

ADDENDUM TO GREENBRIAR DEVELOPMENT PROJECT ENVIRONMENTAL IMPACT REPORT
(SCH #2005062144)

On March 24, 2018, the Greenbriar Development Project applicant submitted an application for a Minor Tentative Map Revision for Greenbriar Phase 1. The Tentative Subdivision Map was approved on May 30, 2017, concurrently with an Addendum to the Greenbriar Development Project Final Environmental Impact Report (EIR) (SCH # 2005062144), certified in January 2008. This Addendum to the 2008 Final EIR evaluates the following described minor modification to the approved Phase 1 Tentative Map.

The applicant seeks approval to remove the alley-loaded villages on the north side of Meister Way and re-align various lot lines to ensure the same housing product type will face both sides of most streets in Phase 1. The proposed revisions eliminate two of the five Subdivision Modifications approved in May 2017, and significantly reduce the number of locations (from eight down to four) that require Subdivision Modifications.

The City of Sacramento, Community Development Department, has reviewed the proposed Minor Tentative Map Revision and, on the basis of the whole record before it including a revised Air Quality Mitigation Plan prepared by Ascent Environmental, and a supplemental noise analysis prepared by Bollard Acoustical Consultants, has determined that there is no substantial evidence that the Minor Tentative Map Revision would have a significant effect on the environment beyond that which was evaluated in the Greenbriar EIR. The Minor Tentative Map Revision requires only minor technical changes that do not warrant preparation of a subsequent EIR.

This Addendum to the certified EIR has been prepared pursuant to Title 14, Section 15164 of the California Code of Regulations; and the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento.

A copy of this document, the certified EIR and all supporting documentation may be reviewed and/or obtained at the City of Sacramento, Community Development Department, Planning Division, 300 Richards Boulevard, Sacramento, California 95811.

Date: June 6, 2018

By: _____


Tom Buford, Manager
Environmental Planning Services

Project Location: The development portion of the Greenbriar project encompasses approximately 577 acres located northwest of the intersection of Interstate 5 (I-5) and State Route 70/99 (SR 70/99) in the North Natomas area of the City of Sacramento. The project site is bordered by agricultural and rural residential land uses to the west and north, I-5 and agricultural lands to the south, and SR 70/99 and a new residential community currently under development within North Natomas to the east and south. Regional access to the project site is provided from SR 70/99 and I-5. Local access to the project site is provided by Elkhorn Boulevard.

Existing Plan Designation and Zoning: The 2035 General Plan designations for the Project site are Suburban Neighborhood Low Density (SNLD), Suburban Neighborhood Medium Density (SNMD), Suburban Neighborhood High Density (SNHD), Urban Neighborhood Low Density (UNLD), Parks and Recreation (PR), Waterways (W), Suburban Center (SC), and Regional Commercial Center (RCC). The zoning designations for the site are Single-Unit Dwelling (R-1-PUD), Single-Unit or Duplex Dwelling (R-1A-PUD), Multi-Unit Dwelling (R-2B-PUD), Multi-Unit Dwelling (R-3-PUD), Multi-Unit Dwelling (R-3A-PUD), Shopping Center (SC-PUD), Limited Commercial (C-1-PUD), and Agricultural-Open Space (A-OS-PUD).

Project Background: The Greenbriar Development Project was approved by the City Council in January 2008. In May 2017, the City approved modifications to the previously approved project, along with next stage entitlements, including a Development Agreement, Tentative Master Parcel Map, Tentative Subdivision Map for Phase 1 (north of the future location of Meister Way), Tentative Map Design Deviations, and Site Plan and Design Review with deviations for the proposed tentative maps. The Project as modified includes mixed-use residential and commercial development centered on a common lake/detention basin, as well as a conservation strategy for preservation of habitat and benefits to special-status wildlife in the Natomas Basin. In addition to the project's conservation goals, the purpose of the project is to create a mixed-use neighborhood through the development of retail and commercial uses, multifamily attached homes, and high-density single-family detached homes. The project also promotes the use of public transportation by incorporating a light rail station at the core of development along the planned Downtown-Natomas-Airport line, which would bisect the project site from east to west along the planned extension of Meister Way.

Project Subject to Addendum: The application currently before the City is for a minor modification to the approved Tentative Subdivision Map and Master Parcel Map for Phase 1. The applicant seeks approval to remove the alley-loaded villages on the north side of Meister Way and re-align various lot lines to ensure the same housing product type will face both sides of most streets in Phase 1.

The proposed revisions eliminate two of the five categories of Subdivision Modifications approved in May 2017. Specifically, the approved Project includes Subdivision Modifications for private alleys, dead-end streets, dead-end alleys, non-standard intersections, and non-standard street sections. The proposed minor modifications eliminate the need for private alley and

dead-end alley Subdivision Modifications. The number of dead-end streets remains the same, but in various locations the minor modification includes public (pedestrian) and emergency vehicle access. The proposed modifications include homes that back on to the north side of Meister Way, with the addition of a masonry wall of minimum 6-foot height along Meister Way. While the proposed modifications to the Phase 1 Tentative Map will result in some changes to the internal circulation pattern, all collector roads and traffic signals remain in the same locations as previously approved.

With these proposed changes, the total Phase 1 unit count will be 1,137 single-family and 225 multi-family units, for a total of 1,362 units (as compared to 1,267 single-family and 222 multi-family units under the previously approved map). The applicant is currently preparing a subdivision map for Phase 2 that would propose an increase the number of units over those previously approved for Phase 2. While an exact unit number is not known with certainty at this time, the applicant anticipates that the number of units would increase, such that the overall Project unit count would be substantially the same as that approved by the City for the Project in 2008.

Discussion:

Pursuant to CEQA Guidelines section 15164, subdivision (a), a lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions identified in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR has occurred. An addendum need not be circulated for public review. (CEQA Guidelines, section 15164, subd. (c).) The following identifies the standards set forth in section 15162:

1. **No substantial changes are proposed in the project which would require major revisions of the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.**
2. **No substantial changes have occurred with respect to circumstances under which the project was undertaken that would require major revisions of the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.**
3. **No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the EIR was certified as complete, shows any of the following:**
 - a. **The project will have one or more significant effects not discussed in the EIR.**
 - b. **Significant effects previously examined will be substantially more severe than shown in the EIR.**

- c. **Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative.**
- d. **Mitigation measures or alternatives which are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternative.**

Analysis:

The Greenbriar Project Minor Tentative Map Revision includes minor changes to the site plan for Phase 1 of the Greenbriar Project as approved by the City Council in 2008, and as amended in 2017. This discussion focuses on whether any of the conditions identified in CEQA Guidelines section 15162 (identified above) are present and require preparation of a supplemental or subsequent EIR for the Minor Tentative Map Revision.

Are there substantial changes in the project?

As described above, the proposed changes to the Phase 1 Tentative Map would reorient some of the lots to remove the alley-loaded villages on the north side of Meister Way and re-align various lot lines to ensure the same housing product type will face both sides of most streets in Phase 1. These changes do not require any amendment of the land use regulations that apply to the project. And while these changes would result in a slight decrease in the unit count for Phase 1, the applicant anticipates adding units as part of the Phase 2 Tentative Map application, such that the overall unit count would be substantially the same as that approved by the City in 2008.

The proposed changes are not substantial changes that would require major revisions to analysis prepared in the 2008 EIR and 2017 Addendum due to the involvement of new significant environmental effects or substantial increase in the severity of a previously identified impact. Air Quality and Noise mitigation measures included in the 2008 EIR would be revised as follows.

Air Quality

In response to the Minor Tentative Map Revision application, the City received a comment letter from the Sacramento Air Quality Management District (SMAQMD), stating that with the revisions to the tentative map, the project would no longer be consistent with the approved operational Air Quality Mitigation Plan (AQMP). The AQMP includes measures to reduce project-generated operational air pollutant emissions by at least 15% from the level that would

be produced by a base-case project assuming full trip generation. The 2008 EIR incorporated the recommendations from the District-approved AQMP to require certain measures that would achieve the 15% reduction goal into Mitigation Measure 6.2-2.

Specifically, SMAQMD's comment letter on the Minor Tentative Map Revision asserts that AQMP measures 9 (traffic calming), 17 (orientation to planned alternative transit), and 18 (residential density) would no longer apply to the project. In response, Ascent Environmental has prepared a revised AQMP showing that, while the project may still be eligible for some credit under the AQMP measures questioned by SMAQMD, the project can achieve the required 15% reduction in operational emissions by removing those three AQMP measures and replacing them with credit for Measure 28 (onsite renewable energy systems). With this change, the project as revised would achieve a 16.27% reduction in operational air quality emissions, exceeding the required 15% reduction. (See Attachment 1, June 2018 AQMP.)

Mitigation Measure 6.2-2 is revised as follows to include new subdivision p:

When a proposed project's operational emissions are estimated to exceed SMAQMD's threshold of significance of 65 lb/day for ROG or NOx, an Air Quality Mitigation Plan (AQMP) to reduce operational emissions by a minimum of 15% shall be submitted to the SMAQMD for approval. The following mitigation is included in the SMAQMD-approved AQMP for this project (Appendix E) and shall be incorporated to achieve a 15% reduction.

- a. *The entire project shall be located within ½ mile of a Class I or Class II bike lane.*
- b. *The project shall provide for pedestrian improvements.*
- c. *Residential uses shall be within 1/4 mile of planned transit.*
- d. *Neighborhoods shall serve as focal points.*
- e. *Separate, safe, and convenient bicycle and pedestrian paths shall connect residential, commercial, and office uses.*
- f. *The project shall provide a development pattern that eliminates physical barriers that impede bicycle or pedestrian circulation.*
- g. *The lowest emitting commercially available furnaces shall be installed.*
- h. *Average residential density shall be seven dwelling units per acre or greater (residential).*
- i. *The project shall be mixed-use.*
- j. *A display case/kiosk displaying transportation information shall be provided.*
- k. *Minimum amount of parking shall be provided.*
- l. *Parking lot shade shall be increased by 10%.*
- m. *The project shall become a permanent member of a Transportation Management Association (TMA).*
- n. *The project shall provide a transportation coordinator.*
- o. *The project shall contract with landscapers complying with ARB standards.*
- p. *The project applicant shall install onsite solar systems throughout the project site, that in total generate a minimum of 3,777 MWh/year of electricity.*

equivalent to 12.5% of the estimated project's total building-related electricity demands. If, at the time of final map approval and building design, the applicant can demonstrate to the City that total project annual electricity demand would be different, this value can be recalculated based on 12.5% of the anticipated annual electricity demand. New calculations and substantial evidence shall be provided by the applicant to the City of Sacramento for approval.

The June 2018 revised AQMP prepared by Ascent concludes that the addition of onsite renewable energy that achieves a 12.5% reduction in the project's estimated emissions at build out would combine with other measures recommended in the AQMP to more than achieve the required 15% reduction in operational air quality pollutant emissions. The changes to mitigation measure 6.2-2 would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

Noise

As explained in the 2008 EIR, residential land uses proposed on the project site would be exposed to future noise levels generated by area automobile traffic, and light rail trains and crossing signals that exceed applicable local exterior noise standards. Also, the interiors of residential land uses located along transportation routes would be exposed to interior noise levels that exceed applicable maximum interior noise level standards established by the City of Sacramento 2035 General Plan. Therefore, the EIR concluded that exposure of proposed residential land uses to noise generated by traffic would be a significant impact. The DEIR found that implementation of Mitigation Measure 6.3-4 would reduce interior and exterior noise to a less than significant level.

Bollard Acoustical Consultants, Inc. (BAC) prepared an analysis of the expected noise exposure for residential lots located north of Meister Way with the changes proposed for the Minor Tentative Map Revision. (See Attachment 2) The BAC analysis indicates that unmitigated backyard noise exposure at these lots would be 68 dB Ldn, which exceeds the City's 60 dB Ldn exterior noise standards. BAC conducted an evaluation of the effectiveness of solid noise barriers in reducing those future traffic noise levels to comply with applicable City noise standards and determined that a solid 8-foot noise barrier would reduce the noise exposure to 60 dB Ldn.

Mitigation Measure 6.3-4 is revised to add the following subdivision j:

- j. For the noise impact/mitigation area north of Meister Way (see Exhibit A to June 4, 2018 Bollard Sound Wall Review), a solid noise barrier of 8 feet in height shall be constructed to adequately shield Meister Way traffic noise.*

The BAC supplemental noise analysis also concludes that interior noise levels are not expected to exceed the City's 45 dB Ldn interior noise level standard with construction of the noise barrier described in Mitigation Measure 6.3-4 (j) and standard residential construction techniques.

The BAC supplemental noise analysis concludes that the revised noise barrier heights would adequately ensure that exterior and interior noise impacts remain less than significant, and the revised barrier heights would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects, and no major revision to the EIR is required.

Are there changes in circumstances under which the project would be developed?

Other than the project changes described above, there are no changes to the project site or the vicinity that have occurred subsequent to the 2008 EIR and 2017 Addendum that would result in the current project having new significant environmental impacts that were not considered in the prior environmental documents or that substantially increase the severity of a previously identified impact.

Is there any new information of substantial importance?

The revised site plan and mitigation measures that would require installation of onsite solar systems to generate the equivalent of 12.5% of the project's energy demand and a sound barrier north of Meister Way do not result in any other changes to the land use plan or project design that were evaluated in the EIR and May 2017 Addendum. No new information of substantial importance exists to show the project will have a new significant effect or substantially more severe effects than discussed in previous environmental review. No mitigation measures or alternatives previously found infeasible have been determined to be feasible. No new or considerably different mitigation measures or alternatives have been identified to reduce one or more significant effects on the environment.

Based on the above analysis, the revised Air Quality Mitigation Plan and the Bollard Noise Report, attached hereto, this Addendum to the EIR has been prepared and adopted by the City of Sacramento.

Attachment 1: June 2017 Air Quality Management Plan

Attachment 2: Bollard Noise Report June 2018

Greenbriar Development Project
Sacramento, California

Operational Air Quality Mitigation Plan



Prepared for:
City of Sacramento Environmental Planning Services
and Sacramento Local Agency Formation Commission

Prepared by:



June 2018

Operational Air Quality Mitigation Plan



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EXECUTIVE SUMMARY

The proposed Greenbriar Development Project (project) site encompasses 577 acres located in the City of Sacramento, northwest of the intersection of State Route 70/99 (SR 70/99) and Interstate 5 (I-5). Implementation of the project would result in a mixture of residential, commercial, school, park, and open space land use types at the site.

In accordance with the recommendations of the Sacramento Metropolitan Air Quality Management District (SMAQMD), this Air Quality Mitigation Plan (AQMP) describes the project design features and mitigation measures, as contained in the environmental documentation, that would be implemented to reduce project-generated operational emissions of ozone precursors (reactive organic gases [ROG] and oxides of nitrogen [NOX]) by 15% from the level that would be produced by a base-case project assuming full trip generation per the current Institute of Transportation Engineers (ITE) Trip Generation Handbook. For clarification, two types of measures are discussed in this AQMP: (1) those that are contained in the environmental documentation for this project (referred to as mitigation measures) and (2) those recommended by SMAQMD (referred to as reduction measures). According to SMAQMD, the development of an AQMP that reduces emissions by 15% also meets the requirements of the California Environmental Quality Act (CEQA) regarding the implementation of mitigation to the extent feasible in order to reduce significant adverse environmental impacts.

This AQMP identifies the SMAQMD-recommended reduction measures and related-point values, as contained in the “Recommended Guidance for Land Use Emission Reductions” (Guidance) (SMAQMD 2007), that are being applied to the project. This AQMP also describes how the project would achieve each SMAQMD-recommended reduction measure chosen to reach the 15% target by the identification of design features and/or mitigation measures, as contained in the environmental documentation. Reduction measures described in this document shall be implemented through the approved Mitigation Monitoring Plan and the mitigation measures specified in the environmental documentation. Table ES-1 identifies and describes all the SMAQMD-recommended reduction measures, along with point information and other remarks that refer to the project.

In October 2005, A Master Air Quality/Transportation Management Plan (AQ/TSM plan) for this project was submitted to SMAQMD for review and was subsequently endorsed by SMAQMD in a letter dated December 21, 2005. That AQ/TSM plan is, therefore, deemed approved. In 2008, the City of Sacramento asked EDAAW to prepare an update to the previously approved 2005 AQ/TSM using the then-current SMAQMD guidance for preparation of an AQMP (SMAQMD 2007). Because the 2005 AQ/TSM had been previously approved and endorsed by SMAQMD, additional approval for the 2008 AQMP update was not required. Nonetheless, the updated 2008 AQMP was provided to the City of Sacramento and SMAQMD to be included as part of the Mitigation Monitoring and Reporting Plan for the project, effectively replacing the 2005 AQ/TSM.

On May 30, 2017 the Tentative Master Parcel Map and Phase 1 Tentative Subdivision Map for the project was approved by the City. On April 5, 2018, the applicant submitted a Minor Tentative Map Amendment for Phase 1 of the project (development north of Meister Way). This proposed amendment would remove the alley-loaded villages and re-align various lot lines to ensure that lots front-on to the neighborhood park and similar product faces both sides of most streets in the plan. With these proposed changes, the total Phase 1 unit count would be 1,137 single-family and 225 multi-family units, for a total of 1,362 (as compared to 1,267 single-family [reduced by 130 units] and 222 multi-family units [increased by 3 units] under the previously approved map). All collector roads and traffic signals would remain in the same locations as previously approved.

On April 27, 2018, SMAQMD submitted a letter to the City asserting that with the proposed changes to the previously approved tentative map, AQMP measures 9, 17, and 18 would no longer apply to the project. While the project may still be eligible for some credit under these AQMP measures, the AQMP has nonetheless been revised to apply Measure 28 to replace these three measures, as described below.

The applicant proposes, and the City concurs that the AQMP has already been approved by SMAQMD and need not be re-submitted. With this in mind, the City has asked Ascent Environmental, Inc. to prepare this stand-alone AQMP, as an update to the 2008 AQMP, that identifies those project design elements and mitigation measures that serve to reduce operational emissions for the Project as revised.

Given SMAQMD's prior approval of the AQ/TSM plan as the AQMP, however, the applicant is not seeking re-approval. Rather, the applicant, with the City's consent, provides SMAQMD with the assurances it is seeking regarding emissions reductions through submittal of this AQMP. Although re-endorsement is not proposed, this AQMP replaces the prior 2008 AQMP that replaced the AQ/TSM plan and will be included as part of the Mitigation Monitoring and Reporting Plan for the project as agreed upon by SMAQMD.

Table ES-1 Greenbriar Development Project Summary of Proposed Operational Air Quality Mitigation Plan

SMAQMD ¹				Points ³			Remarks ³
Category/ Reduction Measure	Title	Use ²	Description	Possible	Scale	Achieved	
Bicycle/Pedestrian/Transit Measures							
1	Bike Parking	C,M	Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak- season maximum demand.	0.63	0.54	0.34	Applied to commercial only.
2	End of trip facilities	C,M	Non-residential projects provide "end-of-trip" facilities including showers, lockers, and changing space.	0.63	-	-	Not applied to project.
3	Bicycle parking at multi-unit residential uses	R	Long-term bicycle parking is provided at apartment complexes or condominiums without garages.	0.63	0.43	0.27	Applied to residential only.
4	Proximity to bike path/bike lanes	R,C,M	Entire project is located with ½ mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility.	0.63	1.00	0.63	Applied to entire project.
5	Pedestrian network	R,C,M	The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.	1.00	1.00	1.00	Applied to entire project.
6	Pedestrian barriers minimized	R,C,M	Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barrier such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated.	1.00	1.00	1.00	Applied to entire project.
7	Bus shelter for existing transit service	R,C,M	Bus or streetcar service provides headways of one hour or less for stops within ¼ mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting.)	0.50	1.00	0.50	Applied to entire project.

Table ES-1 Greenbriar Development Project Summary of Proposed Operational Air Quality Mitigation Plan

Category/ Reduction Measure	Title	Use ²	Description	Points ³			Remarks ³
				Possible	Scale	Achieved	
8	Bus shelter for planned transit service	R,C,M	Project provides transit stops with safe and convenient bicycle/pedestrian access. Project provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) in anticipation of future transit service.	0.25	-	-	Cannot get credit for both measure 7 & 8.
9	Traffic calming	R,C,M	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features.	0.25-1.00	-	-	Not applied to project.
Parking Measures							
10a	Paid Parking	R,C,M	Employee and/or customer paid parking system.	1.0-7.2	-	-	Not applied to project.
10b	Parking cash out	C,M	Employer provides employees with a choice of forgoing subsidized parking for a cash payment equivalent to the cost of the parking space to the employer.	0.06-4.80	-	-	Not applied to project.
11	Minimum parking	R,C,M	Provide minimum amount of parking required. Special review of parking required.	0.10-6.00	-	-	Not applied to project.
12	Parking reduction beyond code	R,C,M	Provide parking reduction less than code. Special review of parking required. Recommend a Shared Parking strategy.	0.10-12.00	-	-	Not applied to project.
13	Pedestrian pathway through parking	R,C,M	Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.	0.50	0.54	0.27	Applied to commercial only.
14	Off-street parking	R,C,M	Parking facilities are not adjacent to street frontage.	0.10-1.50	-	-	Not applied to project.
Site Design Measures							
15	Office/Mixed- use density	C,M	Project provides high density office or mixed-use proximate to transit.	0.1-2.0	-	-	Not applied to project.
16	Orientation to existing alternate transit	R,C,M	Project is oriented toward existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.	0.50	-	-	Cannot get credit for both measures 16 & 17. Not applied to project as alternate transit is planned not existing.
17	Orientation to planned alternate transit	R,C,M	Project is oriented toward planned transit, bicycle, or pedestrian corridor. Setback distance is minimized.	0.25	-	-	Not applied to project.

Table ES-1 Greenbriar Development Project Summary of Proposed Operational Air Quality Mitigation Plan

Category/ Reduction Measure	Title	Use ²	Description	Points ³			Remarks ³
				Possible	Scale	Achieved	
18	Residential density	R	Project provides high-density residential development.	1.00-12.00	-1	-	Not applied to project.
19	Street grid	R,C,M	Project has multiple and direct street routing (grid style).	1.00	1.00	1.00	Applied to entire project.
20	Neighborhood electric vehicle access	R,C,M	Make physical development consistent with requirements for neighborhood electric vehicles	0.50-1.50	-	-	Not applied to project.
21	Affordable housing component	R	Residential development projects of 5 or more dwelling units provide a deed-restricted low-income housing component on-site. [Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure.]	0.60-4.00	0.43	0.26	Affordable housing would be consistent with Sacramento City Code.
Mixed-use Measures							
22	Urban mixed-use	M	Development of projects predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.	3.00-9.00	-	-	Cannot get credit for multiple measures 22, 23, and 24
23	Suburban mixed-use design	R,C,M	Have at least three of the following on-site and/or off-site within ¼ mile: Residential Development, Retail Development, Park, Open Space, or Office.	3.00	1.00	3.00	Applied to entire project.
24	Other mixed-uses	R,M	All residential units are within ¼ mile of parks, schools or other civic uses.	1.00	-	-	Cannot get credit for multiple measures 22, 23 and 24.
Building Component Measures							
25	No fireplace	R	Project does not feature fireplaces or wood burning stoves.	1.00	-	-	Not applied to project.
26	Ozone destruction catalyst	R,C,M	Install ozone destruction catalyst on air conditioning systems	1.25	-	-	Not applied to project.
27	Energy Star roof	R,C,M	Install Energy Star labeled roof materials	0.50-1.00	-	-	Not applied to project.
28	Onsite renewable energy system	R,C,M	Project provides onsite renewable energy system(s)	1.00-3.00	-	3.00	Onsite solar equivalent to 12.5% of project energy demand.
29	Exceed title 24	R,C,M	Project exceeds title 24 requirements by 20%.	1.00	-	-	Not applied to project.

Table ES-1 Greenbriar Development Project Summary of Proposed Operational Air Quality Mitigation Plan

SMAQMD ¹				Points ³			Remarks ³
Category/ Reduction Measure	Title	Use ²	Description	Possible	Scale	Achieved	
30	Solar orientation	R	Orient 75 or more percent of homes and/or buildings to face either north or south within 30 degrees of N/S).	0.50	-	-	Not applied to project.
31	Non-roof surfaces	R,C,M	Provide shade (within 15 years) and/or use light-colored/high-albedo material (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; or use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area. Unshaded parking lot areas, driveways, fire lanes, and other paved areas have a minimum albedo of 0.3 or greater.	1.00	-	-	Not applied to project.
32	Green roof	R,C,M	Install a vegetated roof that covers at least 50% of roof area.	0.50	-	-	Not applied to project.
TDM and Miscellaneous Measures							
33	Transportation Management Association membership	R,C,M	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism.	5.00	1.00	5.00	Applied to the entire project.
34	Electric lawnmower	R	Provide complimentary electric lawnmowers to each residential buyer.	1.00	-	-	Not applied to project.
99	Other	R,C,M	Other proposed strategies, in consultation with project lead agency and SMAQMD.	TBD			
						Total Credit	16.27
						Emissions Reduction Target	15.00

¹. Information as contained in SMAQMD's Recommended Guidance for Land Use Emission Reduction

². R = Residential; C = Commercial; M = Mixed Use

³. Information refers to project, TBD = To Be Determined Source: EDAW 2007; SMAQMD 2007

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1 INTRODUCTION

The proposed plan, land uses, zoning, and public improvements for the project site would create a residential development that provides access to alternative modes of transportation (e.g., light rail shuttles, bicycle, walking) to on-site commercial and retail centers and to off-site employment centers. The project would provide a variety of housing types at an intensified density along with mixed-use development to promote use of alternative modes of transportation. The project's use of a grid street pattern would provide multiple access routes to destinations on-site and off-site and would allow for narrower streets within residential neighborhoods.

The purpose of the project is to create a mixed-use neighborhood through the development of retail and commercial uses, and low, medium and high density residential units. In addition, the project would allow for future on-site retail and commercial development in support of surrounding housing. The project also promotes the use of public transportation by incorporating a light rail station at the core of development.

SMAQMD's Guidance lists reduction measures divided into categories based on the measure type and anticipated end use of the project (e.g., residential, commercial, or mixed-use). In addition, the Guidance specifies the point values to quantify the approximate emission reduction factor for each measure. The points are equivalent to a percentage of emission reduction associated with using a particular measure.

The purpose of this AQMP is to identify recommended measures to reduce project-generated operational air pollutant (ozone precursors ROG and NOX) emissions by at least 15% from the level that would be produced by a base-case project assuming full trip generation. This AQMP has been prepared in accordance with SMAQMD's recommendations, as contained in the Guidance (SMAQMD 2007).

Chapter 2 of this document describes the project's existing and planned transportation setting. Chapter 3 describes how the project would achieve and the related-point value for each SMAQMD-recommended reduction measure chosen to reach the 15% target. The emission reduction measures found in SMAQMD's Guidance are organized into the following categories:

- ▲ Bicycle/Pedestrian/Transit Measures;
- ▲ Parking Measures;
- ▲ Site Design Measures;
- ▲ Mixed-use Measures;
- ▲ Building Component Measures and;
- ▲ Transportation Demand Management (TDM) and Miscellaneous Measures.

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2 PROJECT DESCRIPTION

The project site is located northwest of the intersection of SR 70/99 and I-5 in the City of Sacramento. The project site consists of approximately 577 acres of fallow agricultural land (at the time the Notice of Preparation [NOP] for the project was circulated) bounded I-5 to the south, SR 70/99 to the east, Elkhorn Boulevard to the north, and Lone Tree Canal to the west (Exhibit 2-1). The project site is immediately adjacent and west of the City's North Natomas Community Plan (NNCP) area and within the City's jurisdictional boundary and sphere of influence (SOI). The recently approved Metro Air Park Special Planning Area (SPA) is located adjacent and west of the project site. Since the Metro Air Park is approved and construction has started it is assumed as an existing use under project buildout conditions. An industrial business park is also planned for development within this area.

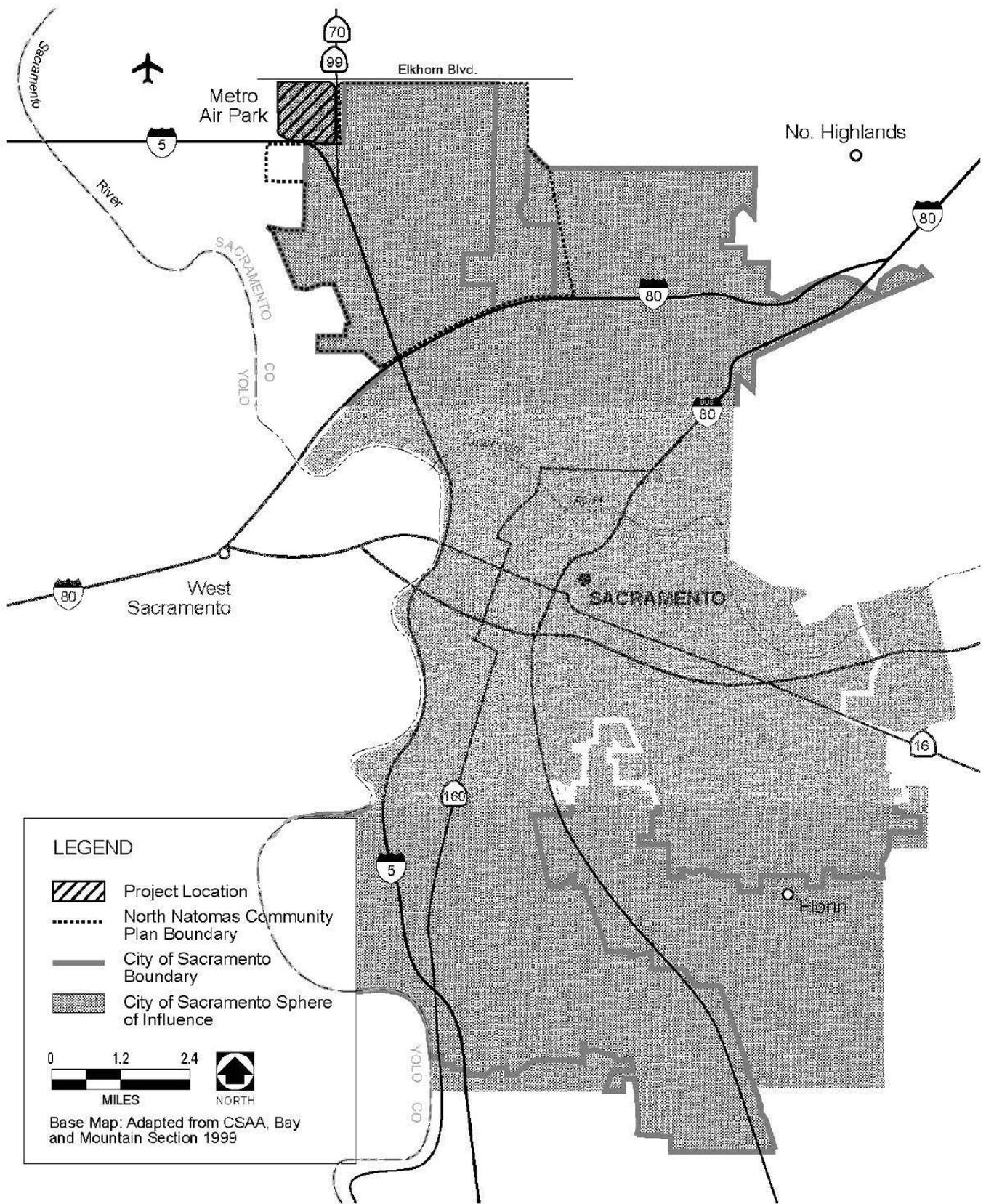
The project is a mixed-use development project that, with approval of the minor modifications to the Phase 1 Tentative Map, includes: (1) 2,829, low, medium, and high density residential units, (2) 35 acres (net) of commercial development, (3) a 10-acre (net) elementary school site, (4) 65 acres (net) of neighborhood parks, buffers, paseos and landscaping, and (5) a 41-acre (net) lake/detention basin that encircles the central portion of the project site.¹ The project also includes the construction of a new east-west roadway, Meister Way, through the center of the site. A new light rail station and rail alignment is proposed to be constructed by Sacramento Regional Transit (RT) along this roadway near the center of the site. The rail alignment would connect the project site to the Metro Airpark development to the west and the North Natomas Community to the east across SR 70/99 via a new proposed overpass at SR 70/99. Higher density (than other parts of the project), mixed-use development (residential and retail/office land uses on same parcel) is proposed along Meister Way near the proposed light rail station. The project also includes a linear open space/buffer area that extends along the western boundary of the site, adjacent to Lone Tree Canal, proposed to protect potentially sensitive biological habitat.

The project has the following objectives:

- ▲ create a quality residential development near the major employment centers of downtown Sacramento and Metro Air Park;
- ▲ create a transit-oriented, pedestrian-friendly development;
- ▲ provide development and land for construction of a light rail stop along the proposed Downtown-Natomas- Airport light rail line with densities that would support the feasibility of a light rail line;
- ▲ develop the project site in a manner consistent with and supportive of the Sacramento Area Council of Government's (SACOG's) Blueprint plan;
- ▲ develop a project that is consistent with the Sacramento International Airport Comprehensive Land Use Plan (CLUP) to the degree feasible;
- ▲ design a project that promotes using various modes of transportation by locating high-density residential development within one-quarter mile of the proposed light rail station;
- ▲ provide vertically and horizontally mixed-use neighborhoods;

¹ Note that the proposed Minor Tentative Map Amendment reduces the overall unit count as compared to the number of units originally approved for the Project in 2008. However, the applicant will be seeking Phase 2 entitlements to include a Tentative Map for portions of the Project site south of Meister Way, which will bring the unit count back up to a number that is substantially the same as the unit count approved in 2008. Phase 2 entitlements will require an analysis to determine whether additional environmental review is required beyond that included in the 2008 EIR.

- ▲ provide neighborhood and community retail near residential development to shorten or reduce the number of vehicle trips;
- ▲ incorporate parks and open space into the project design in a manner that provides community connectivity;
- ▲ create a residential development with a variety of housing types;



Source: EDAW 2008

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- ▲ provide park and recreation opportunities within walking distance of residents;
- ▲ provide an elementary school site to serve the project's student demands;
- ▲ encourage walking and bicycle use by designing residential areas in a grid street pattern;
- ▲ make efficient use of development opportunity as the project site is bordered on three sides by existing or planned urban development;
- ▲ satisfy the requirements of the City of Sacramento's Mixed-Income Housing Ordinance in part by providing an age-restricted facility (senior housing) located near transit and other services that are affordable to very- low- and low-income households;
- ▲ ensure adequate, timely, and cost effective public services for the project; and
- ▲ develop and implement the project consistent with the General Plan Update Vision and Guiding Principles adopted by the City of Sacramento.

To describe the project in terms of SMAQMD scaling methodologies, the trip generation is used as a proportion of a particular land use relative to the entire project. Full trip generation for the project was determined based on data contained in the traffic study contained for the project, and ITE trip rates. See Table 2-1, below, for trip generation attributable to each proposed land use type. These values are consistent with the traffic analysis prepared for this project (Refer to Table 6.1-20 in Section 6.1 and Appendix A of the Greenbriar Development Project Second Recirculated DEIR (SRDEIR) (City of Sacramento and Sacramento LAFCO 2007a).

Table 2-1 Land Use Trip Generation Summary and Scale Factors

Land Use	Daily Vehicle Trips	% of Total (Scale Factor)
Residential	18,603	43
Commercial	23,474	54
Educational	1,032	2
Total Trips	43,109	~100

Source: City of Sacramento and Sacramento LAFCO 2007a; EDAW 2007

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3 TRANSPORTATION SETTING

3.1 ACCESS CHARACTERISTICS

3.1.1 Regional Access

Regional access to the project site is provided by the freeway system that serves northwest Sacramento, including I-5 and SR 70/99.

I-5 is an eight-lane freeway that runs in an east/west direction within the study area. Access to I-5 is currently via SR 70/99. I-5 serves as a commute corridor between downtown Sacramento and the northern and southern portions of the City and County. It also provides access to the Sacramento International Airport west of the site and other Central Valley communities (e.g., cities of Woodland and Davis). A future interchange (I-5 / Metro Air Parkway Interchange) is planned approximately one-half mile west of the project site. This interchange would provide direct access to I-5 from the project site through the approved Metro Air Park development (adjacent and west of the project site).

SR 70/99 is a four-lane highway that runs in a north/south direction within the study area. State Route 70/99 serves as a commute corridor between the City of Sacramento and the Yuba City, Marysville, Chico areas and Sutter County to the north of the project site. SR 70/99 provides direct access to the project site via on/off-ramps at Elkhorn Boulevard. North of its interchange with Elkhorn Boulevard, SR 70 /99 continues as a divided highway with two travel lanes per direction and has a grade-level intersection with Elverta Road.

3.1.2 Local Access

Local access to the project site is provided via Elkhorn Boulevard, East Commerce Way, Elverta Road, Power Line Road and Del Paso Road, as described below (see Section 6.1, “Transportation and Circulation,” of the SRDEIR):

Elkhorn Boulevard is a two-lane road that runs in an east/west direction and serves as the northern boundary to the project site. West of SR 70/99, Elkhorn Boulevard continues to Power Line Road. To the east, it continues to the Rio Linda and North Highlands areas of Sacramento County. Elkhorn Boulevard connects to SR 70/99 at the northeastern corner of the project site via on and off-ramps providing access to northbound and southbound SR 70/99.

East Commerce Way is an existing two-lane roadway that runs in a north/south direction parallel to and about 0.4-mile east of I-5. East Commerce Way is planned to be a six-lane arterial. East Commerce Way extends from Elkhorn Boulevard in the north to Del Paso Road to the south. It extends about 0.9-mile south of Del Paso Road where it intersects with Arena Boulevard.

Elverta Road is a two-lane roadway that runs in an east/west direction approximately one mile north of the project site. Elverta Road has a grade-level signalized intersection at SR 70/99. Elverta Road connects with Power Line Road west of SR 70/99.

Power Line Road is a two-lane roadway that runs in a north/south direction within the project study area. It is located adjacent to the eastern boundary of the Sacramento International Airport approximately one mile west of the project site. Power Line Road extends south of Elverta Road where it crosses I-5 with a two-lane overcrossing and extends south to intersect with Del Paso Road.

Del Paso Road is a two-to-four lane east-west roadway approximately one mile south of the project site that provides access to I-5 via a full interchange. West of I-5, *Del Paso Road* is a two-lane roadway. *Del Paso Road* is a six-lane roadway between I-5 and East Commerce Way. East of East Commerce Way, *Del Paso Road* has three eastbound and two westbound lanes.

On-site vehicle circulation would be provided by local residential streets and collector streets through each neighborhood. All roadways except for local residential neighborhood streets, including the Meister Way overpass, would include a separate bike lane (Class II). Sidewalks and green spaces would be located throughout residential neighborhoods to allow pedestrian access throughout the development and to surrounding areas.

Approximately 3.9 acres of pedestrian trails would be provided around the on-site lake/detention basin.

Using Meister Way as an east-west dividing line through the project site, vehicle circulation in the northern portion of the project site is focused along a grid pattern (no use of cul-de-sacs) of streets extending through residential neighborhoods and neighborhood parks. The northern portion has four access points along Elkhorn Boulevard and eight access points from Meister Way. The southern portion of the project site also includes a grid pattern with streets extending through residential neighborhoods and neighborhood parks in a curvilinear form.

The southern portion has three access points from Meister Way. These three access points also extend north across Meister Way to provide a connection to the northern and southern parts of the project site. The use of a grid pattern for streets throughout the project site provides multiple access points and routes to on- and off-site areas.

3.2 BICYCLE FACILITIES

3.2.1 Existing Bicycle and Pedestrian System

At this time there are no existing bicycle and pedestrian facilities near the project site. Please see proposed bicycle and pedestrian system below for further information on planned systems near the project site.

3.2.2 Proposed Bicycle and Pedestrian System

Bicycle lanes are planned throughout the project and along Elkhorn Boulevard. Five foot (5') to six foot (6') bicycle lanes would be designed to connect residents to all uses including the school and parks. Details on the design and siting of these bike lanes shall be done in consultation with the City of Sacramento Development Engineering and Finance Division (City of Sacramento and Sacramento LAFCO 2007b). Please refer to Exhibit 3-1 to view the project's proposed roadway network.

Please refer to Exhibit 3-2 Proposed Bicycle System to view the project in relation to the City's planned and existing bikeways.

Five foot (5') sidewalks would be constructed throughout the project. All sidewalks (with the exception of a portion of Meister Way), would have additional "buffer" landscaping to separate pedestrians from the roadways. Please refer to Exhibit 3-1 to view the project's roadway network for design specifications. Sidewalks would be in place prior to occupancy and for the purposes of this reduction measure are considered existing.



LAND USE SUMMARY - PHASE 1 (NORTH OF WEBSTER WAY)

LAND USE	AREA (SQ. FT.)	AREA (AC.)	PERCENT	DU'S
RESIDENTIAL SINGLE-FAMILY	1,100,000	25.00	55.00	110
RESIDENTIAL MEDIUM-DENSITY	1,100,000	25.00	55.00	110
RESIDENTIAL HIGH-DENSITY	1,100,000	25.00	55.00	110
COMMERCIAL	1,100,000	25.00	55.00	110
INDUSTRIAL	1,100,000	25.00	55.00	110
OFFICE	1,100,000	25.00	55.00	110
RETAIL	1,100,000	25.00	55.00	110
SCHOOL	1,100,000	25.00	55.00	110
RECREATION	1,100,000	25.00	55.00	110
OPEN SPACE	1,100,000	25.00	55.00	110
UTILITY	1,100,000	25.00	55.00	110
ROADWAY	1,100,000	25.00	55.00	110
TOTAL	2,000,000	45.45	100.00	220

LAND USE SUMMARY - PHASE 2 (SOUTH OF WEBSTER WAY)

LAND USE	AREA (SQ. FT.)	AREA (AC.)	PERCENT	DU'S
RESIDENTIAL SINGLE-FAMILY	1,100,000	25.00	55.00	110
RESIDENTIAL MEDIUM-DENSITY	1,100,000	25.00	55.00	110
RESIDENTIAL HIGH-DENSITY	1,100,000	25.00	55.00	110
COMMERCIAL	1,100,000	25.00	55.00	110
INDUSTRIAL	1,100,000	25.00	55.00	110
OFFICE	1,100,000	25.00	55.00	110
RETAIL	1,100,000	25.00	55.00	110
SCHOOL	1,100,000	25.00	55.00	110
RECREATION	1,100,000	25.00	55.00	110
OPEN SPACE	1,100,000	25.00	55.00	110
UTILITY	1,100,000	25.00	55.00	110
ROADWAY	1,100,000	25.00	55.00	110
TOTAL	2,000,000	45.45	100.00	220

DWELLING UNITS BY PHASE

PHASE	DU'S	PERCENT
PHASE 1	1,138	51.3%
PHASE 2	1,057	47.7%
TOTAL	2,195	100.0%

PHASE 1 PRODUCT SUMMARY

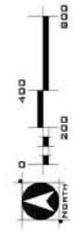
PRODUCT	DU'S	%
60x110	116	10.2
55x100	136	12.0
50x100	230	20.2
55x85	102	9.0
50x85	67	5.9
50x80	55	4.8
45x100	158	13.9
41x90	138	12.1
41x68	136	11.9
TOTAL	1,138	100.0

PHASE 2 PRODUCT SUMMARY

PRODUCT	DU'S	%
55x100	110	10.4
50x100	122	11.5
45x100	165	15.6
41x90	304	28.8
41x68	174	16.5
35x90	70	6.6
35x60	112	10.6
TOTAL	1,057	100.0

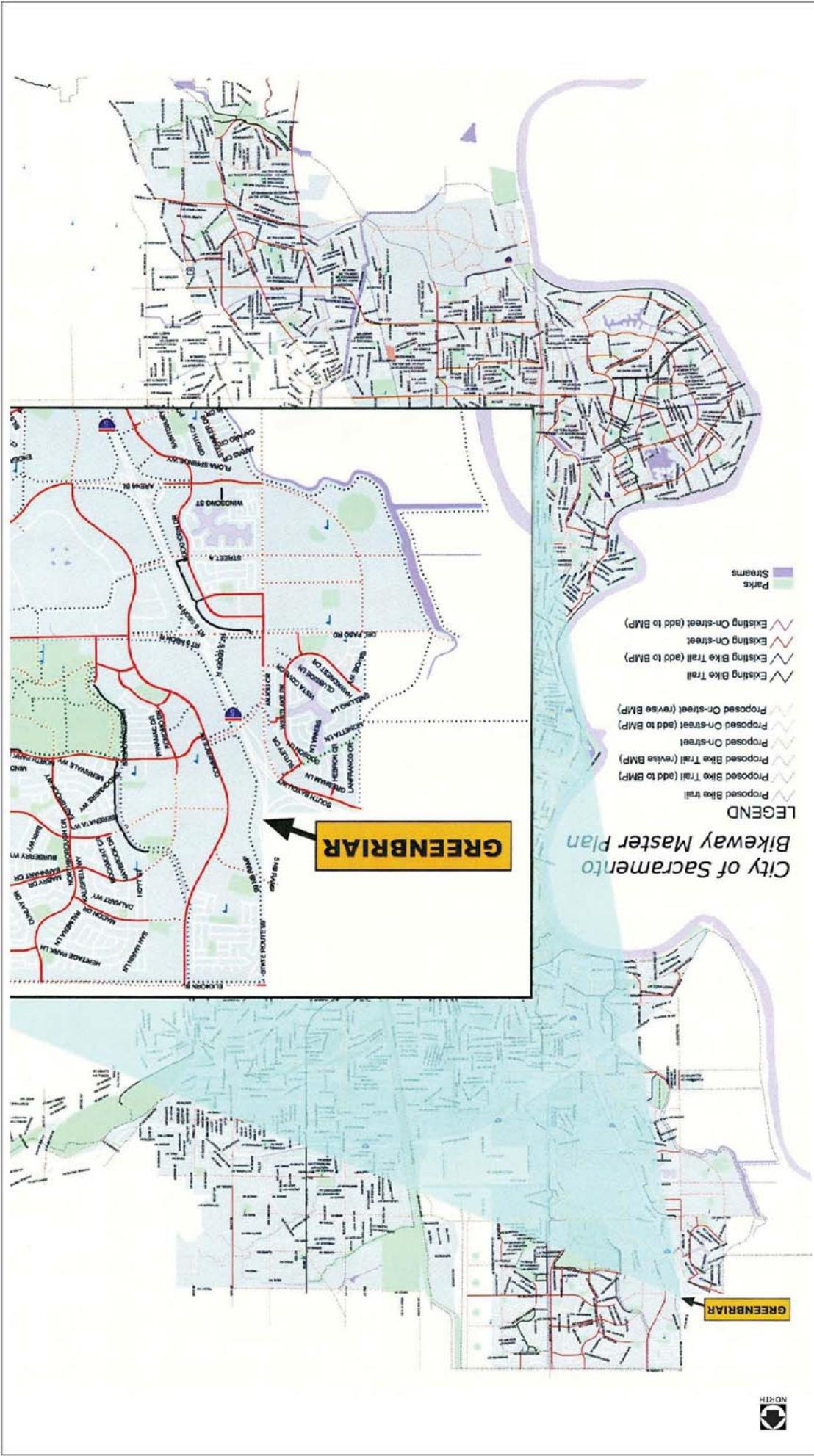
PHASE 1 & 2 PRODUCT SUMMARY

PRODUCT	DU'S	%
60x110	116	5.3
55x100	246	11.2
50x100	352	16.0
55x85	67	3.1
50x85	55	2.5
45x100	323	14.7
41x90	442	20.1
41x68	310	14.1
35x90	70	3.2
35x60	112	5.1
TOTAL	2,195	100.0



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Source: Image provided by Wood Rogers 2018



Source: Image provided by ED&AW 2008

X12010018 01 006



Proposed Bicycle System

Exhibit 3-2

City of Sacramento
Bikeway Master Plan

GREENBRIAR

The project would be designed to maximize bicycle and pedestrian connectivity between residential uses and commercial/retail land uses. Any physical barrier that may impede pedestrian or bicycle circulation, such as berms, gates, walls, or other structures would not be constructed.

Through bicycle commuting assistance offered by SACOG Rideshare, the project would provide safety and bicycle matching information to residents and employees who bicycle to work or for recreation.

3.3 TRANSIT FACILITIES

3.3.1 Existing Transit Service

Because transit service is not currently available in the project area (Exhibit 3-3), the North Natomas Transportation Management Association (NNTMA) has developed a shuttle program that serves the residents in the North Natomas community.

Shuttle service would adjust as development occurs; however, current service provides residents in North Natomas with three types of services:

- ▲ Commuter: Operates from 5:30 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m., Monday through Friday. Provides service for North Natomas residents to workplaces and transportation connections in North Natomas, South Natomas business corridor, and downtown Sacramento. Currently commuter service is free and seats are filled on a first come first serve basis. The NNTMA is anticipating an expansion in this service and a cost of \$1 per ride.
- ▲ Shopper: Operates from 10:00 a.m. to 4:00 p.m., Monday through Friday. Provides a free shuttle service on a fixed route to shopping and recreational facilities within the North Natomas community.
- ▲ Dial-a-ride: This service is for the occasional rider. \$1 each way, free to destination in North Natomas. Residents would need to call the shuttle line at (916) 429-2667 to schedule a ride (reservations accepted between 9:30 a.m. and 2:30 p.m.). Limited spaces available.

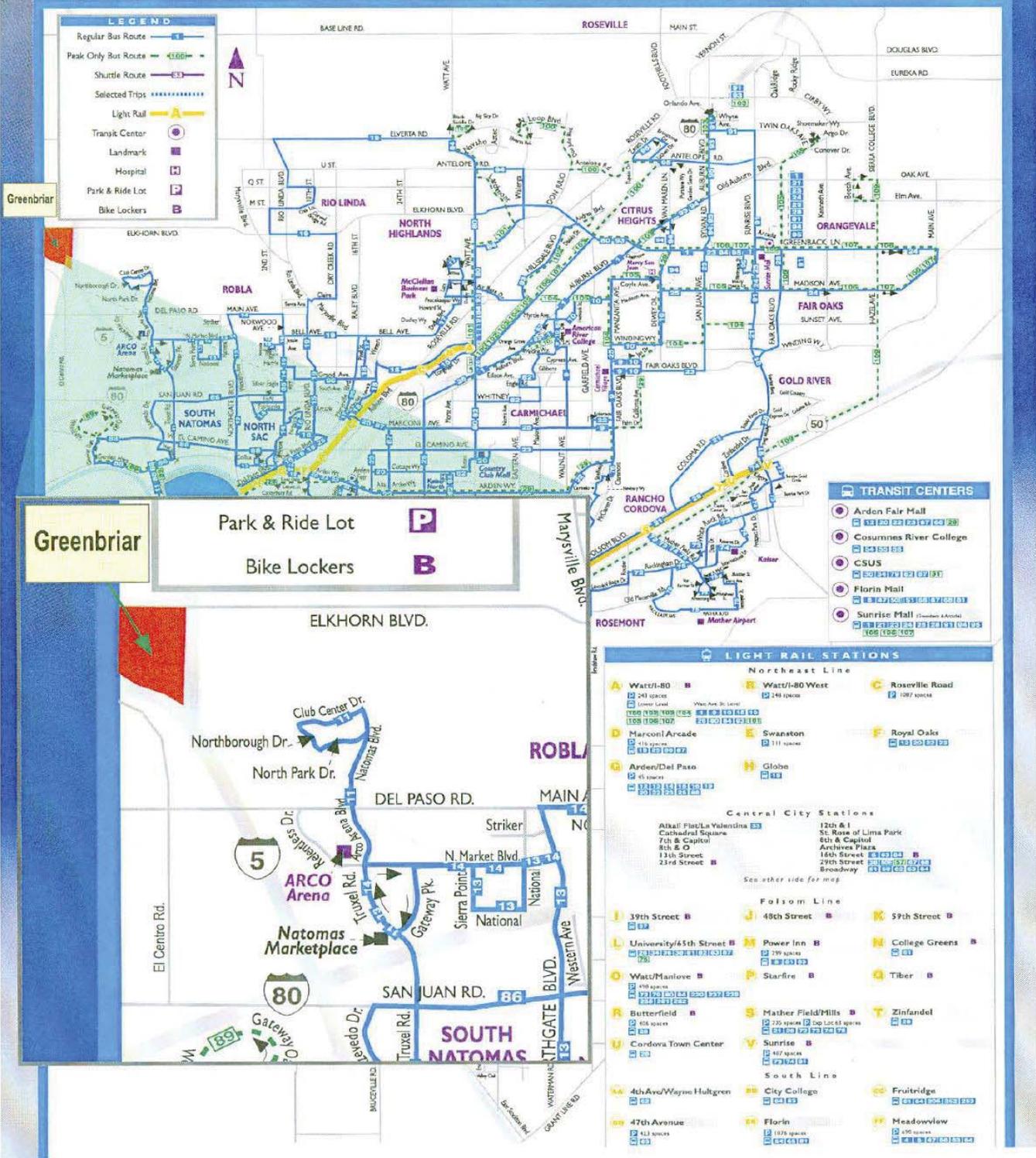
All service would be provided by shuttle bus or by taxi cab. Residents would be notified what vehicle to expect when they schedule their rides.

The project applicant is aware that until RT service becomes available, shuttle service is an important component in the project's alternative mode program. The project applicant would provide its community with shuttle service that includes a commuter line as well as other midday service.

Sacramento Regional Transit currently operates 3 bus routes in North Natomas (Routes 11, 13, 14); however, none of these routes would serve the project site. As described in the DEIR (see Impact 6.1-10, "Transportation and Circulation," of the DEIR), the specific number of public transit riders that would be generated by the project cannot be known. However, the DEIR concluded that because the project would generate new demand for public transit services and none are currently provided to the site, the project would result in a significant impact to public transit services. Mitigation in the DEIR requires the project applicant to fund and operate a peak commute hour shuttle/bus transportation service for residents of the project site. The applicant shall develop this service in consultation with the City of Sacramento and RT. The applicant shall begin to provide shuttle services once demand for public transit services reaches 50 service requests, and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site. The project applicants will continue to provide shuttle services until such time that Sacramento Regional Transit is operating a bus or light rail line that would serve the project site. The timing of when these services would be provided by Sacramento Regional Transit District is unknown (City of Sacramento and Sacramento LAFCO 2007b).

BUS & LIGHT RAIL SYSTEM MAP

EFFECTIVE JUNE 19, 2005



Source: EDWA 2008

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Exhibit 3-3

Existing Transit Service



The details regarding the proposed interim transit service mitigation (Mitigation Measure 6.1-10 in the SRDEIR) would be developed through consultation with the City, Sacramento Regional Transit, and other transit service providers to ensure that the project would implement a transit service that puts into service the performance standards outlined in the mitigation. The City, through its responsibility as a lead agency, will be responsible for ensuring that transit services are offered to residents at the project through the monitoring requirements of the Mitigation Monitoring Plan as required by CEQA. The final details of the transit service plan will depend upon the transit services requested by on-site residents (City of Sacramento and Sacramento LAFCO 2007b).

3.3.2 Proposed Transit Service

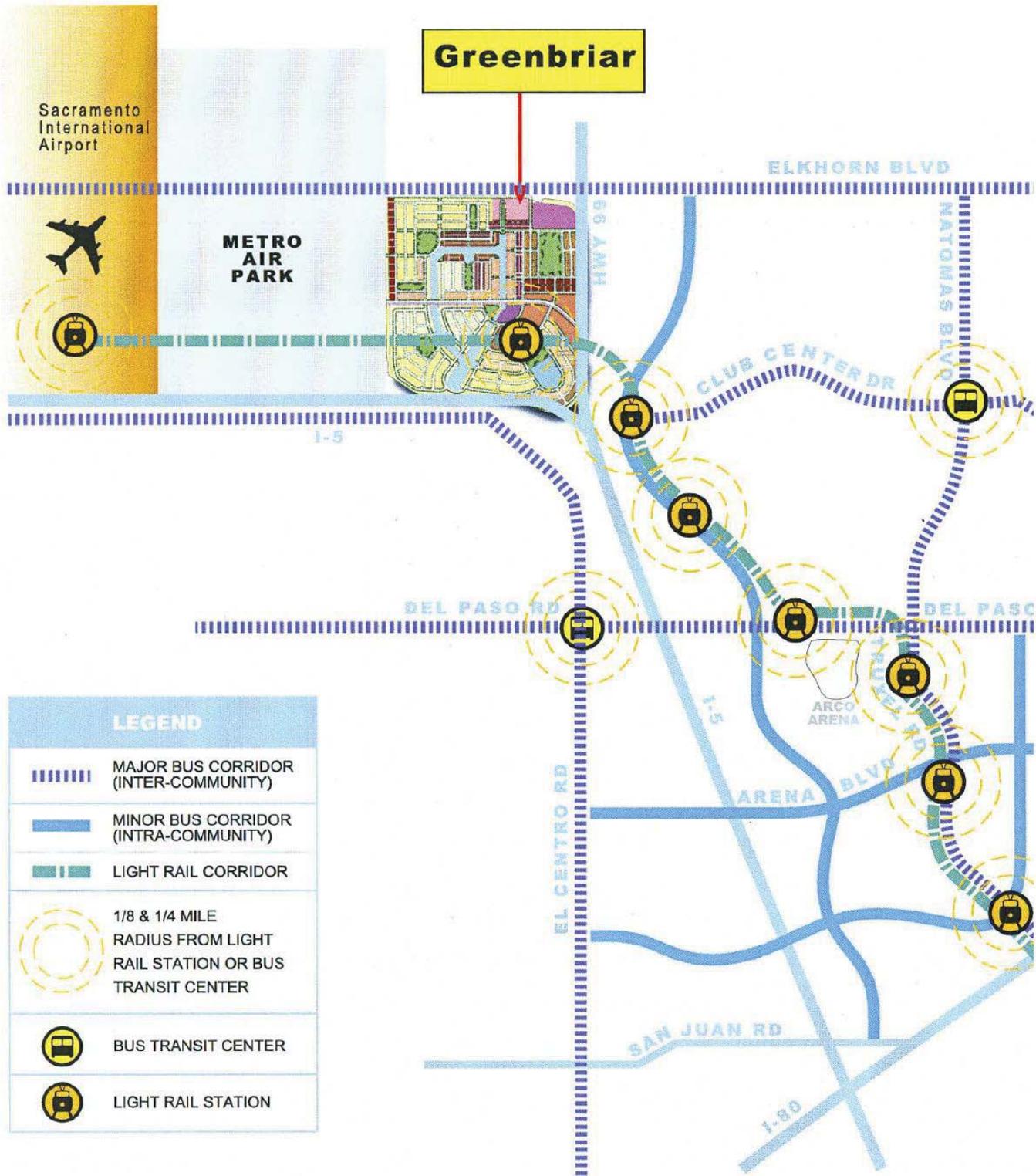
Initially, the project would not be directly served by public transit, as the community is in the initial stages of infrastructure development. However, the NNTMA does provide shuttle services that would serve this project as it builds out (see reduction measure 33 below). As the new residents begin to occupy homes and as commercial areas develop in the newly incorporated areas of North Natomas, residents and employees would be served by increased bus service and ultimately, light rail provided by Regional Transit (RT) (Exhibit 3-4).

The project's land use plan includes dedication of a corridor along the proposed Meister Way that could accommodate a future transit stop and light rail line. These lands would be developed with the light rail line, transit station, and parking facilities by Sacramento Regional Transit District at the time funding is secured for the proposed Downtown-Natomas-Airport light rail line (DNA).

Additionally, the project applicants as an element of the project have proposed to dedicate an easement for the light-rail line along Meister Way. This easement would be transferred to the Sacramento Regional Transit District (SRTD) and would eliminate the need for SRTD to purchase land for the DNA alignment.

The DNA line would also reduce congestion from other non project sources on I-5 (primarily), SR 70/99, and I-80. According to the DNA Draft Alternatives Analysis Report (2003), the DNA line is expected to transport as many as 1,200 persons per hour during its peak hour of operation and will reduce weekday peak period auto travel to Downtown Sacramento by 4,700 daily trips. By comparison, traffic volumes on I-5 in 2025 will range upwards to around 19,000 peak hour trips (both directions). The large number of people traveling during peak hour in this corridor to access jobs in Downtown demonstrates the need to have a variety of transportation mode choices, including the DNA line, highway improvements and express bus services. Given that the DNA line will parallel I-5, it would likely reduce congestion on I-5, as well as reducing traffic on SR 70/99. A funding mechanism for a portion of the DNA line construction costs has been established by the City, including the collection of fees from development in the North Natomas Community Plan area and land dedications for the light rail alignment and stations.

Recognizing the importance of the DNA line in reducing traffic congestion and improving mobility and air quality by providing alternative transit opportunities, the City of Sacramento, as co-lead agency for the project, has directed developers in the North Natomas area to focus mitigation efforts on projects that would result in regional congestion relief and incentives for reduction of trips. One of the regional congestion relief projects that the City is supporting is the funding of the DNA line. Other projects could include contribution to freeway ramps, interchange facilities, bus/carpool lanes to Sacramento International Airport, parallel roads, and overpass connections that act as "relievers" to the mixed flow lanes on I-5 within the Natomas area (City of Sacramento and Sacramento LAFCO 2007b).



Source: EDAW 2008

X12010016 01 008

4 PROPOSED REDUCTION MEASURES

The following supporting text and exhibits describe project design features and mitigation measures, as contained in environmental documentation, that would reduce air pollutant emissions from the proposed development-related land uses. The text describes how the reduction measures would be implemented in accordance with the information available at this time in order to achieve a recommended minimum 15% reduction in emissions. Additional information may be available when development occurs.

As mentioned earlier in the Executive Summary, this AQMP replaces the prior 2008 AQMP that replaced the AQ/TSM plan and will be included as part of the mitigation monitoring plan for the project as agreed upon by SMAQMD.

4.1 BICYCLE/PEDESTRIAN/TRANSIT MEASURES

Measure 1: Bike parking

Unscaled SMAQMD emissions reduction = 0.63
Scale factor = 0.54 (commercial land uses)
Scaled mitigation value = 0.34

As required by Mitigation Measure 6.1-9: Bicycle and Pedestrian Facilities (City of Sacramento) (Refer to pages 6.1-83 and 6.1-84 of the Greenbriar Development Project SRDEIR [City of Sacramento and Sacramento LAFCO 2007a], which was not changed in the Final Environmental Impact Report [FEIR] issued on August 2007), the applicant shall implement the following:

- a. Before recordation of the first map, the project applicant shall coordinate with the City of Sacramento Development Engineering and Finance Division to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the project and could include: sidewalks, stop signs, in-pavement lighted crosswalks, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, marked and raised crosswalks, and pedestrian signal heads.
- b. Circulation and access to all proposed parks and public spaces shall include sidewalks that meet American with Disability Act Standards.
- c. The project applicant shall dedicate a buffer along the edges of the project site (south, east, and west) to the City of Sacramento. This buffer shall be landscaped by the project applicant and shall provide space for future 10-foot off-street bikeways that would connect residents and employees to the NNCP area and other Class I bike facilities. The buffer on the western edge of the project site shall not encroach on the 250-foot linear open space/buffer proposed for giant garter snake habitat.
- d. The project applicant shall provide on-street bicycle lanes 5-6-feet wide within the community. Details on the design and siting of these bike lanes shall be done in consultation with the City of Sacramento Development Engineering and Finance Division.
- e. Bicycle parking shall conform to City standards and shall be located in high visibility areas to encourage bicycle travel. Class I (i.e., bicycle lockers) and Class II (i.e., racks) bicycle facilities shall be provided throughout the commercial areas of the project, at a ratio of 1 bicycle storage space for every 20 off-street vehicle parking spaces required. Fifty percent of the storage spaces shall be Class I facilities and the remaining 50% shall be Class II facilities.

- f. The project applicant shall provide residents, tenants, and employees of the project site with information regarding the SACOG Rideshare bicycle commuting program.

Measure 2: End of trip facilities

This reduction measure was not used.

Measure 3: Bike parking at multi-unit residential uses

Unscaled SMAQMD emissions reduction = 0.63

Scale factor = 0.43 (residential land uses)

Scaled mitigation value = 0.27

Criteria for bicycle parking at multi-unit residential uses in the project would be same as described in reduction measure 1 “Bike parking”.

Measure 4: Proximity to bike path/bike lanes

Unscaled SMAQMD emissions reduction = 0.63

Scale factor = 1.00 (entire project)

Scaled mitigation value = 0.63

As mentioned above in section 3.2; bicycle lanes are planned throughout the project and along Elkhorn Boulevard. Five foot (5') to six foot (6') bicycle lanes are designed to connect residents to all uses including the school and parks. Please refer to Exhibit 3-1 to view the project's roadway network.

Please refer to Exhibit 3-2 Proposed Bicycle System to view the project in relation to the City's planned and existing bikeways.

Through bicycle commuting assistance offered by SACOG Rideshare, the project can provide safety and bicycle matching information to residents and employees who bicycle to work or for recreation. A 200 ft. buffer would be dedicated to the City of Sacramento along the freeway and the project property line. The buffer area would be landscaped and would make possible a future twelve foot (12') off-street bikeway.

Subsequent to the publication of the DEIR, the applicants in coordination with the City have prepared Draft Planned Unit Development (PUD) Guidelines for the project. As identified in Section 2, “Transit Orientation and Mobility”, and Section 5, “Parks, Open Space, and Habitat Conservation,” the project includes a network of both on-and off-street trails and pathways to allow for the safe and convenient movement of non-vehicular traffic (e.g., pedestrians and bicycles). All arterial and collector streets would have striped Class II bike lanes and these lanes would be connected to off-site areas via Meister Way. A copy of the Draft PUD Guidelines is available for review at the City of Sacramento, Planning Department public counter (City of Sacramento and Sacramento LAFCO 2007b).

Measure 5: Pedestrian network

Unscaled SMAQMD emissions reduction = 1.00

Scale factor = 1.00

Scaled mitigation value = 1.00

Five foot (5') sidewalks would be constructed throughout the project. All sidewalks (with the exception of a portion of Meister Way), would have additional “buffer” landscaping to separate pedestrians from the roadways. Please refer to Exhibit 3-1 to view the project's roadway network for design specifications. Sidewalks would be in place prior to occupancy and for the purposes of this reduction measure are considered existing.

A fifteen foot (15') wide pedestrian paseo is designed to surround the water feature. The paseo would feature landscaping, lighting and benches. The paseo would also serve as a connector to the different uses within the project including the school and parks.

In addition to the fifteen foot paseo, land for a 200 ft. buffer would be dedicated to the City of Sacramento along the freeway and the project property line. The buffer area would be landscaped and would make possible for a future twelve foot (12') off-street bikeway.

See reduction measure 4 above regarding the PUD Guidelines for the project.

Measure 6: Pedestrian barriers minimized

Unscaled SMAQMD emissions reduction = 1.00

Scale factor = 1.00 (entire project)

Scaled mitigation value = 1.00

The project would be designed to maximize bicycle and pedestrian connectivity between residential uses and commercial/retail land uses. Any physical barrier that may impede pedestrian or bicycle circulation, such as berms, gates, walls, or other structures would not be constructed, with the exception of a sound wall along Meister Way. However, this wall would not result in any additional barrier or limited access as residential property along Meister Way would limit access from private property fences/gates regardless of the installation of this wall. Access to Meister Way would be provided by other internal roadways where they intersect Meister Way.

Measure 7: Bus shelter for existing transit service

Unscaled SMAQMD emissions reduction = 0.50

Scale factor = 1.00 (entire project)

Scaled mitigation value = 0.50

The details regarding the proposed interim transit service mitigation (Mitigation Measure 6.1-10 in the SRDEIR below) would be developed through consultation with the City, Sacramento Regional Transit, and other transit service providers to ensure that the project would implement a transit service that puts into service the performance standards outlined in the mitigation. The City, through its responsibility as a lead agency, will be responsible for ensuring that transit services are offered to residents at the project through the monitoring requirements of the Mitigation Monitoring Plan as required by CEQA. The final details of the transit service plan will depend upon the transit services requested by on-site residents. (City of Sacramento and Sacramento LAFCO 2007b.)

As required by Mitigation Measure 6.1-10: (Refer to page 6.1-84 of the SRDEIR [City of Sacramento and Sacramento LAFCO 2007a], which was not changed in the FEIR issued on August 2007), the applicant shall implement the following:

- ▲ Before the construction and operation of RT's proposed Light Rail Transit station along Meister Way, the project applicant shall fund and operate an interim shuttle/bus transportation service for residents and visitors of the project site. The project applicant shall develop this interim transit service in consultation with the City of Sacramento and the Regional Transit Authority. The interim transit service shall provide transit services for peak commute periods. To promote the use of public transit services, the project applicant at the sale of proposed residences shall promote the availability of transit services. Once demand for public transit services reaches 50 service requests, the project applicant shall begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site.
- ▲ The transit service shall take residents to the Central Business District (CBD) (i.e., downtown Sacramento) where they can transfer to light rail, bus, or train and connect to anywhere in the greater

Sacramento region and to the Bay Area. The transit service shall connect residents to the following transit services: Sacramento RT, El Dorado Transit, Yuba-Sutter Transit, YoloBus, Placer County Transit, San Joaquin Transit, Fairfield/Suisun Transit, Amador Transit, Roseville Transit, ETRAN (Elk Grove), and the Capitol Corridor/Amtrak. Midday service shall also be considered as development and rider ship demands increase.

- ▲ Final design and operation of the transit service would be subject to the approval of the City and other proposed operating agencies (e.g., RT).

This service would be active immediately upon occupancy and thus is considered here as an existing use.

Measure 8: Bus shelter for planned transit service

This reduction measure was not used. Credit is not given for this measure and for measure 7.

Measure 9: Traffic calming

This reduction measure was not used. Credit was not applied for this measure (see discussion below).

As required by Mitigation Measure 6.1-14: Traffic Calming Measures (Refer to pages 6.1-88 and 6.1-90 of the SRDEIR [City of Sacramento and Sacramento LAFCO 2007a], which was not changed in the FEIR issued on August 2007), the applicant shall implement the following:

- ▲ During review of the project's tentative map and project entitlements, the project applicant shall coordinate with the City to identify roadways where traffic calming measures including but not limited to narrow travel lanes, speed bumps, roundabouts, raised intersections, and stop controls are needed to ensure the orderly, efficient, and safe flow of traffic. Design and siting of these facilities would be subject to approval by the City Development Engineering and Finance Division, and the Development Services Department.

The proposed internal circulation network generally consists of three- and four-legged intersections controlled by stop signs (two-way or all-way). Three traffic signals are proposed along the Meister Way alignment. Exhibit 4-1 shows the proposed internal circulation traffic facilities. Due to the addition of a sound wall along Meister Way, traffic speeds could be increased on this road. The City may impose a reduced speed limit on Meister Way (35 miles per hour), but a specific requirement has not been identified at this time. Although all other traffic calming elements (e.g., controlled intersections, traffic signals) would be constructed per Mitigation Measure 6.1-14, increased speeds along Meister Way could reduce their effectiveness and therefore no emissions reductions were applied from this measure.

4.2 PARKING MEASURES

Measure 10a: Paid parking

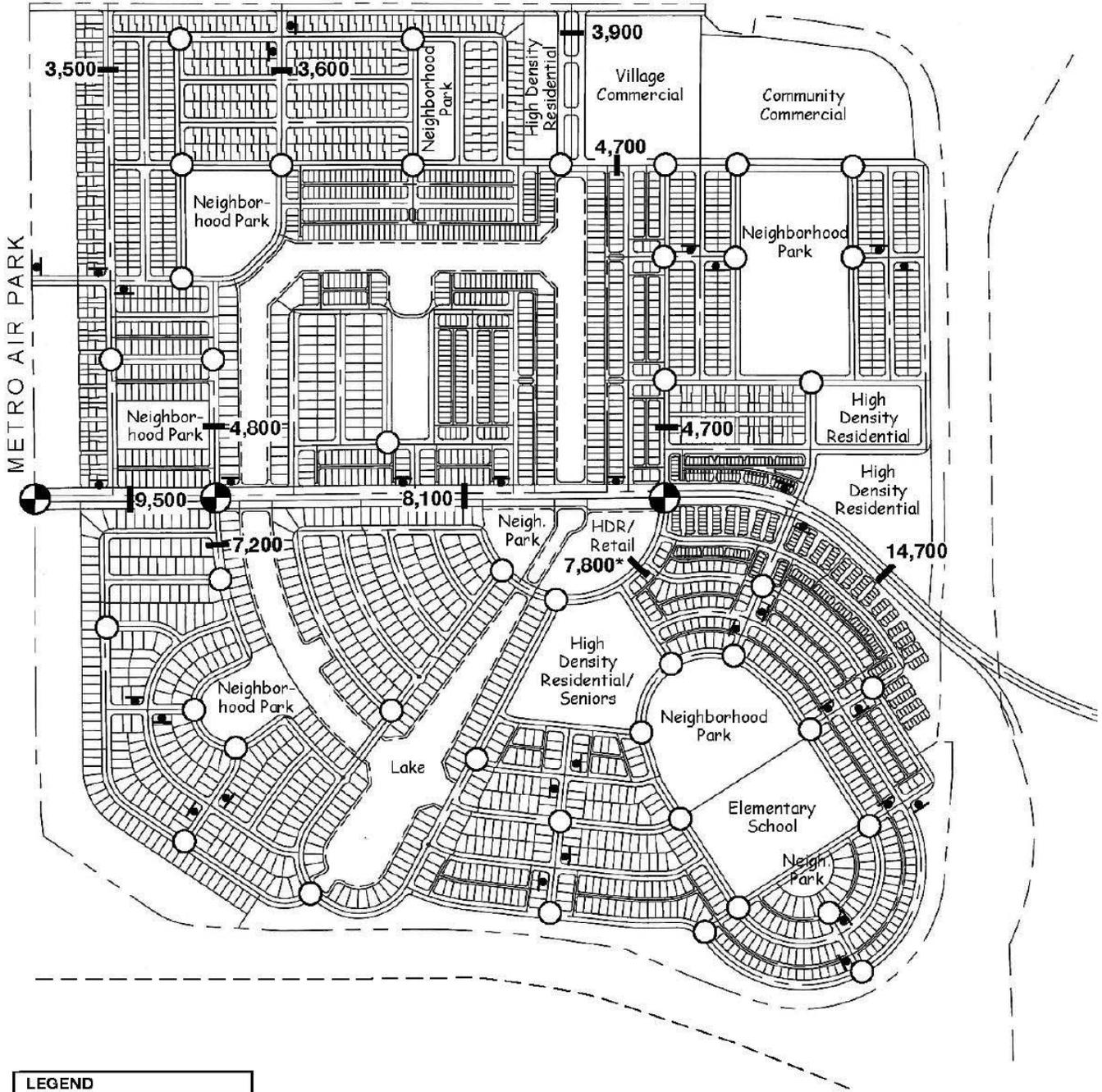
This reduction measure was not used.

Measure 10b: Parking cash out

This reduction measure was not used.

Measure 11: Minimum parking

This reduction measure was not used. Credit is not given for this measure and for measure 12.



LEGEND	
	Proposed Signal
	Proposed All-Way Stop
	Proposed Stop Sign

* Average Daily Traffic in Vehicles Per Day
 G 05110011.01 041



Source: EDAW 2008

X12010016 01 009



Measure 12: Parking reduction beyond code

This reduction measure was not used. Credit is not given for this measure and for measure 11.

Measure 13: Pedestrian pathway through parking

Unscaled SMAQMD emissions reduction = 0.50

Scale factor = 0.54 (commercial areas)

Scaled mitigation value = 0.27

As mentioned in section 4.1 reduction measures 4 and 6 “Proximity to bike path/bike lanes and Pedestrian barriers minimized”, bicycle lanes are planned throughout the project and along Elkhorn Boulevard. Five foot (5') to six foot (6') bicycle lanes are designed to connect residents to all uses including the school and parks. Please refer to Exhibit 3-1 to view the project's roadway network.

Please refer to Exhibit 3-2 Proposed Bicycle System to view the project in relation to the City's planned and existing bikeways.

The project would be designed to maximize bicycle and pedestrian connectivity between residential uses and commercial/retail land uses. Any physical barrier that may impede pedestrian or bicycle circulation, such as berms, gates, walls, or other structures would not be constructed.

Subsequent to the publication of the DEIR, the applicants in coordination with the City have prepared Draft PUD Guidelines for the project. As identified in Section 2, “Transit Orientation and Mobility, “ and Section 5, “Parks, Open Space, and Habitat Conservation,” the project includes a network of both on-and off-street trails and pathways to allow for the safe and convenient movement of non-vehicular traffic (e.g., pedestrians and bicycles). All arterial and collector streets would have striped Class II bike lanes and these lanes would be connected to off- site areas via Meister Way. A copy of the Draft PUD Guidelines is available for review at the City of Sacramento, Planning Department public counter. (City of Sacramento and Sacramento LAFCO 2007b).

Measure 14: Off-street parking

This reduction measure was not used.

4.3 SITE DESIGN MEASURES

Measure 15: Office/Mixed-use density

This reduction measure was not used.

Measure 16: Orientation to existing alternate transit

This reduction measure was not used. Credit is not given for this measure and for measure 17.

Measure 17: Orientation to planned alternate transit

This reduction measure was not used. Credit was not applied for this measure (see discussion below).

The City, through its responsibility as a lead agency, will be responsible for ensuring that transit services are offered to residents at the project through the monitoring requirements of the Mitigation Monitoring Plan as required by CEQA. As the new residents begin to occupy homes and as commercial areas develop in the newly incorporated areas of North Natomas, residents and employees would be served by increased bus service and ultimately, light rail provided by RT (Exhibit 3-4). The final details of the transit service plan will

depend upon the transit services requested by on-site residents. (City of Sacramento and Sacramento LAFCO 2007b). While the 2008 AQMP included a credit for orientation to planned alternative transit given the plans for transit service, with the change in site plan to include an 8 foot sound wall on the north side of Meister Way, in combination with reorientation of the residential lots located on the north side of Meister Way to back up to the street, the Air District expressed concern about whether the credit would be appropriate. While a transit service plan will still be developed and residents on the north side of Meister Way will be able to access transit, credit is no longer being applied for this measure

Measure 18: Residential density

This reduction measure was not used. Credit was not applied for this measure (see discussion below).

The project would provide high-density residential development. See reduction measures 4–7 for more detailed information regarding access to existing and planned transit (Exhibit 3-3 and 3-4).

The project would serve as a focal point with parks, an elementary school, retail and commercial uses. A pedestrian paseo surrounds an extensive water feature that runs through the project. The project would generally be consistent with the City of Sacramento General Plan Update Vision and Guiding Principles document adopted in November 2005, and SACOG's Seven Principles of Smart Growth used to develop the regional blueprint. The project's compliance with these two sets of broad policy directives is described in the Planned Unit Development Design Guidelines prepared for the project. The City will consider adoption of the Planned Unit Development Design Guidelines as one of several discretionary actions necessary to approve the project. Unique for a suburban development, the project has been strategically designed around a future light rail station on the Downtown- Natomas-Airport (DNA) line. This rail line would connect the Natomas area to jobs at Metro Air Park, the Sacramento International Airport, and key activity centers in Natomas such as Arco Arena and the Town Center area, as well as downtown Sacramento.

The project embodies several planning strategies aimed at optimizing the potential for transit ridership when the planned light rail line from downtown to the Sacramento International Airport is built and a station is established at the center of the project. These strategies include:

- ▲ higher density housing near the station site,
- ▲ mixed-use development adjacent to the station site,
- ▲ residential block sizes that encourage pedestrian and bicycle activity and
- ▲ open space/park network for easier pedestrian/bicycle trips.

Increased density directly relates to improved air quality. Higher density leads to shorter walking distances for a greater number of people, and clustering of multiple land use types allows these people to have convenient access to many daily amenities. The project has a diversity of housing types, with an overall average residential density of 10.8 du/acre. Once the light rail becomes operable it is estimated, for the purposes of this plan, to have headways of 30 minutes, though it may have 15-minute headways during peak periods. While the planned density with approval of the Minor Tentative Map Amendment would decrease slightly, the applicant will be submitting an application for Phase 2 entitlements that would result in the overall density of the Project remaining substantially similar to that approved in 2008. However, because an exact unit count for Phase 2 is not known at this time, and based on comments from the Air District, no credits were applied for this measure.

Measure 19: Street grid

Unscaled SMAQMD emissions reduction = 1.00

Scale factor = 1.00 (entire project)

Scaled mitigation value = 1.00

The project's use of a highly connected gridded street pattern would provide multiple access routes to destinations on-site and off-site and would allow for narrower streets within residential neighborhoods, and

shorter walking distances between land uses (as compared with a circuitous roadway network). The gridded street pattern would reduce vehicle miles traveled, would disperse traffic, and reduce congestion.

Measure 20: Neighborhood Electric Vehicle access

This reduction measure was not used.

Measure 21: Affordable housing

Unscaled SMAQMD emissions reduction = 0.60

Scale factor = 0.43 (residential uses)

Scaled mitigation value = 0.26

The total number of housing units proposed to be developed as part of the project is 3,473 dwellings. The project would provide an age-restricted facility that provides housing for seniors and retirees to satisfy the requirements of the City's Inclusionary Housing Ordinance (Section 17.190 of the City of Sacramento Zoning Code). The Inclusionary Housing Ordinance requires that 10% of housing units in new developments be affordable to very- low-income households and 5% of housing units affordable to low-income households. Development of senior housing would create a retirement community that would serve very-low and low-income households and would increase the mixture of housing types within the project.

4.4 MIXED-USE MEASURES

Measure 22: Urban mixed-use

This reduction measure was not used. Credit is not given for this measure and for measure 23 and 24.

Measure 23: Suburban mixed-use development

Unscaled SMAQMD emissions reduction = 3.00

Scale factor = 1 (entire project is within at least a one-quarter mile radius of at least three land use types and the Metro Air Park.)

Scaled mitigation value = 3

The project is a transit oriented mixed-use project with high-density uses within $\frac{1}{4}$ mile of planned transit (Exhibit 4-2). Note that the site plan in exhibit 4-2 has not been updated to reflect the recent tentative map change. However, the updated site plan is provided in Exhibit 3-1 and the proposed changes would not affect applicability of this measure.

The majority of the project has multiple land use types within walking distance of one another (a minimum of three of the following: residential, commercial, parks, or open space within $\frac{1}{4}$ mile from the geographic center of each land use type). The project has dedicated land along Meister Way for the purposes of a light rail station.

Additional land has been reserved for a RT bus-station as well as a park-n-ride lot. The lot would include spaces for cars as well as Class I lockers for bicyclists.

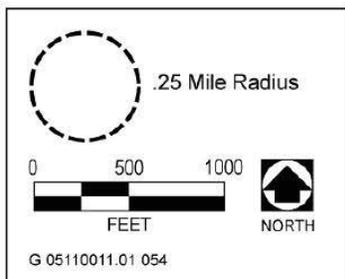
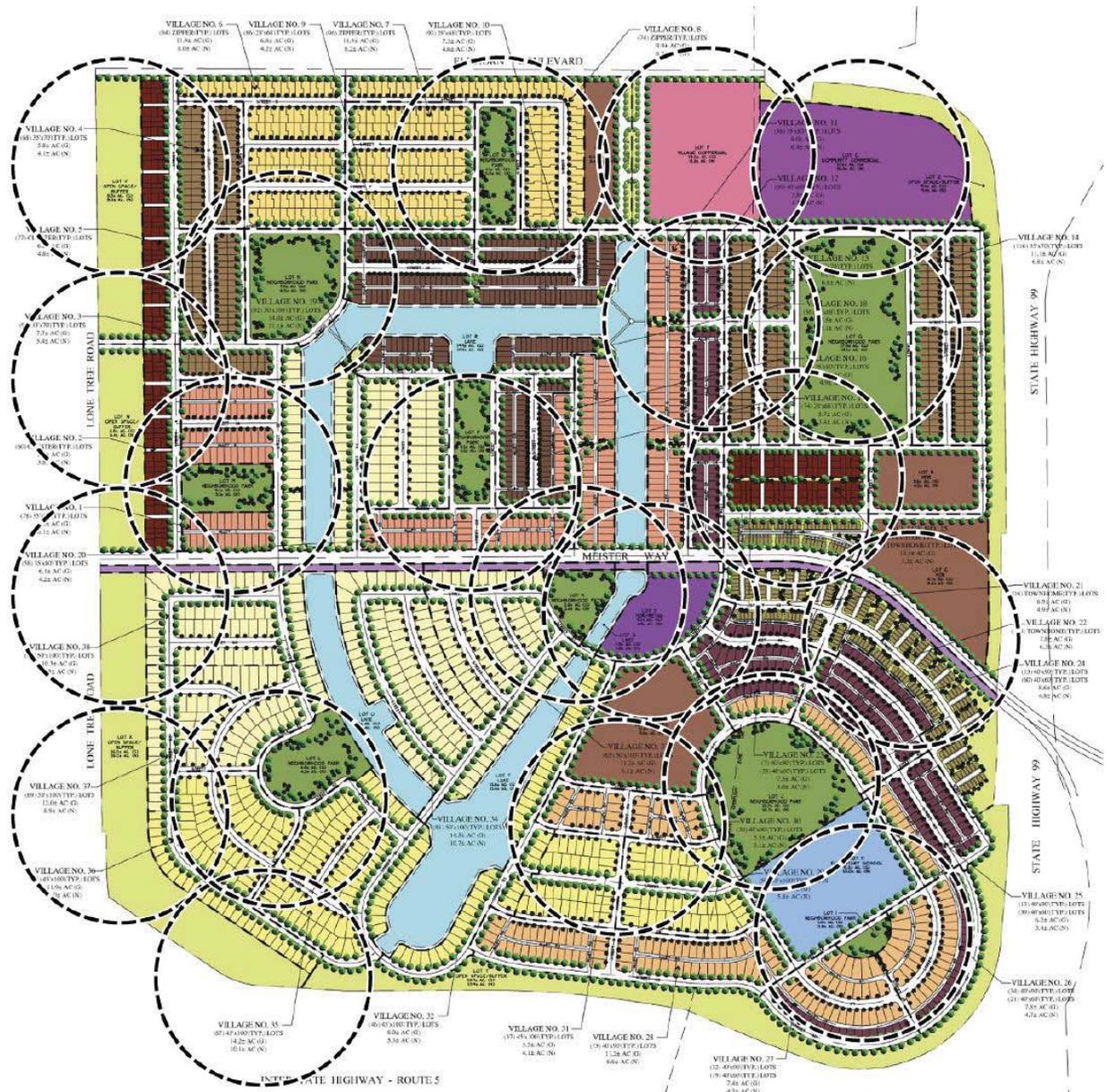
As mentioned in reduction measure 18 above; the project development plan embodies several planning strategies aimed at optimizing the potential for transit ridership when the planned RT Light Rail line from downtown Sacramento to the Sacramento International Airport is built and a station is established at the center of the project. These strategies include:

- ▲ higher density housing near the station site,

- ▲ mixed-use development adjacent to the station site,
- ▲ residential block sizes that encourage pedestrian and bicycle activity and
- ▲ open space/park network for easier pedestrian/bicycle trips.

Initially the project would not be directly served by public transit, as the community is in the initial stages of infrastructure development. Please see section 3.3 for more information on proposed transit improvements.

Metro Air Park



Source: EDAW 2008

X12010016 01 010

Exhibit 4-2

Proximity of Mixed Uses



Measure 24: Other mixed-uses

This reduction measure was not used. Credit is not given for this measure and for measure 22 and 23.

4.5 BUILDING COMPONENT MEASURES

Measure 25: No fireplace

This reduction measure was not used.

Measure 26: Ozone Destruction Catalyst

This reduction measure was not used.

Measure 27: Energy Star roof

This reduction measure was not used.

Measure 28: Onsite renewable energy system

SMAQMD emission reduction range: between 1 and 3 points (2.5% to 12.5% onsite renewable energy)
Mitigation value: 3.0 based on providing 3,777 megawatt-hour/year (MWh/yr) of renewable energy supply.

In accordance with 2007 SMAQMD guidance, incorporation of onsite renewable energy that generates 12.5% of the project's total energy demand would result in 3 mitigation points. Because the onsite renewable energy commitment would be solar panels on homes/buildings, the project's total building electricity demand was used to derive the mitigation requirement. To estimate the project's total electricity demand, the proposed land use types and sizes were input into the California Emissions Estimator Model Version 2016.3.2. Modeling inputs and annual electricity demand are shown below in Table 4-1 and detailed assumptions are shown in Appendix A.

As shown below in Table 4-1, the project is estimated to require 30,213 MWh/yr. To obtain 3.0 mitigation points, the project must supplement 12.5% of the total energy demand with onsite renewables, equivalent to 3,777 MWh/year. Based on the energy demand estimates, assuming each system supplies 100 percent electricity need for each house, this level of onsite solar could be achieved by installing solar systems on 447 single-family homes or on all higher density homes (561 units) plus 165 single family homes. Final site plans have not been prepared but the project would install sufficient onsite solar systems such that 3,777 MWh/yr of electricity would be supplied from renewable sources.

Because this measure was not applied during the 2008 AQMP or environmental document preparation, a new mitigation measure has been incorporated into this AQMP update as well as included in the City's 2018 Addendum prepared concurrently for approval of the Minor Tentative Map Amendment. As required by revised Mitigation Measure 6.2-2, the applicant shall implement the following:

- ▲ The project applicant shall install onsite solar systems throughout the project site, that in total generate a minimum of 3,777 MWh/year of electricity, equivalent to 12.5% of the estimated project's total building-related electricity demands. If, at the time of final map approval and building design, the applicant can demonstrate to the City that total project annual electricity demand would be different, this value can be recalculated based on 12.5% of the anticipated annual electricity demand. New calculations and substantial evidence shall be provided by the applicant to the City of Sacramento for approval.

Table 4-1 Project Annual Energy Demand

Land Use	Unit/Size	MWH/Year
Single Family Homes	2,298 dwelling units	19,404
Medium and High-Density Homes	531 dwelling units	2,386
Educational	10 acres	459
Parks/Buffers/Paseos/Landscaping	65 acres	978
Shopping Center	354,143 square feet	4,097
Community Commercial	13,068 square feet	151
Grocery/Retail	67,000 square feet	2,707
Community Center Building	2,000 square feet	29
TOTAL		30,213

Source: Compiled by Ascent Environmental, Inc based on the approved 2017 Conceptual Plan and the data available in the 2007 2nd Recirculated Draft Environmental Impact Report. See Appendix A for details

Measure 29: Exceed Title 24

This reduction measure was not used.

Measure 30: Solar orientation

This reduction measure was not used.

Measure 31: Non-Roof Surfaces

This reduction measure was not used.

Measure 32: Green Roof

This reduction measure was not used.

4.6 TDM AND MISCELLANEOUS MEASURES

Measure 33: Transportation Management Association Membership

Unscaled SMAQMD emissions reduction = 5.00

Scale factor = 1.00 (entire project)

Scaled mitigation value = 5.00

Currently the project is not served by a TMA. The TMA closest to the project is the NNTMA. The NNTMA offers its employee and residential members services such as shuttle service, Guaranteed Ride Home Program, transportation fairs, ride matching assistance, and vanpool assistance. Membership fees are automatically paid by residents and tenants through annual assessments to the Community Facilities District.

The project would join a TMA and participate in programs and services offered by the TMA. The project's Transportation Coordinator would work with the TMA to promote TMA programs for the purpose of reducing employee commute trips. The TMA would also promote programs to residents through marketing, transportation fairs, and through their Web site and publications.

The TMA would also work with the Transportation Coordinator to provide information to new residents.

SMAQMD commented on this issue when the DEIR was released, and the information did not change in the RDEIR. Mitigation Measure 6.2-2 (Page 6.2-22 of the RDEIR) was revised as shown below to concur with those measures contained in the SMAQMD-approved AQ/TSM plan. This change is also presented in Chapter 7, "Revisions to the DEIR, RDEIR, and SRDEIR" (City of Sacramento and Sacramento LAFCO 2007b).

Page 6.2-21, Mitigation Measure 6.2-2, is hereby revised as follows:

When a project's operational emissions are estimated to exceed SMAQMD's threshold of significance of 65 lb/day for ROG or NOX, an Air Quality Mitigation Plan (AQAP) (~~Appendix E~~) to reduce operational emissions by a minimum of 15% shall be submitted to SMAQMD for approval. The following mitigation is included in the SMAQMD-approved AQAP for this project (Appendix E) ~~has been chosen from SMAQMD's most current recommended land use reduction measure~~ and shall be incorporated to achieve a 15% reduction.

j. A display case/kiosk displaying transportation information shall be provided.

m. The project shall become a permanent member of a Transportation Management Association (TMA).

n. The project shall provide a transportation coordinator.

Measure 34: Electric lawnmower

This reduction measure was not used.

Measure 99: Other

This reduction measure was not used.

5 REFERENCES

- City of Sacramento and Sacramento LAFCO. 2007a (April 9). *Greenbriar Development Project Second Recirculated Draft Environmental Impact Report*. Sacramento, CA. Prepared by EDAW, Sacramento, CA.
- City of Sacramento and Sacramento LAFCO. 2007b. *Greenbriar Development Project Final Environmental Impact Report*. Sacramento, CA. Prepared by EDAW, Sacramento, CA.
- City of Sacramento. 2007c. *Title 17 Zoning Code*. Sacramento, CA.
- EDAW. 2008 (January). *Operational Air Quality Mitigation Plan*. Prepared for the City of Sacramento. Prepared by EDAW. Sacramento, CA.
- Institute of Transportation Engineers. 2004. *Parking Generation Manual*, 3rd Edition. ISBN-13: 978-0-935403-92-3. Washington, DC.
- ITE. See Institute of Transportation Engineers.
- North Natomas 575 Investors, LLC. 2005. *Greenbriar Master AQ/TSM Plan*. Sacramento, CA. Prepared by The Hoyt Company, Sacramento, CA.
- Sacramento Metropolitan Air Quality Management District. 2007 (August). *Recommended Guidance for Land Use Emissions Reductions Version 2.4*. Sacramento, CA.
- SMAQMD. See Sacramento Metropolitan Air Quality Management District.

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Appendix A

Measure 28 Calculations and Assumptions

Measure 28. Project provides onsite renewable energy systems (NEW MEASURE)

Applicability: Projects that install renewable energy systems capable of generating 12.5% of project's projected annual energy need shall receive 3.0 mitigation points

LAND USE SUMMARY

LU ID	CaIeEMod Land Use	SIZE/JUNIT	METRIC	ACRES	Res. Acreage Summary		
1	Phase 1 Single Family Housing	1137	DU	133.4	SFH Unit	Acres	DU/Acre
2	Phase 2 Single Family Housing	1161	DU	110.0	2298	243.4	9.44125
3	Phase 1 Apartment Low-Rise	225	DU	7.5	531	16.9	31.4201
4	Phase 2 Apartment Low-Rise	306	DU	9.4	2829	260.3	10.8682
5	Elementary School	750	Student	10.0			
6a	Shopping Center	177,071 - 354,143	SF	27.1			
6b	Community Commercial	9801 - 13,068	SF	1.5			
7	Parks	65.1	Acre	65.1			
8	Supermarket	67	1,000 SF	6.4			
9	Community Center	2	1,000 SF	1.9			

REGIONAL COMMERCIAL/FAR: 0.15 - 3.0
SUBURBAN CENTER /FAR: 0.15 - 2.0

SOURCE

- Based on 4/15/2018 revised PD for Greenbriar Phase 1 Tentative Map Amendment and revised land use summary indicating 1137 SFH on 133 acres
- DU count from Approved Conceptual Plan dated May 2017.
- Based on 4/15/2018 revised PD for Greenbriar Phase 1 Tentative Map Amendment indicating 225 multi-family on 7.5 acres
- DU count from Approved Conceptual Plan dated May 2017.
- Number of students based on reasonable assumptions from other projects in Sacramento (Panhandle, Mather South) and acreage from 2007 2nd Recirculation EIR (Table 3-2)
- Acreage from Approved Conceptual Plan dated May 2017. FAR's per Gen Plan Designation.
- This category includes all irrigated open-space categories (Parks, Freeway Buffers, Paseos & Landscape Corridors) from approved conceptual plan dated May 2017
- SF based on the land use description in the 2007 2nd Recirculation EIR page 3-6 and acreage based on the ratio of the supermarket/retail SF uses to the total acreage for the CNCO designation in table 3-2 of 27.5 acres
- Based on Conceptual Site Plan prepared in support of the Greenbriar entitlement application.

Project Energy Estimate

CaIeEMod Inputs	SIZE/JUNIT	METRIC	KWH/Year	MWH/Year
Single Family Homes	2298	DU	19,403,800	19,404
Apartment/Lot Rise	531	DU	2,386,440	2,386
Elementary School	750	students	458,983	459
Parks	65.1	acres	978,336	978
Grocery	67	1000 sf	2,707,470	2,707
Office Building (used for community bid.)	2	1000 sf	28,880	29
Regional Shopping Center	354,143	1000 sf	4,097,430	4,097
Retail/Strip Mall	13,068	1000 sf	151,197	151
TOTAL				30,213
12.5% of project energy to obtain 3 mitigation points (MWH/YEAR)				3,777

Notes

park energy use based on CaIeEMod assumptions for parking lot lighting of 0.345 kwh/sf in section 7.3 of appendix a

Solar Requirements

Single Family Homes	Apartment/Lot Rise	Scenario 1: All Apartment, some SFH	Scenario 2: All SFH
MWH/DU	MWH/yr	MWH/yr	MWH/yr
8.4	2386	3777	3777
4.5	1390		
#Units	#Units	#Units	#Units
531	165	447	447
165			

GB - Sacramento County, Annual

GB

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	65.10	Acre	65.10	2,835,756.00	0
Single Family Housing	2,298.00	Dwelling Unit	243.40	4,136,400.00	6136
Apartments Low Rise	531.00	Dwelling Unit	31.40	531,000.00	1418
Strip Mall	13.07	1000sqft	1.50	13,068.00	0
Regional Shopping Center	354.14	1000sqft	27.10	354,143.00	0
Elementary School	750.00	Student	10.00	62,702.53	0
Supermarket	67.00	1000sqft	6.40	67,000.00	0
General Office Building	2.00	1000sqft	1.90	2,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	58
Climate Zone	6	Operational Year			2020

Utility Company Sacramento Municipal Utility District

CO2 Intensity (lb/MW/hr)	590.31	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Office used to represent community center. All land uses provided by wood rogers 2018. See AQMP Appendix for details/sources.

Construction Phase - run used for electricity demand only

Off-road Equipment - run used for electricity demand only

Grading - run used for electricity demand only

Trips and VMT - run used for electricity demand only.

On-road Fugitive Dust - run used for electricity demand only.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	620.00	1.00
tblConstructionPhase	PhaseEndDate	3/29/2023	11/12/2020
tblLandUse	LandUseSquareFeet	13,070.00	13,068.00
tblLandUse	LandUseSquareFeet	354,140.00	354,143.00
tblLandUse	LotAcreage	746.10	243.40
tblLandUse	LotAcreage	33.19	31.40
tblLandUse	LotAcreage	0.30	1.50
tblLandUse	LotAcreage	8.13	27.10
tblLandUse	LotAcreage	1.44	10.00
tblLandUse	LotAcreage	1.54	6.40
tblLandUse	LotAcreage	0.05	1.90
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOnRoadDust	HaulingPercentPave	100.00	0.00
tblOnRoadDust	RoadSiltLoading	0.10	0.00
tblOnRoadDust	VendorPercentPave	100.00	0.00
tblOnRoadDust	WorkerPercentPave	100.00	0.00
tblTripsAndVMT	Hauling TripLength	20.00	0.00
tblTripsAndVMT	Vendor TripLength	6.50	0.00
tblTripsAndVMT	Worker TripLength	10.00	0.00

5.0 Energy Detail

5.2 Energy by Land Use - NaturalGas Unmitigated

Land Use	tons/yr										MT/yr						
	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr																
Apartments Low Rise	6.42442e+006	0.0346	0.2960	0.1260	1.8900e-003	0.0239	0.0239	0.0239	0.0239	0.0239	0.0239	0.0000	342.8315	342.8315	6.5700e-003	6.2900e-003	344.8688

City/Park	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Elementary School	956841	5.1600e-003	0.0469	0.0394	2.8000e-004	3.5600e-003	0.0239	0.0239	3.5600e-003	0.0239	0.0239	0.0239	0.0239	3.5600e-003	0.0239	0.0239	0.0239	3.5600e-003	0.0239	0.0239
General Office Building	26200	1.4000e-004	1.2800e-003	1.0800e-003	1.0000e-005	1.0000e-004														
Regional Shopping Center	1.91946e+006	0.0104	0.0941	0.0790	5.6000e-004	7.1500e-003	0.0239	0.0239	7.1500e-003	0.0239	0.0239	0.0239	0.0239	7.1500e-003	0.0239	0.0239	0.0239	7.1500e-003	0.0239	0.0239
Single Family Housing	5.93581e+007	0.3201	2.7356	1.1641	0.0175	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212	0.2212
Strip Mall	70828.6	3.8000e-004	3.4700e-003	2.9200e-003	2.0000e-005	2.6000e-004														
Supermarket	1.7018e+006	9.1800e-003	0.0834	0.0701	5.0000e-004	6.3400e-003	0.0239	0.0239	6.3400e-003	0.0239	0.0239	0.0239	0.0239	6.3400e-003	0.0239	0.0239	0.0239	6.3400e-003	0.0239	0.0239
Total		0.3800	3.2608	1.4826	0.0207	0.2625														

Mitigated

Natural Gas Use	ROG	NOX	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Blc-CO2	NBlc-CO2	Total CO2	CH4	N2O	CO2e	
Land Use	tons/yr																
kBTU/yr																	
Apartments Low Rise	6.42442e+006	0.0346	0.2960	0.1260	1.8900e-003	0.0239	0.0239	0.0239	0.0239	0.0239	0.0000	342.8315	342.8315	6.5700e-003	0.0000	6.2900e-003	344.8688
City/Park	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	956841	5.1600e-003	0.0469	0.0394	2.8000e-004	3.5600e-003	0.0239	0.0239	3.5600e-003	0.0239	0.0000	51.0607	51.0607	9.8000e-004	0.0000	9.4000e-004	51.3641
General Office Building	26200	1.4000e-004	1.2800e-003	1.0800e-003	1.0000e-005	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	1.0000e-004	0.0000	1.3981	1.3981	3.0000e-005	0.0000	3.0000e-005	1.4064
Regional Shopping Center	1.91946e+006	0.0104	0.0941	0.0790	5.6000e-004	7.1500e-003	0.0239	0.0239	7.1500e-003	0.0239	0.0000	102.4294	102.4294	1.9600e-003	0.0000	1.8800e-003	103.0381
Single Family Housing	5.93581e+007	0.3201	2.7356	1.1641	0.0175	0.2212	0.2212	0.2212	0.2212	0.2212	0.0000	3,168.108	3,168.108	0.0607	0.0581	3,166.935	3
Strip Mall	70828.6	3.8000e-004	3.4700e-003	2.9200e-003	2.0000e-005	2.6000e-004	2.6000e-004	2.6000e-004	2.6000e-004	2.6000e-004	0.0000	3,7797	3,7797	7.0000e-005	0.0000	7.0000e-005	3.8021
Supermarket	1.7018e+006	9.1800e-003	0.0834	0.0701	5.0000e-004	6.3400e-003	0.0239	0.0239	6.3400e-003	0.0239	0.0000	90.8145	90.8145	1.7400e-003	0.0000	1.6600e-003	91.3542
Total		0.3800	3.2608	1.4826	0.0207	0.2625	0.2625	0.2625	0.2625	0.2625	0.0000	3,760.422	3,760.422	0.0721	0.0690	3,782.769	1

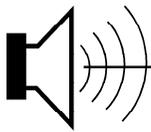
5.3 Energy by Land Use - Electricity

Unmitigated

Land Use	Electricity Use		Total CO2	CH4	N2O	CO2e
	kWh/yr	tons/yr				
Apartment Low Rise	2.38644e+006	638.9938	0.0314	6.4900e-003	641.7141	
City Park	0	0.0000	0.0000	0.0000	0.0000	
Elementary School	4.56983	122.8972	6.0400e-003	1.2500e-003	123.4204	
General Office Building	28880	7.7329	3.8000e-004	8.0000e-005	7.7658	
Regional Shopping Center	4.09743e+006	1,1097.129	0.0539	0.0112	1,101.800	1
Single Family Housing	1.94038e+007	5,195.565	0.2552	0.0528	5,217.683	4
Strip Mall	151197	40.4845	1.9900e-003	4.1000e-004	40.6568	
Supermarket	2.70747e+006	724.9525	0.0356	7.3700e-003	728.0387	
Total		7,827.765	0.3846	0.0796	7,861.079	2

Mitigated

Land Use	Electricity Use		Total CO2	CH4	N2O	CO2e
	kWh/yr	tons/yr				
Apartment Low Rise	2.38644e+006	638.9938	0.0314	6.4900e-003	641.7141	
City Park	0	0.0000	0.0000	0.0000	0.0000	
Elementary School	4.56983	122.8972	6.0400e-003	1.2500e-003	123.4204	
General Office Building	28880	7.7329	3.8000e-004	8.0000e-005	7.7658	
Regional Shopping Center	4.09743e+006	1,1097.129	0.0539	0.0112	1,101.800	1
Single Family Housing	1.94038e+007	5,195.565	0.2552	0.0528	5,217.683	4
Strip Mall	151197	40.4845	1.9900e-003	4.1000e-004	40.6568	
Supermarket	2.70747e+006	724.9525	0.0356	7.3700e-003	728.0387	
Total		7,827.765	0.3846	0.0796	7,861.079	2



June 4, 2018

Mr. John Stanek and Caren Read, Esq.
The Greenbriar Project Owner, LP
C/O Mr. Mike Carson
888 San Clemente, Suite 100
Newport Beach, CA 92660

Subject: Greenbriar Development Sound Wall Review for Meister Way

Dear Messrs. Stanek and Read,

Pursuant to your request, Bollard Acoustical Consultants, Inc. (BAC) has re-evaluated the proposed noise barrier heights for the proposed residences on the north side of Meister Way within the Greenbriar Development in Sacramento, California. This evaluation was requested due to changes in the proposed site plan which reoriented the residences relative to that roadway.

Criteria for Acceptable Noise Exposure

The City of Sacramento General Plan requires that exterior traffic noise environments at new residential uses be at or below 60 dB L_{dn} at primary outdoor activity areas. In addition, an interior noise level standard of 45 dB L_{dn} is applied to all residential uses within the City.

Predicted Future Meister Way Traffic Noise Levels

The FHWA Model was used with future traffic forecasts to predict traffic noise exposure at the nearest noise-sensitive exterior areas (backyards & building facades) of the proposed single-family residential lots on the north side of Meister Way. The Meister Way lots which are the subject of this evaluation are shown on Attachment A. The FHWA Model inputs and predicted future traffic noise levels at the project site are shown in Attachment B.

Predicted Backyard Noise Levels:

The Attachment B data indicate that unmitigated future backyard noise exposure at the subject residences is predicted to be 68 dB L_{dn} . Because this level exceeds the City's 60 dB L_{dn} exterior noise standards, BAC conducted an evaluation of the effectiveness of solid noise barriers in reducing those future traffic noise levels to a state of compliance with the applicable City noise standard. That evaluation, which is provided as Attachment C, indicates that solid noise barriers 8-feet tall relative to backyard elevation would be required to reduce future backyard noise exposure to 60 dB L_{dn} . Attachment A shows the locations of the required Meister Way noise barriers.

Predicted Interior Noise Levels within Residences:

The Attachment B data also indicate that unmitigated future building façade noise exposure is predicted to be 67 dB L_{dn} at first floors and, due to reduced ground attenuation at elevated 2nd floor locations, 70 dB L_{dn} at those facades. After construction of the Meister Way noise barrier described above, first-floor façade noise levels are predicted to be approximately 60 dB L_{dn} .

Given predicted future 1st and 2nd-floor exterior building façade noise exposures of 60 and 70 dB L_{dn} at the proposed residences on the north side of Meister Way, exterior to interior building façade noise reductions of 15 and 25 dB would be required to achieve satisfaction with the City of Sacramento 45 dB L_{dn} interior noise standard within these residences.

Standard residential construction (stucco siding, STC-27 windows, door weather-stripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of at least 25 dB with windows closed and approximately 15 dB with windows open. Therefore, because future traffic noise levels are not predicted to exceed 70 dB L_{dn} at either first or second-floor exterior building facades, standard construction would be adequate to ensure compliance with the City of Sacramento General Plan 45 dB L_{dn} interior noise level standard. Mechanical ventilation should be included in the project design to allow occupants to close doors and windows as desired for acoustical isolation.

Conclusions

Construction of solid 8-foot tall noise barriers at the locations identified on Attachment A would result in future traffic noise levels at the backyards of the proposed single family residential uses on the north side of Meister Way being satisfactory relative to City of Sacramento exterior noise standards. In addition, predicted future interior noise levels within these residences are predicted to be satisfactory with standard construction practices, including mechanical ventilation.

This concludes BAC's evaluation of future traffic noise exposure for the residences proposed on the north side of Meister Way within the Greenbriar Development. Please contact BAC at (916) 663-0500 or paulb@bacnoise.com with any questions or comments regarding this evaluation.

Sincerely,

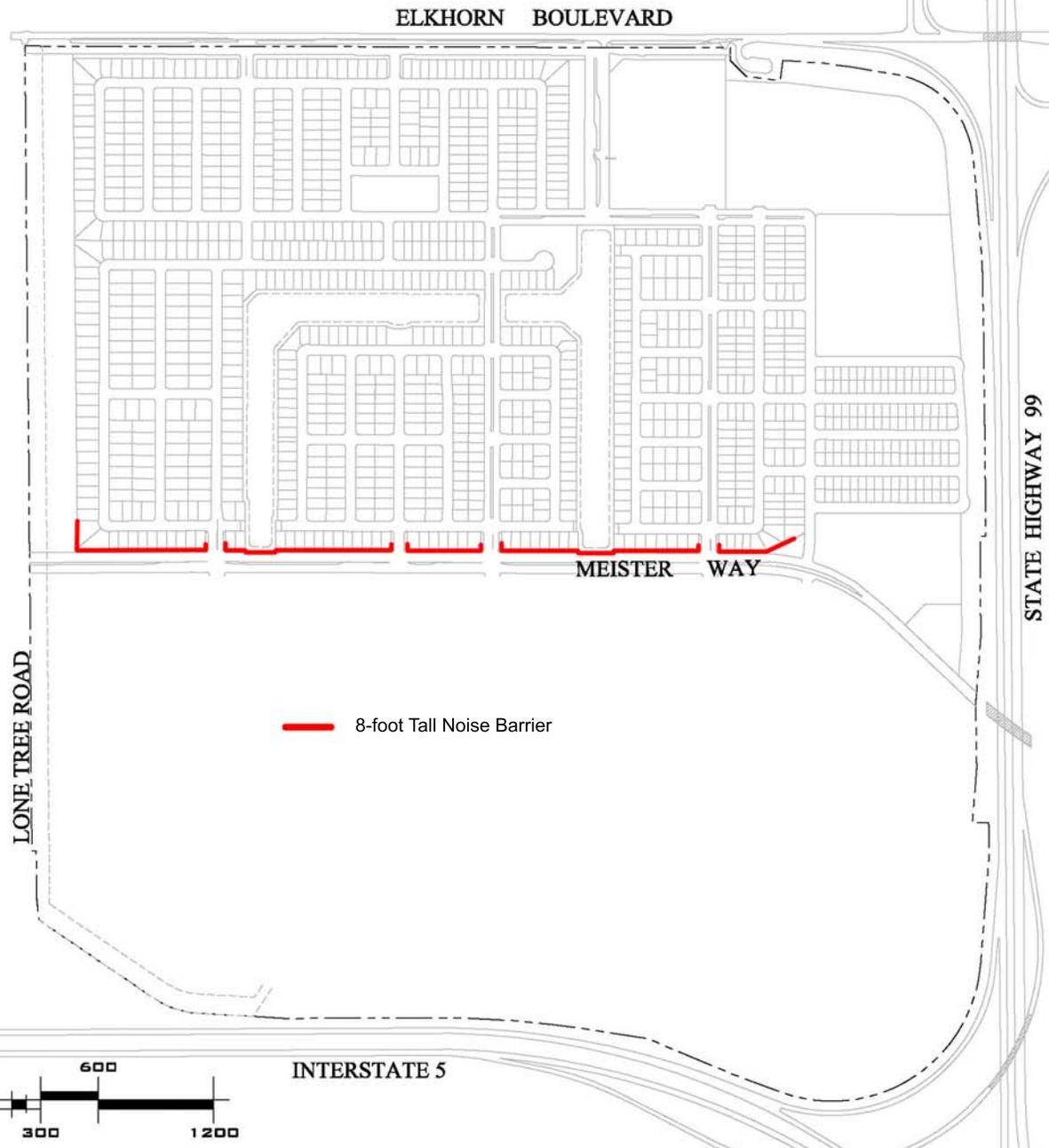
Bollard Acoustical Consultants, Inc.



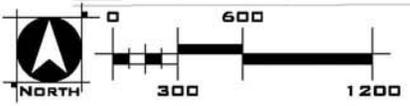
Paul Bollard
President

Attachments

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STATE HIGHWAY 99



WALLS
GREENBRIAR
INTEGRAL COMMUNITIES
 CITY OF SACRAMENTO, CALIFORNIA
 MAY 2018

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 3301 O ST, BLDG. 100-B TEL 916.341.7760
 SACRAMENTO, CA 95816 FAX 916.341.7767

Attachment B
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2015-257
 Project Name: Greenbriar Soundwall review
 Roadway Name: Meister Way

Traffic Data:

Year: Future
 Average Daily Traffic Volume: 20,945
 Percent Daytime Traffic: 80
 Percent Nighttime Traffic: 20
 Percent Medium Trucks (2 axle): 8
 Percent Heavy Trucks (3+ axle): 2
 Assumed Vehicle Speed (mph): 35
 Intervening Ground Type (hard/soft): **Soft**

Traffic Noise Levels:

				-----L _{dn} , dB-----			
Location	Description	Distance	Offset (dB)	Autos	Medium Trucks	Heavy Trucks	Total
1	Nearest Backyards	75	0	64	63	62	68
2	Nearest 1st-Floor Facades	85	0	63	62	61	67
3	Nearest 2nd-Floor Facades	85	3	66	65	64	70

Traffic Noise Contours (No Calibration Offset):

L _{dn} Contour, dB	Distance from Centerline, (ft)
75	25
70	54
65	116
60	251

Attachment C
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information: Job Number: 2015-257
 Project Name: Greenbriar Soundwall review
 Roadway Name: Meister Way
 Location(s): Nearest Backyards

Noise Level Data: Year: Future
 Auto L_{dn}, dB: 64
 Medium Truck L_{dn}, dB: 63
 Heavy Truck L_{dn}, dB: 62

Site Geometry: Receiver Description: Nearest Backyards
 Centerline to Barrier Distance (C₁): 65
 Barrier to Receiver Distance (C₂): 10
 Automobile Elevation: 0
 Medium Truck Elevation: 2
 Heavy Truck Elevation: 8
 Pad/Ground Elevation at Receiver: 0
 Receiver Elevation¹: 5
 Base of Barrier Elevation: 0
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height ² (ft)	----- L _{dn} , dB -----				Barrier Breaks Line of Sight to...		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	57	57	57	62	Yes	Yes	Yes
7	7	56	55	56	61	Yes	Yes	Yes
8	8	54	54	54	59	Yes	Yes	Yes
9	9	53	53	53	58	Yes	Yes	Yes
10	10	52	52	52	57	Yes	Yes	Yes
11	11	51	51	51	56	Yes	Yes	Yes
12	12	50	50	50	55	Yes	Yes	Yes
13	13	49	49	49	54	Yes	Yes	Yes
14	14	49	48	48	53	Yes	Yes	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)