivers turning from San Juan onto Northgate then into driveway – could clip bus if stop moved closer to intersection
  - San Juan is a transfer location – ideal to minimize distance from intersection
**EXISTING CONDITIONS**

**Patio Ave.**

- Northbound
  - Far from intersection
  - Move 100’ from intersection
  - Avoid guidewire (mirror breaks) – put stop 40’ ahead of guidewire

- Southbound
  - Future Sonic development
  - Move stop closer to intersection
EXISTING CONDITIONS

Rosin Ct.

- Northbound
  - Far from intersection
  - Move stop closer to intersection
  - Stay near side – utilize Taco Bell sidewalk/access

- Southbound
  - McDonald’s southern walkway not compliant
  - No change