

Volume II  
Greenbriar Development Project  
Sacramento, California

Draft Environmental Impact Report



**Appendices A–F**

State Clearinghouse Number 2005062144

Prepared for:

City of Sacramento  
Environmental Planning Services

and

Sacramento Local Agency Formation Commission

July 2006



## Draft Environmental Impact Report



### Appendices A–F

Prepared for:

City of Sacramento  
Environmental Planning Services  
1231 I Street, Suite 300  
Sacramento, CA 95814

Contact:

Tom Buford  
916/808-7931

Sacramento Local Agency Formation Commission  
1112 I Street, Suite 100  
Sacramento, CA 95814

Contact:

Peter Brundage  
916/874-6458

Prepared by:

EDAW  
2022 J Street  
Sacramento, CA 95814

Contact:

Amanda Olekszulín  
916/414-5800

July 2006





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## **APPENDIX A**

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### **NOTICE OF PREPARATION AND COMMENTS**



Sacramento Local Agency  
Formation Commission  
1121 I Street, Suite 100  
Sacramento, CA 9581

City of Sacramento  
Development Services Division  
2101 Arena Boulevard, 2<sup>nd</sup> Floor  
Sacramento, CA 95834

**Date:** August 16, 2005

**To:** Responsible Agencies, Interested Persons, and Organizations

**From:** Don Lockhart, Assistant Executive Officer, Sacramento LAFCo  
Tom Buford, Associate Planner, City of Sacramento

**Subject:** **RECIRCULATED Notice of Preparation of a Draft Environmental Impact Report for the Greenbriar Project (P05-069)**

**Public Review Period:** August 16, 2005 to September 16, 2005

#### Introduction

The Recirculated Notice of Preparation for the Greenbriar project (P05-069) is attached. The Notice of Preparation is being recirculated because the Sacramento Local Agency Formation Commission is serving as a co-lead agency with the City of Sacramento, pursuant to the California Environmental Quality Act (CEQA).

**All responses submitted to the Notice of Preparation dated June 28, 2005, including comments submitted at the Public Scoping Meeting held on July 13, 2005 will be considered, and do not need to be resubmitted.**

#### Project Area

The project is located in the unincorporated portion of Sacramento County, on approximately 577 acres located at the northwest intersection of State Route 99 (SR 99) and Interstate 5 (I-5). The project site is located outside the current Sphere of Influence for the City of Sacramento. The 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 99 and a new residential community currently under development within North Natomas to the east. Regional access to the project site is provided from SR 99 and I-5. Local access to the project site is provided by Elkhorn Boulevard (Exhibit 1).

The recently approved Metro Airpark development area is located approximately 2 miles west of the project site, within Sacramento County and adjacent to the eastern boundary of the Sacramento International Airport. The Metro Airpark development area includes existing and proposed commercial, hotel, and recreational (i.e., golf course) land uses. The City's North Natomas Community Plan area is located adjacent to the eastern boundary of the project site and across SR 99. New residential and commercial land uses are currently being developed east of the project site.

## Project Description

In addition to proposed approvals and development described below, the proposed project includes a request for a Sphere of Influence (SOI) boundary adjustment and annexation to the City of Sacramento. The Sacramento County Local Agency Formation Commission (LAFCo) is the agency with statutory responsibility for boundary changes and Sphere Of Influence adjustments, and the EIR will therefore address LAFCo's needs for environmental evaluation and disclosure under CEQA. The EIR will evaluate the potential environmental impacts of the project and recommend mitigation measures as required. The lead agencies will prepare a full-scope, project EIR in compliance with CEQA Guidelines Section 15120 and 15161.

The applicant is seeking approval of a residential mixed-use development on the project site, which is located adjacent to and west of the Sacramento City limits and the City's SOI; the project applicant is seeking to annex the project site to the City. Annexation will require approval of pre-zoning entitlements from the City, and approval of an amendment to the City's SOI and annexation approval from the Sacramento County Local Formation Commission (LAFCo).

The project includes the construction of a range of housing types (e.g., high, medium, low density). The proposed land use plan is a predominantly residential development centered on a common water feature (approximately 41 acres) (Exhibit 2). A total of 3,723 housing units and approximately 30 acres of retail and commercial space would be constructed on site. An 11.3-acre elementary school would be provided in the southeastern portion of the project site. A total of 8 neighborhood parks (approximately 59 acres) would be provided throughout the community and would be connected by the central water feature and pedestrian paths and trails.

Commercial development would be primarily located in the northeastern portion of the project site along Elkhorn Boulevard. Medium and high density housing and retail land uses would be located in the center of the project site along a new arterial that connects the project site to the North Natomas Community to the east and Metro Airpark to the west.

The project would require several land use entitlements from the City of Sacramento including a general plan amendment, zoning amendments, pre-zoning, expansion of the North Natomas Community Plan area, and amendment of the North Natomas Community Plan. The project site is currently designated as agricultural cropland by the County and agriculture by the City. The project would change the land use designation to low density residential, medium density residential, high density residential, community/village commercial, and parks and open space land use designations under the City's General Plan.

## Environmental Effects

The LAFCo and City reviewed the proposed project and determined that an EIR should be prepared. It is expected that the following environmental issues will be evaluated in the EIR.

**Consistency with Plans and Policies:** Evaluation of project consistency with applicable land use and environmental plans and policies applicable to the project site including the Sacramento County General Plan, City of Sacramento General Plan, the Natomas Basin Habitat Conservation Plan, the Comprehensive Airport Land Use Plan, and other relevant plans.



**Traffic and Circulation** –Impacts to local and regional transportation facilities including several freeway segments. The evaluation transportation analysis will evaluate local intersections, project-related vehicle trips, proposed site circulation and access, local transit operations, and the surrounding roadway network.

**Agriculture** –Conversion of agricultural land to urban uses and impacts to surrounding agricultural uses.

**Air Quality** –Regional and local air quality will be described, and air quality impacts during construction (short-term) and project operation (long-term). The project's estimated air emissions will be compared to emissions thresholds of the Sacramento Metropolitan Air Quality Management District.

**Hydrology and Water Quality** –Effect on hydrology and water quality characteristics of the central valley region including alteration of drainage patterns, erosion, stormwater discharges, and flooding.

**Geology and Soils** –Seismicity of the local area, presence of existing fault lines and effect on development, erodibility of site soils, soil stability, and expansive characteristics of site soils.

**Noise** –Construction and operational noise impacts (including traffic and airport noise) and comparison of these impacts to applicable noise thresholds.

**Biological Resources** – Botanical and wildlife reconnaissance surveys will be conducted. The EIR will describe the existing biological resources on the project site and evaluate the project's impacts to these biological resources. The project site is located within the Natomas Basin. The EIR will evaluate how the project would affect implementation of the Natomas Basin Habitat Conservation Plan.

**Cultural Resources** –Cultural resource impact assessment for the project site. Field surveys and literature review of the project site will be completed and summarized in the EIR.

**Public Services** –Potential to create adverse impacts to the provision of fire, police and emergency medical response, public schools, and libraries.

**Utilities** –Current capacity of the water and wastewater systems and the project's impact to these systems. An analysis of the regional water supply conditions will be provided, consistent with Senate Bill 610 (CEQA Section 21151.9), as well as water conveyance, wastewater collection and treatment, storm drainage, solid waste disposal, and electricity and natural gas services.

**Aesthetics** –Potential visibility of the project from surrounding uses and viewsheds. An assessment of the spatial attributes of the project and lighting/glare impacts to onsite and offsite areas will be provided.

**Public Health and Hazards** –Hazardous materials assessments, potential project impacts related to use of hazardous materials and emergency response plans, and safety issues related to the Sacramento International Airport.

**Parks and Open Space** –Project's potential to increase the use of neighborhood and regional parks, project's consistency with applicable plans and policies for parks and open space, and the project's potential to result in the loss of open space.

**Population and Housing** –Project's consistency with applicable goals and policies of the Housing Element in City of Sacramento's General Plan, as they relate to environmental policies and impacts. The EIR will analyze how the project affects the jobs/housing ratio for the City of Sacramento and North Natomas community. The EIR will also evaluate affordable housing requirements for the city and county of Sacramento, and potential for inducing additional growth.

**Cumulative Impacts** – The EIR will summarize the cumulative impacts of the project as identified and described in each of the environmental technical sections.

### **Alternatives**

The EIR will examine a range of feasible alternatives to the proposed project. The following project alternatives have been tentatively identified for analysis in the EIR:

- 1) **Reduced Impacts to Biological Resources:** Designed to avoid or reduce impacts to wetlands and giant garter snake habitat on the project site.
- 2) **Reduced Traffic Generation:** Designed to constrain development at the project site to reduce the potential of exceeding Level of Service (LOS) thresholds
- 3) **No Project Alternative – Continuation of Existing Land Uses:** Assumes no project and continuation of existing conditions at the project site.

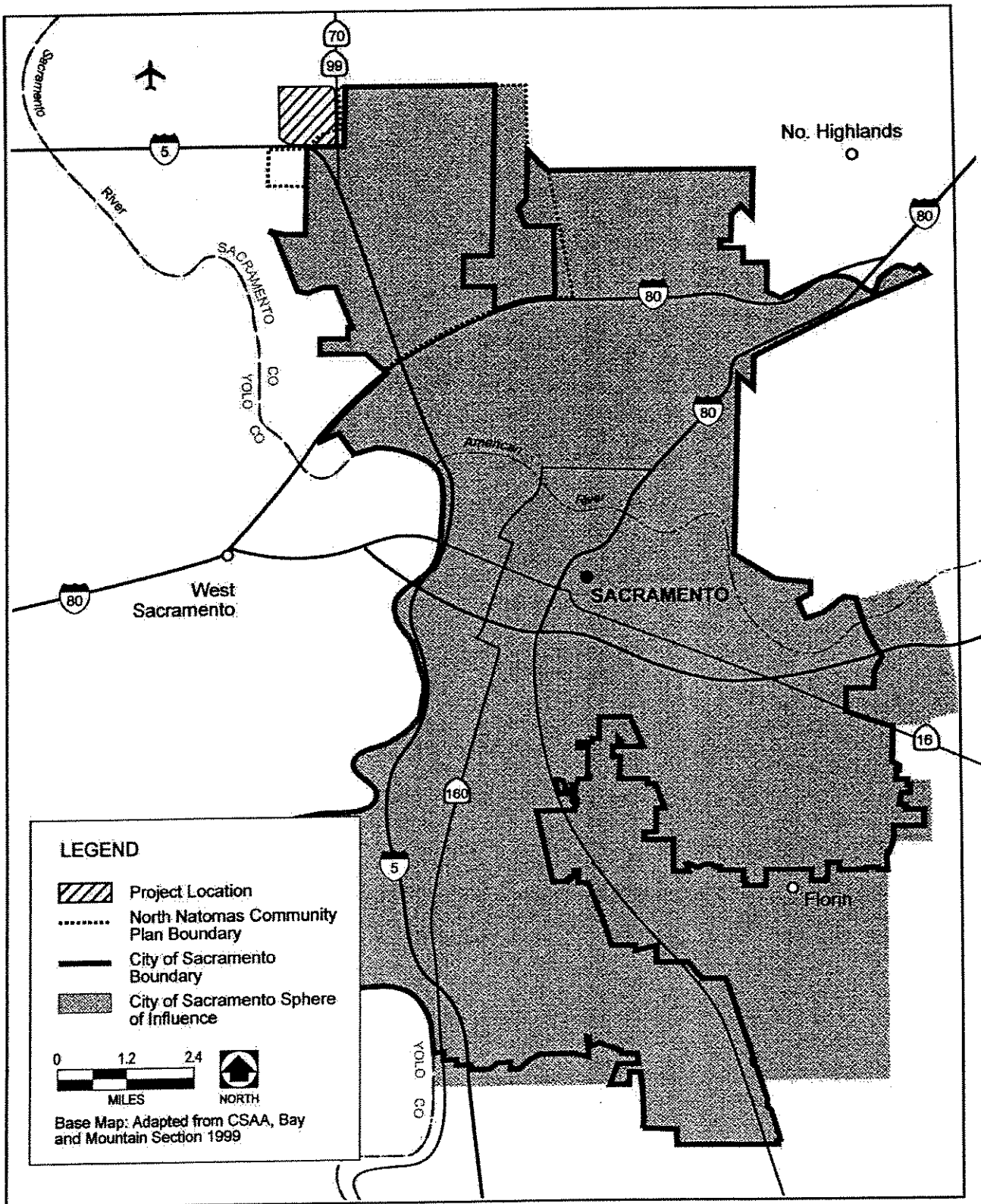
Other alternatives may be added following review of comments received in response to this NOP.

### **Submitting Comments**

To ensure the full range of project issues of interest to responsible agencies and the public are addressed, comments and suggestions are invited from all interested parties. Written comments or questions concerning the EIR should be directed to the environmental project manager at the following address by 5:00 p.m. on September 16, 2005:

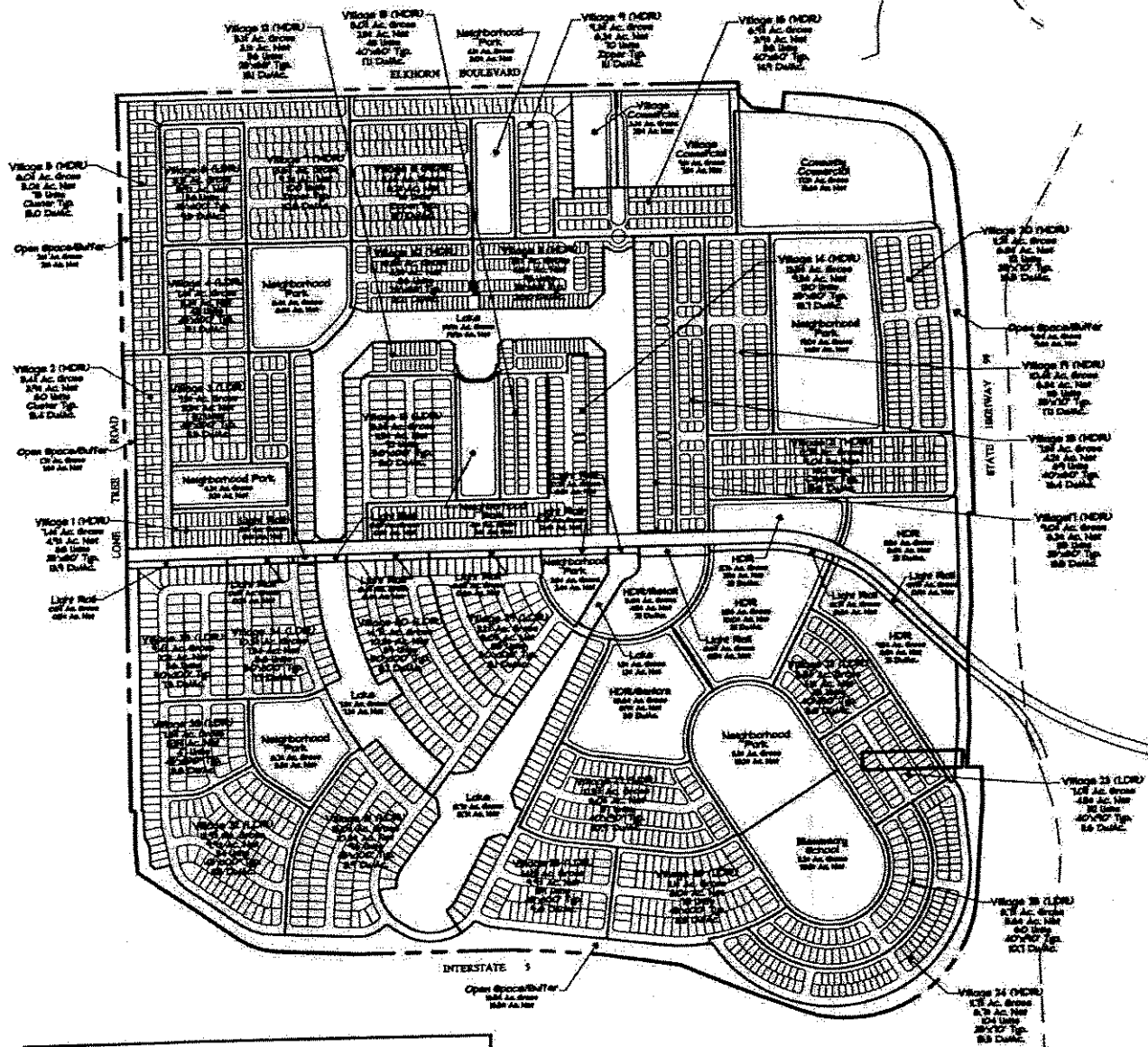
City of Sacramento Environmental Services Division  
Attn: Tom Buford, Associate Planner  
2101 Arena Boulevard, 2<sup>nd</sup> Floor  
Sacramento, CA 95834  
Direct Line: (916) 808-7931  
E-mail: [tbuford@cityofsacramento.org](mailto:tbuford@cityofsacramento.org)

**All comments must include full name and address in order for staff to respond appropriately.**



Project Location Map

Exhibit 1



LAND USE SUMMARY			
LAND USE	GROSS ACRES	NET ACRES	UNITS
LOW DENSITY RESIDENTIAL (3-10 du/ac)	150.0	128.0	1,146
MEDIUM DENSITY RESIDENTIAL (7-21 du/ac)	160.7	106.5	1,960
HIGH DENSITY RESIDENTIAL (31-29 du/ac)	48.8	42.8	1,012
VILLAGE COMMERCIAL	12.4	10.1	-
COMMUNITY COMMERCIAL	17.2	15.6	-
ELEMENTARY SCHOOL	11.5	10.2	-
NEIGHBORHOOD PARKS	58.5	48.8	-
LAKE	41.2	41.2	-
OPEN SPACE/BUFFER	24.9	24.6	-
LIGHT RAIL CORRIDOR	3.0	4.7	-
OPEN SPACE	-	1.7	-
LANDSCAPE CORRIDOR	-	2.0	-
PEDESTRIAN PASSEO	-	2.0	-
ELKHORN BOULEVARD + MASTER WAY	12.0	12.0	-
LOCAL RESIDENTIAL STREETS	-	12.5	-
TOTAL	577.0	377.0	3,723

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**RECIRCULATED NOTICE OF PREPARATION RESPONSES**

**PROJECT NAME: Greenbriar (P05-069)**

**Review Period: August 16, 2006 to September 16, 2006**

<u>Date</u>	<u>Name and Organization</u>
August 16, 2005	Scott Morgan, State Clearinghouse
August 17, 2005	Kevin Boles, Public Utilities Commission
August 29, 2005	Bridget Binning, California Department of Health Services
August 29, 2005	Christine Palisoc, California Regional Water Quality Control Board
September 6, 2005	Robert Sherry, County of Sacramento Planning and Community Development
September 14, 2005	Monica R. Newhouse, Sacramento County Airport System
September 16, 2005	Taiwo Jaiyeoba, Regional Transit
September 16, 2005	James P. Pachi



Arnold  
Schwarzenegger  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Sean Walsh  
Director

**Notice of Preparation**

August 16, 2005

To: Reviewing Agencies

Re: Greenbriar Development Project  
SCH# 2905062144

Attached for your review and comment is the Notice of Preparation (NOP) for the Greenbriar Development Project draft Environmental Impact Report (EIR).

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

Please direct your comments to:

**Tom Buford**  
City of Sacramento  
North Permit Center, 2101 Arena Blvd., Second Floor  
Sacramento, CA 95834

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

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

Sincerely,

Scott Morgan  
Senior Planner, State Clearinghouse

Attachments  
cc: Lead Agency

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2005062144  
**Project Title** Greenbriar Development Project  
**Lead Agency** Sacramento, City of

**Type** NOP Notice of Preparation  
**Description** The applicant is seeking approval of a residential mixed-use development on the project site, which is located adjacent to and west of the Sacramento City limits and the City's SOI; the project applicant is seeking to annex the project site to the City. Annexation will require approval of pre-zoning entitlements from the City, and approval of an amendment to the City's SOI and annexation approval from the Sacramento County Local Formation Commission (LAFCo).

**Lead Agency Contact**

**Name** Tom Buford  
**Agency** City of Sacramento  
**Phone** (916) 808-7931 **Fax**  
**email**  
**Address** North Permit Center, 2101 Arena Blvd., Second  
**City** Floor **State** CA **Zip** 95834  
 Sacramento

**Project Location**

**County** Sacramento  
**City**  
**Region**  
**Cross Streets** Elkhorn Boulevard and Highway 99  
**Parcel No.** 225-0800-002,-003,-004,-015to-018,-021to-038  
**Township** **Range** **Section** **Base**

**Proximity to:**

**Highways** SR 99, I-5  
**Airports** Sacramento Int'l  
**Railways**  
**Waterways**  
**Schools**  
**Land Use** Agriculture (AG-80)

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

**Reviewing Agencies** Resources Agency; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 2; Department of Health Services; Office of Emergency Services; Native American Heritage Commission; State Lands Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 3; Regional Water Quality Control Bd., Region 5 (Sacramento)

**Date Received** 08/16/2005 **Start of Review** 08/16/2005 **End of Review** 09/14/2005

**OP Distribution List**

County: SAN CALVALENTINO

SUM#

AS

- Resources Agency
- Fish & Game Region 3  
Robert Floerke
- Fish & Game Region 4  
Mike Mulligan
- Fish & Game Region 5  
Don Chadwick  
Habitat Conservation Program
- Fish & Game Region 6  
Gabrina Gatchel  
Habitat Conservation Program
- Fish & Game Region 6 I/M  
Tammy Allen  
Inyo/Mono, Habitat Conservation Program
- Dept. of Fish & Game M  
George Isaac  
Marine Region
- Other Departments
- Food & Agriculture  
Steve Shaffer  
Dept. of Food and Agriculture
- Dept. of General Services  
Public School Construction
- Dept. of General Services  
Robert Sleppy  
Environmental Services Section
- Dept. of Health Services  
Veronica Rameriz  
Dept. of Health/Drinking Water
- Independent Commissions, Boards
- Delta Protection Commission  
Debbie Eddy
- Office of Emergency Services  
Dennis Castrillo
- Governor's Office of Planning & Research  
State Clearinghouse
- Native American Heritage Comm.  
Debbie Treadway
- Resources Agency  
Nadell Gayou
- Dept. of Boating & Waterways  
David Johnson
- California Coastal Commission  
Elizabeth A. Fuchs
- Colorado River Board  
Gerald R. Zimmerman
- Dept. of Conservation  
Roseanne Taylor
- California Energy Commission  
Roger Johnson
- Dept. of Forestry & Fire Protection  
Allen Robertson
- Office of Historic Preservation  
Wayne Donaldson
- Dept. of Parks & Recreation  
B. Noah Tighman  
Environmental Stewardship Section
- Reclamation Board  
DeeDee Jones
- S.F. Bay Conservation & Dev't. Comm.  
Steve McAdam
- Dept. of Water Resources  
Resources Agency  
Nadell Gayou
- Conservancy
- Fish and Game
- Dept. of Fish & Game  
Scott Flint  
Environmental Services Division
- Fish & Game Region 1  
Donald Koch
- Fish & Game Region 2  
Banky Curtis
- Public Utilities Commission  
Ken Lewis
- State Lands Commission  
Jean Sarino
- Tahoe Regional Planning Agency (TRPA)  
Cherry Jacques
- Business, Trans. & Housing
- Caltrans - Division of Aeronautics  
Sandy Hesnard
- Caltrans - Planning  
Terri Pencovic
- California Highway Patrol  
John Olejnik  
Office of Special Projects
- Housing & Community Development  
Lisa Nichols  
Housing Policy Division
- Dept. of Transportation
- Caltrans, District 1  
Rex Jackman
- Caltrans, District 2  
Marcelino Gonzalez
- Caltrans, District 3  
Katherine Eastham
- Caltrans, District 4  
Tim Sable
- Caltrans, District 5  
David Murray
- Caltrans, District 6  
Marc Birnbaum
- Caltrans, District 7  
Cheryl J. Powell
- Caltrans, District 8  
Dan Kopulsky
- Caltrans, District 9  
Gayle Rosander
- Caltrans, District 10  
Tom Dumas
- Caltrans, District 11  
Marlo Orso
- Caltrans, District 12  
Bob Joseph
- Cal EPA
- Air Resources Board
- Airport Projects  
Jim Lerner
- Transportation Projects  
Kurt Karperos
- Industrial Projects  
Mike Tollstrup
- California Integrated Waste Management Board  
Sue O'Leary
- State Water Resources Control Board  
Jim Hockenberry  
Division of Financial Assistance
- State Water Resources Control Board  
Student Intern, 401 Water Quality Certification Unit  
Division of Water Quality
- State Water Resources Control Board  
Steven Herrera  
Division of Water Rights
- Dept. of Toxic Substances Control  
CEQA Tracking Center
- Department of Pesticide Regulation
- Regional Water Quality Control Board (RWQCB)
- RWQCB 1  
Cathleen Hudson  
North Coast Region (1)
- RWQCB 2  
Environmental Document Coordinator  
San Francisco Bay Region (2)
- RWQCB 3  
Central Coast Region (3)
- RWQCB 4  
Jonathan Bishop  
Los Angeles Region (4)
- RWQCB 5S  
Central Valley Region (5)
- RWQCB 5F  
Central Valley Region (5)  
Fresno Branch Office
- RWQCB 5R  
Central Valley Region (5)  
Redding Branch Office
- RWQCB 6  
Lahontan Region (6)
- RWQCB 6V  
Lahontan Region (6)  
Victorville Branch Office
- RWQCB 7  
Colorado River Basin Region (7)
- RWQCB 8  
Santa Ana Region (8)
- RWQCB 9  
San Diego Region (9)
- Other



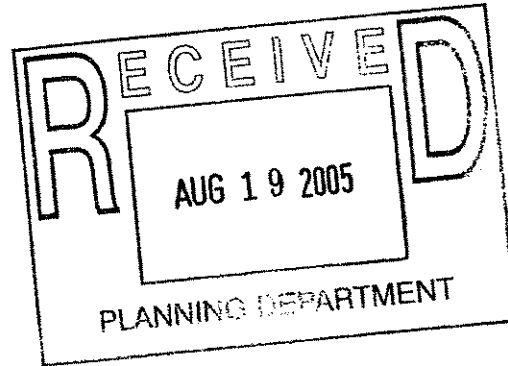
## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



August 17, 2005

L.E. Buford  
City of Sacramento  
1231 I Street, Room 200  
Sacramento, CA 95814



Dear Mr. Buford:

Re: SCH #2005062144; Greenbriar Development Project

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the County be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the County.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

A handwritten signature in black ink, appearing to read "Kevin Boles".

Kevin Boles  
Utilities Engineer  
Rail Crossings Engineering Section  
Consumer Protection and Safety Division

State of California—Health and Human Services Agency  
Department of Health Services



California  
Department of  
Health Services

**SANDRA SHEWRY**  
Director



**ARNOLD SCHWARZENEGGER**  
Governor

August 29, 2005

Tom Buford  
City of Sacramento  
North Permit Center  
2101 Arena Boulevard, 2<sup>nd</sup> Floor  
Sacramento, California 95834

RE: Greenbriar Development Project – SCH2005062144

The California Department of Health Services (CDHS) is in receipt of the Notice of Preparation for the above project.

If the City of Sacramento plans to develop a new water supply well or make modifications to the existing domestic water treatment system to serve the Greenbriar Development Project, an application to amend the water system permit must be reviewed and approved by the CDHS Sacramento District Office. These future developments may be subject to separate environmental review.

Please contact Terry Macaulay of the Sacramento office at (916) 449-5600 for further information.

Sincerely,

A handwritten signature in black ink that reads 'Bridget Binning'.

Bridget Binning  
California Department of Health Services  
Environmental Review Unit

Tom Buford  
Page 2  
August 29, 2005

cc:

Terry Macaulay, District Engineer  
CDHS Sacramento  
1616 Capitol Avenue, MS 7407  
Sacramento, CA 95899

State Clearinghouse  
P.O. Box 3044  
Sacramento, CA 95812-3044



# California Regional Water Quality Control Board

## Central Valley Region

Robert Schneider, Chair

Alan C. Lloyd, Ph.D.  
Agency Secretary

Sacramento Main Office  
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114  
Phone (916) 464-3291 • FAX (916) 464-4645  
<http://www.waterboards.ca.gov/centralvalley>



Arnold Schwarzenegger  
Governor

29 August 2005

L.E. Buford  
City of Sacramento  
1231 I Street, Room 200  
Sacramento, CA 95814

***PROPOSED PROJECT REVIEW, CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA),  
NOTICE OF PREPARATION FOR GREENBRIAR DEVELOPMENT PROJECT, STATE  
CLEARINGHOUSE #2005062144, SACRAMENTO, SACRAMENTO COUNTY***

As a Responsible Agency, as defined by CEQA, we have reviewed the Notice of Preparation for Greenbriar Development Project. Based on our review, we have the following comments regarding the proposed project.

Storm Water

A NPDES General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002, Order No. 99-08-DWQ is required when a site involves clearing, grading, disturbances to the ground, such as stockpiling, or excavation that results in soil disturbances of one acre or more of total land area. Construction activity that involves soil disturbances on construction sites of less than one acres and is part of a larger common plan of development or sale, also requires permit coverage. Coverage under the General Permit must be obtained prior to construction. More information may be found at <http://www.swrcb.ca.gov/stormwtr/construction.html>

Post Construction Storm Water Management

Manage storm water to retain the natural flow regime and water quality, including not altering baseline flows in receiving waters, not allowing untreated discharges to occur into existing aquatic resources, not using aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All storm water flows generated on-site during and after construction and entering surface waters should be pre-treated to reduce oil, sediment, and other contaminants. The local municipality where the proposed project is located may now require post construction storm water Best Management Practices (BMPs) pursuant to the Phase II, SWRCB, Water Quality Order No. 2003 – 0005 – DWQ, NPDES General Permit No. CAS000004, WDRS for Storm Water Discharges from Small Municipal Separate Storm Sewers Systems (MS4). The local municipality may require long-term post-construction BMPs to be incorporated into development and significant redevelopment projects to protect water quality and control runoff flow.

*California Environmental Protection Agency*



Wetlands and/or stream course alteration

Section 401 of the federal Clean Water Act requires any project that impacts waters of the United States (such as streams and wetlands) to file a 401 Water Quality Certification application with this office. The project proponent must certify the project will not violate state water quality standards. Projects include, but are not limited to, stream crossings, modification of stream banks or stream courses, and the filling or modification of wetlands. If a U.S. Army Corp of Engineers (ACOE) permit is required for the project, then Water Quality Certification must be obtained prior to initiation of project activities. The proponent must follow the ACOE 404(b)(1) Guidance to assure approval of their 401 Water Quality Certification application. The guidelines are as follows:

1. **Avoidance** (Is the project the least environmentally damaging *practicable* alternative?)
2. **Minimization** (Does the project minimize any adverse effects to the impacted wetlands?)
3. **Mitigation** (Does the project mitigate to assure a no net loss of functional values?)

If, after avoidance and minimization guidelines are considered and wetland impacts are still anticipated:

- determine functional losses and gains (both permanent and temporal; both direct and indirect)
- conduct adequate baselines of wetland functions including vegetation, wildlife, hydrology, soils, and water quality
- attempt to create/restore the same wetland type that is impacted, in the same watershed
- work with a regional context to maximize benefits for native fish, wildlife, vegetation, as well as for water quality, and hydrology
- use native species and materials whenever possible
- document all efforts made to avoid the minimize adverse wetland impacts
- be prepared to develop performance criteria and to track those for between 5 to 20 years
- be prepared to show project success based on achieving wetland functions
- if the project fails, be prepared to repeat the same process (via financial assurance), with additional acreage added for temporal losses
- specify how the mitigation project will be maintained in perpetuity and who will be responsible for the maintenance

For more information regarding Water Quality Certification may be found at  
[http://www.waterboards.ca.gov/centralvalley/available\\_documents/wq\\_cert/application.pdf](http://www.waterboards.ca.gov/centralvalley/available_documents/wq_cert/application.pdf)

Dewatering Permit

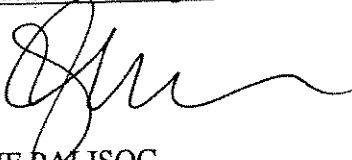
The proponent may be required to file a Dewatering Permit covered under Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit, Order No. 5-00-175 (NPDES CAG995001) provided they do not contain significant quantities of pollutants and are either (1) four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd:

- a. Well development water
- b. Construction dewatering
- c. Pump/well testing
- d. Pipeline/tank pressure testing
- e. Pipeline/tank flushing or dewatering
- f. Condensate discharges
- g. Water Supply system discharges
- h. Miscellaneous dewatering/low threat discharges

Industrial

A NPDES General Permit for Storm Water Discharges Associated with Industrial Activities, NPDES No. CAS000001, Order No. 97-03-DWQ regulates 10 broad categories of industrial activities. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The General Industrial Permit also requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring plan. The General Industrial Permit requires that an annual report be submitted each July 1. More information may be found at <http://www.swrcb.ca.gov/stormwtr/industrial.html>

For more information, please visit the Regional Boards website at <http://www.waterboards.ca.gov/centralvalley/> or contact me at 916.464.4663 or by e-mail at [palisoc@waterboards.ca.gov](mailto:palisoc@waterboards.ca.gov).



CHRISTINE PALISOC  
Environmental Scientist  
Storm Water Unit  
916.464.4663

cc: Scott Morgan, State Clearinghouse, Sacramento



Municipal Services Agency

Terry Schutten, County Executive  
Cheryl Creson, Agency Administrator

**Planning and Community  
Development**

Robert Sherry, Director

**County of Sacramento**

Richard Maddox, Code Compliance

Leighann Moffitt, Long Range Planning

Dave Pevny, Community Planning

Ana Rhodes, Administration

Michael Tateishi, Accounting & Fiscal Services

September 6, 2005

City of Sacramento Planning Division  
Attention: Mr. Tom Buford, Associate Planner  
1231 I Street, Room 300  
Sacramento, CA 95814

RE: Comments on the Greenbriar Project Notice of Preparation

Thank you for the opportunity for the Sacramento County Department of Planning and Community Development to comment on the Reissued Greenbriar project Notice of Preparation of Draft Environmental Impact Report (EIR). We have reviewed the most recent notice dated August 16, 2005 and have the following comments:

**Consistency with Plans and Policies:** The project is located in the unincorporated portion of the Natomas area, outside the County's Urban Services Boundary. Please consider the Greenbriar application in the context of the Natomas Vision.

Please consider the mitigation required for Greenbriar in the context of the Natomas Basin and Metro Airpark Habitat Conservation Plans (HCPs). The EIR should evaluate the amount of mitigation required by the Greenbriar project compared with the amount of land in the Basin that is not already allocated to the existing HCPs. Additionally, consider that the Basin receives competing mitigation pressures from projects in the unincorporated County located in nearby communities such as Rio Linda and Elverta. The availability of Swainson's Hawk foraging habitat, in particular, is becoming limited in the north County. Please consider that the "Joint City-County Shared Policy Vision in Natomas" includes a 1:1 open space mitigation ratio that may be more than what was required in the existing HCPs.

**Traffic and Circulation:** Since this project is located at the junction of Highway 99 and Interstate 5, please consider the impacts to freeway traffic including peak hour congestion on Highway 99 impacting traffic patterns on I-5. Within the project, please consider the viability of the light rail layout, indicate how rail crossings will be handled and what the affect will be to the current park and ride lot at Elkhorn Boulevard and Highway 99. There are recent regulations requiring increased train horn usage at crossings. Given the close proximity of the light rail tracks to housing, please analyze the recent law change and its applicability to this project to see if there will be any impacts. Consider the lack of trails and pedestrian linkages between the lakes, parks and mixed use areas and how this may be improved to decrease Vehicle Miles Traveled (VMT) and allow for pedestrian, bike and other modes of travel.

**Agriculture:** The project site is located on active agricultural lands. The 2002 map of Sacramento County Important Farmland, prepared by the California Department of Conservation, shows that a majority of the land on the subject site is Prime Farmland with significant portions of Farmland of Statewide Importance. The County General Plan seeks to protect and preserve farmland and our agricultural heritage. Please analyze the potential loss of agricultural land and viability and consider the impacts to nearby farming operations from neighborhood complaints of dust, noise, aerial applications, odors etc. caused by routine agricultural practices.

**Air Quality:** Please consider alternative layouts to encourage pedestrian, bicycle and alternative transportation usages to reduce automobile trips and associated impacts on air quality.

**Hydrology and Water Quality:** The west portion of the project site is located in an area of moderate to high ground water recharge. The EIR should consider the cumulative impacts to recharge from the resulting building footprints and streets. In addition, the several man-made lakes proposed on the project could reduce infiltration if they need to be lined with impervious materials in order to retain their water. A discussion of how the lakes' water levels will be maintained is warranted. Consideration should be given to utilizing drainage swales, especially in the moderate to high recharge areas of the project.

**Airport Protection and Noise:** The project is located near Sacramento International Airport and portions lie within the overflight zone. History in the area has already proven that when residential development is allowed in such close proximity to the airport, even with avigation easements, complaints will inevitably follow, especially after properties experience two or three generations of sales. These complaints can result in the modification of airport operations which adversely affect the airport's ability to operate efficiently and safely. The Sacramento International Airport is an important facet of the region's economy and the EIR should consider impacts to operations from adjacent residential and recreational land uses.

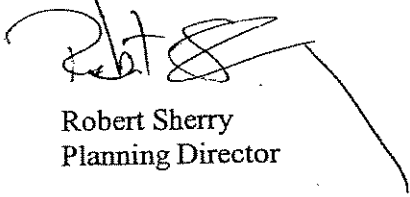
**Biological Resources:** The Natomas HCP and Metro Airpark HCP are operating in the Basin and have a pre-established need for mitigation lands. The Natomas Vision and its related development will have a similar need for mitigation lands as does the International Airport. This project develops lands currently identified as potential mitigation lands and will also add its own requirement for mitigation lands to the area, as it contains the habitat of several protected and/or endangered species. The EIR should consider impacts to biological resources in the context of the already approved and operating Natomas Basin and Metro Airpark HCPs. In addition to any direct take, consider impacts to the other HCPs as the Basin possesses limited opportunities for mitigation. The County General Plan encourages concurrent permitting and coordinated planning of preserve systems.

**Parks and Open Space:** Under the Natomas Vision, the County agreed to be the agent of open space in the Basin and the City would be the agent of development. The project as proposed shows several developed parks. These, however, do not appear to be linked by any kind of trail or greenbelt system and remaining undeveloped open space is limited. As referenced above in the Air Quality section, please analyze how the lack of interconnecting greenbelts will affect vehicle trips and explore project alternatives to increase open space and provide more public access. The man-made lakes appear to have little common shore line. Most of the water frontage is occupied by the rear yards of private single family dwellings, limiting the lakes' value as open space as they are not available to all citizens. The Sacramento County Planning and Community Development Department would recommend exploring a project alternative with a greenbelt system adjacent to the lakes to interconnect the parks, schools and retail centers. This would reduce impacts to open space, traffic, air quality and aesthetics. Alternatively, please consider removing the lakes from the proposal and converting the proposed lake acreage into public open space and incorporating trails, drainage swales and other biological water quality treatments into the design.

**Population and Housing:** The Sacramento Area Council of Governments' (SACOG) Blueprint preferred scenario shows that this area is planned to be primarily high density residential. The project as proposed shows extensive low density residential areas. The environmental document should evaluate to what extent the project meets Blueprint objectives such as densities and intensities of land uses without impacting Airport operations. Furthermore, the document should address the required and appropriate inclusion of affordable housing.

In conclusion, we reaffirm our commitment to pursuing the planned, cooperative approach to development in the Natomas area that has been agreed to under the Natomas Vision and look forward to a growing partnership that will benefit the region. We understand that this project may be re-noticed and reserve the right to comment again if that happens. Please keep us on your distribution for any future items regarding this project. Thank you for your careful consideration and incorporation of our comments which are not inclusive of all issues that should be discussed in the EIR but represent those areas in which we have a particular knowledge or statutory authority.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Sherry", with a long, sweeping underline that extends to the right.

Robert Sherry  
Planning Director

County Executive  
Terry Schutten

Sacramento County  
Airport System  
G. Hardy Acree, Director of Airports



## County of Sacramento

Sacramento International Airport  
Mather Airport  
Executive Airport  
Franklin Field

September 14, 2005

City of Sacramento Environmental Services Division  
Attn: Tom Buford, Associate Planner  
2101 Arena Boulevard, 2<sup>nd</sup> Floor  
Sacramento, CA 95834

RE: Notice of Preparation of a Draft Environmental Impact Report for the Greenbriar Project (P05-069)

Dear Mr. Buford:

The Sacramento County Airport System (Airport System) is pleased to provide comment on the preparation of a Draft Environmental Impact Report for the Greenbriar Project. The proposed development is consistent with the current Comprehensive Land Use Plan (CLUP) in that the residential development is outside the 60 CNEL (Community Noise Equivalent Level) but the majority of this property is located within the existing CLUP Aircraft Overflight Zone which allows residential land use but is heavily conditioned. Even meeting those conditions, the Airport System has concerns about the proposed project due to the unique location of the property relative to the airport's aircraft training flight pattern.

Based on current and historical experience, the Airport System's specific concern is related to single-event noise occurrences and complaints from future homeowners in the Greenbriar Project due to extremely low altitudes flown by military aircraft in the training flight pattern.

Should the project be approved, disclosure of overflight and noise impacts on the initial sale of homes, and Grants of Avigation and Noise Easements that would be executed upon purchase of homes and be part of disclosure statements on future re-sales should be minimum requirements. The following comments support these recommendations.

### Background

The 557-acre property is located at the northwest intersection of Interstate 5 and Highway 99, and is bordered on the north by Elkhorn Boulevard. The land is currently utilized for agricultural purposes. This proposal includes over 3,700 residential units (including areas of both high and low density), 12.5 acres of Village Commercial area and 20.8 acres of Community Commercial area.

### Summary of County Airport System Concerns

In February 2004 the Sacramento County Board of Supervisors initiated environmental review of the new Airport Master Plan for Sacramento International Airport ("Airport"), which includes forecasts of future aircraft operations through the year 2020. The Master Plan estimates that total passengers served by the Airport will approximately double between the year 2000 and 2020 and that flight operations will grow by more than two percent annually during that period.

Approval of this project would facilitate residential and other noise-sensitive urban development below the flight tracks of aircraft using Sacramento International Airport, resulting in potentially significant effects on human health and wellbeing. The Airport System has consistently raised concerns regarding development in this area since the late 1980s.<sup>1</sup> Comments specific to the subject property include the attached May 22, 2000 letter (denoted as item "b" in footnote below).

This particular property is located 1.22 miles from the departure end of Runway 16L and will experience direct overflights by commercial aircraft at altitudes between 1,500 and 3,500 feet above the ground. This area is also directly under the Airport's flight training pattern and would result in direct overflight of both general aviation and military training operations.

The Airport System wants to reiterate our previous concerns that potential development of this particular area poses both safety and aircraft noise issues even though the aircraft noise contours do not show that this area is significantly impacted by aircraft noise. This area will experience single noise events in excess of that in areas under the departure and arrival corridors due to the nature of training activities. The Environmental Impact Report (EIR) for the proposed project should examine the potential noise impacts including single-event noise exposure on the project resulting from current and projected future aircraft operations in the vicinity.

Should this project be approved, it is essential that the City require an aviation easement(s) for aircraft movement and noise. Details about projected Airport growth and over flight considerations follow.

---

<sup>1</sup> Examples of Airport System comments on previous projects include: (a) North Natomas Community Plan, meeting among Airport System staff, City Planning and SACOG staff, April 19, 1991; (b) Airport System comment letter on proposed Greenbriar Farms development, May 22, 2000, 1990 (attached).

### Increased Airport Operations

Commercial aircraft operations are predicted to continue expanding during the coming decades in both frequency and size of aircraft. Flights operations in early morning and late evening hours are also expected to increase. The Airport Master Plan forecasts an average annual passenger growth rate of four percent (4%) between 1999 and 2010, and almost three percent (3%) between 2010 and 2020.<sup>2</sup> The Master Plan also forecasts that average annual flight operations will increase 2.7% between 1999 and 2010, and by 2.1% between 2010 and 2020.<sup>3</sup>

Recent growth rates have been particularly rapid. The total of 901,000 passengers served in June 2004 was 14% higher than the same month in 2003, and was the first time monthly passengers exceeded 900,000. For the 12-month period ending October 2004, the total number of passengers was 9,338,930, an increase of 602,341 (almost 7%). As an origination-destination airport, Sacramento International has obviously not experienced the post 9-11 decline in passengers common among many "hub" airports. The Airport's recent passenger increases were stimulated by more airlines offering Sacramento service (Aloha, Hawaiian, JetBlue, Mexicana), coupled with an increase in flights. Some departures, such as the two operated by JetBlue, occur in the late evening hours.

Aircraft departure routes for most northbound flights and aircraft training pass near the area proposed for the Greenbriar development. The Natomas area has experienced substantial urban growth in recent years and has resulted in greater numbers of noise complaints received by the Airport System. As stated above, the number of aircraft overflying this site will increase as the Airport continues to grow. The Federal Aviation Administration (FAA) has total control over aircraft departure routes. The Airport System is unaware of any FAA plans to alter these routes, and it is highly speculative that the FAA would alter these routes in the future.

### Noise Considerations

The Sacramento County Grand Jury addressed the drawbacks of land use incompatibility near Sacramento International Airport in its Final 2001/2002 Report "Encroaching Land Use Imperils Sacramento's Airport System" (p. 42-51), published June 30, 2002. This report summarized some of the potential negative impacts as follows:

The Grand Jury has concerns about the negative impact to the Sacramento County Airport System's current and future plans for operations, growth and development at both Sacramento International Airport and Mather Field as a result of planning, zoning and land use decisions made by local political bodies.

Land use decisions made by the Board of Supervisors, County Planning Department and Commission, and the City of Sacramento may seriously affect both airports' operational status as well as future expansion plans. These decisions create a high probab-

<sup>2</sup> *Sacramento International Airport Master Plan*, February 2004, Table 3.2-1, p. 3-13.

<sup>3</sup> *Sacramento International Airport Master Plan*, February 2004, Table 3.4-14, p. 3-53.



ity for curfews, limited operations, restricted flight paths and the necessity of obtaining operational variances for continuation or expansion of air transit operations.

These decisions have and will continue to expose Sacramento International Airport, Mather Field and the taxpayers of Sacramento County to potential liability for damages from lawsuits brought against airport operations at both facilities. This liability arises from lawsuits that could be brought by surrounding commercial operations and residential homeowners in new developments allowed to build in close proximity to known and pre-existing major aviation facilities.

Although aircraft manufacturers have significantly reduced the noise levels of new aircraft over the past 20 years and airlines work hard to reduce noise impacts, aircraft noise remains an unwanted byproduct of aircraft operations. The Airport System does its part to minimize aircraft noise by working with aircraft operators, air traffic controllers, and concerned citizens to ensure the airport operates in as quiet a manner as possible.

As described in detail below, about 75 percent of aircraft departures from Sacramento International Airport occur to the south. These overflights occur at altitudes ranging from 1,500 to 3,500 feet above the ground. An aircraft flying at these altitudes at a horizontal distance of one-half mile is close enough that it appears to an observer on the ground to actually be overhead. Of perhaps even greater concern is noise generated by military aircraft training operations at the Airport. Many of the military aircraft are larger and noisier than commercial aircraft, and are typified by lower flight patterns (500 – 3,000 feet) than departing commercial aircraft. The variability of military aircraft operations could also be a significant source of potential annoyance to project area residents.

#### Background Information – Flight Tracks and Noise Exposure

The Airport System operates an Aircraft Noise and Operations Monitoring System (ANOMS) that monitors aircraft flight tracks and noise exposure. Attached are flight track plots generated by ANOMS for the Airport. Figure 1 provides a location map of the proposed Greenbriar development. Figure 2 depicts a single day of flight tracks (November 17, 2004) when the Airport operates in a "south flow" configuration, i.e., landing to the south and departing in a southward direction. The green lines depict departures, the red lines are arrivals, and the blue lines labeled as overflights are comprised mostly of aircraft training operations.

Wind and weather conditions dictate the direction of flow at SMF. Aircraft take off and land into the wind. Because south winds predominate at the Airport, south flow occurs about 75 percent of the time. If the winds and weather are highly variable, south flow may occur intermittently throughout the course of the day. Figure 3 depicts Airport "north flow" for a day (September 15, 2004). North flow is used when the winds are out of the north, when other weather conditions dictate, and for nighttime noise abatement. During the course of a year north flow occurs about 25 percent of the time.

Figure 4 depicts the flight tracks associated with training activity for the fourth quarter of 2004 at the Airport. Although all types of aircraft train at SMF, the large military aircraft are of greatest concern. These transport-size aircraft, such as the C-5A, KC-10, and KC-135, train several times each week. These aircraft operate at much lower altitudes than the typical commercial traffic at the Airport and are also not subject to the engine noise restrictions imposed on commercial aircraft. Fighter-type aircraft also utilize the Airport. All public use airports are obligated to make their airfield available to military aircraft for training purposes and these aircraft may be in the flight pattern for up to an hour. These aircraft operate at altitudes as low as 500 feet over this proposed development.

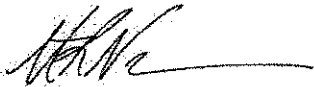
Wildlife Attractant Concerns

Though the original development plan did not include lakes within the Greenbriar project, the most current plan shows several lakes. The area in which these lakes are proposed is within the area defined by the FAA in Advisory Circular 5200-33A, Hazardous Wildlife Attractants On and Near Airports as being in conflict with aircraft operations. Positioning a new lake to the southeast of the airfield would likely increase waterfowl traffic directly through the airspace and through the primary departure corridor for commercial air traffic. The safety of said commercial traffic is at risk should the lakes be built without conforming to the standards within the aforementioned FAA Advisory Circular.

Please refer to the attached memorandum (Attachment 6) from the United States Department of Agriculture, Wildlife Services regarding what type of lakes would be acceptable and how they must be maintained in order to be in agreement with the FAA guidelines.

Thank you for considering the Airport System's request and comments. Any questions you have can be directed to me at 874-0704.

Sincerely,



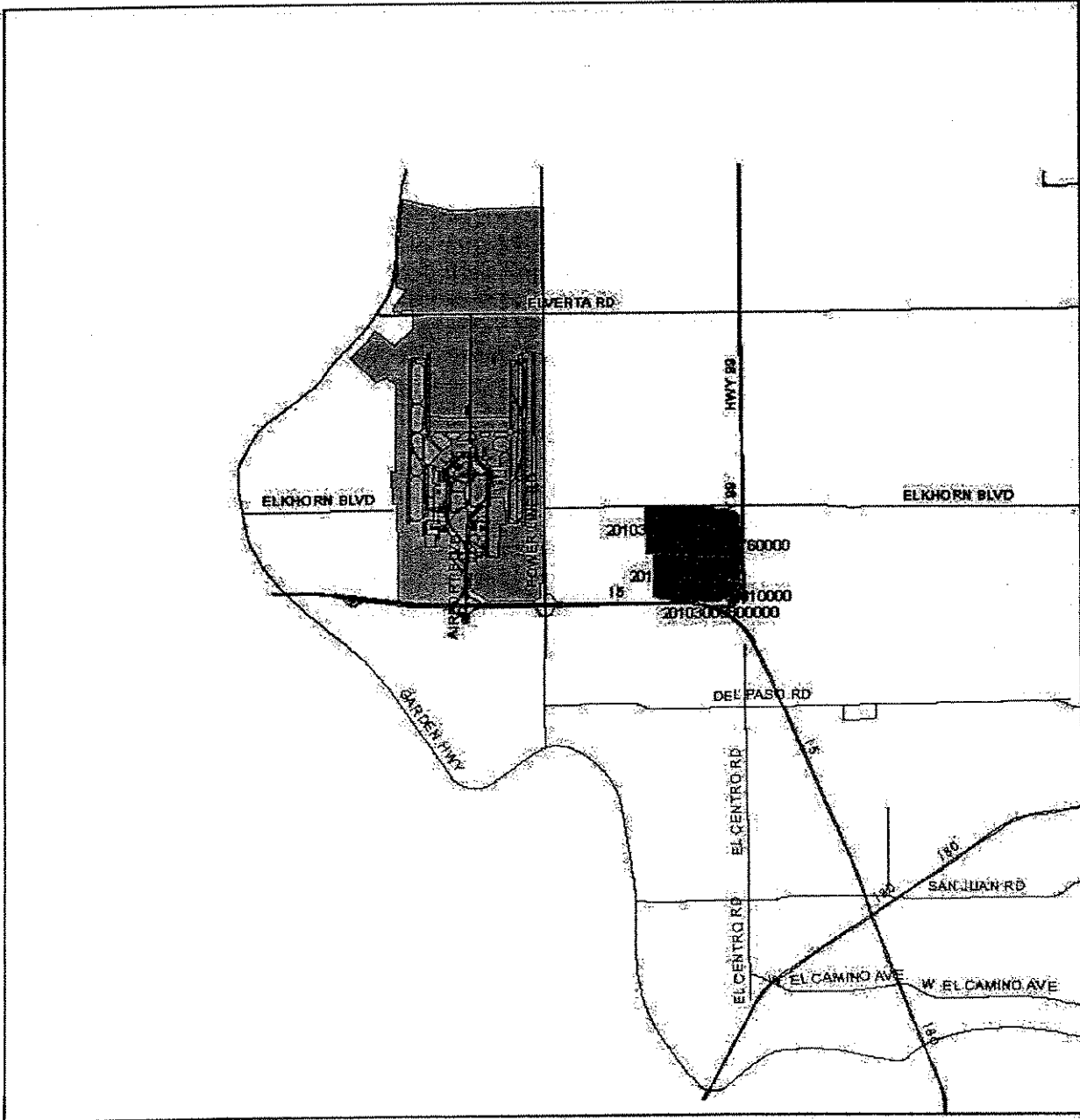
Monica R. Newhouse  
Airport Noise Program Manager

Enclosures (6)

C:  
Robert B. Leonard, Airport Chief Operating Officer - County Airport System  
Leonard H. Takayama, Deputy Director - Planning and Development,

# FIGURE 1

Sacramento County Airport System  
Aircraft Noise Information Office  
Greenbriar Project Site Proximity to Sacramento International Airport



0 0.2 0.4 0.8 1.2 1.6 2 Nautical Miles

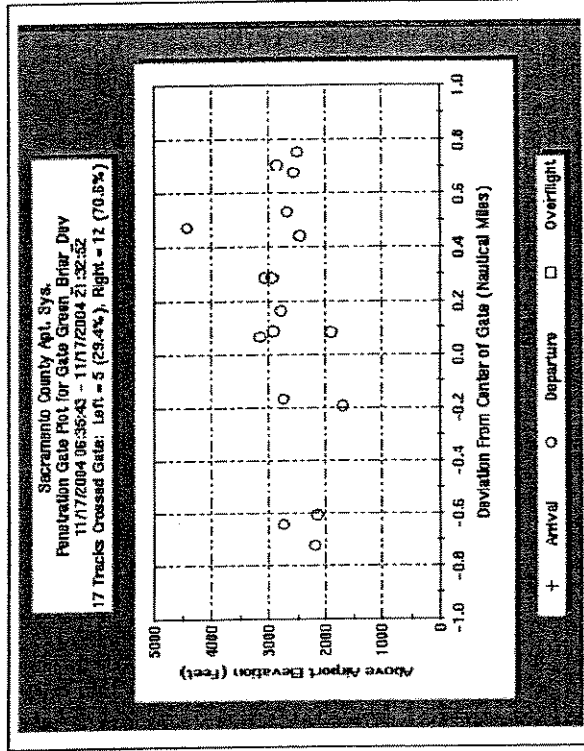
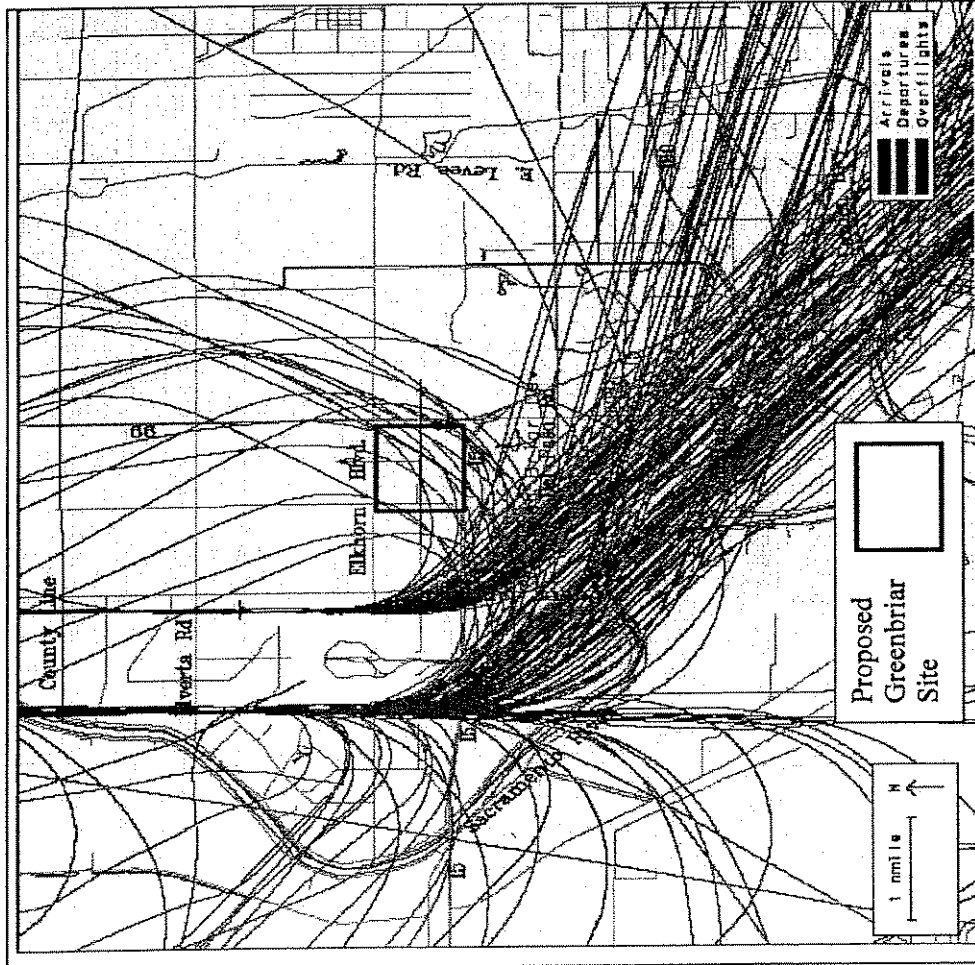


**Legend**  
Greenbriar parcels



**FIGURE 2**

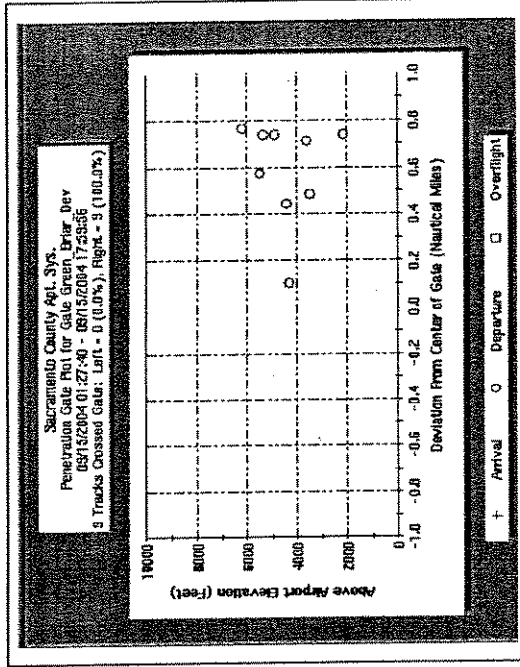
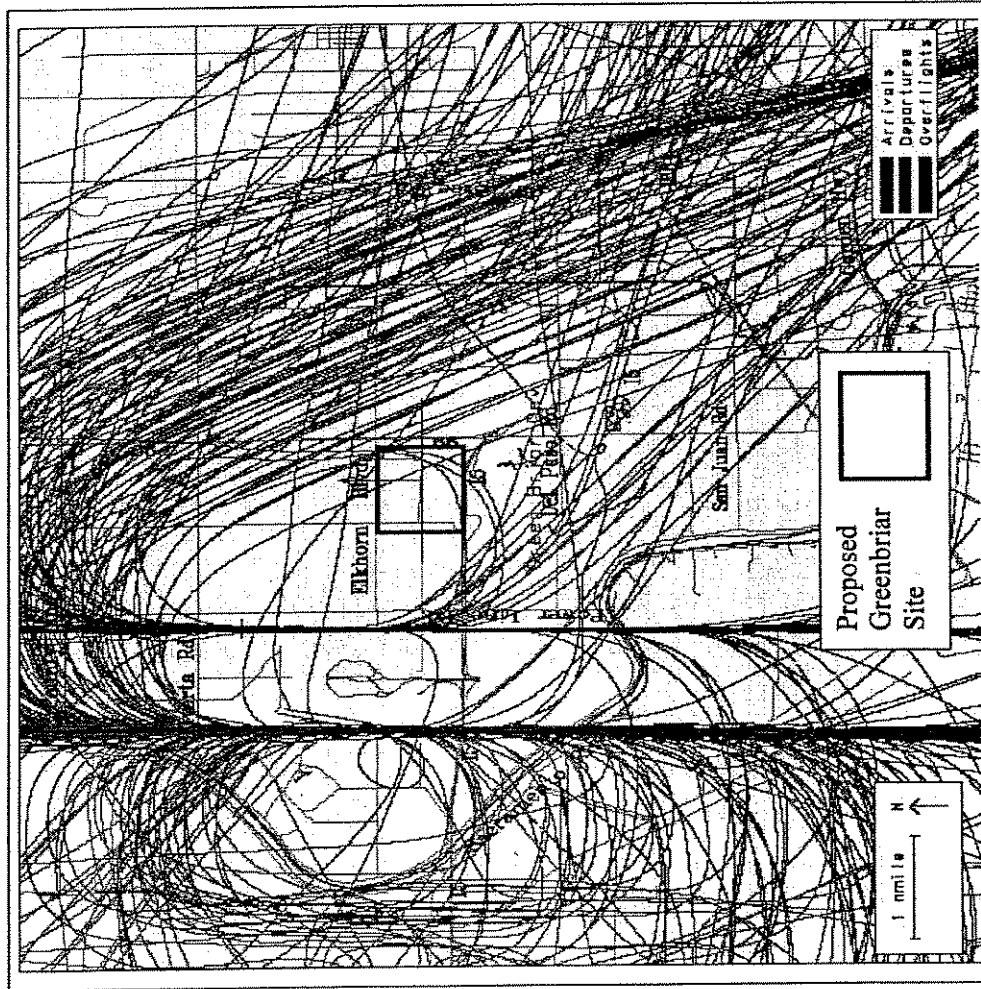
Sacramento County Airport System  
 Aircraft Noise Information Office  
 SMF Typical South Flow Operations and Proximity to Proposed Greenbriar Project Site  
*Flight Track Analysis and Gate Analysis*



Prevailing winds favor South Flow operations about 75% of the time during the year.

**FIGURE 3**

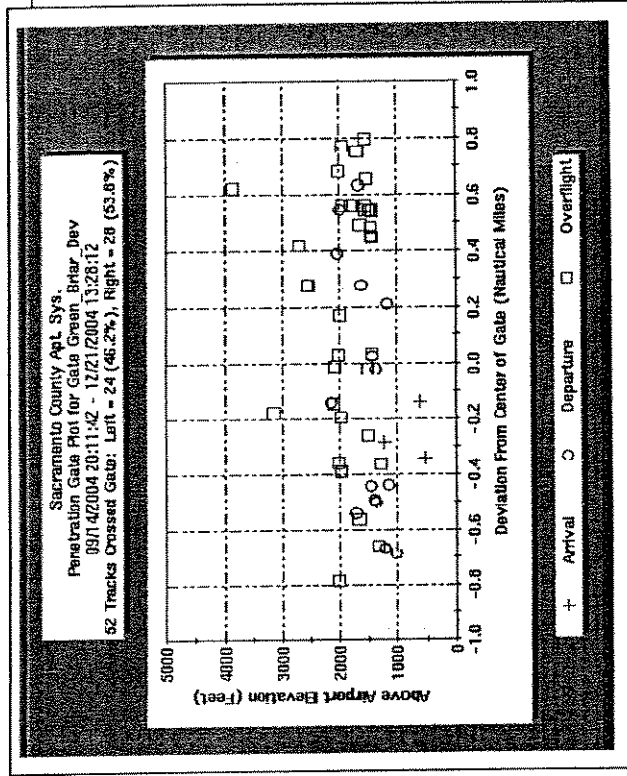
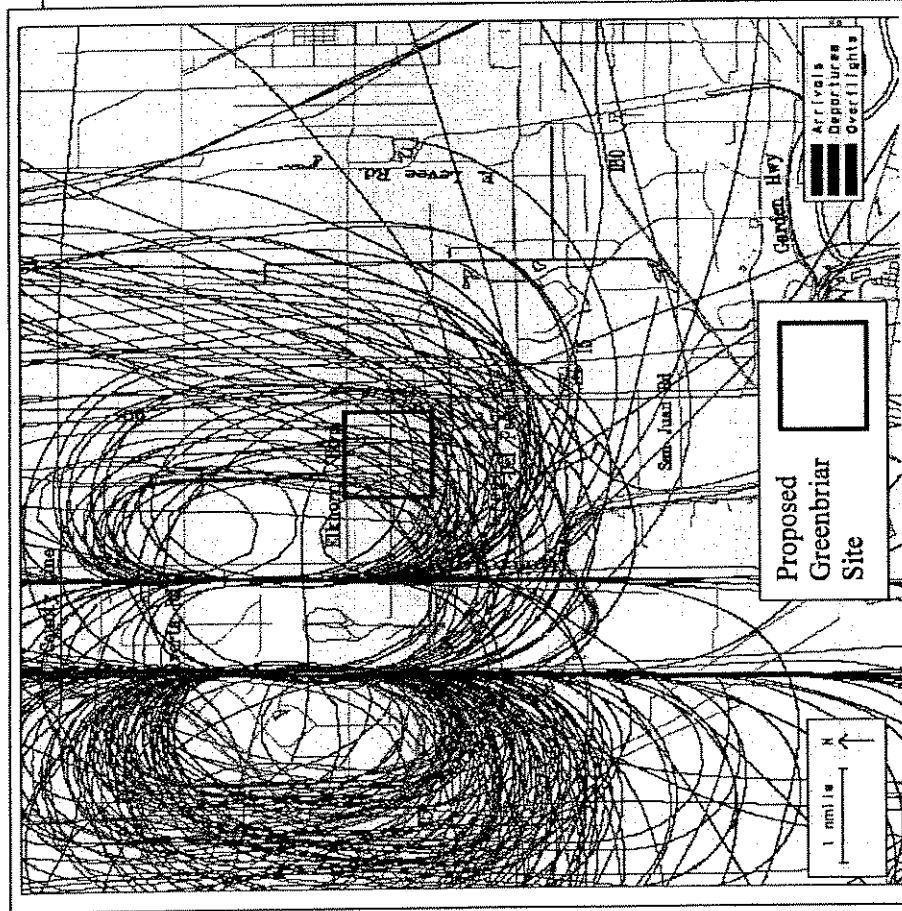
Sacramento County Airport System  
 Aircraft Noise Information Office  
 SMF Typical North Flow Operations and Proximity to Proposed Greenbriar Project Site  
*Flight Track Analysis and Gate Analysis*



Prevailing winds favor North Flow operations about 25% of the time during the year.

**FIGURE 4**

Sacramento County Airport System  
 Aircraft Noise Information Office  
 SMF Fourth Quarter 2004 Military Operations and Proximity to Proposed Greenbriar Project Site  
*Flight Track Analysis and Gate Analysis*



Military aircraft regularly conduct training flights at SMF. Though sporadic, such flights will often be noticeably lower than typical commercial aircraft operating at SMF. Due to both the lower altitudes and to the unique design characteristics of military aircraft, many will also be noticeably louder than most commercial aircraft.



**COUNTY OF SACRAMENTO**  
**DEPARTMENT OF AIRPORTS**  
6900 AIRPORT BOULEVARD  
SACRAMENTO, CALIFORNIA 95837-1109

ROBERT LEONARD  
Master Plan Director  
Mail Code; 95-001.

G. Hardy Acres  
DIRECTOR OF AIRPORTS  
May 22, 2000

John O'Farrell  
ADMINISTRATOR, COMMUNITY DEVELOPMENT &  
NEIGHBORHOOD ASSISTANCE AGENCY

Mr. Thomas Pace, Associate Planner  
City of Sacramento  
1231 I Street, Room 300  
Sacramento, CA 95814-2998

Subject: File Number IR00-020  
Greenbriar Farms

Dear Mr. Pace:

The Sacramento County Airport System staff has reviewed the information, which you sent regarding the proposed Greenbriar Farms development. As you might guess, we have serious concerns with the proposal.

To begin with, aircraft overflight noise is always a matter of concern, especially when incompatible development is being proposed so close to the airport. In that regards, we have an aircraft tracking system (ANOMS), which receives data from the Federal Aviation Administration radar that shows us the exact flight path and altitude of every flight into and out of International Airport. I have enclosed a graphic depiction of this activity for May 1, 2000, a typical day. A line is drawn on this chart just below "Greenbriar" which is a "gate." The second enclosure is a vertical slice of the airspace at this "gate" which shows the location and altitude of the flights shown in plan view on the first graphic. As you can see from these two items, approximately ten aircraft arrived or departed International across Greenbriar Farms at the "gate" at altitudes of 1,000-1,500 feet above ground. There is little doubt but what we would receive complaints about these flights.

The 60 CNEL noise contour, which you are utilizing, was the last noise contours which the Board of Supervisors adopted in 1993. These contours are no longer current. We are starting a new master plan for Sacramento International airport which will provide us with new contours, however, it is expected to be approximately two years before any new contours are adopted by the Board.

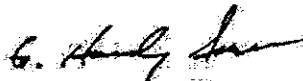
The Airport System recommends that local governments support the adopted CLUPS and not approve developments which are not in compliance with the CLUPS. That would be the case for this development.

The Airport System does not normally take an official position in support of or in opposition to any specific development. We try to provide factual data to the decision makers so they can make an informed decision. I urge you to include a thorough analysis of both flight safety and aircraft overflight noise issues as the City considers this proposed development.

Please call Mr. Fred Coxe at 874-0608 or myself at 874-0600 if you have any questions or need to discuss this matter.

Thank you for giving us the opportunity to be involved in the City's consideration of the Greenbriar Farms development.

Sincerely,



G. Hardy Acree, Director  
Sacramento County Airport System

Enclosures International Airport Aircraft Altitudes over Greenbriar Farms Graph  
ANOMS Flight Paths for International Airport - May 1, 2000

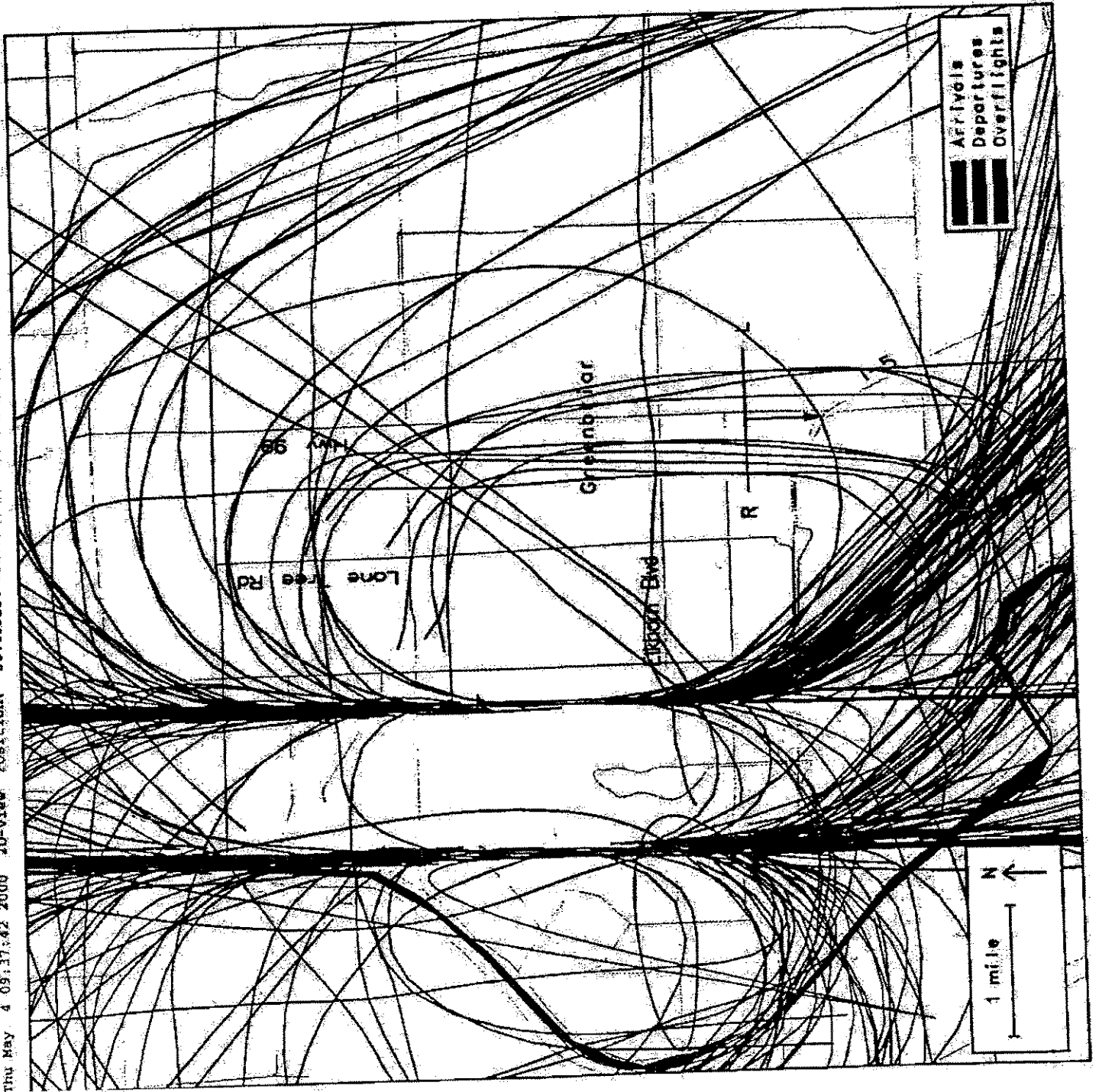
cc: John O'Farrell  
Thomas Hutchings  
Paul Hahn  
Dennis Yeast  
Robert Leonard  
Fred Coxe



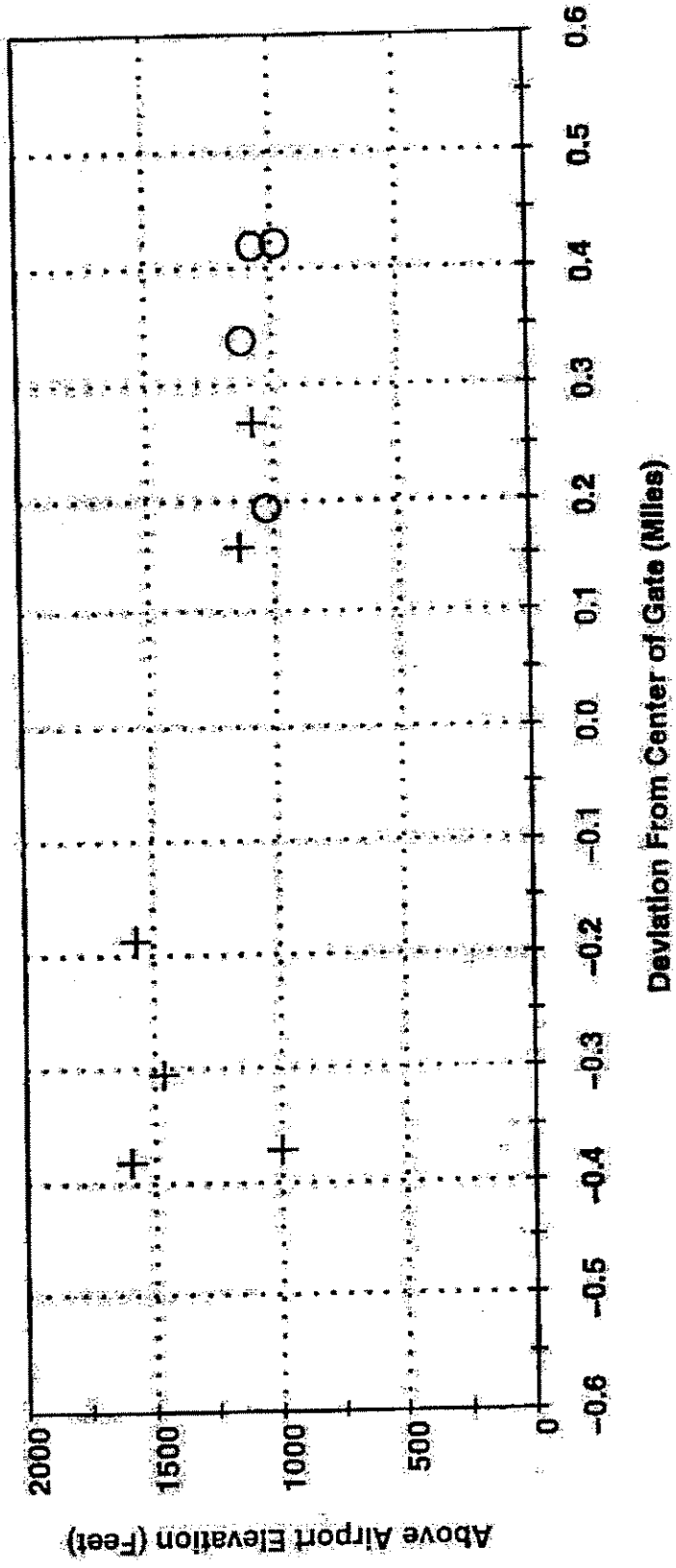
Thu May 4 09:17:42 2000 2D-View Position 38.699236 -121.556088 Scale: 13267



All SNF Arrivals/Departure  
May 1, 2000



Sacramento Int'l Airport  
 Aircraft Altitudes over  
 Greenbriar Farms



+ Arrival      O Departure      □ Overflight

May 1, 2000



United States  
Department of  
Agriculture

Subject: Greenbriar Housing Development

Date: 8/30/2005

Marketing and  
Regulatory  
Programs

To: Sacramento County Airport System

Animal and  
Plant Health  
Inspection  
Service

On August 30, 2005, Wildlife Services was asked to evaluate the proposed plans for "Greenbriar Project" at the intersection of I-5 and Hwy 99 to determine the potential for lakes in the development to become hazardous wildlife attractants.

Wildlife  
Services

California State  
Office

3419A Arden Way  
Sacramento, CA  
95825  
(916) 979-2675

Based on information that has been provided to USDA-WS and our knowledge of wildlife use patterns at SMF, the location of the proposed lake would likely increase the number of hazardous wildlife in the area and their movements through flight patterns. We would recommend that these kinds of attractants should not be permitted within a five mile radius of the airport, as prescribed by the FAA in A/C 5200-33A, Hazardous Wildlife Attractants On and Near Airports. In SMF's situation, the golf course located west of the airport and Pritchard's Lake located north of the airport already attract substantial numbers of waterfowl to the area. Positioning a new lake southeast of the airfield would be likely to increase waterfowl traffic directly through the airspace around the airfield through a synergistic effect. This situation is specifically addressed in Section 2.8 of the previously mentioned A/C.

The presence of lakes should be limited to water detention facilities, holding water for no more than 48 hours, then allowing the basin to dry. These basins should be maintained in shortly mowed grass, with easily maintenance slopes to prevent vegetation build up. Any vegetation not maintained as landscape would be likely to harbor populations of rodents attractive to raptors. Raptors pose another threat to aviation, especially as the positioning of this feature in under the flight patterns. Any wildlife attracted to the lake/detention pond should be hazed aggressively and regularly to deter use of the facility.

If the above measures are followed, hazards to aircraft would be minimized, but not completely avoided. Wildlife Services does not recommend that water retention basins be constructed within five mile radius if the feature has the potential attract wildlife which may pose a hazard to aircraft because even the recommended mitigation measures will not eliminate use by waterfowl and increased movement in the airspace.

Please feel free to contact me if you have any questions.

Erica McDonald  
Wildlife Biologist, USDA Wildlife Services  
916-874-0501



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September 16, 2005

Tom Buford, Associate Planner  
CITY OF SACRAMENTO  
Environmental Services Division  
2101 Arena Boulevard, 2<sup>nd</sup> Floor  
Sacramento, CA 95834

Dear Mr. Buford:

**Subject: Recirculated Notice of Preparation of a Draft EIR for the Greenbriar Project (P05-069)**

Regional Transit (RT) staff has reviewed the Notice of Preparation for an Environmental Impact Report (EIR) for the Greenbriar Project and submits the following comments regarding the document:

*Light Rail Operations*

The Draft Environmental Impact Report (DEIR) should identify the future light rail alignment and station being planned through the area and the impacts of the development on this future alignment and station. Analysis of traffic impacts on the local intersections and the freeway interchange should take into account the changes that will occur in the area when light rail is constructed. These cumulative impacts need to be addressed.

*Bike and Pedestrian Circulation*

The document should identify the pedestrian and bicycle connectivity within the site and between the site and adjoining development and also analyze the impacts of the development on this circulation. Strong pedestrian and bicycle circulation within the subject site and adjoining roads/uses will facilitate ease of access by future residents to transit services. RT wants to see a design that emphasizes a high level of pedestrian linkage encouraging pedestrian activities around the rail station.

Thank you for the opportunity to comment. If you have further questions regarding these comments, please contact me at 556-0507 or at [tjaiyeoba@sacrt.com](mailto:tjaiyeoba@sacrt.com).

Sincerely,

A handwritten signature in cursive script that reads 'Taiwo Jaiyeoba'.

Taiwo Jaiyeoba  
Director of Planning

c: Mike Wiley, Assistant General Manager – Planning, RT  
Don Smith, Senior Planner, RT

**James P. Pacht**  
**Attorney at Law**  
817 - 14<sup>th</sup> Street, Suite 100  
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September 16, 2005

Tom Buford, Associate Planner  
Planning & Building Department  
2101 Arena Blvd, 2nd floor  
Sacramento, CA 95834

808-8370

RE: comment NOP for DEIR for Greenbriar annexation and project

Dear Mr. Buford,

These comments are on behalf of ECOS, Sierra Club, and Friends of the Swainson's Hawk. These organizations are opposed to further development outside of the County Urban Service Boundary and to further development in Natomas Basin outside of the present Permit Areas of the NBHCP. Thus, they oppose this project, and also the extension of light rail through the project area.

Incorporated herein by reference as **ATTACHMENT A**, is my letter to Greg Bitter, City of Sacramento, dated January 11, 2005, commenting on the Preliminary Review of Application for Greenbriar Project, which discusses the following issues that will need to be analyzed in an EIR and considered by City in its decision-making:

(a) potential violation of the Natomas Settlement Agreement (Stipulated Amendment of Federal Judgment, May 15, 2001); (b) violation of City Council Resolution 2001-518; (c) potential violation of the Federal and State Incidental Take Permits under 2003 NBHCP; (d) funding of new or upgraded highway interchanges and lanes; (e) impacts to prime farmland and the need to mitigate for loss of prime farmland; (f) inconsistency with State law and LAFCO policy to protect prime farmland; (g) conflicts between residential use and jet noise impacts; (h) inconsistency with California Education Code §§ 17213 and 17215; (i) cumulative impacts; (j) mitigation of cumulative impacts; (k) funding of necessary traffic and drainage facilities; (l) light rail; (m) growth inducement.

The project is outside the County Urban Service Boundary. There are large areas of vacant land within the Urban Policy Area and Urban Service Boundary which are suitable for development, and many opportunities for infill development within existing urban and suburban areas in the City and the region. This project, and further development in Natomas outside of the existing USB, will divert investment and resources away from infill and development within the existing USB. This is an impact that must be addressed in the EIR.

Traffic impacts generated by the project on I-5 and Hwy 99, and traffic impacts on regional access to the Airport must be analyzed. It should not be approved if traffic generated by the project, in combination with existing traffic and traffic projected to arise from build-out of North Natomas and South Sutter, will impede access to the Airport. Traffic analysis should include analysis of impacts on Airport access during the morning and evening commute hours; and analysis of effects on Airport operations if analysis shows that traffic impacts will impede Airport access.

The EIR should address the inconsistency of the light rail project proposed for the area with US EPA policies against federal investment in capacity-increasing transportation projects in ozone non-attainment areas.

### Consistency with "Joint Vision" Policies

The EIR must address consistency and inconsistencies of the project with each of the City/County adopted Joint Vision policies, including but not limited to Joint Vision's policies for open space preservation, farmland preservation, airport protection. The EIR should explain how the project will provide open space mitigation at the ratio of at least 1 to 1 "within the Sacramento unincorporated area of the Basin" (Joint Vision p. 11) and minimize and mitigate for loss of farmland, *(id)*, as required by Joint Vision.

The EIR must address consistency and inconsistency with the Joint Vision General Plan Amendments and annexation that are being processed by City and LAFCO.

### Inconsistency with Natomas Basin Habitat Conservation Plan

The letter of USFWS and CDFG, July 29, 2005, commenting on the prior NOP dated June 28, 2005, raises important issues.

In the FEIR/EIS for the 2003 Natomas Basin Habitat Conservation Plan, City stated that:

"Development of West Lakeside and Greenbriar Farms is not considered reasonably certain to occur *because extensive studies, planning and further analyses are required as part of the Joint Vision process before any development approvals may be considered* for any of these areas, and because the outcome of these efforts is unknown." (FEIR/EIS p. 3-31, attached.) **(ATTACHMENT B)**

The NOP proposes that Greenbriar proceed ahead of Joint Vision, which is inconsistent with City's representations in NBHCP FEIR/EIS.

The effectiveness of the NBHCP's Operating Conservation program is explicitly premised on the commitment of City to limit development to 8,050 acres within the City's Permit Area, Sutter's Commitment to limit development to 7,464 acres, and Metro Air Park commitment to limit development to 1,986 acres within its Permit area, for a total of 17,500 acres. The NBHCP, EIR/EIS, and other decision documents rely upon the assumption that the rest of the Basin will remain in agriculture and continue to provide habitat values for threatened GGS and SWH.

The Federal District Court, Judge David Levi, construed the effect of these provisions in its decision on September 8, 2005, upholding the 2003 NBHCP, as follows:

At pg. 30, fnnt 13, of the Opinion, the Court states that:

"the Service and those seeking an ITP in the future will face an uphill battle if they attempt to argue that additional development in the Basin beyond 17,500 acres will not result in jeopardy" pointing out that the HCP, Bio Op, Findings, EIR/EIS all are predicated on the assumption that development will be limited to 17,500 acres and the remaining lands will remain in agriculture.

At pg. 22 fnnt 10, of the Opinion, the Court states that:

"while plaintiffs contend that future development will vitiate the NBHCP, it is more likely that, if future development in the [Sacramento] County will have this effect, the Secretary will decline to issue ITP's for development in [Sacramento] County or will insist on mitigation that may be considerably greater than required by the NBHCP."

The Greenbriar project, and other development proposed under "Joint Vision" are inconsistent with the NBHCP as construed by the Court's decision.

#### **Habitat Baseline**

Because the project is totally dependent upon issuance of Incidental Take Permits by USFWS and CDFG and upon the habitat baseline established by the 2003 NBHCP, the habitat baseline condition for Greenbriar and Joint Vision would be the same as that relied upon by the 2003 NBHCP for those areas, because the NBHCP relied up remaining agriculture at Greenbriar and in the Joint Vision area to provide habitat benefits. During most years, Greenbriar was cultivated in rice, which is valuable GGS habitat. It was fallowed for the past two years to attempt to reduce the habitat baseline for GGS, but that is not the habitat condition relied upon by the NBHCP and its EIR/EIS in determining that there were be no jeopardy as along as the Basin outside of the NBHCP Permit Areas remained in agriculture.

#### **Sacramento River, Deep Flooding - FEMA Certification Based On Outdated Information**

Prior to 1997, the Natomas Basin was certified by FEMA as being protected against the 100-year flood of the Sacramento River. However, the FEMA certification is out of date and cannot be relied upon.

The Sacramento Bee, September 8, 2005, (**ATTACHMENT C**), reported that a panel of experts at the Floodplain Management Association Annual Conference concluded that "Our risk of deadly floods is probably much higher than we think", because data on which is the basis of the FEMA 100-year certification standard relies on information from the 1960's which is seriously outdated.

The Corps of Engineers and SAFCA have already found serious deficiencies in the Sacramento River levee which protects Natomas. See "Commonly Asked Questions ..." by the Corps and SAFCA, which was distributed at public meetings in July 2002 (**ATTACHMENT D**).

The Corps/SAFCA document states that engineering studies subsequent to the 1997 flood revealed that foundation soils underlying the levees do not meet engineering criteria for underseepage, and that there is potential for underseepage to cause "boils" that could cause levee breach. "If not reinforced, the levee could breach and cause major flooding within Natomas Basin." (Id)

The Corps/SAFCA documents speaks of the need for major reinforcement of the Sacramento River levee protecting Natomas, for which money has not been authorized or appropriated. The New Orleans flood tragedy demonstrated that a relatively small breach of a levee rapidly becomes a very large breach, and that a flood basin, such as New Orleans or North Natomas, fills very rapidly once the levee is breached. Flooding of North Natomas during high water conditions could be 30 feet deep in some locations.

Common sense and prudence dictate that no further development be approved in North Natomas pending reassessment and improvement of the actual level of flood protection for Natomas Basin. The EIR for this project should thoroughly address this issue in light of current information.

#### Consistency With LAFCo Policies

The EIR must address the consistency of this project with LAFCo's policies, including policies for agricultural land preservation, open space, habitat protection, mandate for infill development in preference to development on farmland, protection of the Airport operations, etc.

#### Payment of \$10,000,000 Promised by Developer to University of California, Davis, Health Care System

At the LAFCo hearing of August 3, 2005, the project proponent and developer, AKT development, represented that it would "donate" \$10,000,000 from the proceeds of the project to University of California, Davis, Health Care System, towards construction of a relocated medical school facility. Several LAFCo Commissioners made comments indicating that this "donation" was a major reason for LAFCo to proceed with the project. The developer has allegedly offered donations to other charitable organizations from the proceeds of the project.

Because it appears that the decision to approve the project will very likely be influenced by the developer's statement of its intention to donate, the EIR and project description should state whether the developer's statement of its intention to "donate" the funds to U.C. and the other charities is a legally binding legal obligation and condition of approval for the project.

Respectfully submitted,

  
James P. Pachl



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January 11, 2005

Greg Bitter  
Planning & Building Department  
City of Sacramento  
1231 I Street, Room 300  
Sacramento, CA 95814

RE: Preliminary Review of Application for Greenbriar project, #IR04-463

Dear Mr. Bitter,

I represent ECOS, Sierra Club, and Friends of the Swainson's Hawk in pending litigation challenging the validity of the 2003 Natomas Basin Habitat Conservation Plan. I received a copy of the Application on January 10, 2005, and offer the following comment for City's consideration:

**A. Potential Violations of Natomas Settlement Agreement (Stipulated Amendment of Judgment, May 15, 2001).**

I am the Plaintiff's representative for implementation of the Natomas Settlement Agreement, which was incorporated into a Stipulated Amendment of Judgment in *NWF v. Babbitt*, Civ. No. S-99 274 DFG, filed May 16, 2001. The Stipulated Judgment, p. 17, states that City shall enact a resolution which restricts first-stage legislative entitlements on Greenbriar, and two other projects, until completion of the pending SOI study for proposed development in Natomas Basin outside of the NNCP area. Such a Resolution 2001-518 was enacted by the City Council on June 24, 2001, which defines first-stage legislative entitlements as including rezoning, rezoning, general or community plan amendments, development agreements, or establishment of a PUD. Most of the actions requested by the project applicant are therefore prohibited until after completion of the SOI study referenced in Resolution 2001-518.

The Stipulated Judgment, pg. 16, parag. b, states that City will confirm, in its preparation of its SOI study, its interest in creating a GGS protection zone. U.S. Fish and Wildlife Service separately submitted to City a conceptual map of a GGS protection zone that included all or a substantial portion of the subject property, to provide GGS aquatic habitat connectivity between GGS habitat areas and wetland preserves of the Natomas Basin Conservancy north and south of the Greenbriar properties. The project map shows no connectivity corridor for GGS. While the Settlement Agreement does not require a "GGS protection zone" on this property, USFWS

ATTACHMENT A

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clearly intends that any future Incidental Take Permit covering development on this property would include a north-south "GGS habitat connectivity corridor" through this property.

**B. Potential Violation of Federal and State Incidental Take Permits Under 2003 NBHCP**

The conservation mitigation program of the 2003 Natomas HCP relies upon the assumption that development in the Basin will not exceed 17,500 acres for the 50-year term of the permit, all of which is restricted to the Permit Areas of City, Sutter County, and Metro Air Park, and that the rest of the Basin will largely remain in agriculture (to supplement the inadequate mitigation program). The 2003 NBHCP provides that the City shall not approve new development outside of its Permit Area without incidental take permits under the Federal and State Endangered Species Acts, and that such new development shall trigger re-evaluation and possible amendment of the of the Natomas Basin HCP. Permitting of new development outside of the City's NBHCP Permit Area without Incidental Take Permits would expose the City to revocation of its permit under the NBHCP and potential civil and criminal action for violation of Federal and State ESA.

The project application fails to include any commitment to mitigate for impacts on threatened and endangered species, or to obtain Incidental Take Permits under the Federal and State ESA. The Environmental Information Form asks the applicant to list other permits and public approval required for the project. The applicant wrote in "n.a.", which seems to declare that applicant intends to ignore the requirement for Federal and State Incidental Take Permits under Federal and State ESA.

**C. Other Issues**

The only highway access are the interchanges at Elkhorn/Hwy 99, and the Airport interchange, which are clearly inadequate to serve the project. A new lane would be needed on Hwy 99 to accommodate traffic generated by the project. The project application fails to make any provision for constructing a new or upgraded interchange, or additional highway lanes. Will development be allowed prior to construction and/or upgrade of interchanges and highway lanes? Who will pay the cost of the new or upgraded interchanges and lanes -- the public or the project?

The project site is prime farmland, the loss of which must be mitigated. Such mitigation is feasible and thus required under the Court of Appeal decision in the Lent Ranch case (2004.) The project is ignoring State law and LAFCO policies for protection of prime agricultural land.

There are significant airplane noise impacts arising from operations of the Sacramento International Airport. The Airport discourages new residential construction west of Highway 99 because of conflicts between residential use and jet noise impacts. In commenting on the original North Natomas Community Plan, the Airport strongly opposed any residential construction west of Highway 99.

California Education § 17215 prohibits using State and local funds to construct schools within two miles of an airport runway, unless approved by the California Department of Transportation. Such approval may be unlikely because of current and anticipated air traffic

volume at Sacramento International. Most of the area between Hwy 99 and the Airport is within two miles of the east runway, except for a narrow strip alongside Hwy 99, where siting of schools is inadvisable due to highway noise and elevated air pollution from vehicle exhaust. Siting of a school within 500 feet of a freeway is severely restricted by Education Code Section 17213. This may be a constraint on the desirability of residential uses at Greenbriar.

There are major cumulative impacts issues as to air quality, traffic, drainage, and flood control arising from the combined impacts of this project, existing development in North Natomas, and reasonably foreseeable new development in North Natomas, "Joint Vision." Metro Air Park, and Sutter County. How will these cumulative impacts be mitigated? Who will pay for necessary traffic and drainage facilities - new development or the public?

The project map shows light rail service to the site. However, such light rail service is contingent upon Federal funding that may not materialize. Projected ridership on the proposed airport line, based on existing approved land uses, does not meet Federal criteria for funding. It is not known whether approval of urban development at Greenbriar would change that determination. Rail expansion linked to development of farmland is controversial, and controversial projects tend to get pushed down on the priority list. Federal funding is increasingly scarce due to multiple demands to serve existing urban areas, and rapidly escalating costs of other federal needs having higher priority (e.g.: servicing increased national debt, increased military expense, funding social security obligations.) Light rail service to Natomas is also dependent upon linkage to the proposed Intermodal Terminal, which is financially infeasible without much more federal funding that is unlikely to be approved. It would be highly unrealistic for the City's evaluation of this project to assume that there will be light rail service to the site.

The commercial retail area proposed along Elkhorn is growth-inducing as to the farmland north of Elkhorn Blvd.

The subject property is outside of the County Urban Service Boundary. There are large areas of vacant land within the Urban Policy Area and Urban Service Boundary which are suitable for new development, and many opportunities for infill development in the region. For that reason, ECOS, Sierra Club, and Friends of the Swainson's Hawk continue to oppose new development outside of the County Urban Service Boundary.

Thank you for the opportunity to comment.

Very Truly Yours,

James P. Pachl

(see Section 2.2.1 and Section 4.1.2.3) because this is the amount of development that would be allowed in the Natomas Basin under adopted City, Sutter County, and Sacramento County land use plans. In other words, 17,500 acres represents the level of development considered reasonably foreseeable in the Basin.

Other specific development approval requests for lands outside of the City, Sutter County, and MAP Permit Areas were not considered reasonably foreseeable under NEPA for the reasons described above in the discussion regarding the treatment of cumulative effects under the ESA. Section 4.1.2.3 of the EIR/EIS explains that several other long-term projects, including the potential for development within the unincorporated portion of Sacramento County, have the potential to occur in the Basin at some unidentified future date. If these projects occur, they would not be included in the 17,500 acres of Planned Development unless the NBHCP is amended or a separate HCP were prepared for that additional development. Both the EIR/EIS and NBHCP acknowledge that any additional urban development in the Basin beyond 17,500 acres may contribute to significant cumulative environmental effects to the resources within the Natomas Basin. However, at the time the Draft EIR/EIS was prepared, insufficient data were available to conduct an assessment of these cumulative effects, in part, because the nature, location, amount, and extent of such development was unknown, and remains unknown as described further above in this Master Response. Additionally, no specific land uses or proposals were identified (with the exception of the Greenbriar Farms and West Lakeside areas) that would enable an analysis of potential cumulative impacts.

The following text summarizes the status of future specific development proposals or planning efforts that commentors suggest should be considered cumulative projects and the way in which the NBHCP and EIR/EIS address these planning efforts or proposals.

**West Lakeside and Greenbriar Farms.** The Draft NBHCP describes the West Lakeside and Greenbriar Farms proposals on page III-15. The developer has attempted to obtain necessary development approvals for several years to support development of the West Lakeside and Greenbriar Farms properties. In its latest attempts, the developer filed a general plan amendment, rezoning and annexation applications with the City on February 22, 2002 for the West Lakeside project. Although the developer has expressed interest in annexing the Greenbriar Farms property, it has not filed any applications with the City. Because the West Lakeside and Greenbriar Farms properties are not included in any adopted land use plans nor are they located within the City's SOI and city limits or within the County's Urban Services Boundary, development of these areas is not allowed by the City or Sacramento County. While the developer has expressed interest in annexation to the City, the status of these requests and the timing and ability to obtain necessary local approvals remain uncertain because it is unknown whether the Joint Vision effort would result in changes to the SOI so that such development could proceed. Consequently, development of these properties was considered speculative at the time the Draft NBHCP was prepared, and it remains speculative.

Moreover, the City is limited in its ability to approve development of the West Lakeside and Greenbriar Farms for the foreseeable future. In accordance with the Settlement Agreement in the prior *NWF v. Babbitt* litigation, the City adopted a resolution (Resolution No. 2001-518, Appendix H of the Final EIR/EIS), imposing restrictions on its approval of General Plan amendments, rezonings/ rezonings, and development agreements for the Camino Norte,

ATTACHMENT B

West Lakeside, and Greenbriar Farms areas, or any lands otherwise located outside of the existing boundaries of the North and South Natomas Community Plans until completion of the Joint Vision. Consequently, these areas are not covered by the NBHCP and the ITPs, and the City is prohibited under its Resolution from taking any actions to approve the West Lakeside and Greenbriar Farms annexations and development proposals pending the results of the Joint Vision effort. Development of the West Lakeside and Greenbriar Farms property is not considered reasonably certain to occur because extensive studies, planning, and further analyses are required as part of the Joint Vision process before any development approvals may be considered for any of these areas, and because the outcome of these efforts is unknown. These projects also are not considered related projects under ESA or CESA because they are not considered authorized activities that may be covered by the NBHCP and ITPs. For these reasons, they are not considered reasonably foreseeable.

**Northern Territories/Brookfield Land Company.** In the 1990s, Northern Territories, Inc. proposed a large development project in Sacramento County north of Elkhorn Boulevard outside the County's Urban Services Boundary. The County denied the development project and rejected the proposal to change the Urban Services Boundary for this project. As of the date of preparation of the Final NBHCP and EIR/EIS, the developer has not filed any further annexation requests with the County or the City of Sacramento. As stated above, the City is restricted in its consideration of this project, should an application be filed, because this area is outside of the City's SOI and County's Urban Services Boundary. In other words, unless the City's SOI or County's urban service boundary is expanded to include this property, the City or County must deny an urban development application. Consequently, this area is not covered by the NBHCP and the ITPs, and the City is prohibited under Resolution No. 2001-518 from taking any actions to approve a development proposal pending the results of the Joint Vision effort described above. Development of this property is not considered reasonably certain to occur because extensive studies, planning, and further analyses are required before any development approvals may be considered for this area, and because the outcome of these efforts is unknown. This project also is not considered a related project under the ESA because it is not covered by the NBHCP and ITPs. Consequently, it is not considered reasonably foreseeable.

**North River Coalition.** The North River proposal consists of 822 acres for development south of West El Camino Avenue, including a 350-acre auto mall, outside of the Urban Services Boundary and the City's Permit Area. Sacramento County has held on abeyance its response to this proposal pending the outcome of the Joint Vision process. Development of the North River Coalition's proposal is not considered reasonably certain to occur because extensive studies, planning, and further analyses are required as part of the Joint Vision process before the potential for development of this property can be determined.

**Alleghany Properties.** This area consists of 86 acres on the west side of El Centro Road outside of the City's Permit Area. No application has been filed for urban development on this property. This property must await the results of the Joint Vision planning effort before the City could consider development of this site.

**Laupps Family/AKT.** This area consists of approximately 298 acres of land bounded by I-5, Powerline Road, West Drainage canal, and RD 1000 Lone Tree canal outside of the City's Permit Area. This property must await the results of the Joint Vision planning effort before

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# Opinion

## Editorial: Our New Orleans Do Natomas residents realize flood danger?

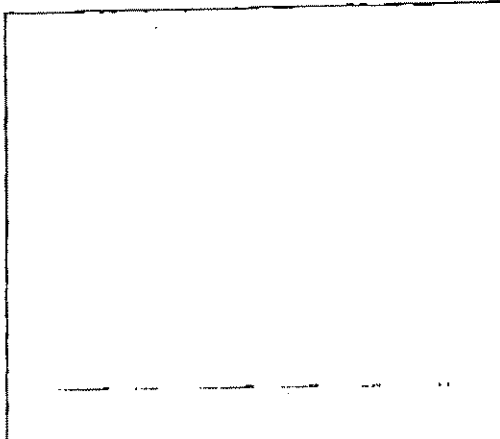
Published 2:15 am PDT Tuesday, August 30, 2005  
Story appeared in Editorials section, Page B6

Some parts of New Orleans remain above water - battered and bruised to be sure from Hurricane Katrina, but still breathing. The power of this frightening storm, whose total damage won't be known for some time, came dangerously close to socking New Orleans with a surge of water and wind that could have submerged much of the city.

New Orleans, essentially a bowl that is protected by walls, is used to the risk posed by tropical storms. The hurricane risk is such a part of the city's psyche that a tall drink is named in its honor. The Sacramento region has some bowls of its own, one just as deep as New Orleans, yet countless newcomers may not be aware of the flood risk. And that is pretty darn scary.

The fast-growing Natomas basin, those communities popping up seemingly overnight around Arco Arena, is this region's version of a New Orleans. Before the levees, the basin would remain under water throughout the spring as snowmelt caused the Sacramento River to sprawl throughout the valley. Now a system of levees, canals and pumps keeps Natomas low and dry.

New Orleans is vulnerable to a



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ATTACHMENT C

certain storm of a certain ferocity arriving on a certain path. Natomas is vulnerable if the Sacramento or American rivers - or both - surge after a cycle of monster rain storms. The American River empties into the Sacramento and causes its water level to dangerously rise. Likewise, any number of major rivers on the Sacramento system, such as the Yuba or Feather, can test the levees along the system.

Under current state law, homeowners aren't required to buy flood insurance even if the first floor would be entirely under water were a levee to break. If that levee (should it hold) can hold back a storm that theoretically has a 1-in-100 chance of happening in any given winter, there is no insurance requirement.

New Orleans, one of the nation's oldest cities, has a civic memory of hurricanes. While plenty of Sacramento residents remember the storms of 1997 and 1986, the collective worry about the weather seems to fade with the onset of every spring.

While there's no need to invent a new umbrella drink in honor of the Pacific storm cycle that could bury local communities such as Natomas in water, it's important to look at those images of New Orleans and realize that we're in harm's way as well. If you live behind a levee, seriously consider buying flood insurance. Our flood protection system is better than it used to be, but it needs to get a whole lot better. Until that happens, Sacramento has something in common with New Orleans that no one should ignore.

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ATTACHMENT C 2



SARCA



Public Meeting

July 25, 2002

Commonly Asked Questions About the Proposed Modifications  
To  
The Sacramento River East Levee and Natomas Cross Canal Levees

1. What is the purpose of the proposed project?

In 1996, Congress authorized a project to raise the east levee of the Sacramento River in Natomas between Powerline Road and Verona so that it could safely withstand higher water levels that are expected during very large storms. In 1999, Congress approved raising the north and south levees along the Natomas Cross canal so that they could contain the same higher water levels. Engineering studies for designing the projects have revealed that the foundation soils under the levee do not meet engineering criteria for under-seepage. Therefore, without corrective action, the levees could be unsafe when higher water occurs. Consequently, the Corps, the State Reclamation Board and the Sacramento Area Flood Control Agency are evaluating options to address this under-seepage issue. One or more of these options would be implemented as part of the levee raise project.

2. What is "under-seepage"?

Under-seepage is water seeping through permeable levee foundation soil strata such as sand and gravel. During a flood, high river stage creates pressure that forces water into the strata on the river side of the levee. The water flows away from the river under the levee and either seeps out of the ground on the dry side of the levee or becomes groundwater. If the surface soils on the dry side of the levee have low permeability, such as silt and clay, they restrict seepage to the surface. The restriction causes the water to exert upward pressure on the surface soils and can "lift" them, causing boils. The boil provides a passage for increased flow of water and the increased flow can wash away the sand below the levee. If not reinforced, the levee could breach and cause major flooding within the Natomas Basin.

3. How could the risk of under-seepage be addressed?

The project sponsors are evaluating three different options to reduce the risk of levee failure due to under-seepage. The first option is to reinforce the affected levees with a berm extending outward 100 to 200 feet from the landside of the levee. At the levee, the berm has a thickness of about eight feet tapering to about three feet at the edge. The second option is to install a seepage cut-off wall through the levee. To be effective, the bottom of the cut-off wall must extend into a low permeability soil strata such as clay. Construction equipment limits the depth of cut-off wall construction to about 80 feet below the top of levee. In locations where the depth to clay strata exceeds 80 feet, the cutoff wall is not feasible. The third option is to install wells, ditches and pumps along the land-side of the levee that are designed to relieve the pressure by releasing the confined water to the surface and then moving it back to the river.

4. What is the purpose of this meeting?

In order to facilitate public input into the project planning process and to comply with State and Federal environmental laws, the Corps will produce an environmental document disclosing the environmental impacts of raising the levees and implementing the various under-seepage containment options. The purpose of today's scoping meeting is to provide interested members of the public with information about these measures so they in turn can identify environmental and other concerns that need to be considered in the project planning process and the environmental document. Public input will again be sought when the environmental document is complete in draft form, later this year.



5. **Who will pay the cost associated with this project?**

If the State legislature and Congress approve the project, costs will be shared as follows:

Federal Share:	75 percent
State Share:	17.5 percent
SAFCA Share:	7.5 percent

6. **Who will be affected by construction of the proposed project?**

During construction, this project will affect residents and businesses in the approximate geographical area of the Garden Highway levee between Orchard Lane and Verona and the Natomas Cross Canal north and south levees. Lands and easements will be acquired from property owners along both sides of these levees.

Work along the Garden Highway levee will require that local and through traffic be detoured around the construction area. Provisions for emergency access by police, fire, and ambulance will be maintained at all times. Controlled provisions for access and egress from homes and business will be maintained at all times. The exact nature of the traffic control plan cannot be determined until all information on project impacts is available.

Property owners and residents within the affected construction "zone" will be kept informed and are needed to participate in the planning process for this project.

7. **When will the construction start?**

Projected construction is expected to begin in 2005

8. **How long will it take to construct the project?**

The construction schedule will be dependent on the alternative selected, requirements to avoid environmental impacts on threatened and endangered species, and the need to insure public access around and through the construction area.

9. **Who will benefit from construction of this proposed project?**

The project levees protect all 55,000 acres of the Natomas basin, so all properties in the basin will benefit from the project. Properties on the waterside of the levee will also benefit by decreasing the risk that the levee will fail.

# Scoping Meetings

(Community Meetings)  
Sacramento River East Bank Levee  
And  
Natomas Cross Canal

The U.S. Army Corps of Engineers (Corps), the State Reclamation Board (State) and the Sacramento Area Flood Control Agency (SAFCA) invite you to attend any or all of the Scoping Meetings listed below. We will discuss remedies for (1) seepage problems along the East Levee of the Sacramento River and the North and South Levees of the Natomas Cross Canal, (2) erosion protection along the east bank of the Sacramento River at several sites and (3) raising of the Sacramento River East Bank Levee and Natomas Cross Canal Levees.

**Thursday, July 25**  
6:00 - 8:00 P.M.  
South Natomas  
Community Center  
2921 Truxel Road  
Sacramento, CA 95833

**Tuesday, July 30**  
6:00 - 8:00 P.M.  
Teal Bend Golf Course  
Meeting Room  
7200 Garden Hwy.  
Sacramento, CA 95837

**Wednesday, July 31**  
6:00 - 8:00 P.M.  
Holt of California  
Conference Room  
7310 Pacific Avenue  
Pleasant Grove, CA 95668

High flows in the Sacramento River during the Flood of 1986 triggered seepage through the Sacramento River East Levee in Natomas nearly failing the levee in several locations. The problem was remedied through insertion of a slurry wall along a reach of the levee and construction of a stability berm along another reach of the levee between 1990 and 1993.

After the Flood of 1997, engineers determined that flows higher than those experienced in 1986 could create high pressure in porous materials under the levee. This higher pressure may penetrate the surface soils on the landside of the levee resulting in serious boils that destabilize the levee foundation soils. At the above Scoping Meetings, representatives from the Corps, the State and SAFCA will present information on alternative remedies to address this underseepage problem and plans to raise the levees. The public will have an opportunity to identify concerns that need to be addressed as the project planning process continues.

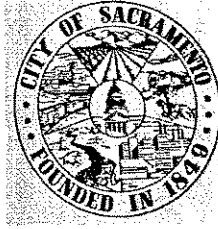
**PLEASE PLAN TO ATTEND.**

For further information, contact Maggie Frankl  
Sacramento Area Flood Control Agency

at the

- 1 d -

ATTACHMENT D - 3



DEVELOPMENT SERVICES  
DEPARTMENT

**CITY OF SACRAMENTO**  
CALIFORNIA

1231 I STREET  
ROOM 300  
SACRAMENTO, CA  
95814-2998

Planning Division

PLANNING  
916-808-5381  
FAX 916-808-5328

**Date:** June 28, 2005  
**To:** Responsible Agencies, Interested Persons, and Organizations  
**From:** Tom Buford, Associate Planner, City of Sacramento  
**Subject:** Notice of Preparation of a Draft Environmental Impact Report for the  
Greenbriar Project (Project P05-069)

**Public Review Period:** June 28, 2005 to July 29, 2005

### Introduction

The Notice of Preparation for the Greenbriar project (P05-069) is attached.

### Project Area

The project is located in the unincorporated portion of Sacramento County, on approximately 577 acres located at the northwest intersection of State Route 99 (SR 99) and Interstate 5 (I-5). The project site is located outside the current Sphere of Influence for the City of Sacramento. The 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 99 and a new residential community currently under development within North Natomas to the east. Regional access to the project site is provided from SR 99 and I-5. Local access to the project site is provided by Elkhorn Boulevard (Exhibit 1).

The recently approved Metro Airpark development area is located approximately 2 miles west of the project site, within Sacramento County and adjacent to the eastern boundary of the Sacramento International Airport. The Metro Airpark development area includes existing and proposed commercial, hotel, and recreational (i.e., golf course) land uses. The City's North Natomas Community Plan area is located adjacent to the eastern boundary of the project site and across SR 99. New residential and commercial land uses are currently being developed east of the project site.

### Project Description

In addition to proposed approvals and development described below, the proposed project includes a request for a Sphere of Influence (SOI) boundary adjustment and annexation to the City of Sacramento. The Sacramento County Local Agency Formation Commission (LAFCO) is the agency with statutory responsibility for boundary changes and Sphere Of Influence adjustments, and the EIR will therefore address LAFCO's needs for environmental evaluation and disclosure under CEQA. The EIR will evaluate the potential environmental impacts of the project and recommend mitigation measures as required. The

lead agencies will prepare a full-scope, project EIR in compliance with CEQA Guidelines Section 15120 and 15161.

The applicant is seeking approval of a residential mixed-use development on the project site, which is located adjacent to and west of the Sacramento City limits and the City's SOI; as such the project applicant is seeking to annex the project site to the City. Annexation will require approval of pre-zoning entitlements from the City, and approval of an amendment to the City's SOI and annexation approval from the Sacramento County Local Formation Commission (LAFCO).

The project includes the construction of a range of housing types (e.g., high, medium, low density). The proposed land use plan is a predominantly residential development centered on a common water feature (approximately 41 acres) (Exhibit 2). A total of 3,723 housing units and approximately 30 acres of retail and commercial space would be constructed on site. An 11.3-acre elementary school would be provided in the southeastern portion of the project site. A total of 8 neighborhood parks (approximately 59 acres) would be provided throughout the community and would be connected by the central water feature and pedestrian paths and trails.

Commercial development would be primarily located in the northeastern portion of the project site along Elkhorn Boulevard. Medium and high density housing and retail land uses would be located in the center of the project site along a new arterial that connects the project site to the North Natomas Community to the east and Metro Airpark to the west.

The project would require several land use entitlements from the City of Sacramento including a general plan amendment, zoning amendments, pre-zoning, expansion of the North Natomas Community Plan area, and amendment of the North Natomas Community Plan. The project site is currently designated as agricultural cropland by the County and agriculture by the City. The project would change the land use designation to low density residential, medium density residential, high density residential, community/village commercial, and parks and open space land use designations under the City's General Plan.

### **Environmental Effects**

The City reviewed the proposed project and determined that an EIR should be prepared. It is expected that the following environmental issues will be evaluated in the EIR.

**Consistency with Plans and Policies:** Evaluation of project consistency with applicable land use and environmental plans and policies applicable to the project site including the Sacramento County General Plan, City of Sacramento General Plan, the Natomas Basin Habitat Conservation Plan, the Comprehensive Airport Land Use Plan, and other relevant plans.

**Traffic and Circulation** –Impacts to local and regional transportation facilities including several freeway segments. The evaluation transportation analysis will evaluate local intersections, project-related vehicle trips, proposed site circulation and access, local transit operations, and the surrounding roadway network.

**Agriculture** –Conversion of agricultural land to urban uses and impacts to surrounding agricultural uses.

**Air Quality** –Regional and local air quality will be described, and air quality impacts during construction (short-term) and project operation (long-term). The project's estimated air emissions will be compared to emissions thresholds of the Sacramento Metropolitan Air Quality Management District.

**Hydrology and Water Quality** –Effect on hydrology and water quality characteristics of the central valley region including alteration of drainage patterns, erosion, stormwater discharges, and flooding.

**Geology and Soils** –Seismicity of the local area, presence of existing fault lines and effect on development, erodibility of site soils, soil stability, and expansive characteristics of site soils.

**Noise** –Construction and operational noise impacts (including traffic and airport noise) and comparison of these impacts to applicable noise thresholds.

**Biological Resources** – Botanical and wildlife reconnaissance surveys will be conducted. The EIR will describe the existing biological resources on the project site and evaluate the project's impacts to these biological resources.

**Cultural Resources** –Cultural resource impact assessment for the project site. Field surveys and literature review of the project site will be completed and summarized in the EIR.

**Public Services** –Potential to create adverse impacts to the provision of fire, police and emergency medical response, public schools, and libraries.

**Utilities** –Current capacity of the water and wastewater systems and the project's impact to these systems. An analysis of the regional water supply conditions will be provided, consistent with Senate Bill 610 (CEQA Section 21151.9), as well as water conveyance, wastewater collection and treatment, storm drainage, solid waste disposal, and electricity and natural gas services.

**Aesthetics** –Potential visibility of the project from surrounding uses and viewsheds. An assessment of the spatial attributes of the project and lighting/glare impacts to onsite and offsite areas will be provided.

**Public Health and Hazards** –Hazardous materials assessments, potential project impacts related to use of hazardous materials and emergency response plans, and safety issues related to the Sacramento International Airport.

**Parks and Open Space** –Project's potential to increase the use of neighborhood and regional parks, project's consistency with applicable plans and policies for parks and open space, and the project's potential to result in the loss of open space.

**Population and Housing** –Project's consistency with applicable goals and policies of the Housing Element in City of Sacramento's General Plan, as they relate to environmental policies and impacts. The EIR will analyze how the project affects the jobs/housing ratio for the City of Sacramento and North Natomas community. The EIR will also evaluate affordable housing requirements for the city and county of Sacramento, and potential for inducing additional growth.

**Cumulative Impacts** – The EIR will summarize the cumulative impacts of the project as identified and described in each of the environmental technical sections.

## **Alternatives**

The EIR will examine a range of feasible alternatives to the proposed project. The following project alternatives have been tentatively identified for analysis in the EIR:

- 1) Airport Land Use Compatibility: Avoid or reduce noise and safety impacts from operations at the Sacramento International Airport.
- 2) Reduced Impacts to Biological Resources: Designed to avoid or reduce impacts to wetlands and giant garter snake habitat on the project site.
- 3) Reduced Traffic Generation: Designed to constrain development at the project site to reduce the potential of exceeding Level of Service (LOS) thresholds
- 4) No Project Alternative – Continuation of Existing Land Uses: Assumes no project and continuation of existing conditions at the project site.

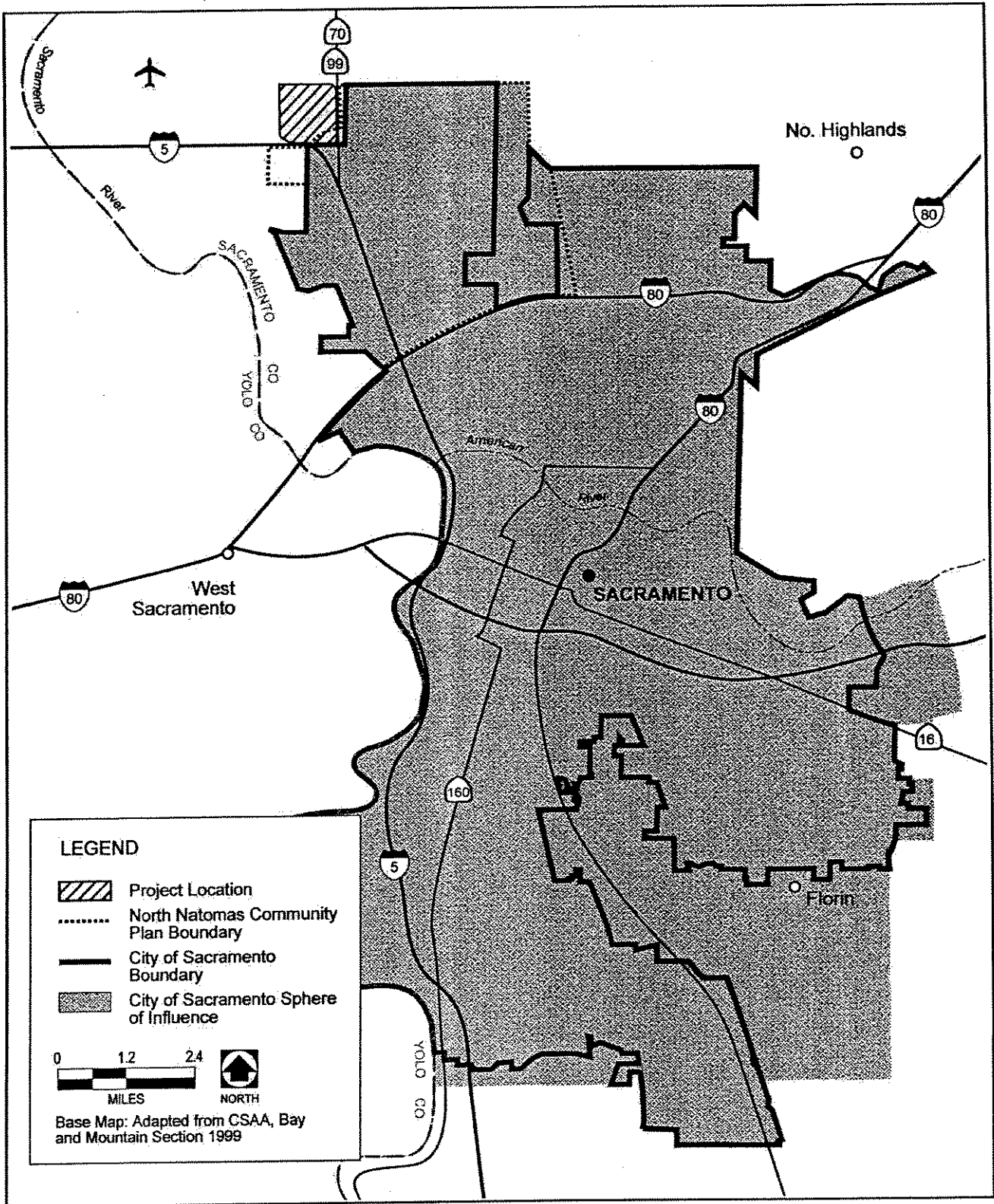
Other alternatives may be added following review of comments received in response to this NOP and the public scoping meeting.

### **Submitting Comments**

To ensure the full range of project issues of interest to responsible agencies and the public are addressed, comments and suggestions are invited from all interested parties. Written comments or questions concerning the EIR should be directed to the environmental project manager at the following address by 5:00 p.m. on July 29, 2005:

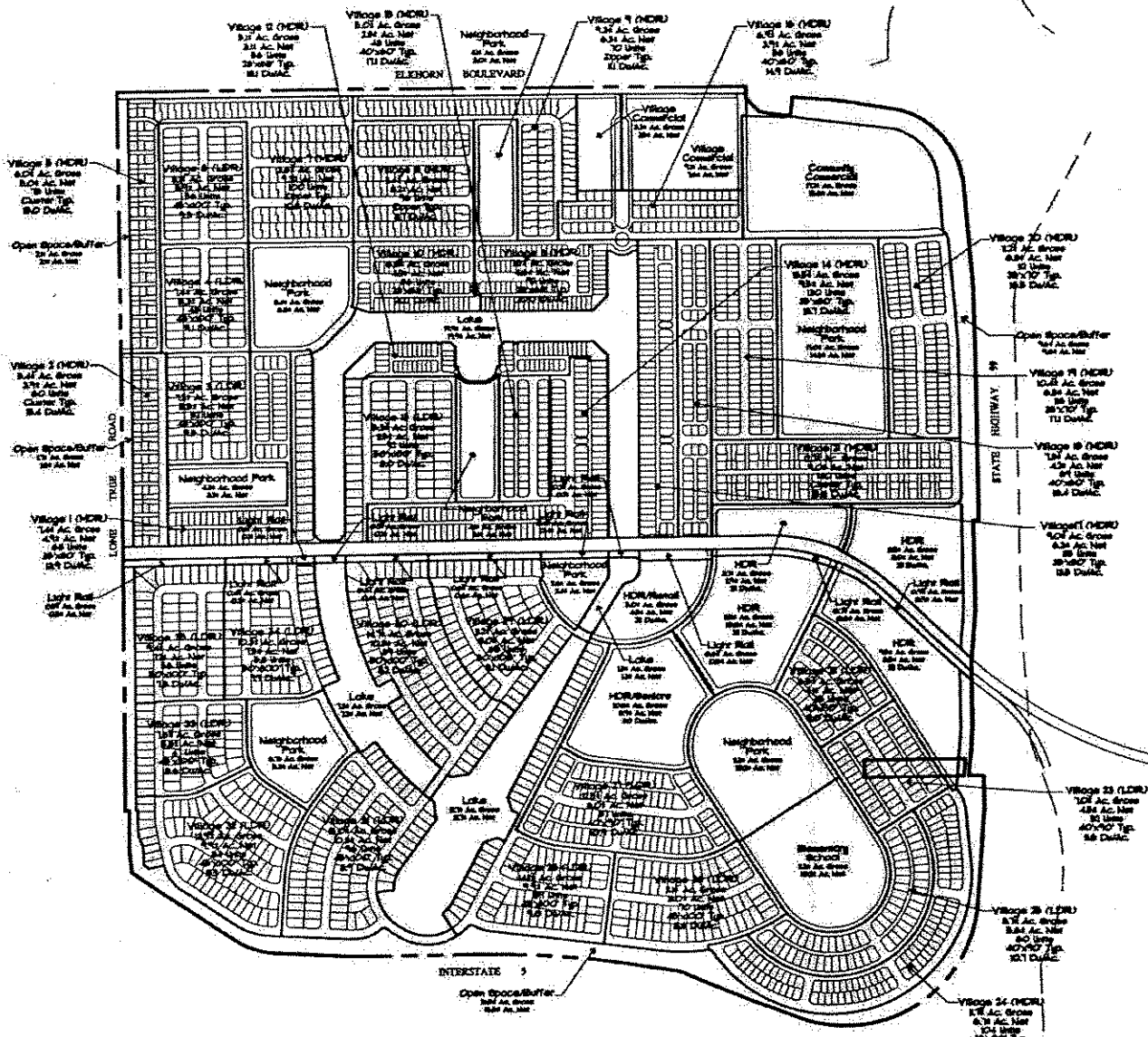
City of Sacramento Planning Division  
Attn: Tom Buford, Associate Planner  
1231 I Street, Room 300  
Sacramento, CA 95814  
Direct Line: (916) 808-7931  
E-mail: [tom.buford@cityofsacramento.org](mailto:tom.buford@cityofsacramento.org)

**All comments must include full name and address in order for staff to respond appropriately.**



Project Location Map

Exhibit 1



LAND USE SUMMARY			
LAND USE	GROSS ACRES	NET ACRES	UNITS
LOW DENSITY RESIDENTIAL (3-10 du/ac)	180.0	126.0	1346
MEDIUM DENSITY RESIDENTIAL (7-21 du/ac)	760.7	505.5	1560
HIGH DENSITY RESIDENTIAL (11-29 du/ac)	48.8	42.8	1012
VILLAGE COMMERCIAL	12.4	30.1	-
COMMUNITY COMMERCIAL	17.2	15.6	-
ELEMENTARY SCHOOL	11.5	10.2	-
NEIGHBORHOOD PARKS	58.5	48.8	-
LAKE	41.2	41.2	-
OPEN SPACE/BUFFER	24.9	25.8	-
LIGHT RAIL CORRIDOR	5.0	4.7	-
OPEN SPACE	-	1.7	-
LANDSCAPE CORRIDOR	-	2.0	-
PEDESTRIAN PASEO	-	2.0	-
ELSBNOR BOULEVARD + NESTER WAY	12.0	12.0	-
LOCAL RESIDENTIAL STREETS	-	122.6	-
<b>TOTAL</b>	<b>577.0</b>	<b>577.0</b>	<b>3,723</b>

G091001.01 004



**NOTICE OF PREPARATION RESPONSES**

**PROJECT NAME: Greenbriar (P05-069)**

**Review Period: June 28, 2005 to July 29, 2005**

<b><u>Date</u></b>	<b><u>Name and Organization</u></b>
June 28, 2005	Scott Morgan, State Clearinghouse
June 29, 2005	William Ness, U. S. Army Corps of Engineers (via e-mail)
June 30, 2005	Walt Seifert, Sacramento Area Bicycle Advocates (via e-mail)
July 1, 2005	Helen Selph, City of Sacramento, Long Range Planning
July 11, 2005	Nancy Miller, Miller, Owen & Trost (Legal Counsel for Sacramento LAFCO)
July 13, 2005	Monica Newhouse, Sacramento County Airport System
July 19, 2005	Sandy Hesnard, Caltrans Division of Aeronautics
July 25, 2005	Art Smith, SMAQMD
July 26, 2005	Dennis J. O'Bryant, California Department of Conservation
July 26, 2005	Katherine Eastham, California Department of Transportation
July 28, 2005	Wendy Haggard, P.E., County Sanitation District 1
July 29, 2005	Wayne White, U.S. Fish and Wildlife Service

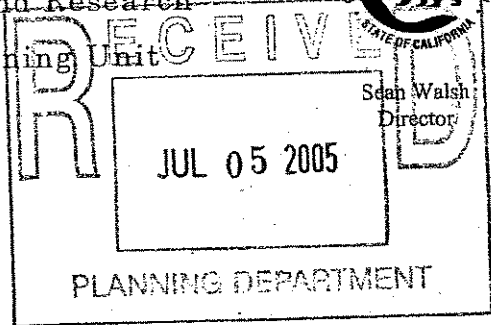
**Scoping Meeting**

July 13, 2005	Transcript: EIR Scoping Meeting
	Monica Newhouse, Sacramento County Airport System
	George Munson, Sacramento County Airport System
	Katherine Eastham, Caltrans, District 3



Arnold  
Schwarzenegger  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Notice of Preparation

June 28, 2005

To: Reviewing Agencies  
Re: Greenbriar Development Project  
SCH# 2005062144

Attached for your review and comment is the Notice of Preparation (NOP) for the Greenbriar Development Project draft Environmental Impact Report (EIR).

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

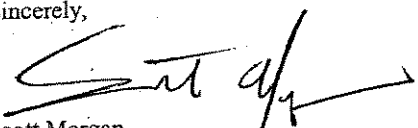
Please direct your comments to:

L.E. Buford  
City of Sacramento  
1231 I Street, Room 200  
Sacramento, CA 95814

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

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

Sincerely,

  
Scott Morgan  
Senior Planner, State Clearinghouse

Attachments  
cc: Lead Agency

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2005062144  
**Project Title** Greenbriar Development Project  
**Lead Agency** Sacramento, City of

**Type** NOP Notice of Preparation  
**Description** The project seeks to a change in the City's sphere of influence, annexation to the City of Sacramento, and the necessary entitlements to allow for the development of approximately 3,723 housing units and approximately 30 acres of retail and commercial space would be constructed on site. An 11.3 acre elementary school would be provided in the southeastern portion of the project site. A total of 8 neighborhood parks (approximately 59 acres) would be provided throughout the community and would be connected by the central water feature and pedestrian paths and trails.

**Lead Agency Contact**

**Name** L.E. Buford  
**Agency** City of Sacramento  
**Phone** (916) 808-5935 **Fax**  
**email**  
**Address** 1231 I Street, Room 200  
**City** Sacramento **State** CA **Zip** 95814

**Project Location**

**County** Sacramento  
**City**  
**Region**  
**Cross Streets** Elkhorn Boulevard and Highway 99  
**Parcel No.** 225-0800-002,-003,-004,-015to-018,-021to-038  
**Township** **Range** **Section** **Base**

**Proximity to:**

**Highways** SR 99, I-5  
**Airports** Sacramento Int'l  
**Railways**  
**Waterways**  
**Schools**  
**Land Use** Agriculture (AG-80)

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

**Reviewing Agencies** Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 2; Department of Health Services; Office of Emergency Services; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 3; State Water Resources Control Board, Clean Water Program; State Water Resources Control Board, Division of Water Rights; Department of Toxic Substances Control; Regional Water Quality Control Bd., Region 5 (Sacramento)

**Date Received** 06/28/2005 **Start of Review** 06/28/2005 **End of Review** 07/27/2005

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

- Resources Agency Nadell Gayou
- Dept. of Boating & Waterways David Johnson
- California Coastal Commission Elizabeth A. Fuchs
- Colorado River Board Gerald R. Zimmerman
- Dept. of Conservation Roseanne Taylor
- California Energy Commission Environmental Office
- Dept. of Forestry & Fire Protection Allen Robertson
- Office of Historic Preservation Wayne Donaldson
- Dept. of Parks & Recreation B. Noah Tilghman
- Reclamation Board DeeDee Jones
- Santa Monica Mountains Conservancy Paul Edelman
- S.F. Bay Conservation & Dev't. Comm. Steve McAdam
- Dept. of Water Resources Resources Agency Nadell Gayou
- Fish and Game Robert Floerke
- Fish & Game Region 4 William Laudemilk
- Fish & Game Region 5 Don Chadwick
- Fish & Game Region 6 Gebrina Gatchel
- Fish & Game Region 6 I/M Tammy Allen
- Dept. of Fish & Game M George Isaac
- Food & Agriculture Steve Shaffer
- Dept. of Food and Agriculture Dept. of General Services
- Dept. of General Services Robert Sleppy
- Dept. of Health Services Veronica Ramenz
- Dept. of Health/Drinking Water
- Independent Commissions, Boards
- Coachella Valley Mountains Conservancy
- Delta Protection Commission Debby Eddy
- Office of Emergency Services Dennis Castillo
- Governor's Office of Planning & Research State Clearinghouse
- Native American Heritage Comm. Debbie Treadway
- Habit Conservation Program
- Habitat Conservation Program
- Inyo/Mono, Habitat Conservation Program
- Marine Region
- Public School Construction
- Environmental Services Section

- Public Utilities Commission Ken Lewis
- San Gabriel & Lower LA Rivers San Joaquin River Conservancy
- State Lands Commission Jean Sarfno
- Tahoe Regional Planning Agency (TRPA) Cherry Jacques
- Business, Trans. & Housing
- Caltrans - Division of Aeronautics Sandy Hensard
- Caltrans - Planning Terr Pencovic
- California Highway Patrol John Olejnik
- Office of Special Projects
- Housing & Community Development Lisa Nichols
- Housing Policy Division
- Dept. of Transportation
- Caltrans, District 1 Mike Eagan
- Caltrans, District 2 Don Anderson
- Caltrans, District 3 Jeff Pulverman
- Caltrans, District 4 Tim Sable
- Caltrans, District 5 David Murray
- Caltrans, District 6 Marc Blimbaum
- Caltrans, District 7 Cheryl J. Powell

- Caltrans, District 8 John Pagano
- Caltrans, District 9 Gayle Rosander
- Caltrans, District 10 Tom Dumas
- Caltrans, District 11 Mario Orso
- Caltrans, District 12 Bob Joseph
- Caltrans, District 13
- Air Resources Board Airport Projects Jim Leimer
- Transportation Projects Kurt Karperos
- Industrial Projects Mike Tollstrup
- California Integrated Waste Management Board Sue O'Leary
- State Water Resources Control Board Jim Hockenberry
- Division of Financial Assistance
- State Water Resources Control Board Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- State Water Resources Control Board Steven Herrera
- Division of Water Rights
- Dept. of Toxic Substances Control CEQA Tracking Center
- Department of Pesticide Regulation

Regional Water Quality Control Board (RWQCB)

- RWQCB 1 Cathleen Hudson
- RWQCB 2 Environmental Document Coordinator San Francisco Bay Region (2)
- RWQCB 3 Central Coast Region (3)
- RWQCB 4 Jonathan Bishop Los Angeles Region (4)
- RWQCB 5 Central Valley Region (5)
- RWQCB 5F Central Valley Region (5) Fresno Branch Office
- RWQCB 5R Central Valley Region (5) Redding Branch Office
- RWQCB 6 Lahontan Region (6)
- RWQCB 6V Lahontan Region (6) Victorville Branch Office
- RWQCB 7 Colorado River Basin Region (7)
- RWQCB 8 Santa Ana Region (8)
- RWQCB 9 San Diego Region (9)
- Other

**From:** "Ness, William W SPK" <William.W.Ness@spk01.usace.army.mil>  
**To:** <tom.buford@cityofsacramento.org>  
**Date:** 6/29/05 3:54PM  
**Subject:** Greenbriar EIR, P05-069

I am responding to the NOP you recently issued for the Greenbriar project. The applicant has recently submitted a wetlands delineation to our office for verification. Based upon our review of the submitted information, soil surveys, and historic aerials, it appears additional information will need to be provided to us before we can verify the extent of waters present on the site. To ensure the EIR adequately considers the effect the proposed and alternative developments would have on the aquatic environment, I would encourage you to use the findings of a verified delineation in your documentation. Alternatives which minimizes and avoid impacts to the aquatic environment should be favorably considered. Thank you for the opportunity to comment. -Will

William Ness  
Sacramento Office Chief  
U.S. Army Corps of Engineers  
1325 J Street, Rm. 1480  
Sacramento, California 95814  
(916)557-5268, fax (916)557-6877  
william.w.ness@usace.army.mil  
[www.spk.usace.army.mil/regulatory.html](http://www.spk.usace.army.mil/regulatory.html)

**From:** "Walt Seifert" <saba1@sbcglobal.net>  
**To:** <tom.buford@cityofsacramento.org>  
**Date:** 6/30/05 2:58PM  
**Subject:** Notice of Preparation: Grenbria Project (Project P05-069)

Mr. Buford,

Thanks for providing the opportunity to comment on the Notice of Preparation for the Greenbriar Project.

The water features of this project as shown in the project site plan will make walking and biking trips longer as they block through travel. This will affect mode choice and air quality.

There appears to be only a single roadway connection to the east over Hwy 99 and no roadway connection across I-5.

The proposed traffic and circulation element as described does not include an analysis of bicycle circulation.

As mitigation for the project and especially in the "Reduced Traffic Generation" alternative, a better connected internal roadway system (shorter block lengths, grid system, bicycle/pedestrian bridges across the water features) and supplemental trails (perimeter trails and trails through parks) should be analyzed.

Additional external connections such as bike/pedestrian crossings of I-5 and Hwy 99 or non-interchange roadway crossings of these freeways should be analyzed.

Bicycle circulation should be analyzed for all alternatives, including on and off street bikeways, consideration of travel distances and school and shopping access.

Walt Seifert  
Executive Director  
Sacramento Area Bicycle Advocates (SABA)  
909 12th Street, Suite 114  
Sacramento, CA 95814  
(916) 444-6600  
saba@sacbike.org  
www.sacbike.org  
"SABA represents bicyclists. Our aim is more and safer trips by bike."



## INTERNAL MEMORANDUM

Date: 7-1-05  
To: Arwen Wacht, Associate Planner  
From: Helen Selph, Assistant Planner  
SUBJECT: P04-069 Greenbriar

DRAFT

The Long Range Planning Team has reviewed your project, and has the following preliminary comments regarding consistency with adopted City policy and recommendations for revisions to the plan.

### Adopted City Policy

Please see our previous comments (attached) on IR04-463 in December 2004 regarding the following policy issues that were established in the City-County MOU:

- Mitigation for loss of open space/farmland/habitat – minimum ratio of 1:1
- There may be requirements for linkages to provide biological connectivity. See suggestions below.
- More mix of housing types within sub-areas of the plan
- Increased densities within ½ mile of transit station (see RT recommendations)
- Constraints of over flight zone/ airport noise contours

### New Comments on Revised Plan/Formal Application

**Biological Connectivity:** As mentioned in the previous memo to Greg Bitter, the City-County MOU states that development will provide linkages for biological activity and trail systems. The California Natural Diversity Database (CNDDB) shows a large number of Giant Garter Snake (GGS) points along the existing canal on the west boundary between Greenbriar and Metro Air Park. We recommend that the plan be revised to include a wildlife corridor to maintain the north/south habitat linkages for GGS. This would connect habitat on Natomas Basin Conservancy owned lands and Fisherman's Lake, with GGS habitat that would be preserved as a part of the Community Separator/Open Space Connector, consistent with the principles of the MOU.

**Mix of Housing Types & Increased Density:** The plan shows most of the high density residential in large blocks located in the southeast quadrant of the proposed development. The high-density blocks then abruptly transition to low density residential. Unless the over-flight zone precludes this, we would support more high density residential in the northeast quadrant adjacent to the light rail station (perhaps above ground-floor retail), and some medium density residential in the southeast quadrant. In other words, mix it up more, but keep the highest density near the light rail station where possible. The eastern portions that are not constrained by the over-flight zone should support higher densities, but should also provide some variety in housing types, especially in the areas between ¼ and ½ mile from the station. The area constrained by the over-flight zone will probably need to be mostly low density. Large parks should not be in eastern area within ½ mile from the transit station, since they would lower densities and increase walking distances. Conversely, plazas, small parks, and narrow linear greenways make more

sense in the higher intensity eastern portion.

**Airport Protection:** It appears that the 60 CNEL does not overlap with the proposed development, (It would be wise to confirm this with airport staff.) The applicant should be advised to show the over-flight zone on the plan. There is a table in the Comprehensive Land Use Plan or CLUP (which will be replaced by the Airport Land Use Compatibility Plan or ALUCP in the near future) showing compatible land uses. According to the CLUP, uses are compatible with the over-flight zone only if they do not result in a large concentration of people. A large concentration of people is defined in the CLUP as " a gathering of individuals in an area that would result in an average density of greater than 25 persons per acre per hour during a 25 hour period ending at midnight, not to exceed 50 persons per acre at any time." Since the CLUP will be replaced in the near future with the ALUCP, you will probably want to coordinate with the airport and/or SACOG staff regarding how to interpret this.

**Transportation Linkages:** The blocks shown on the plan are too long for pedestrians. The upper limit for block lengths should be somewhere between 300-350 feet. In addition, there aren't enough connections through Meister Way between the north half and the south half of the plan. Finally, we would recommend that the applicant consider creating a pedestrian-oriented north-to-south "main street" roughly along the boundary of the over-flight zone. This would improve connections and orient the community according to the maximum allowable densities in the over-flight zone.

In the previous plan, we liked the use of the green corridors through the plan, except for the fact that they were too wide to be included near the future light rail station where you don't want to increase walking distances that much.

Question: What is the proposed width of Meister Way? Is it a County road or a City road?

**Village Commercial:** The plan shows all 29 acres of commercial on Elkhorn Blvd. We would recommend that the "Village Commercial" be located adjacent to the light rail station or along the north-to-south "main street". We would support Village Commercial along the north-to-south main street. Alternatively, would support more vertically oriented mixed use, with retail on the ground floor and housing and/or small offices above, either along the main street or clustered near the future light rail station.

Finally, as I suggested in the previous memo, if you have not already done so, County staff should have the opportunity to comment on this application. The name of the staff person that has been assigned to the Joint Vision area is John Lundgren. You can e-mail him as [jlundgren@saccounty.net](mailto:jlundgren@saccounty.net).

### Followup

Please contact me prior to sending the City response to the applicant so that our comments are coordinated. Also, please provide copies of your review letter to the applicant, any further revisions made by the applicant, and future staff reports related to this item.

CC:  
Ashely Feeney  
Ellie Buford  
Tom Buford  
Jim McDonald  
Steve Peterson





PLANNING AND BUILDING  
DEPARTMENT  
PLANNING DIVISION

**CITY OF SACRAMENTO**  
CALIFORNIA

1231 I STREET  
ROOM 300  
SACRAMENTO, CA  
95814-2998

PLANNING  
916-264-5381  
FAX 916-264-5328

**MEMORANDUM**

Date: 12-17-04  
To: Greg Bitter, Associate Planner  
From: Helen Selph, Assistant Planner  
**SUBJECT: IR 04-463 Greenbriar**

The Long Range Planning Team has reviewed your project, and has the following preliminary comments regarding consistency with adopted City policy and recommendations for revisions to the plan.

We commend the effort that the applicant has made relative to incorporating the principles established in the Blueprint, and to involve other agencies such as RT. One thing that we particularly appreciate is that the street connectivity throughout the plan is pretty good, and the linear park, and perhaps the open space designated as "drainage/water quality" may provide opportunities for improved pedestrian and bicycle connections. This being said, we would like to offer the following comments to improve the project according to the City's Smart Growth Principles, and in accordance with the City-County MOU.

**Adopted City Policy**

The December 10, 2001 MOU between the City and the County of Sacramento outlined a set of principles for the Natomas Joint Vision area, which included preservation of open space for habitat, farmland, and airport protection. In adopting the MOU, the Council also adopted a map (Exhibit A), and Exhibit B, a statement of Joint City-County Shared Policy Vision in Natomas. References to the MOU below include excerpts from Exhibit B.

The following comments have been organized around the City's Smart Growth Principles:

"Preserve open space, farmland, natural beauty, and critical environmental areas within the urban environment and on the urban edge": In accordance with this principle, and the policies provided in the MOU, the applicant should be advised that they should be prepared to mitigate for the loss of open space, including habitat and farmland, at a ratio of at least

1:1. The mitigation land is to be located in the Natomas Joint Vision planning area from either the 1-mile buffer/Swainson's Hawk zone, or from the 1-mile Community Separator/Open Space Connector just south of the Sacramento County -Sutter County boundary.

The MOU states that development will provide linkages for biological connectivity and trail systems, and that buffer areas will be derived from developing lands. Due to the known presence of sensitive & special status species in the Joint Vision area, we cannot assume that requirements for wildlife corridors and habitat preservation will be limited to areas outside of the "Urban Reserve". Furthermore, the preliminary conceptual site plan may not be acceptable to the wildlife agencies.

The specific widths for buffers have not been adopted for the Joint Vision area. The width of a buffer depends on what it is to be used for. Habitat buffers may vary, depending on the species of concern. Ag-Urban buffers of several hundred feet can do little to mitigate agricultural spray, which can drift for miles when conditions are right. An ag-urban buffer of 250-300 feet could be planted with 3 or more rows of tall, dense evergreen trees, which would screen the view of homes from the open-space areas (such as the levee road), and possibly catch some of the dust from agricultural operations. Since Lone Tree Road abuts Metro Air Park on the west, a buffer is not needed. The freeway buffer on the south side could be dual purpose if extended west all of the way to Lone Tree.

"Created a range of housing opportunities and choices with a diversity of affordable housing near employment centers."

One major comment would be that the applicant should be encouraged to provide more of a mix of different housing types within sub-areas of the plan. In other words, rather than 42 acres of high density residential all concentrated in a single contiguous area of the plan, it would be better to separate the high density blocks with other types of housing. Rather than create neighborhoods of 20 or more acres of one product type (for example, medium density 10-unit clusters) it would be better to create neighborhoods with more diversity or break them up into smaller neighborhoods.

"Mix land uses and support vibrant city centers by giving preference to the redevelopment of city centers and transit oriented development within existing transportation corridors with vertically or horizontally integrated mixed uses to create vibrant urban places."

"Support land use, transportation management, infrastructure and environmental planning programs that reduce vehicle emissions."

With regard to the area near the future transit station, the Regional Transit Master Plan recommends densities greater than or equal to 30 DU/Acre within 1/8 mile of the transit station, greater than or equal to 20 DU/Acre within 1/4 mile of the future transit station, and 10-15 DU/Acre for the 1/2 mile radius. The density within the 1/8 and 1/4 miles radius zones is not given on the plan, but it is obvious that the density guidelines of the RT Master Plan have not been achieved. The applicant should be encouraged to increase the density within 1/8 mile and 1/4-mile radius of the transit station accordingly, and to designate more

area as mixed-use, particularly along Meister Way and the interior roads and intersections adjacent to the light rail station. Also with regard to the "drainage/water quality" feature positioned through the middle of the plan may not be the best land use for an area that is within ¼ mile of the future transit station where the greatest intensity is needed. If possible, it should be moved to an area outside of the ¼ mile zone. The same is true for the parks that are shown within the ¼ mile radius. Some public open space (pocket parks, promenades, plazas etc. are very desirable within the ¼ mile radius, particularly when the public open space can be used to orient the community (as Peter Calthorpe did with his design for Laguna West.) The 10-acre blocks of park however should probably be moved to an area outside of the TOD, or reconfigured to provide orientation and pedestrian connections.

As we have discussed, the CLUP noise contours are being revised due to airport growth projected by the Sacramento International Airport Master Plan. The new noise contours are not yet available for planning purposes. I will follow-up to obtain an update on their status, and keep you informed regarding any preliminary information that is available.

Finally, in the spirit of with the MOU and the Joint Vision, I would suggest that County planning staff should be allowed the opportunity to comment on applications received by the City. The name of the staff person that has been assigned to the Joint Vision area is John Lundgren. You can e-mail him at [jlundgren@saccounty.net](mailto:jlundgren@saccounty.net).

### **Followup**

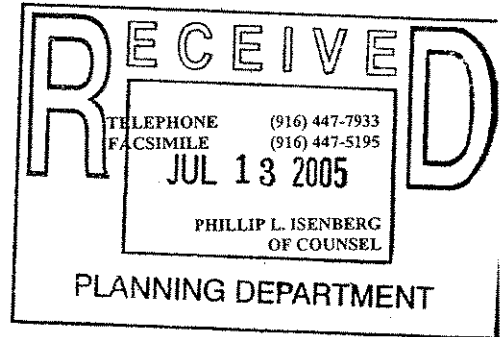
Please coordinate with me regarding your response to the applicant, provide copies of your review letter to the applicant, any further revisions made by the applicant, and future staff reports related to this item.

**MILLER, OWEN & TROST**

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW  
428 J STREET, SUITE 400  
SACRAMENTO, CALIFORNIA 95814-2394

PAUL J. CHRISMAN  
MATINA R. KOLOKOTRONIS  
CHRISTIANE E. LAYTON  
MADELINE E. MILLER  
NANCY C. MILLER  
WILLIAM L. OWEN  
KIRK E. TROST



July 11, 2005

Tom Buford  
City of Sacramento  
Development Services Department  
Planning Division  
1231 I Street, Room 300  
Sacramento, CA 95814-2998

Via U.S. Mail

Re: Notice of Preparation for an Environmental Impact Report (EIR) for the  
Greenbriar (PO5-069) Project

Dear Mr. *Buford*,

Thank you for the opportunity to respond to the above referenced of Notice of Preparation ("NOP"). This firm represents the Sacramento County Local Agency Formation Commission ("LAFCo"). This letter serves as a request to modify the NOP to clarify that LAFCo is the lead agency for the sphere of influence amendment. LAFCo's status as lead agency for sphere of influence amendments was recognized by the City in past NOPs for SOI requests. Further this request is consistent with LAFCo policies, our previous correspondence to you in September and October of 2002 and CEQA guidelines. (Sacramento LAFCo Policies, § IV, p. IV-7; see attached correspondence; CEQA Guidelines § 15051.) To my knowledge, Sacramento LAFCo sphere of influence applications have been consistently processed with LAFCo acting as lead agency.

The NOP creates confusion by referring on page one to "the lead agency" and referring on page three to multiple "lead agencies." The NOP should clarify that LAFCo serves as the lead agency for amendments to spheres of influence and the City serves as the lead agency for the annexation and rezoning and general plan amendment. It is my understanding that we would both certify the document for our respective purposes.

I suggest that instead of creating one EIR for many projects, concurrent EIRs could be prepared by the City and LAFCo. This strategy will allow the sphere of influence amendment to be completed in a more efficient manner and may remove the criticism that the EIR seeks to cover multiple projects in one document. Further it will allow us to move the SOI in a timely manner ahead of the City's processing. Alternatively LAFCo can utilize the EIR prepared by the City but retain authority to approve and certify it for the SOI amendment.

July 11, 2005  
Page 2 of 2

Further, this letter serves to express concern regarding the timing of the Notice of Preparation because LAFCo has not received an application from the City of Sacramento. We have received notice that the City intends to request concurrent processing of the SOI and annexation but that is not scheduled to be heard until August.

I understand the need for efficiency with the preparation of environmental documents and we should meet to discuss how the application could be expedited and to address the CEQA concerns.

Very truly yours,

MILLER, OWEN & TROST  
A Professional Corporation

By: \_\_\_\_\_

  
Nancy C. Miller

cc: Peter Brundage

Enclosures



**SACRAMENTO LOCAL AGENCY FORMATION COMMISSION**  
1112 I Street, Suite 100 - Sacramento, California 95814-2836 Tel (916) 874-6458 Fax (916) 874-2939

September 20, 2002

Mr. Brad Shirhall  
EIR Project Manager  
City of Sacramento  
Planning and Building Department  
1231 I Street, Suite 300  
Sacramento, CA 95814

**SUBJECT: NOP for EIR for WEST LAKESIDE PROJECT**  
Application Number P00-027 and P00-028; SCH # 2000072056

Dear Mr. Shirhall:

We have reviewed the above noted project, and respectfully offer the following comments.

1. The NOP identifies a reorganization (annexation and related detachments) as part of the project description. With the rezoning, the City will be lead agency for the annexation [Gov.Code section 15051.(b)(2).] However, LAFCo is the lead agency for any revisions to the Sphere of Influence (SOI), and may impose mitigation measures independent of the City of Sacramento. In the interest of process streamlining, consideration should be given to partnering with LAFCo in the scoping of a joint environmental document, rather than to have to circulate a subsequent NOP.
2. While the project description does reference the necessary amendment to the City of Sacramento's Master Service Element, such action is not a project subject to CEQA.
3. If the project description remains the same, (which for reasons set forth in this letter perhaps should be changed,) the lead agency oversight of the SOI amendment should be clarified.
4. Concurrent SOI and annexation processing is not consistent with Sacramento LAFCo policies. There has not been identified compelling public policy reasons why this project is a good candidate for waiver of this Sacramento LAFCo policy. No reasons are set forth in the NOP.

5. It is not clear how this project relates to the Joint Vision Memorandum of Understanding that is presently being considered by both the City and County of Sacramento.

According to the public material distributed at the various City Council and Board of Supervisors workshops, the project site does not appear to be included in any future Sphere of Influence amendments under consideration by the City ("MOU Regarding Principles of Land Use and Revenue Sharing for the Natomas Area").

In fact the property is identified for permanent open space in the July, August, and September 2002 drafts. In the course of project review, LAFCo is required to give "great weight" to such City-County agreements [Gov. Code section 56425(b).]

Further, in oral and written testimony regarding the MOU, interested parties have identified this property as some of most environmentally sensitive in the Natomas Basin, perhaps worthy of permanent habitat and open space protection. The Natural Features map issued with the MOU materials dated July 2002, appears to identify this area as habitat for certain species.

In this context, and with these issues taken together, one may conclude that the NOP is premature.

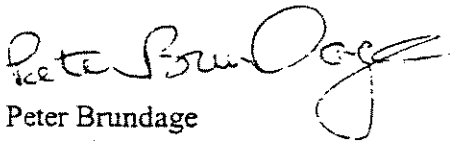
Perhaps instead, the project would be more appropriately included in the subsequent City SOI amendment application, to be submitted after the final MOU is adopted.

We would be happy to further discuss these comments with the City and the project proponent, and look forward to working cooperatively with all affected parties.

Thank you for the opportunity to review and provide comments on this project.

Respectfully,

*SACRAMENTO LOCAL AGENCY FORMATION COMMISSION*



Peter Brundage  
Executive Officer

Maf

cc: Robert Thomas, City Manager, City of Sacramento  
Terry Schutten, County Executive  
City Planning Department  
County Planning Department  
Applicant

(West Lakeside)

# HYDE, MILLER, OWEN & TROST

A PROFESSIONAL CORPORATION

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MAUREEN O'HAREN  
LEGISLATIVE ADVOCATE

PHILLIP L. ISENBERG  
OF COUNSEL

October 15, 2002

Mr. Brad Shirhall  
EIR Project Manager  
City of Sacramento  
Planning and Building Department  
1231 I Street, Suite 300  
Sacramento, CA 95818

Re: NOP for WEST LAKESIDE PROJECT: SCH # 200072056;  
City Planning Number P00-027, P00-028

Dear Mr. Shirhall:

Thank you for meeting with Don Lockhart, LAFCo Assistant Executive Officer, and me last week to discuss our concerns with the NOP for the above referenced project. We appreciated receiving clarification from the City of Sacramento planning staff and the property owner on the project status. I also appreciate your willingness to extend the time for comment on the NOP and as a result of our meeting we have the following additional comments.

We have not received a project application and understand that the City will not be submitting an application to LAFCo for a Sphere of Influence Amendment (SOI) or the reorganization as identified in the NOP (annexation and related detachments) at this time. The City indicated its intent on amending its General Plan prior to initiating any action with LAFCO for either a SOI amendment or a reorganization. The General Plan Amendment EIR will not be prepared until an MOU with the County is executed. Under the current draft MOU (Joint Vision) the project property is designated as permanent open space.

As a result, there is currently no project initiated with LAFCo and thus our environmental review responsibility as a lead agency for the SOI amendment or as a responsible agency/lead agency for the reorganization has not commenced. We would request that the NOP project description be modified to reflect these facts. We did discuss the possibility of the property owner filing an application with LAFCo, but in light of the current inconsistency of the project with the City and County general plans and the current joint vision document (MOU), a filing at this time would be premature.



Mr. Brad Shirhall  
October 15, 2002  
Page 2

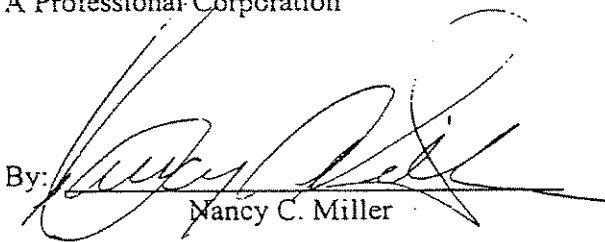
LAFCo staff has forwarded the LAFCo policies to the environmental consultant for their review. If you have any questions regarding this letter or have concerns please do not hesitate to contact me.

I am interested in your thoughts on the process particularly if you intend to proceed with the preparation of an environmental document. I look forward to talking with you.

Sincerely yours,

HYDE, MILLER, OWEN & TROST  
A Professional Corporation

By:

A handwritten signature in black ink, appearing to read "Nancy C. Miller", written over a horizontal line.

Nancy C. Miller

NCM:bak

cc: City Manager  
County Executive  
City Planning Director  
County Planning Director  
Tina Thomas

GREENBRIAR PROJECT (P05-069)  
ENVIRONMENTAL IMPACT REPORT (EIR)

COMMENT FORM

To be added/corrected on our mailing list and to document the author of comments received, please provide the following information. Thank you.

Name: Monica Newhouse

Address: 6900 Airport Blvd, Sacramento, CA 95833

Organization: Sacramento Co Airport System

The purpose of the Notice of Preparation and Scoping Meeting is to identify environmental issues for consideration in the Environmental Impact Report.

Please provide us with your written comments on the EIR by **July 29, 2005**.

Issue Areas for Consideration in the EIR:

The area being considered for the Greenbriar Project lies directly below the flight training pattern for Sacramento International Airport. This area receives not only overflights from North-bound commercial flights but also overflights from military training flights. These flights can be as low as 500 ft above ground level. The noise from such overflights can be in excess of 100dB SPL.

Single event noise levels related to these overflights should be addressed in this EIR due to the high likelihood of severe annoyance from residents related to such overflight.

The property also lies inside a safety zone for Sac International Airport. This area restricts the densities of ~~some~~ population in the area due to statistical likelihood of aircraft accidents in that zone.

Consideration should be given to the lakes proposed in the latest version of the plans as they can be wildlife attractants. Over  $\rightarrow$

Please send comments to:

Tom Buford  
Planning and Building Department  
1231 I Street, Room 300  
Sacramento, CA 95814  
Phone: (916) 808-7931  
FAX (916) 264-7185

**DEPARTMENT OF TRANSPORTATION**  
DIVISION OF AERONAUTICS – M.S.#40  
1120 N STREET  
P. O. BOX 942873  
SACRAMENTO, CA 94273-0001  
PHONE (916) 654-4959  
FAX (916) 653-9531  
TTY (916) 651-6827



*Flex your power!  
Be energy efficient!*

July 19, 2005

Mr. L.E. Buford  
City of Sacramento  
1231 I Street, Room 200  
Sacramento, CA 95814

Dear Mr. Buford:

Re: City of Sacramento's Notice of Preparation for a Draft Environmental Impact Report for  
Greenbriar Development Project; SCH# 2005062144

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety, noise and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public and special use airports and heliports. The following comments are offered for your consideration.

The proposal is for the development of approximately 3,723 housing units, approximately 30 acres of retail and commercial space, an elementary school and eight parks.

The project site is located approximately one mile east of the Sacramento International Airport. The western half of the project site is within the Overflight Zone as designated in the Comprehensive Land Use Plan for Sacramento International Airport prepared by the Sacramento Council of Governments (SACOG) in its capacity of Airport Land Use Commission (ALUC). The proposal should be submitted to SACOG for a consistency determination.

The project site is also within the Sacramento County Airport System's draft planning policy area for Sacramento International Airport. The proposal should be coordinated with airport staff to ensure that the proposal will be compatible with future as well as existing airport operations.

Section 11010 of the Business and Professions Code and Sections 1102.6, 1103.4, and 1353 of the Civil Code (<http://www.leginfo.ca.gov/calaw.html>) address buyer notification requirements for lands around airports. Any person who intends to offer land for sale or lease within an *airport influence area* is required to disclose that fact to the person buying the property. Future homeowners and tenants must be advised of the proximity of Sacramento International Airport.

It is likely that some future homeowners and tenants will be annoyed by aircraft noise in this area. Aircraft noise levels could represent a significant adverse impact on the project. A thorough airport-related noise analysis should be included in the DEIR.

Mr. L.E. Buford  
July 19, 2005  
Page 2

In accordance with CEQA, Public Resources Code 21096, the Caltrans Airport Land Use Planning Handbook (Handbook) must be utilized as a resource in the preparation of environmental documents for projects within an airport land use compatibility plan boundaries or if such a plan has not been adopted, within two nautical miles of an airport. The Handbook is published on-line at <http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/landuse.php>.

Public Utilities Code, Section 21659, "Hazards Near Airports Prohibited" prohibits structural hazards near airports. To ensure compliance with Federal Aviation Regulation, Part 77, "Objects Affecting Navigable Airspace," submission of a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration (FAA) may be required. For further technical information, please refer to the FAA's web site at <http://www.faa.gov/ats/ata/ATA400/oeaaa.html>.

The proposal includes an elementary school. Education Code, Section 17215 requires a school site investigation by the Division of Aeronautics prior to acquisition of land for a proposed school site located within two miles of an airport runway. Our recommendations are submitted to the State Department of Education for use in determining acceptability of the site. The Division's school site evaluation criteria is available on-line at <http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/-regulations.php>.

The proposal also includes several small lakes. Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. The FAA Advisory Circular (AC) 150/5200-33A entitled "Hazardous Wildlife Attractants on or Near Airports" addresses this issue and is available on-line at [http://www.faa.gov/arp/150acs.cfm#Airport\\_Safety](http://www.faa.gov/arp/150acs.cfm#Airport_Safety). For further technical information, please refer to the FAA's web site at [http://wildlife-mitigation.tc.faa.gov/public\\_html/index.html](http://wildlife-mitigation.tc.faa.gov/public_html/index.html). For additional information concerning wildlife damage management, you may wish to contact the United States Department of Agriculture, Wildlife Services, at (916) 979-2675.

Aviation plays a significant role in California's transportation system. This role includes the movement of people and goods within and beyond our state's network of over 250 airports. Aviation contributes nearly nine percent of both total state employment (1.7 million jobs) and total state output (\$110.7 billion) annually. These benefits were identified in a recent study, "Aviation in California: Benefits to Our Economy and Way of Life," prepared for the Division of Aeronautics which is available at <http://www.dot.ca.gov/hq/planning/aeronaut/>. Aviation improves mobility, generates tax revenue, saves lives through emergency response, medical and fire fighting services, annually transports air cargo valued at over \$170 billion and generates over \$14 billion in tourist dollars, which in turn improves our economy and quality-of-life.

The protection of airports from incompatible land use encroachment is vital to California's economic future. Sacramento International Airport is an economic asset that should be protected through effective airport land use compatibility planning and awareness. Although the need for compatible and safe land uses near airports in California is both a local and a state issue, airport staff, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land

*"Caltrans improves mobility across California"*

Mr. L.E. Buford  
July 19, 2005  
Page 3

uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise and safety impacts and regional airport land use planning issues. We advise you to contact our district office concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. We look forward to reviewing the DEIR. If you have any questions, please call me at (916) 654-5314.

Sincerely,

  
SANDY HESNARD  
Aviation Environmental Planner

c: State Clearinghouse, SACOG, Sacramento International Airport



July 25, 2005

Mr. Tom Buford, Associate Planner  
Development Services Department  
City of Sacramento  
1231 I Street, Room 300  
Sacramento, CA 95814

**SUBJECT: NOP OF DRAFT EIR FOR THE GREENBRIAR PROJECT  
FILE # P05-069**

Dear Mr. <sup>Tom</sup>Buford:

Thank you for sending information regarding the project listed above to the Sacramento Metropolitan Air Quality Management District (District) for review and comment. District staff comments follow.

On June 7, 2005, I sent comments to Arwen Wacht. In that letter I stated that due to the size of this project, it is likely that the CEQA threshold of significance for the precursors of ozone would be exceeded during the construction phase. In the Environmental Effects section of the NOP you have provided, it shows in the Air Quality section that an environmental analysis will be completed to determine what impacts will occur in the construction and operational phases of the project. When that analysis is complete, I look forward to receiving the draft EIR in order to complete the review and analysis on behalf of the District.

Since this project is located adjacent to two major freeways, the recent guidance provided by the California Air Resources Board (CARB) will apply. On that basis, I offer the following information:

The California Air Resources Board (CARB) recently adopted the "Air Quality and Land Use Handbook: A Community Health Perspective" to provide guidance to local planners and decision-makers about land use compatibility issues. The Handbook suggests that, at a minimum, the siting of residential uses should not occur within 500 feet of a freeway. Traffic-related studies referenced in the Handbook reflect that the additional health risk attributable to the proximity effect was strongest within 1,000 feet. Other studies conducted near Southern California freeways indicate a dramatic drop off in the concentration of ultra-fine particulates beyond 300 feet. We urge the City to consider the most recent CARB guidance on air quality and land use prior to making a decision on this project. If the City Council approves this project, we urge them to consider locating non-residential uses in the parts of the project area closest to the freeway. As an alternative, minimize impacts on residential development by orienting buildings away from the freeway or providing appropriate setback or buffer zones.

This project will also be subject to various District rules. On that basis, the following information is provided:

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

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

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

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

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

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

I look forward to receiving the DEIR when it is completed for this project. If you have questions, please contact me at 874-4887 or [asmith@airquality.org](mailto:asmith@airquality.org).

Sincerely,



Art Smith

cc Ron Maertz SMAQMD

L/MSD/LANDUSE & TRANS/LANDUSE/SAC200400304B



# DEPARTMENT OF CONSERVATION

## DIVISION OF LAND RESOURCE PROTECTION

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814  
 PHONE 916 / 324-0850 • FAX 916 / 327-3480 • TDD 916 / 324-2531 • WEB SITE [conservation.ca.gov](http://conservation.ca.gov)



July 26, 2005

Tom Buford, Associate Planner  
 City of Sacramento, Planning Division  
 1231 I Street, Room 300  
 Sacramento, CA 95814

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Greenbriar Development Project **SCH# 2005062144**

Dear Mr. Buford:

The Department of Conservation's Division of Land Resource Protection (Division) monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. The Division has reviewed the above NOP and offers the following recommendations for the DEIR with respect to the project's potential impacts on agricultural land.

The proposed project involves a change in the City's Sphere of Influence, annexation, and various entitlements to allow development of 3,723 housing units, retail/commercial space, school, and park uses on a 577-acre site. The NOP notes that the DEIR will evaluate the project's impacts on conversion of agricultural land to urban use and impacts to surrounding agricultural uses. Therefore, the Division recommends that, at a minimum, the following items be specifically addressed to document and treat project impacts on agricultural land and land use.

### Agricultural Setting of the Project

The DEIR should describe the project setting in terms of the actual and potential agricultural productivity of the land. The Division's Sacramento County Important Farmland Map, which defines farmland according to soil attributes and land use, may be used for this purpose. In addition, we recommend including the following information to characterize the agricultural land resource setting of the project.

- Current and past agricultural use of the project area. Include data on the types of crops grown, and crop yields and farmgate sales values.



- To help describe the full agricultural resource value of the soils on the site, we recommend the use of economic multipliers to assess the total contribution of the site's potential or actual agricultural production to the local, regional and state economies. State and Federal agencies such as the UC Cooperative Extension Service and USDA are sources of economic multipliers.

#### Project Impacts on Agricultural Land

- Type, amount, and location of farmland conversion resulting directly and indirectly (growth-inducement) from project implementation.
- Impacts on current and future agricultural operations; e.g., land-use conflicts, increases in land values and taxes, vandalism, etc.
- Incremental project impacts leading to cumulatively considerable impacts on agricultural land. This would include impacts from the proposed project as well as impacts from past, current and probable future projects.

Impacts on agricultural resources may also be quantified and qualified by use of established thresholds of significance (California Code of Regulations Section 15064.7). The Division has developed a California version of the USDA Land Evaluation and Site Assessment (LESA) Model, a semi-quantitative rating system for establishing the environmental significance of project-specific impacts on farmland. The model may also be used to rate the relative value of alternative project sites. The LESA Model is available on the Division's website noted later in this letter.

#### Mitigation Measures and Alternatives

Feasible alternatives to the project's location or configuration that would lessen or avoid farmland conversion impacts should be considered in the DEIR. Similarly, while the direct conversion of agricultural land is often deemed to be an unavoidable impact by California Environmental Quality Act (CEQA) analyses, mitigation measures must nevertheless be considered.

The Division recommends consideration of the purchase of agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land, as well as for the mitigation of growth inducing and cumulative impacts on agricultural land. We highlight this measure because of its growing acceptance and use by lead agencies as mitigation under CEQA.

Mitigation using conservation easements can be implemented by at least two alternative approaches: the outright purchase of conservation easements tied to the project, or via the donation of mitigation fees to a local, regional or statewide organization or agency, including land trusts and conservancies, whose purpose includes the purchase, holding and maintenance of agricultural conservation easements. Whatever the approach, the

Mr. Tom Buford  
July 26, 2005  
Page 3 of 3

conversion of agricultural land should be deemed an impact of at least regional significance and the search for mitigation lands conducted regionally, and not limited strictly to lands within the Sacramento region.

Information about conservation easements is available on the Division's website, or by contacting the Division at the address and phone number listed below. The Division's website address is:

<http://www.conservation.ca.gov/DLRP/>

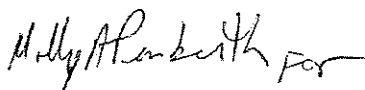
Of course, the use of conservation easements is only one form of mitigation that should be considered. The following mitigation measures could also be considered:

- Increasing home density or clustering residential units to allow a greater portion of the development site to remain in agricultural production.
- Protecting nearby farmland from *premature* conversion through the use of less than permanent long-term restrictions on use such as 20-year Farmland Security Zone contracts (Government Code Section 51296) or 10-year Williamson Act contracts (Government Code Section 51200 et seq.).
- Establishing buffers such as setbacks, berms, greenbelts, and open space areas to separate farmland from incompatible urban uses.
- Investing in the commercial viability of the remaining agricultural land in the project area through a mitigation bank which invests in agricultural infrastructure, water supplies and marketing.

The Department believes that the most effective approach to farmland conservation and impact mitigation is one that is integrated with general plan policies. For example, the measures suggested above could be most effectively applied as part of a comprehensive agricultural land conservation element in the City's general plan. Mitigation policies could then be applied systematically toward larger goals of sustaining an agricultural land resource base and economy. Within the context of a general plan mitigation strategy, other measures could be considered, such as the use of transfer of development credits, mitigation banking, and economic incentives for continuing agricultural uses.

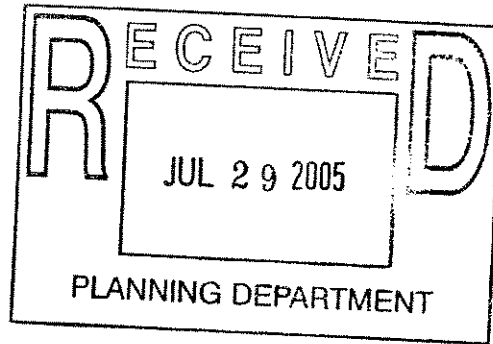
Thank you for the opportunity to comment on the NOP. If you have questions on our comments, or require technical assistance or information on agricultural land conservation, please contact the Division at 801 K Street, MS 18-01, Sacramento, California 95814; or, phone (916) 324-0850.

Sincerely,



Dennis J. O'Bryant  
Acting Assistant Director

DEPARTMENT OF TRANSPORTATION  
DISTRICT 3 – SACRAMENTO AREA OFFICE  
VENTURE OAKS, MS 15  
P. O. BOX 942874  
SACRAMENTO, CA 94274-0001  
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July 26, 2005

05SAC0113  
03-SAC-99 PM 33.180  
Greenbriar (P05-069)  
Notice of Preparation  
SCH# 2005062144

Mr. Tom Buford, Associate Planner  
City of Sacramento  
Planning Department  
1231 I Street, Room 300  
Sacramento, CA 95814

Dear Mr. Buford:

Thank you for the further opportunity to review and comment on the Greenbriar project Notice of Preparation documentation. Our comments are as follows:

- The comments of our December 17, 2004 and June 9, 2005 letters (copies enclosed) regarding this project are still valid.
- Please provide the Traffic Impact Study (TIS) for this project as soon as it becomes available. After our initial meeting with City staff, we look forward to seeing the TIS and an assessment of this project's impact's on State freeway and interchange facilities, prior to its inclusion in the EIR, so appropriate mitigation to the mainline and interchange(s) can be determined.
- The internal project circulation access roads and parcel mapping provided in the DEIR should reflect the right-of-way dedication needs of the ultimate 8-lane I-5 and SR99 freeways that abut this project site, allowing for new structures and auxiliary lanes in the vicinity of the preliminary engineered freeway Junction.
- Please provide a map showing the proposed re-alignment of the irrigation drainage channel, located between SR99 and the Greenbriar property, while allowing for the right-of-way needs of the 8-lane SR99 and I-5 freeways and auxiliary lanes near the expanded SR99/I-5 Junction interchange.
- The DEIR should discuss the new elementary school site location, after consultation with Sacramento Metropolitan Airport staff and Caltrans, to ascertain if it should be sited in another location, possibly outside the project's boundaries.

Mr. Tom Buford  
July 26, 2005  
Page 2

- The DEIR should provide a map showing the proposed alignment of the Regional Transit light rail transit line to the airport using Meister Way through the project area and depict any transit-oriented development features near the prospective station site.

Please work with our office regarding traffic, right-of-way, and other issues of concern to Caltrans while the TIS and DEIR are being developed and provide any further action regarding this project. If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

A handwritten signature in cursive script that reads "Katherine Eastham".

KATHERINE EASTHAM, Chief  
Office of Transportation Planning – Southwest

Enclosures

c: Don Smith, Regional Transit  
Scott Morgan, State Clearinghouse

DEPARTMENT OF TRANSPORTATION  
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June 9, 2005

05SAC0088  
03-SAC-99 PM 33.180  
Greenbriar (P04-069)  
Application

Ms. Arwen Wacht, Associate Planner  
City of Sacramento  
Planning Department  
1231 I Street, Room 300  
Sacramento, CA 95814

Dear Ms. Wacht:

Thank you for the further opportunity to review and comment on the Greenbriar project proposal. Our comments are as follows:

- The comments of our December 17, 2004 letter (copy enclosed) are still valid. Caltrans is especially interested in reviewing the traffic study as soon as it is available and its assessment of impacts to State freeway and interchange facilities.
- The Greenbriar project proposes a school site in the southeast area of the subdivision that places it quite close to the State Route (SR) 99 Junction with the Interstate 5 (I-5) freeway. The California Public Resources Code Section 21150-21154, Chapter 21151.8, indicates that a project's environmental impact report or negative declaration may not be approved if it involves the purchase of a school site and the construction of a new elementary or secondary school by a school district within 500 feet from the edge of a freeway traffic lane or other busy traffic corridor. Poor air quality and elevated noise exposure to school employees and children are less than desirable effects created by a poorly situated school site next to roadways. The location of the school in a more central location would provide: (1) a more walkable situation for most students and (2) a better internal circulation plan for equalizing the distance of school-related vehicle trips as well.

A re-design of the nearby I-5 / SR99 Junction and widening of the freeways may place the proposed school site closer to high speed vehicular throughfares than depicted on the maps provided. In addition, our prior letter indicated the need for an early consultation meeting to clarify freeway right-of-way allowance issues associated with accommodating increased traffic demand and a revised Junction design for two future 8 lane freeways. The need for freeway-to-freeway connectors situated adjacent to this project at the Junction should also be clarified.

Ms. Arwen Wacht  
June 9, 2005  
Page 2

- Caltrans will need reserved right-of-way and the establishment of wider extended freeway access control boundaries to be determined along the east and south Greenbriar property frontage. The proposed irrigation canal relocation should also accommodate the abutting State Route 99 Highway as it changes into a higher standard 8 lane freeway facility. Accordingly, the abandonment and relocation of existing easements referred to on Page 8 of the documentation should allow for the new freeway facility widening. For further assistance regarding the existing right-of-way easements Caltrans has further interest in and examples of preliminary access control plans that would be standard for an 8 lane freeway, please contact Scott Jackson at (530) 741-4307.
- In the southwest corner of the Greenbriar project, the future Lone Tree Road and structure at Interstate 5 should be provided with an adequate right-of-way reservation.
- Caltrans would be interested in consulting with the project proponents regarding the possible re-alignment of the irrigation drainage channels, as stated on Page 6, that are located between SR99 and the Greenbriar property. This re-alignment may change existing drainage patterns near the SR99 highway. Pre and post project discharge information and any channel alignment proposals should be shared with Caltrans.
- Any soundwalls to be constructed are the responsibility of the developer and should be situated with sufficient setback areas to allow for the new freeway Junction design and right-of-way footprint.

Please work with our office to finalize the TIS and provide any further action regarding this project. If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

**ORIGINAL SIGNED BY:**

KATHERINE EASTHAM, Chief  
Office of Transportation Planning – Southwest

c: Don Smith, Regional Transit

Ms. Arwen Wacht  
June 9, 2005  
Page 3

bc: John Holzhauser, Office of Traffic Operations – Sacramento  
Steve Hetland, Special Funded Projects  
Tom Ganyon, Office of Right of Way  
Don Grebe, Office of Right of Way  
Scott Jackson, Office of Right of Way Engineering  
Chad Baker, Advanced Planning  
John Rocanova, HQ Design and Local  
James Arbis, HQ Office of Traffic Operations  
Jennifer Hayes, Community Planning  
Dennis Jagoda, Hydraulics  
Bruce Capaul, Permits  
Marlon Flournoy, Office of Transportation Planning-Southwest  
Jeff Pulverman, Office of Transportation Planning  
Ken Champion, District 3 – Sacramento County LDR Coordinator

KC/ kc

DEPARTMENT OF TRANSPORTATION  
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December 17, 2004

04SAC0180  
03-SAC-99 PM 33.180  
Greenbriar (IR04-463)  
Application

Mr. Greg Bitter  
City of Sacramento  
Planning Department  
1231 I Street, Room 300  
Sacramento, CA 95814

Dear Mr. Bitter:

Thank you for the opportunity to review and comment on the Greenbriar project proposal. Our comments are as follows:

- Any specific development which is proposed, and any change in land use, which would result in or allow increased or redistributed trips for the North Natomas Community Plan (NNCP) may trigger roadway facility improvement needs sooner than scheduled.
- This project represents a change to the original land uses of the 1994 NNCP from Agricultural to Mixed-Use Residential, Commercial and Transit-Oriented development. A preliminary assessment of this project indicates that it could generate an appreciable increase in trips for the immediate vicinity of the State Route (SR) 99/Elkhorn Boulevard Interchange and the Interstate 5 (I-5) /SR99 Junction Interchange.
- This project has impacts that are of regional or area wide significance. In addition, this project adds to a changing regional background traffic picture fostered by the proposed connection of the western segment of the Placer Parkway and the nearby build out of the Elverta Specific Plan affecting SR99 near this project. Assembly Bill (AB) 1807 amended the California Environmental Quality Act (CEQA) and Public Resources Code Sections 21081.4, 21081.6 and 21081.7, mandate that lead agencies under CEQA provide the California Department of Transportation with information on transportation related mitigation monitoring measures for projects that are of statewide, regional, or area wide significance. The enclosed "Guidelines for Submitting Transportation Information from a Reporting or Monitoring Program to the Department of Transportation" (MM Submittal Guidelines) discuss the scope, purpose and legal requirements for mitigation monitoring reporting and submittal, specify the generic content for reports, and explain procedures for the timing, certification and submittal of the required reports. For this project and its part in the



increasing traffic demand, therefore, the enclosed Mitigation Monitoring Certification Checklist form should be completed and submitted to our office when the mitigation measures are approved, and again when they are completed for all improvements related to the Greenbriar project.

- This mixed use project, immediately northwest and abutting the I-5 and SR 99 Junction, will generate approximately 3134 AM and 3623 PM peak hour trips from just the residential portion of this project. The commercial portion of the project is as yet unspecified, but will add even more trips to peak traffic flows. A Traffic Impact Study (TIS) should be prepared. The complete Caltrans TIS guidelines are available at the following website: <http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/>. The TIS should incorporate the following scenarios:

- Existing conditions without the project
- Existing conditions plus the project
- Cumulative conditions (without the project)
- Cumulative conditions (with project build-out)
- Existing conditions (widened freeway facilities and new I-5/SR99 interchange)
- Future conditions (widened freeway facilities and new I-5/SR99 interchange)

- The traffic analysis should provide a Level of Service (LOS) analysis for the SR99/Elkhorn Boulevard Interchange freeway ramps and ramp terminal intersections. A merge/diverge analysis should be performed for the freeway and ramp junctions and all analysis should be based on AM and PM peak hour volumes. The analysis should include the (individual, not averaged) LOS and traffic volumes applicable to all intersection road approaches and turn movements. The procedures contained in the Year 2000 Highway Capacity Manual should also be used as a guide for the traffic study.

The analysis should also include a Junction interchange and traffic circulation element. A SR99/I-5 Junction Interchange analysis should address any revised traffic movement needs for improved circulation near the Greenbriar project (ie. south access to the I-5/Metro Airpark Interchange) or new east road access from I-5 into North Natomas via a revised Junction interchange design. In addition, the analysis should assess the various scenarios for the changing SR99 and I-5 mainline traffic conditions in the project area. It is unclear from the document if access to I-5 will be part of this project.

Caltrans requests a meeting prior to the completion of the traffic study to enable early consultation. The analysis should address this project's constraining impacts to the future I-5/SR99 freeway interchange, if full right-of-way allowance is not made for the traffic demand and junctioning of the two freeways that are planned to be widened to 8 lanes each. The analysis should also address any traffic congestion and queuing impacts near the future Interstate 5/Metro Airpark Interchange site, I-5/ Del Paso Road, and SR99/Elkhorn Boulevard Interchanges as a result of an inadequate freeway-to-freeway interchange widening provision at the junction.

- Mitigation measures should be identified where the project would have a significant impact. Caltrans considers the following to be significant impacts:
  - Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway.
  - Vehicle queues at intersections that exceed existing lane storage.
  - Project traffic impacts that cause any ramp's merge/diverge Level of Service (LOS) to be worse than the freeway's LOS.
  - Project impacts that cause the freeway or intersection LOS to deteriorate beyond LOS E for freeway and LOS D for intersections. (If the LOS is already "E" or "F", then a quantitative measure of increased queue lengths and delay should be used to determine appropriate mitigation measures.)
- Traffic generated from the proposed project will contribute to cumulative SR99/Elkhorn Boulevard Interchange impacts. Interchange improvements (ie. ramp terminal intersection modification, closed circuit television monitoring, traffic surveillance items and auxiliary lanes) may be required, in addition to Kittelson Report improvements, as mitigation measures to maintain adequate traffic operations in the vicinity of this project. Fair share mitigation fees for HOV lanes from I-5/Del Paso Road to north of I-5/Metro Airpark Interchange and on SR99 between the Elkhorn Boulevard Interchange and I-80 should be considered.
- The analysis of future traffic impacts should be based on a 20 year planning horizon.
- Possible mitigation measures to consider and the timing of their implementation include the following:
  - SR99/Elkhorn Boulevard Interchange signalization
  - Modifications to ramp terminal intersections
  - Transit enhancements to reduce vehicular trips
  - Contribution to SR99 mainline auxiliary lanes
  - Provision of right-of-way or temporary landscape buffer for a future expansion of the I5/SR99 Interchange when the freeway-to-freeway interchange project goes forward.
- According to Caltrans Planning Transportation Concept Reports for the future ultimate freeway expansion needs at the Interstate 5/SR99 Junction, a future ultimate 8 lane Interstate 5 freeway will be junctioning with a future ultimate 8 lane SR99 freeway. This junction expansion is yet to be designed but borders the Greenbriar Project on the south and east sides. The need for auxiliary lanes and freeway-to-freeway connector ramps will require study in addition to the future interchange design.

- The proposed development of new commercial units should mitigate construction activities such that any development would not contribute contaminants to storm waters handled by the State, for example oils, grease, sand, sediment, or debris. All runoff that enters I-5 or SR99 right-of-way must meet Regional Water Quality Control Board (RWQCB) standards for clean water.
- Any increases of discharge from this development into the State drainage system must be mitigated. Existing drainage patterns must be perpetuated or improved within the State right-of-way. Pre and post-project discharge information should be supplied for Caltrans review.
- The incorporation of environmental Best Management Practices, ie. retention ponds, infiltration trenches, or other drainage improvements should be used to mitigate drainage impacts by the proposed development.
- Any project sign plans near I-5 or SR 99 should be provided to Caltrans for review depicting the layout, roadway set back, orientation, glare intensity and sign size.
- Any work conducted within State right-of-way will require an encroachment permit. For permit assistance, please contact Bruce Capaul at (530) 741-4403.

Please work with our office to finalize the TIS and provide any further action regarding this project. If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

**ORIGINAL SIGNED BY:**

KATHERINE EASTHAM, Chief  
Office of Transportation Planning – Southwest

c: Don Smith, Regional Transit

bc: John Holzhauser, Office of Traffic Operations – Sacramento  
Steve Hetland, Special Funded Projects  
Tom Ganyon, Office of Right of Way  
Don Grebe, Office of Right of Way  
Martha Ragas, HQ Office of Right of Way  
Jennifer Hayes, Community Planning  
Dennis Jagoda, Hydraulics  
Bruce Capaul, Permits  
Marlon Flournoy, Office of Transportation Planning-Southwest  
Jeff Pulverman, Office of Transportation Planning  
Ken Champion, District 3 – Sacramento County LDR Coordinator

KC/ kc



July 28, 2005  
E225.000

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**www.csd-1.com**

Tom Buford, Associate Planner  
City of Sacramento Planning Division  
1231 I St, Rm 300  
Sacramento CA 95814

**Subject: Notice of Preparation (NOP) for a Draft Environmental Impact Report (DEIR) for Greenbrier Project Control No.: P05-069**

Dear Ms. Buford:

County Sanitation District 1 (CSD-1) and Sacramento Regional County Sanitation District (SRCSD) have reviewed the Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the subject project.

**Board of Directors**  
Representing:

- County of Sacramento
- City of Citrus Heights
- City of Elk Grove
- City of Folsom
- City of Rancho Cordova
- City of Sacramento

The subject property is outside the boundaries of CSD-1, SRCSD, and the Urban Service Boundaries (USB). The current Master Plans for both districts do not provide for sewer service to this area. All pipes within the districts, both existing and future, have only been sized for flow within the USB. Any expansion of the USB would immediately cause our system to be undersized. Therefore, this project is of specific concern to CSD- 1 and SRCSD.

The ultimate plan for conveyance and treatment of the subject property by the Districts shall not be considered until after a formal application for annexation to the districts and the USB has been filed and is being processed.

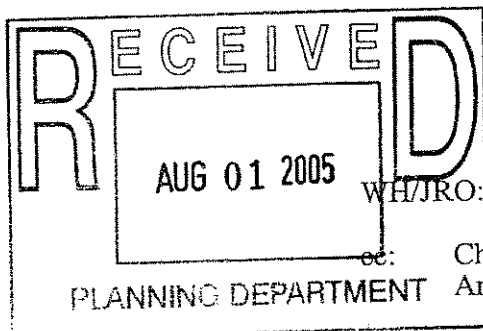
- Robert F. Shanks  
District Engineer
- Marcia Maurer  
Chief Financial Officer
- Wendell H. Kido  
District Manager
- Mary K. Snyder  
Collection Systems Manager

In order for the Districts to more fully evaluate the subject project's impact on their systems, during the annexation process a sewer study will be needed. This study shall demonstrate any interim and permanent connection(s) to the Districts' systems. This study may be refined by supplemental studies as the scope and details of the subject project become more defined.

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

Sincerely,

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



WH/JRO:clm  
cc: Christoph Dobson  
Amber Schalansky

horizumi072805.ltr

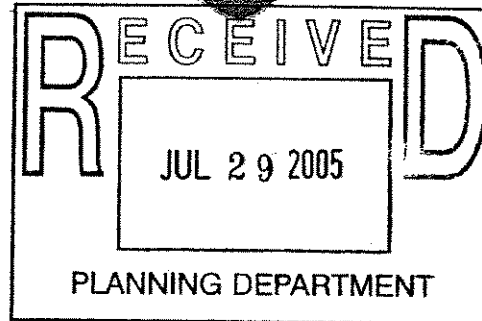


US Fish & Wildlife Service  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825  
(916) 414-6600  
FAX (916) 414-6712



Department of Fish and Game  
Sacramento Valley-Central  
Sierra Region  
1701 Nimbus Road, Suite A  
Rancho Cordova, CA 95670  
FAX (916) 358-2912

Tom Buford, Associate Planner  
City of Sacramento Planning Division  
1231 I Street, Room 300  
Sacramento, California 95814



JUL 29 2005

Subject: Comments on the City of Sacramento's June 28, 2005, Notice of Preparation of a Draft Environmental Impact Report for the Greenbriar Project (Project P05-069)

Dear Mr. Buford:

The U.S. Fish and Wildlife Service (Service) and California Department of Fish and Game (DFG) (hereafter collectively referred to as the Wildlife Agencies) have reviewed the City of Sacramento's (City) June 28, 2005, Notice of Preparation (NOP) of a draft Environmental Impact Report (DEIR) for the Greenbriar Development Project (proposed project). The proposed project is for the construction of 3,723 housing units (consisting of low, medium and high density housing), approximately 30 acres of retail and commercial development, an 11.3 acre elementary school, an approximately 41 acre common water feature, and eight neighborhood parks totaling approximately 59 acres. The proposed project area totals approximately 577 acres.

The proposed project is located in northern unincorporated Sacramento County, approximately one mile east of the Sacramento International Airport. The proposed project site is bounded by Interstate 5 to the south, Highway 99/70 to the east, the Metro Air Park (MAP) development to the west and Elkhorn Boulevard to the north.

#### **Potential Impacts of the Proposed Project on the Natomas Basin Habitat Conservation Plan**

The proposed project is located north and west of the area covered by the City's Natomas Basin Habitat Conservation Plan (NBHCP) (City et al. 2003) Section 10(a)(1)(B) and Section 2081(b) incidental take permits (ITPs). The NBHCP is a multi-jurisdictional, multi-species, 50-year plan intended to protect and conserve 22 "Covered Species" and other biological resources within the Natomas Basin in Sacramento and Sutter Counties. The plan was submitted by the City and Sutter County in support of their applications for federal ITPs under Section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (Act), as well as applications for ITPs under State law pursuant to Section 2081(b) of the California Fish and Game Code. The conservation strategy of the NBHCP relies on total development in the basin being limited to 17,500 acres (including MAP) and includes measures to avoid, minimize and mitigate impacts to each of the

NBHCP's Covered Species. The Service issued an ITP (Permit # TE073667-0) to the City premised on the NBHCP on June 27, 2003. CDFG issued their ITP (Permit # 2081-1995-086-02-A1) to the City on July 10, 2003.

The effectiveness of the NBHCP's Operating Conservation Program is explicitly premised upon the City's commitment to limit total development to 8,050 acres within the City's Permit Area, and Sutter County's commitment to limit total development to 7,467 acres within Sutter County's Permit Area. These commitments are outlined in Sections I.B.2.a and I.B.2.b of the NBHCP and Section 3.1.1 of the NBHCP's Implementation Agreement. Section 3.1.1(a) of the NBHCP's Implementation Agreement provides that if either the City or Sutter County approve urban development beyond that considered in the NBHCP within the Natomas Basin or outside of their respective Permit Areas, the approval would constitute a significant departure from the NBHCP's Operating Conservation Program. The City and Sutter County agreed that in the event this future urban development should occur, then *prior* to approval of any related rezoning or pre-zoning, such future urban development shall trigger a reevaluation of the NBHCP and ITPs, a new effects analysis, potential amendments and/or revisions to the NBHCP and ITPs, a separate conservation strategy and issuance of ITPs to the City and/or Sutter County for that additional development, and/or possible suspension or revocation of the City's or Sutter County's ITPs in the event either jurisdiction violates such limitations. In addition to suspension or revocation of the City's and/or Sutter's permits, violation of the provisions limiting development, which is incorporated by reference as a Term and Condition under Condition E of the jurisdictions' ITPs, would subject the offending jurisdiction subject to potential civil and criminal penalties under Section 11 of the Act.

The proposed project will convert 577 acres of land from agricultural to urbanized uses that is presently suitable habitat for several of the NBHCP's Covered Species. For example, the State- and Federally-threatened giant garter snake (*Thamnophis gigas*) (snake) has been observed on numerous occasions in the Lone Tree Canal, which adjoins the western boundary of the proposed project site. The uplands within 200 feet of the Lone Tree Canal on the proposed project site are suitable upland habitat for the snake. As another example, much of the proposed project site is suitable foraging habitat for the State-threatened Swainson's hawk (*Buteo swainsoni*) (hawk). As noted above, if approved, the proposed project would result in a loss of up to 577 acres of habitat beyond that anticipated, analyzed and approved under the City's permit and would constitute a significant departure from the NBHCP's Operating Conservation Program. Therefore, in accordance with the NBHCP's Implementation Agreement, prior to approval of any rezoning or pre-zoning for the proposed project, the City will need to work with the Wildlife Agencies to conduct a reevaluation of the NBHCP and ITPs, a new effects analysis and amendment of the ITPs and revisions to the NBHCP to address such additional development. As part of the effects analysis, the full impact of such development on the efficacy of the NBHCP's carefully designed conservation strategy to minimize and mitigate the impacts of take of the Covered Species associated with a maximum of 17,500 acres of development within the Natomas Basin must be thoroughly analyzed. A separate conservation strategy that adequately addresses the increased impacts to the Covered Species resulting from additional loss of the limited habitat remaining in

the basin will be required prior to authorization of any additional take. If the City fails to conduct the necessary environmental analyses and appropriate plan revisions and permit amendments, there is a possible risk of suspension or revocation of the NBHCP ITPs.

### **The Proposed Project's Potential Impacts on Connectivity in the Natomas Basin**

The importance of maintaining connectivity corridors for the NBHCP's Covered Species is a key underlying theme of the April 2003, Final Natomas Basin Habitat Conservation Plan (City et al. 2003). The HCP's 0.5:1 mitigation ratio is, in part, justified by the plan's commitment to maintain connectivity between the Natomas Basin Conservancy's reserves (NBHCP, p. IV-7). The plan repeatedly emphasizes the need to ensure connectivity between the Natomas Basin Conservancy's reserves in order to minimize habitat fragmentation and species isolation (NBHCP, p. I-16). For example, a primary goal of the NBHCP is to "ensure connectivity between individual reserves, and connectivity between reserves and surrounding agricultural lands", and the NBHCP's "conservation strategy emphasizes maintaining connectivity between TNBC (*The Natomas Basin Conservancy*) reserves to allow giant garter snake movement within the Natomas Basin" (NBHCP, p. IV-18). Maintenance of connectivity corridors is extremely important for the snake to allow individuals to access areas of suitable habitat and to sustain genetic interchange throughout the basin (NBHCP, p. II-15). Prior to acquisition of wetland reserves, the Natomas Basin Conservancy must demonstrate that reserve lands to be acquired are hydrologically connected to suitable habitat and other reserve lands (NBHCP, p. IV-22). The Natomas Basin Conservancy must reassess connectivity corridors within and between reserves annually (NBHCP, p. VI-16).

The primary opportunity for connectivity for the snake in the Natomas Basin is the basin's system of irrigation and drainage canals and ditches (NBHCP, p. IV-18). The Lone Tree Canal, which is located along the western edge of the proposed project site, is a particularly significant connectivity corridor for the snake, and snakes have been observed using the canal on numerous occasions. As indicated in Figure 17 of the NBHCP (City et al. 2003), the Lone Tree Canal represents one (and we believe the most significant) of only a few possible corridors to allow the movement of snakes between the Natomas Basin Conservancy's managed marsh and rice reserves to the north and south of Interstate 5 (see attached map indicating the current locations of the Natomas Basin Conservancy's reserves). Of the other two possible movement corridors, the N Drain is surrounded on both sides by urban development (i.e., Sacramento International Airport and the approved Metro Air Park project) and the West Drainage Canal is disconnected from other hydrologic features north of Interstate 5 (Natomas Basin Conservancy 2005). Based upon the above information, the DEIR should evaluate the potential impacts of the proposed project on the ability of snakes to move within and between the Natomas Basin Conservancy's reserve lands and surrounding agricultural lands.

The NOP indicates that there is little to no buffer between the proposed project and the Lone Tree Canal. The absence of an adequate buffer could severely limit the utility of the Lone Tree Canal as a major connectivity corridor in the basin. The DEIR should include an analysis of an

alternative in which an increased upland buffer is provided between the proposed project and the Lone Tree Canal. As a potential starting point, the NBHCP includes a land area buffer of at least 250 feet width between residential development (as is being considered here) and Fisherman's Lake (NBHCP, page V-2). A buffer of comparable width along Lone Tree Canal should be analyzed.

#### **Additional Comments on the Notice of Preparation**

In addition to the effects of the proposed project on the viability of the NBHCP and connectivity for the snake in the basin, the DEIR should discuss and provide avoidance, minimization and mitigation measures for the following:

1. The proposed project's potential impacts upon fish, wildlife and plants, and their habitats.
2. The proposed project's potential impacts upon significant habitats such as wetlands, including vernal pools and riparian areas. The proposed project should be designed so that impacts to wetlands are avoided. Mitigation should be provided for unavoidable impacts based upon the concept of no net loss of wetland habitat values or acreage.
3. The proposed project's potential impacts to special status species, including species which are State- and federally-listed as threatened and endangered.
4. The proposed project's potential indirect and cumulative impacts upon fish, wildlife, water quality and vegetative resources.

The DEIR should also:

1. Provide an analysis of specific alternatives which reduce potential impacts to fish, wildlife, water quality and vegetative resources.
2. Include a full evaluation of the proposed project's consistency with applicable land use plans, including the Sacramento County General Plan and the NBHCP.
3. Consider and analyze whether implementation of the proposed project will result in reasonably foreseeable potentially significant impacts subject to regulation by the DFG under section 1600 et seq. of the Fish and Game Code. In general, such impacts result whenever a proposed project involves work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel, including ephemeral streams and water courses. Impacts triggering regulation by the DFG under these provisions of the Fish and Game Code typically result from activities that:



- A. Divert, obstruct, or change the natural flow or the bed, channel or bank of any river, stream, or lake;
- B. Use material from a streambed; or
- C. Result in the disposal or deposition of debris, waste, or other material where it may pass into any river stream, or lake.

In the event implementation of the proposed project involves such activities, and those activities will result in reasonably foreseeable substantial adverse effects on fish or wildlife, a Lake or Streambed Alteration Agreement (LSAA) will be required by the DFG. Because issuance of an LSAA is subject to review under the California Environmental Quality Act (CEQA), the DEIR should identify and analyze potentially feasible mitigation measures aimed at avoiding or substantially reducing impacts associated with project activities requiring an LSAA.

Finally, in the event implementation of the proposed project will involve activities and impacts requiring an LSAA, please contact the Sacramento Valley-Central Sierra Region for a notification packet and fee schedule for an LSAA.

This project will impact fish and/or wildlife habitat. Assessment of fees under Public Resources Code Section 21089 and as defined by Fish and Game Code Section 711.4 is necessary. Fees are payable by the project applicant upon filing of the Notice of Determination by the lead agency.

Pursuant to Public Resources Code Sections 21092 and 21092.2, the DFG requests written notification of proposed actions and pending decisions regarding this project. Written notifications should be directed to the DFG Rancho Cordova office, 1701 Nimbus Road, Rancho Cordova, California 95670.

The City is currently developing at least one additional proposal (i.e., Natomas Joint Vision) for amendment of their general plan, expansion of their Sphere of Influence (SOI) and potential annexation of additional lands. Based upon (1) this knowledge; (2) the extensive environmental analyses and ITP amendment processes triggered by the approval of any additional development not considered in the NBHCP in the basin; and (3) the conservation benefits of large-scale land use planning (as opposed to project-by-project consideration), the Service and DFG recommend that the City delay consideration of the proposed project until the larger Joint Vision-related general plan amendment and SOI expansion are considered.

Mr. Tom Buford

6

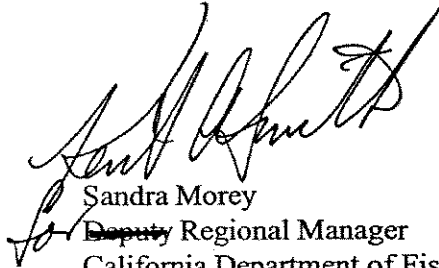
Thank you for the opportunity to review this project. Please contact Craig Aubrey or Lori Rinek of the Service at (916) 414-6600 or Ms. Jenny Marr, Staff Environmental Scientist (530) 895-4267 or Mr. Kent Smith, Habitat Conservation Supervisor, (916) 358-2382 of the DFG if you have any questions or concerns regarding this letter.

Sincerely,

Sincerely,



Wayne White  
Field Supervisor  
U.S. Fish and Wildlife Service



Sandra Morey  
~~Deputy~~ Regional Manager  
California Department of Fish & Game

Enclosure

cc:

Larry Combs, County of Sutter, Yuba City, California  
Board of Supervisors, County of Sacramento, Sacramento, California  
John Roberts, The Natomas Basin Conservancy, Sacramento, California  
Kent Smith, Department of Fish and Game Region 2, Rancho Cordova, California  
Jenny Marr, Department of Fish and Game Region 2, Rancho Cordova, California

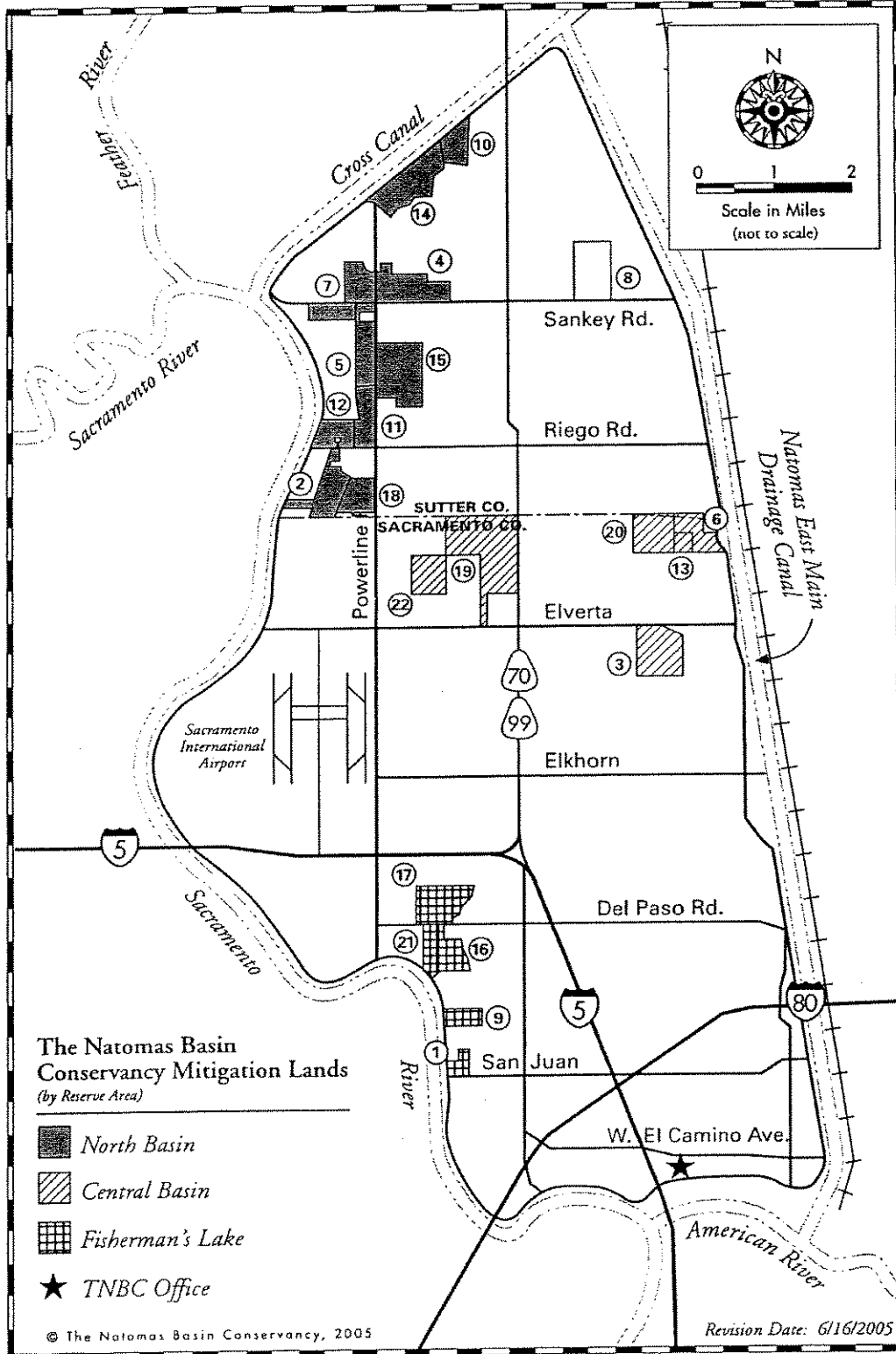
**Literature Cited**

City of Sacramento, Sutter County, Natomas Basin Conservancy, Reclamation District No. 1000, and Natomas Mutual Water Company (NBHCP). 2003. Final Natomas Basin Habitat Conservation Plan. Sacramento, California: Prepared for the U. S. Fish and Wildlife Service and CDFG. April.

Natomas Basin Conservancy. 2005. 2004 Implementation Annual Report on pursuant to the Implementation Agreement for the 2003 Natomas Basin Habitat Conservation Plan. Appendix F: Biological effectiveness Monitoring Program. Sacramento, California: Prepared for the U. S. Fish and Wildlife Service and CDFG. May.

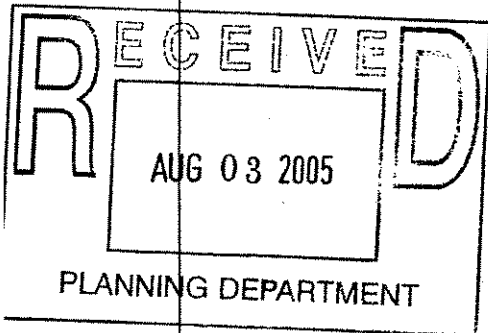
NATOMAS BASIN CONSERVANCY  
2005

*Base Map*



CITY OF SACRAMENTO  
DEVELOPMENT SERVICES DEPARTMENT

PUBLIC SCOPING MEETING  
GREENBRIAR PROJECT  
(PROJECT P05-069)



NATOMAS SERVICE CENTER  
3291 TRUXEL BOULEVARD  
SACRAMENTO, CALIFORNIA

COPY

WEDNESDAY, JULY 13, 2005

6:00 P.M.

REPORTED BY:

SANDRA VON HAENEL  
CSR NO. 11407

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A T T E N D E E S

CITY OF SACRAMENTO:

- ARWEN WACHT, ASSOCIATE PLANNER - CURRENT PLANNING
- TOM BUFORD, ASSOCIATE PLANNER - ENVIRONMENTAL AFFAIRS
- GREG BITTER, SENIOR PLANNER - CURRENT PLANNING
- SAMAR HAJEER - DEVELOPMENT ENGINEERING & FINANCE
- ASHLEY FEENEY - LONG RANGE PLANNING

EIR CONSULTING FIRM:

- EDAW INC
- AMANDA OLEKSZULIN, SENIOR ASSOCIATE

FOR PROJECT APPLICANT:

- REMY, THOMAS, MOOSE and MANLEY, LLP
- BY: TIFFANY K. WRIGHT, ATTORNEY
- PHILLIP R. SERNA, SERNA CONSULTING

INTERESTED PERSONS:

- KATIE EASTHAM - CALTRANS
- MONICA NEWHOUSE - SACRAMENTO COUNTY AIRPORT SYSTEM
- GEORGE MUNSON - SACRAMENTO COUNTY AIRPORT SYSTEM
- DONALD J. LOCKHART - SACRAMENTO LAFCo

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1 SACRAMENTO, CALIFORNIA, WEDNESDAY, JULY 13, 2005

2 6:00 P.M.

3 ---oOo---

4 MR. BUFORD: We'll go ahead and start the meeting.

5 This is the EIR Scoping Meeting for the Greenbriar  
6 Project. The Project Number for the City of Sacramento is  
7 P05-069.

8 I'm Tom Buford. I'm an associate planner with the  
9 Environmental Affairs Division for the City of Sacramento.  
10 The purpose -- we'll go through the purpose of the meeting  
11 and a few preliminaries, and then we'll take whatever  
12 comments folks have with regard to the EIR.

13 Arwen Wacht, in the front here, is an associate planner  
14 and is from Current Planning. She's actually the project  
15 planner.

16 Greg Bitter, in the back row, is the senior planner  
17 with Current Planning who is responsible for the current  
18 planning on the project.

19 Don Lockhart is here. He's the assistant executive  
20 officer with the Sacramento Local Agency Formation  
21 Commission.

22 Amanda Olekszulín is here. Amanda is with EDAW, which  
23 is the environmental consulting firm that's doing the  
24 Environmental Impact Report for the project.

25 Tiffany Wright is with Remy, Thomas & Moose --

1 MS. WRIGHT: -- Moose and Manley.

2 MR. BUFORD: She's an attorney for the applicant.

3 MALE SPEAKER: Could you say her name for me again,  
4 please.

5 MR. BUFORD: She'll give you a business card so you can  
6 probably see it better written.

7 And Phillip Serna, I believe.

8 MR. SERNA: Phil.

9 MR. BUFORD: Phil?

10 One of the project applicant's representatives.

11 Those are the folks that I know in the audience right  
12 now that are associated in one way or another with the  
13 applicant or with the City.

14 The purpose of today's meeting is to obtain comments  
15 and input on the scope of the Environmental Impact Report.

16 A meeting was noticed and scheduled in the Notice of  
17 Preparation for the project, and it was noticed for  
18 6 o'clock, and by my watch it's 6:15, and the internal clock  
19 is 6:20. So I think we've probably got the folks who are  
20 going to be here.

21 Most of us in the room are probably familiar at this  
22 point with the EIR process, but I think it bears mention that  
23 this is one of the opportunities for public comment, and  
24 during the Notice of Preparation period, which for this  
25 project is June 28 to July 29, the City receives comments.



1 We can receive them at this meeting. We also receive written  
2 comments, and there are forms in the back of the room for  
3 providing us with written comments.

4 There are forms for signing in. And if you've signed  
5 in back here and you're not already on our mailing list,  
6 you'll be put on the mailing list for the project.

7 Arwen is here.

8 Why don't you take a couple of minutes -- and have you  
9 explain the project or the basics of the project.

10 MS. WACHT: Well, again, my name is Arwen Wacht. I'm a  
11 project manager for the City for Greenbriar. This is  
12 PO5-069. It's approximately 577 acres.

13 We do have our tentative map exhibit up here. I've got  
14 a smaller version of the PUD schematic plan. But if anyone  
15 wants copies of any other exhibits, I'd be happy to provide  
16 them.

17 Right now I believe they're looking at -- there is a  
18 sphere of influence, an annexation, development agreement,  
19 general plan amendment, community plan amendment, pre-zone,  
20 PUD establishment to the master parcel map, to the  
21 subdivision map, and eventually special permits.

22 What they're overall kind of proposing is approximately  
23 3,723 units for residential units. The residential units  
24 that are in there are going to be low density, medium  
25 density, and high density.

1           There is also a commercial component, several parks,  
2 detention basins, a school site that is proposed at this  
3 project site.

4           It's generally located at the southwest corner of  
5 Elkhorn and Highway 99. Also, the southern boundary is  
6 Interstate 5, and Meister Way is proposed to eventually run  
7 east-west through the site.

8           There is a number of different housing projects they're  
9 proposing -- sorry, I'm going all over the place -- different  
10 lots, clusters, there is the standard size lots. They've  
11 included several high-density size lots also.

12           I believe that's it. I'd be happy to answer any  
13 questions anyone may have on just the general aspects of the  
14 project.

15           MR. BUFORD: And if you have, yeah, anything, Arwen can  
16 answer questions. Obviously, the applicants are here and  
17 available, I'm sure, afterwards if anyone is interested.

18           Also indicate Samar Hajeer is here with the Department  
19 of Development Engineering & Finance.

20           Have I got that right?

21           I've been with the City three weeks. It's all new.

22           And Ashley Feeney, who is a planner with Long Range  
23 Planning.

24           Okay. We don't have enough people here to be very  
25 formal, so if anyone would like, that is here, to make a

1 comment about the scope of the EIR, we'd like you to  
2 introduce yourself and talk to us.

3 Are you here to -- do you want to make a comment?

4 MS. EASTHAM: Well, if you want me to start off.

5 MR. BUFORD: Sure.

6 MS. EASTHAM: I'm Katie Eastham. I'm with Caltrans  
7 District 3, so we're the entity that's ultimately responsible  
8 for Interstate 5 and State Route 99.

9 We've already met with the City to discuss the traffic  
10 study, our big concern being Elkhorn Interchange going onto  
11 SR 99, the potential impacts from having this number of  
12 housing units with such limited access points on the freeway  
13 system.

14 Our other concern was the location of the elementary  
15 school which, as you see, is in the southeast corner, which  
16 is right at the intersection of where I-5 and 99 meet. This  
17 is an interchange which will need to be upgraded in the  
18 future to accommodate a much larger State Route 99 as well as  
19 a much larger I-5 interchange. Our concern being where the  
20 boundaries of the project are and knowing that we're going to  
21 have to expand the existing facilities there.

22 Our other -- the big concern with the elementary school  
23 being placed there is its close proximity to a State  
24 facility. Air Resources Board has come out with guidelines  
25 recommending that facilities for folks with sensitive

1 natures, especially elementary school kids, aren't located  
2 500 feet within a busy interchange or high traffic volume  
3 area like that.

4 That would be our big concern. And I believe we've  
5 already submitted some preliminary comments about the  
6 possibility of switching the park and the elementary school  
7 so that there is more of a buffer between the school and the  
8 State facilities.

9 MS. NEWHOUSE: Which park are you referring to?

10 MS. EASTHAM: There is -- that one that looks like a  
11 big racing track, that's a park. And then the lower portion  
12 is the elementary school site.

13 MS. NEWHOUSE: That puts it inside the aircraft  
14 overflight safety zone for the airport system. That would  
15 mean that it was directly in the area that has a high  
16 likelihood of aircraft accidents.

17 MR. BUFORD: What's your name?

18 MS. NEWHOUSE: Monica Newhouse from the Sacramento  
19 County Airport System. I'm the airport noise program  
20 manager.

21 So the school is of significant interest to us as well  
22 for the location, because we definitely do not want a school  
23 inside that overflight safety zone.

24 MS. EASTHAM: Yes. I understand the overflight safety  
25 zone line moved between the original map and the existing

1 tentative map, that it's actually moved further east?

2 MS. NEWHOUSE: Yes. That is because the company doing  
3 the -- it was erroneous. It was smaller than it was supposed  
4 to be, and it did move further. It encompasses about 75% of  
5 the project.

6 MR. BITTER: The line didn't -- Greg Bitter, City  
7 Planning Department.

8 The line didn't necessarily move. In reality, it's the  
9 original exhibit depicted the line in the incorrect position.

10 MS. EASTHAM: Right.

11 MR. BITTER: I just want to make sure that's clear.

12 MR. BUFORD: Is the line shown on this exhibit?

13 MS. EASTHAM: It should be.

14 MS. NEWHOUSE: No, it's not. But the --

15 MR. BUFORD: Is this your map, Arwen?

16 MS. WACHT: Yes.

17 MS. EASTHAM: Yeah, you're right --

18 MS. WACHT: No, this isn't my map.

19 MS. EASTHAM: Yeah, because it originally was about  
20 here (indicating), and now it's closer to here (indicating.)

21 And, again, that's still, even if you were to move the  
22 school anywhere within the site, you're still going to be  
23 having to place it someplace really close to the State  
24 highway to meet that small band of where you can site a  
25 location like that.

1 MR. BUFORD: Anything else from Caltrans?

2 MS. EASTHAM: No, that's all I have for right now.

3 MR. BUFORD: Okay. Monica?

4 MS. NEWHOUSE: Obviously we have a lot of concerns  
5 related to this property because 75% of it is inside the  
6 aircraft overflight safety zone for Sacramento International,  
7 meaning that it is directly under the military training  
8 pattern for the airport. Even though it's a commercial  
9 service airport -- there are commercial overflights, but the  
10 ones that would be of most interest are the military training  
11 flights which can be as low as 500 feet above ground level  
12 with noise levels in excess of over a hundred decibels SEL.

13 Obviously that could be a problem. But because of the  
14 safety aspect, densities are of particular interest because  
15 the safety area is defined as the area where there is the  
16 highest propensity for an aircraft accident. So the  
17 densities related inside that area are of particular  
18 interest, the school siting, that.

19 Also, the lakes are a problem in this latest version  
20 for us in that they are wildlife attractants, and this would  
21 cause a flyway in between the river and this property and  
22 therefore create a very high safety concern for the airport  
23 system.

24 The FAA will be commenting on that particular element  
25 as well as the USDA, because all of those lakes are inside an

1 area that is federally mandated to not create lakes, wildlife  
2 attractants for airports.

3 And that's probably the bulk of our concerns.

4 MR. BUFORD: Any other comments?

5 MR. MUNSON: That would be it.

6 George Munson, M-u-n-s-o-n, also with Sacramento County  
7 Airport System.

8 And that would be it for now.

9 MR. BITTER: Actually, I have one other question.

10 Has the team, the entire team, acquired the services of  
11 an aviation firm for advice on this project?

12 MR. BUFORD: Well, I tell you, from the -- I don't  
13 know. You're talking about -- you can ask the applicant.  
14 You might ask the applicant if they'd like to answer.

15 MS. OLEKSZULIN: Vincent Mellone & Associates. But he  
16 is not an aviation environmental firm. He is a former air  
17 traffic controller, so he does not have any experience with  
18 aircraft noise impact.

19 MR. SERNA: So we'd be actively saying that it is a  
20 general assessment of the strains associated with the  
21 airport.

22 MS. NEWHOUSE: With moving the flight path?

23 MR. BUFORD: If that's the extent of the comments on  
24 the scope of the Environmental Impact Report, then I'll call  
25 an end to the meeting.

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Thank you all very much. I'm sure the folks here will  
stick around afterwards for general discussion.

(At 6:28 p.m. the meeting was concluded.)

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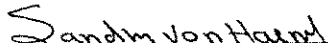
REPORTER'S CERTIFICATE

STATE OF CALIFORNIA )  
 ) ss.  
COUNTY OF SACRAMENTO )

I, SANDRA VON HAENEL, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing the named proceedings;

That I thereafter caused my shorthand writing to be reduced to typewriting, and the pages numbered 1 through 12, inclusive, constitute a complete, true, and correct record of said proceedings:

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on the 27th day of July, 2005.

  
\_\_\_\_\_  
SANDRA VON HAENEL  
CSR No. 11407

## **APPENDIX B**

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### **TRAFFIC DATA**

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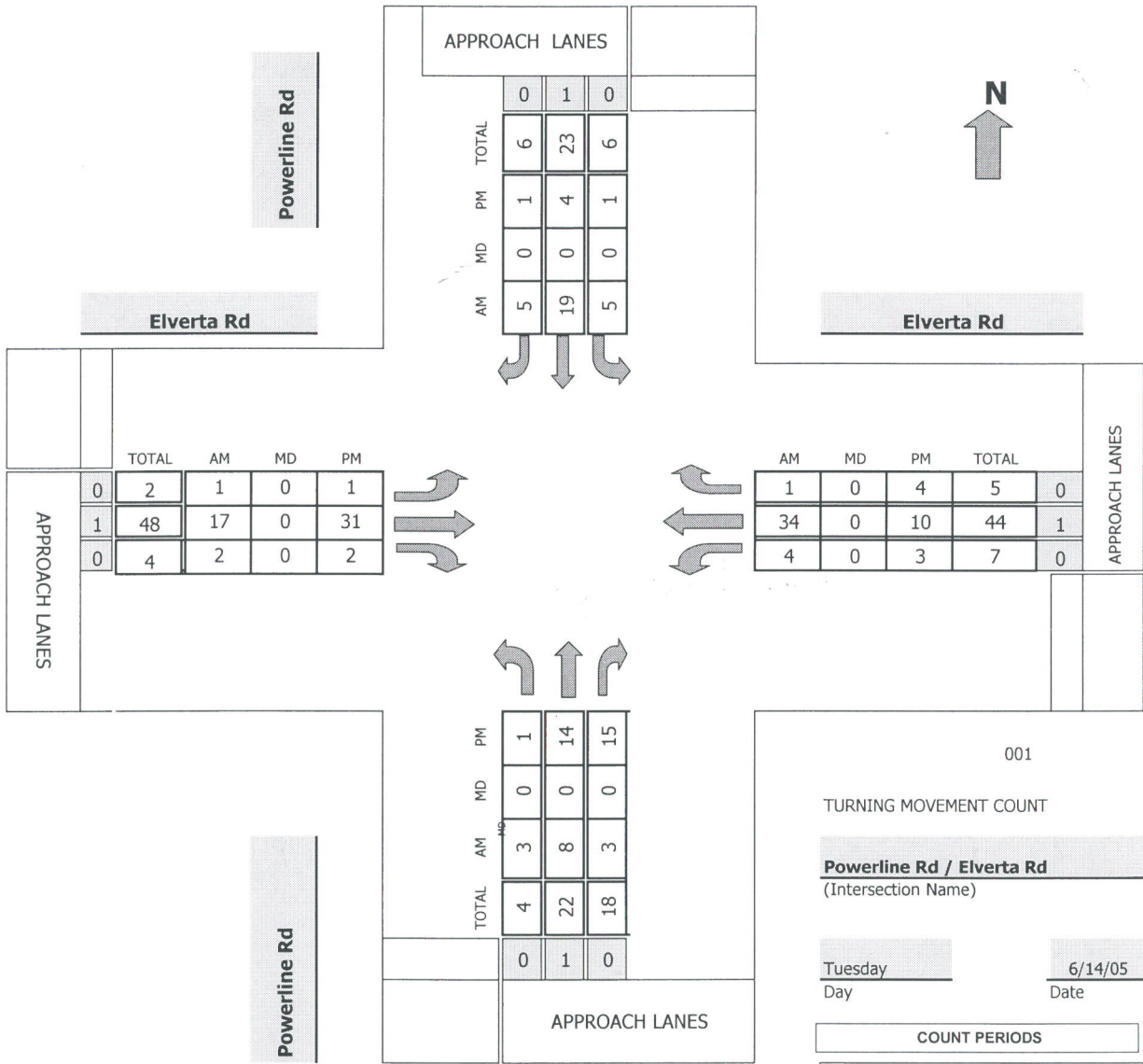
## APPENDIX A - EXISTING TRAFFIC COUNTS

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- Intersection Turning Movement Counts
- Ramp Counts
- Freeway Mainline Counts

**TMC Summary of Powerline Rd/Elverta Rd**

Project #: 05-7065-005



	TOTAL	AM	MD	PM
0	2	1	0	1
1	48	17	0	31
0	4	2	0	2

APPROACH LANES			
	AM	MD	PM
0	5	0	1
1	19	0	4
0	5	0	1
TOTAL	6	23	6

AM	MD	PM	TOTAL	
1	0	4	5	0
34	0	10	44	1
4	0	3	7	0

TOTAL	AM	MD	PM
4	3	0	1
22	8	0	14
18	3	0	15
0	1	0	

001

TURNING MOVEMENT COUNT

**Powerline Rd / Elverta Rd**  
(Intersection Name)

Tuesday 6/14/05  
Day Date

COUNT PERIODS

am	7:00 AM - 9:00 AM
noon	4:00 PM - 6:00 PM
pm	4:00 PM - 6:00 PM

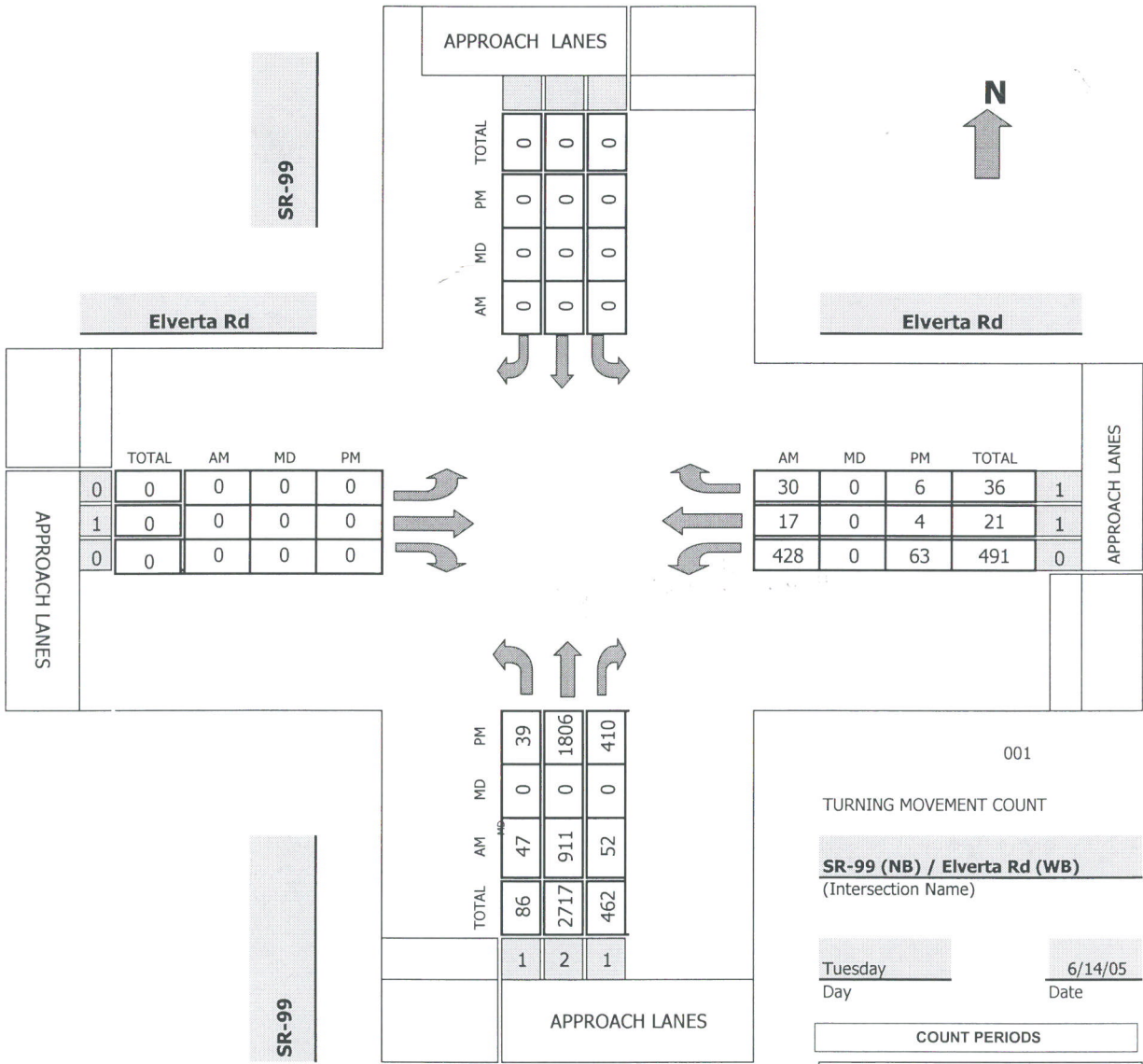
AM PEAK HOUR 715 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 415 PM

**TMC SUMMARY OF SR-99 (NB)/Elverta Rd (WB)**

Project #: 05-7065-010



	TOTAL	AM	MD	PM
0	0	0	0	0
1	0	0	0	0
0	0	0	0	0

AM	MD	PM	TOTAL	APPROACH LANES
30	0	6	36	1
17	0	4	21	1
428	0	63	491	0

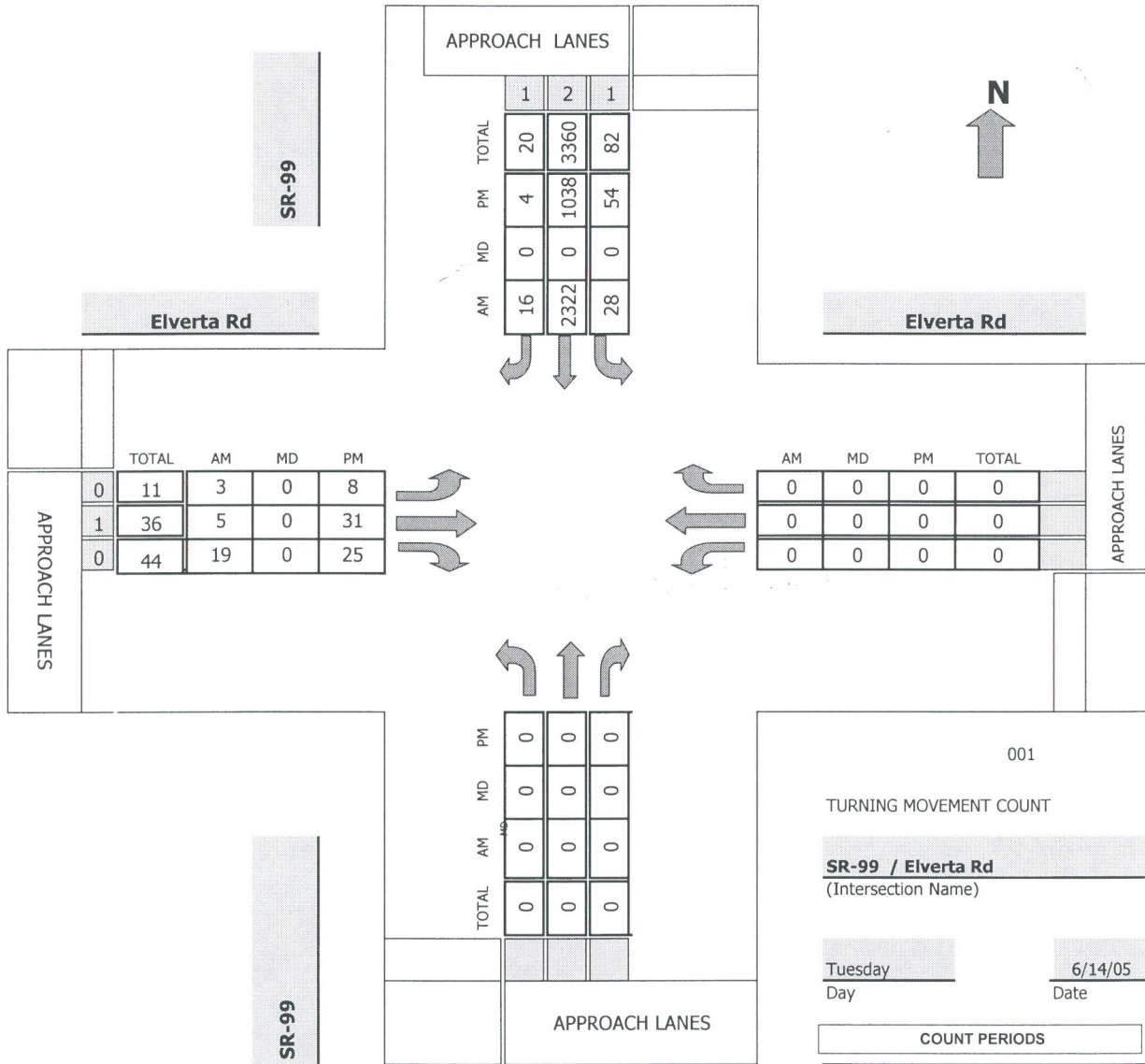
	TOTAL	AM	MD	PM
	86	47	0	39
	2717	911	0	1806
	462	52	0	410

001  
 TURNING MOVEMENT COUNT  
**SR-99 (NB) / Elverta Rd (WB)**  
 (Intersection Name)  
 Tuesday 6/14/05  
 Day Date  
 COUNT PERIODS  
 am 7:00 AM - 9:00 AM  
 noon 4:00 PM - 6:00 PM  
 pm 4:00 PM - 6:00 PM

AM PEAK HOUR 715 AM  
 NOON PEAK HOUR 0 AM  
 PM PEAK HOUR 400 PM

**TMC Summary of SR-99 (SB)/Elverta Rd (EB)**

Project #: 05-7065-011



001

TURNING MOVEMENT COUNT

**SR-99 / Elverta Rd**  
(Intersection Name)

Tuesday 6/14/05  
Day Date

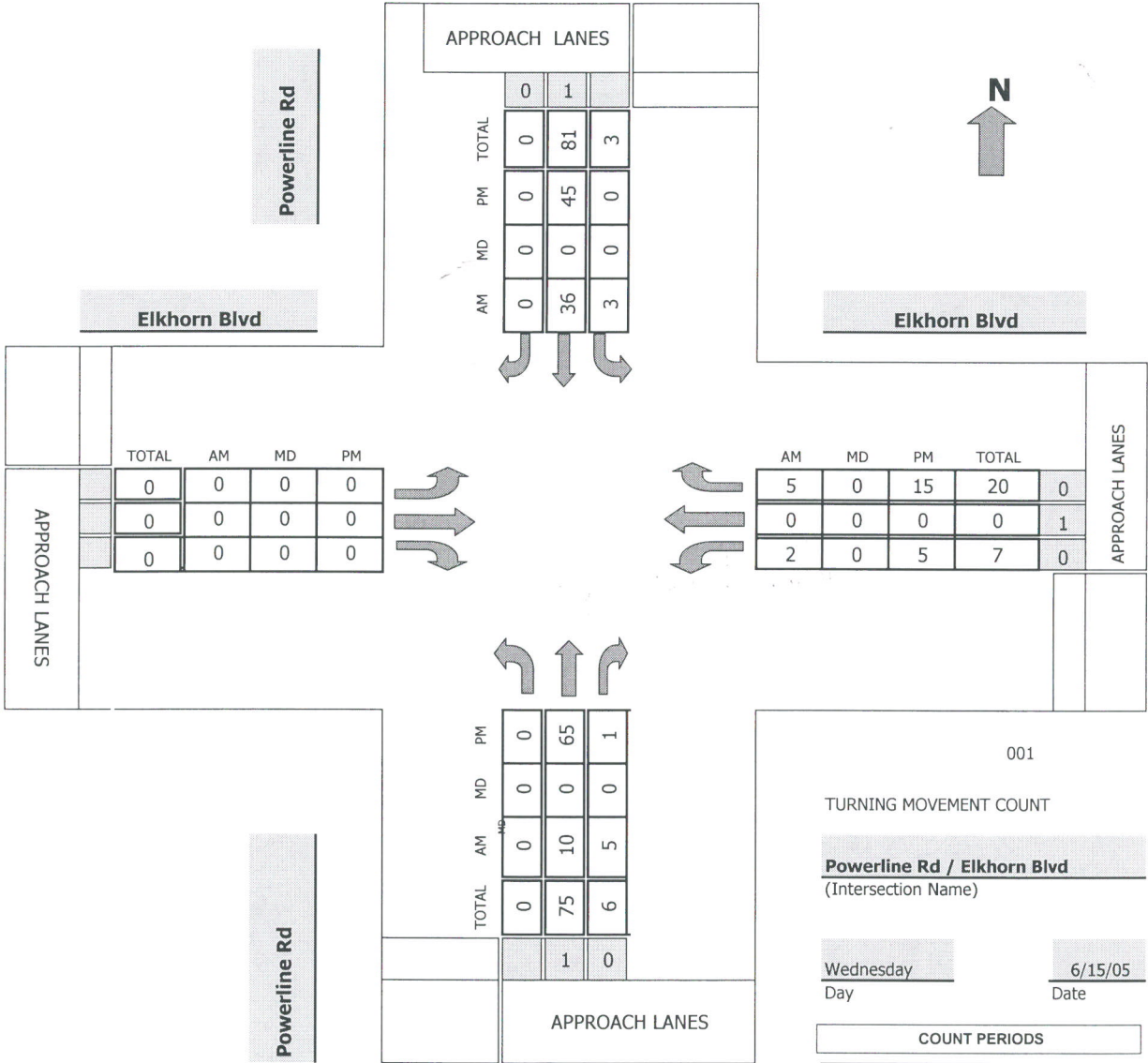
COUNT PERIODS

am	7:00 AM - 9:00 AM
noon	4:00 PM - 6:00 PM
pm	4:00 PM - 6:00 PM

AM PEAK HOUR	7:15 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	4:00 PM

**TMC Summary of Powerline Rd/Elkhorn Blvd**

Project #: 05-7065-003



001

TURNING MOVEMENT COUNT

**Powerline Rd / Elkhorn Blvd**  
(Intersection Name)

Wednesday 6/15/05  
Day Date

COUNT PERIODS

<b>am</b>	7:00 AM - 9:00 AM
<b>noon</b>	4:00 PM - 6:00 PM
<b>pm</b>	4:00 PM - 6:00 PM

AM PEAK HOUR 700 AM

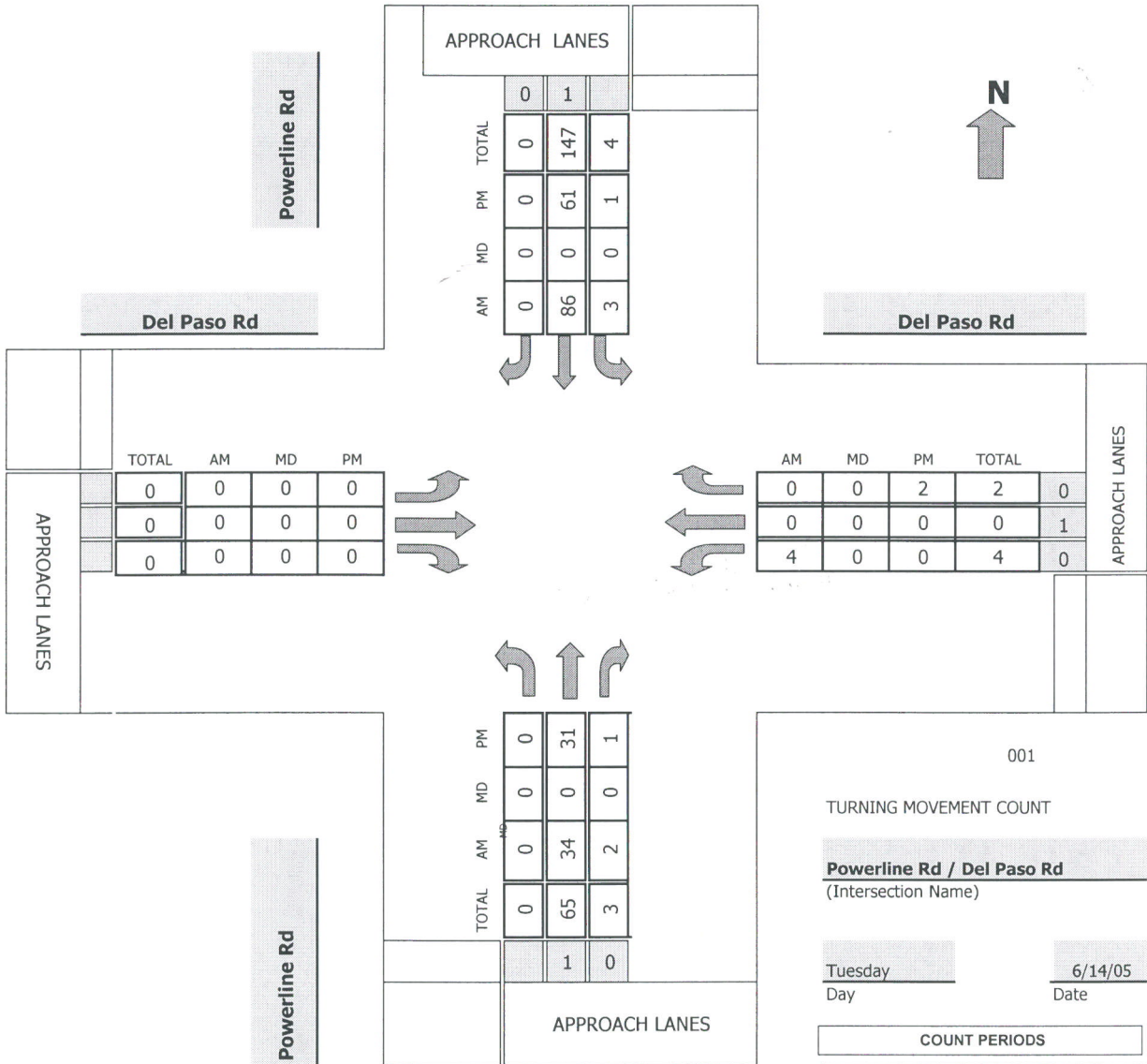
NOON PEAK HOUR 0 AM

PM PEAK HOUR 400 PM



**TMC Summary of Powerline Rd/Del Paso Rd**

Project #: 05-7065-006



AM PEAK HOUR 700 AM

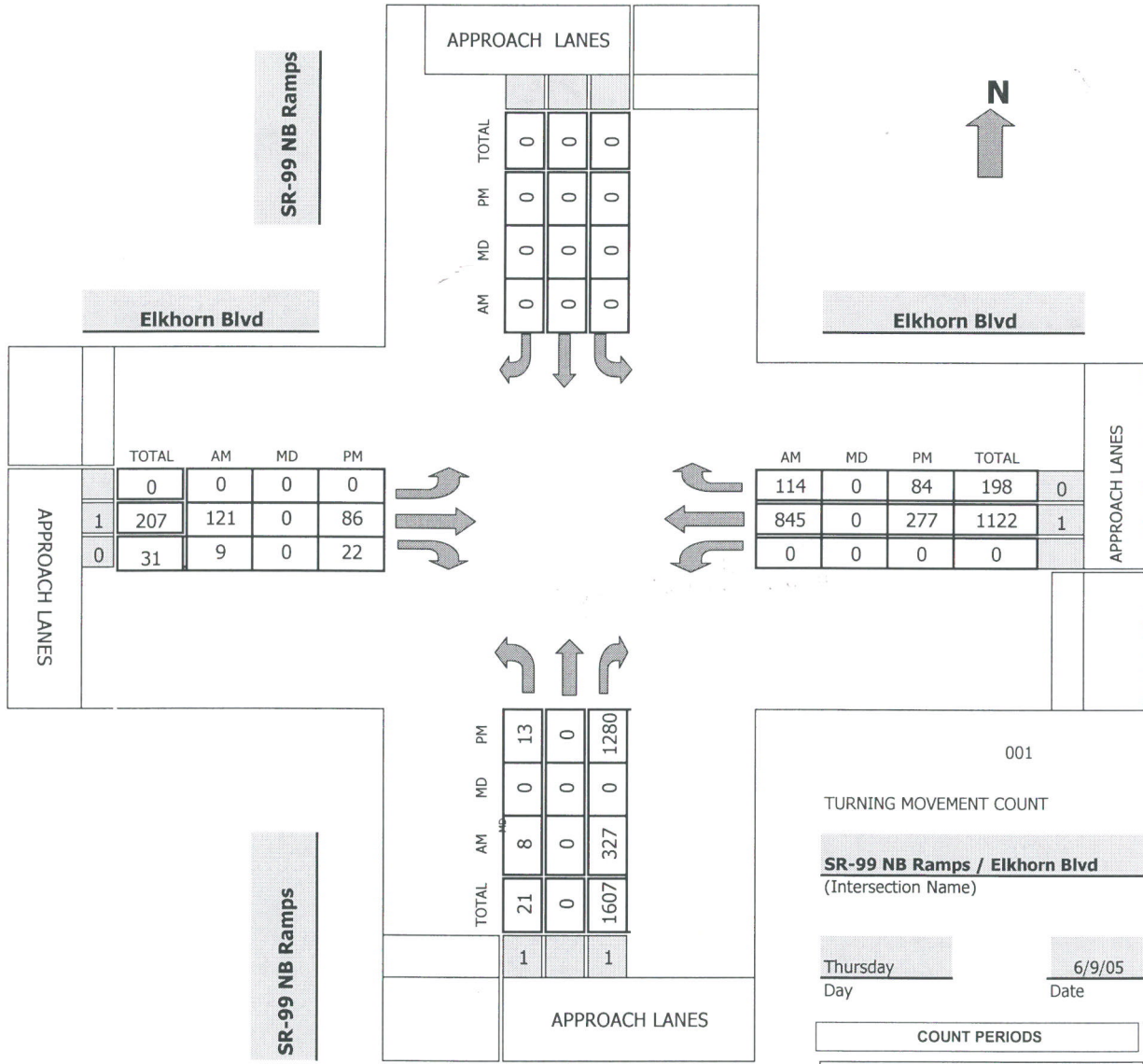
NOON PEAK HOUR 0 AM

PM PEAK HOUR 415 PM



**TMC Summary of SR-99 NB Ramps/Elkhorn Blvd**

Project #: 05-7065-001



	TOTAL	AM	MD	PM
	0	0	0	0
1	207	121	0	86
0	31	9	0	22

	AM	MD	PM	TOTAL	
	114	0	84	198	0
	845	0	277	1122	1
	0	0	0	0	

	TOTAL	AM	MD	PM
	21	8	0	13
	0	0	0	0
	1607	327	0	1280

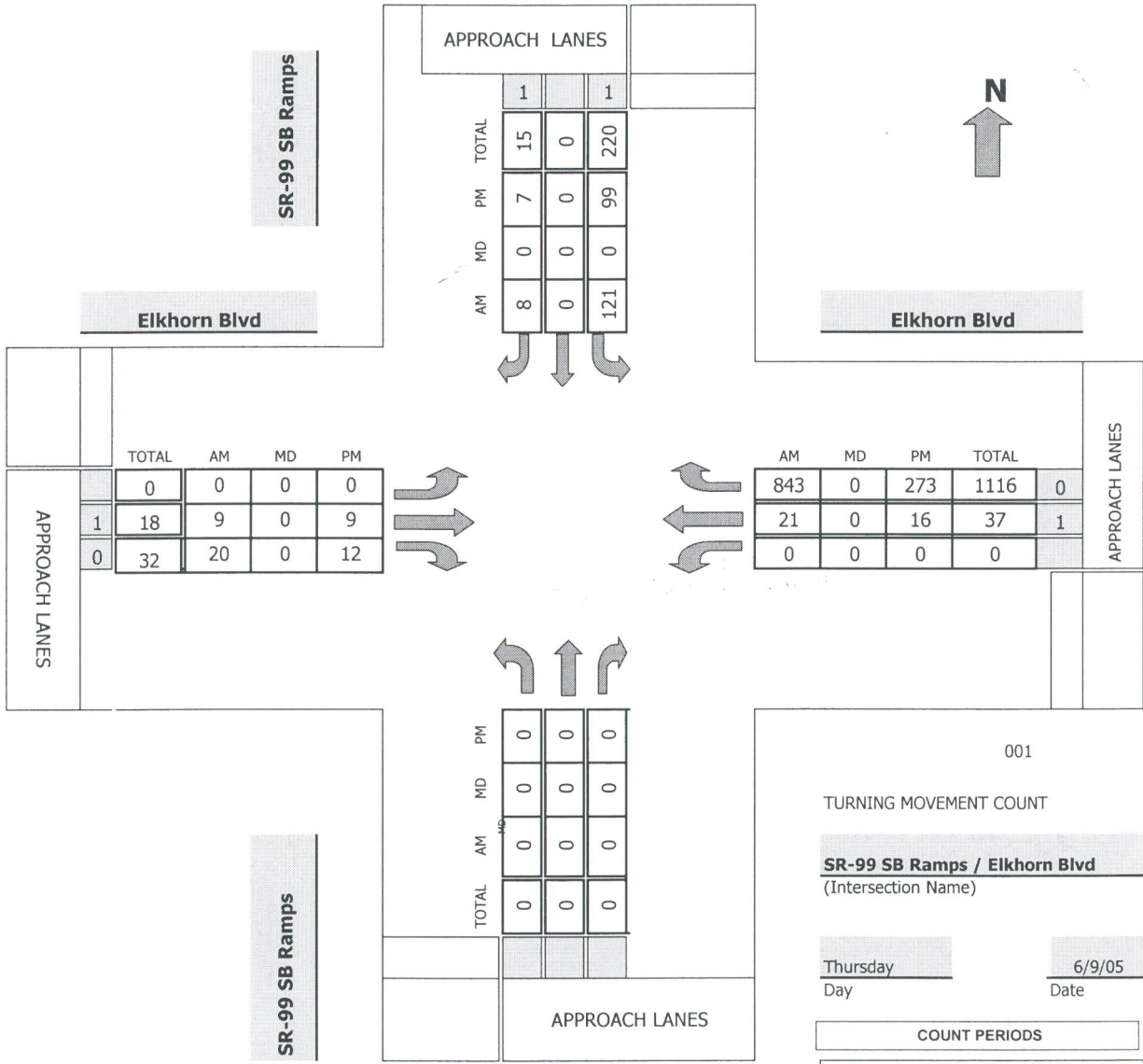
001  
TURNING MOVEMENT COUNT  
**SR-99 NB Ramps / Elkhorn Blvd**  
(Intersection Name)  
Thursday 6/9/05  
Day Date

COUNT PERIODS	
<b>am</b>	7:00 AM - 9:00 AM
<b>noon</b>	4:00 PM - 6:00 PM
<b>pm</b>	4:00 PM - 6:00 PM

AM PEAK HOUR 700 AM  
NOON PEAK HOUR 0 AM  
PM PEAK HOUR 500 PM

**TMC Summary of SR-99 SB Ramps/Elkhorn Blvd**

Project #: 05-7065-002



APPROACH LANES			
	1		1
TOTAL	15	0	220
PM	7	0	99
MD	0	0	0
AM	8	0	121

	TOTAL	AM	MD	PM
	0	0	0	0
1	18	9	0	9
0	32	20	0	12

	AM	MD	PM	TOTAL	
	843	0	273	1116	0
	21	0	16	37	1
	0	0	0	0	

	TOTAL	AM	MD	PM
	0	0	0	0
	0	0	0	0
	0	0	0	0

001

TURNING MOVEMENT COUNT

**SR-99 SB Ramps / Elkhorn Blvd**  
(Intersection Name)

Thursday 6/9/05  
Day Date

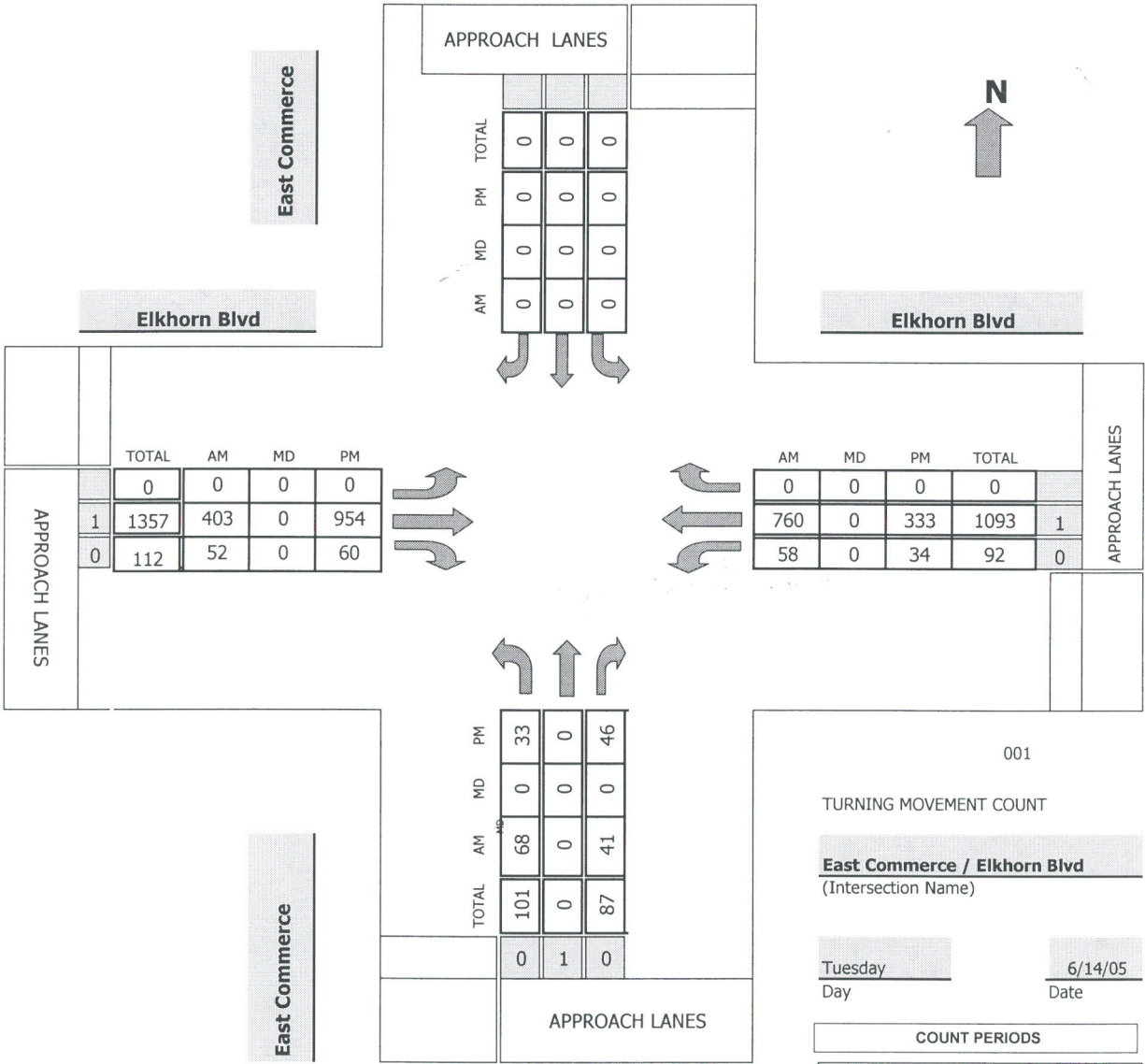
COUNT PERIODS

am	7:00 AM - 9:00 AM
noon	4:00 PM - 6:00 PM
pm	4:00 PM - 6:00 PM

AM PEAK HOUR	700 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

**TMC Summary of East Commerce/Elkhorn Blvd**

Project #: 05-7065-004



AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	500 PM

Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-001

Location: SR-99 NB off-ramp to Elkhorn Blvd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00	20				12:00	94				
00:15	24				12:15	100				
00:30	28				12:30	78				
00:45	8	80			12:45	92	364		364	
01:00	11				13:00	84				
01:15	11				13:15	96				
01:30	9				13:30	90				
01:45	11	42			13:45	107	377		377	
02:00	8				14:00	78				
02:15	9				14:15	109				
02:30	4				14:30	111				
02:45	12	33			14:45	101	399		399	
03:00	9				15:00	115				
03:15	5				15:15	145				
03:30	3				15:30	129				
03:45	7	24			15:45	179	568		568	
04:00	6				16:00	175				
04:15	9				16:15	215				
04:30	13				16:30	246				
04:45	24	52			16:45	327	963		963	
05:00	29				17:00	270				
05:15	27				17:15	325				
05:30	36				17:30	275				
05:45	44	136			17:45	216	1086		1086	
06:00	60				18:00	172				
06:15	89				18:15	128				
06:30	105				18:30	106				
06:45	140	394			18:45	86	492		492	
07:00	81				19:00	85				
07:15	100				19:15	65				
07:30	76				19:30	73				
07:45	75	332			19:45	71	294		294	
08:00	71				20:00	53				
08:15	65				20:15	75				
08:30	85				20:30	66				
08:45	71	292			20:45	54	248		248	
09:00	66				21:00	58				
09:15	84				21:15	63				
09:30	58				21:30	80				
09:45	85	293			21:45	64	265		265	
10:00	54				22:00	56				
10:15	74				22:15	38				
10:30	60				22:30	45				
10:45	62	250			22:45	40	179		179	
11:00	80				23:00	27				
11:15	92				23:15	36				
11:30	83				23:30	26				
11:45	83	338			23:45	26	115		115	
<b>Total Vol.</b>	2266					5350			<b>5350</b>	
								<b>Daily Totals</b>		
						NB	SB	EB	WB	<b>Combined</b>
						7616				<b>7616</b>
								<b>PM</b>		
<b>Split %</b>	100.0%					100.0%				<b>70.2%</b>
<b>Peak Hour</b>	06:30					16:45				<b>16:45</b>
<b>Volume</b>	426					1197				<b>1197</b>
<b>P.H.F.</b>	0.76					0.95				<b>0.92</b>

Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-002

Location: SR-99 NB loop onramp from Elkhorn Blvd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00	1				12:00	1				
00:15	0				12:15	0				
00:30	0				12:30	2				
00:45	0	1			12:45	0	3		3	
01:00	0				13:00	1				
01:15	1				13:15	1				
01:30	0				13:30	0				
01:45	0	1			13:45	0	2		2	
02:00	0				14:00	2				
02:15	0				14:15	2				
02:30	0				14:30	1				
02:45	0	0			14:45	0	5		5	
03:00	0				15:00	1				
03:15	0				15:15	3				
03:30	0				15:30	1				
03:45	0	0			15:45	0	5		5	
04:00	0				16:00	0				
04:15	0				16:15	0				
04:30	0				16:30	0				
04:45	1	1			16:45	0	0			
05:00	0				17:00	0				
05:15	3				17:15	2				
05:30	1				17:30	0				
05:45	0	4			17:45	1	3		3	
06:00	2				18:00	2				
06:15	1				18:15	0				
06:30	1				18:30	2				
06:45	1	5			18:45	0	4		4	
07:00	1				19:00	0				
07:15	0				19:15	1				
07:30	1				19:30	1				
07:45	1	3			19:45	0	2		2	
08:00	1				20:00	1				
08:15	0				20:15	0				
08:30	2				20:30	0				
08:45	0	3			20:45	1	2		2	
09:00	0				21:00	0				
09:15	0				21:15	0				
09:30	0				21:30	0				
09:45	1	1			21:45	1	1		1	
10:00	1				22:00	0				
10:15	1				22:15	0				
10:30	1				22:30	1				
10:45	0	3			22:45	0	1		1	
11:00	4				23:00	0				
11:15	2				23:15	0				
11:30	2				23:30	0				
11:45	2	10			23:45	0	0			
<b>Total Vol.</b>	32			<b>32</b>		28			<b>28</b>	
								<b>Daily Totals</b>		
						NB	SB	EB	WB	Combined
						60				60
								<b>PM</b>		
<b>Split %</b>	100.0%			<b>53.3%</b>		100.0%				<b>46.7%</b>
<b>Peak Hour</b>	11:00			<b>11:00</b>		13:45				<b>13:45</b>
<b>Volume</b>	10			<b>10</b>		5				<b>5</b>
<b>P.H.F.</b>	0.63			<b>0.63</b>		0.75				<b>0.63</b>



Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-003

Location: SR-99 NB slip on ramp from Elkhorn Blvd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00	1				12:00	12				
00:15	0				12:15	25				
00:30	0				12:30	28				
00:45	0	1			12:45	22	87		87	
01:00	0				13:00	27				
01:15	0				13:15	19				
01:30	1				13:30	15				
01:45	0	1			13:45	13	74		74	
02:00	1				14:00	23				
02:15	2				14:15	26				
02:30	2				14:30	17				
02:45	0	5			14:45	37	103		103	
03:00	2				15:00	43				
03:15	1				15:15	24				
03:30	0				15:30	32				
03:45	2	5			15:45	30	129		129	
04:00	2				16:00	26				
04:15	2				16:15	24				
04:30	10				16:30	35				
04:45	4	18			16:45	25	110		110	
05:00	7				17:00	23				
05:15	21				17:15	24				
05:30	21				17:30	24				
05:45	18	67			17:45	19	90		90	
06:00	22				18:00	15				
06:15	39				18:15	19				
06:30	26				18:30	16				
06:45	27	114			18:45	6	56		56	
07:00	33				19:00	10				
07:15	21				19:15	9				
07:30	24				19:30	16				
07:45	19	97			19:45	11	46		46	
08:00	27				20:00	8				
08:15	18				20:15	10				
08:30	29				20:30	10				
08:45	27	101			20:45	12	40		40	
09:00	27				21:00	5				
09:15	22				21:15	8				
09:30	14				21:30	4				
09:45	21	84			21:45	8	25		25	
10:00	19				22:00	10				
10:15	30				22:15	4				
10:30	24				22:30	8				
10:45	17	90			22:45	3	25		25	
11:00	30				23:00	2				
11:15	15				23:15	2				
11:30	15				23:30	6				
11:45	30	90			23:45	2	12		12	
<b>Total Vol.</b>	673			<b>673</b>		797			<b>797</b>	
								<b>Daily Totals</b>		
						NB	SB	EB	WB	<b>Combined</b>
						1470				<b>1470</b>
								<b>PM</b>		
<b>Split %</b>	100.0%			<b>45.8%</b>		100.0%				<b>54.2%</b>
<b>Peak Hour</b>	06:15			<b>06:15</b>		14:45				<b>14:45</b>
<b>Volume</b>	125			<b>125</b>		136				<b>136</b>
<b>P.H.F.</b>	0.80			<b>0.80</b>		0.74				<b>0.79</b>

Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-004

Location: SR-99 SB off ramp to Elkhorn Blvd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00		4			12:00		27		
00:15		2			12:15		16		
00:30		2			12:30		25		
00:45		0	8		12:45	8	17	85	85
01:00		1			13:00		22		
01:15		3			13:15		23		
01:30		0			13:30		19		
01:45		2	6		13:45	6	28	92	92
02:00		1			14:00		34		
02:15		0			14:15		28		
02:30		0			14:30		15		
02:45		0	1		14:45	1	32	109	109
03:00		2			15:00		23		
03:15		0			15:15		20		
03:30		1			15:30		25		
03:45		0	3		15:45	3	24	92	92
04:00		3			16:00		26		
04:15		4			16:15		26		
04:30		9			16:30		31		
04:45		9	25		16:45	25	22	105	105
05:00		2			17:00		25		
05:15		10			17:15		24		
05:30		23			17:30		19		
05:45		21	56		17:45	56	34	102	102
06:00		29			18:00		20		
06:15		26			18:15		14		
06:30		33			18:30		17		
06:45		46	134		18:45	134	18	69	69
07:00		29			19:00		24		
07:15		34			19:15		14		
07:30		34			19:30		6		
07:45		47	144		19:45	144	10	54	54
08:00		25			20:00		17		
08:15		34			20:15		11		
08:30		28			20:30		9		
08:45		14	101		20:45	101	11	48	48
09:00		15			21:00		13		
09:15		24			21:15		5		
09:30		17			21:30		7		
09:45		17	73		21:45	73	5	30	30
10:00		15			22:00		5		
10:15		24			22:15		5		
10:30		23			22:30		5		
10:45		13	75		22:45	75	1	16	16
11:00		24			23:00		2		
11:15		18			23:15		3		
11:30		30			23:30		3		
11:45		17	89		23:45	89	0	8	8

<b>Total Vol.</b>	715	<b>715</b>	810	<b>810</b>
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		Daily Totals				
		NB	SB	EB	WB	Combined
			1525			1525

Split %	AM	PM
	100.0%	46.9%
		100.0%
		53.1%

<b>Peak Hour</b>	07:00	<b>07:00</b>	13:30	<b>13:30</b>
<b>Volume</b>	144	<b>144</b>	109	<b>109</b>
<b>P.H.F.</b>	0.77	<b>0.77</b>	0.80	<b>0.80</b>





Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-006

Location: SR-99 SB slip on ramp from Elkhorn

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00		0			12:00		4			
00:15		0			12:15		3			
00:30		0			12:30		2			
00:45		0	0		12:45		3	12	12	
01:00		0			13:00		5			
01:15		1			13:15		2			
01:30		0			13:30		2			
01:45		0	1	1	13:45		5	14	14	
02:00		0			14:00		2			
02:15		0			14:15		2			
02:30		0			14:30		5			
02:45		0	0		14:45		1	10	10	
03:00		0			15:00		10			
03:15		0			15:15		3			
03:30		0			15:30		3			
03:45		0	0		15:45		3	19	19	
04:00		0			16:00		3			
04:15		0			16:15		3			
04:30		1			16:30		2			
04:45		3	4	4	16:45		6	14	14	
05:00		1			17:00		3			
05:15		0			17:15		3			
05:30		1			17:30		2			
05:45		0	2	2	17:45		1	9	9	
06:00		1			18:00		5			
06:15		1			18:15		0			
06:30		0			18:30		3			
06:45		0	2	2	18:45		4	12	12	
07:00		0			19:00		3			
07:15		1			19:15		3			
07:30		4			19:30		1			
07:45		16	21	21	19:45		4	11	11	
08:00		4			20:00		1			
08:15		2			20:15		0			
08:30		8			20:30		3			
08:45		2	16	16	20:45		6	10	10	
09:00		2			21:00		0			
09:15		3			21:15		0			
09:30		2			21:30		1			
09:45		6	13	13	21:45		0	1	1	
10:00		1			22:00		4			
10:15		1			22:15		1			
10:30		2			22:30		2			
10:45		5	9	9	22:45		1	8	8	
11:00		0			23:00		1			
11:15		0			23:15		0			
11:30		3			23:30		1			
11:45		2	5	5	23:45		1	3	3	
<b>Total Vol.</b>		73		<b>73</b>			123		<b>123</b>	
								<b>Daily Totals</b>		
						NB	SB	EB	WB	<b>Combined</b>
							196			<b>196</b>
<b>Split %</b>		<b>AM</b>				<b>PM</b>				
		100.0%		<b>37.2%</b>		100.0%				<b>62.8%</b>
<b>Peak Hour</b>		07:45		<b>07:45</b>			14:30			<b>14:30</b>
<b>Volume</b>		30		<b>30</b>			19			<b>19</b>
<b>P.H.F.</b>		0.47		<b>0.47</b>			0.48			<b>0.48</b>

Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-011

Location: I-5 SB on ramp from SR-99 SB

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00		35			12:00		313		
00:15		33			12:15		338		
00:30		37			12:30		309		
00:45		26	131		12:45		270	1230	1230
01:00		29			13:00		280		
01:15		27			13:15		338		
01:30		27			13:30		311		
01:45		19	102		13:45		317	1246	1246
02:00		27			14:00		387		
02:15		30			14:15		324		
02:30		25			14:30		351		
02:45		26	108		14:45		324	1386	1386
03:00		28			15:00		340		
03:15		44			15:15		368		
03:30		60			15:30		371		
03:45		54	186		15:45		355	1434	1434
04:00		82			16:00		445		
04:15		93			16:15		369		
04:30		122			16:30		363		
04:45		137	434		16:45		312	1489	1489
05:00		198			17:00		299		
05:15		294			17:15		264		
05:30		396			17:30		260		
05:45		442	1330		17:45		279	1102	1102
06:00		515			18:00		261		
06:15		607			18:15		231		
06:30		726			18:30		250		
06:45		737	2585		18:45		170	912	912
07:00		745			19:00		180		
07:15		794			19:15		154		
07:30		768			19:30		151		
07:45		729	3036		19:45		144	629	629
08:00		638			20:00		136		
08:15		545			20:15		128		
08:30		485			20:30		112		
08:45		535	2203		20:45		141	517	517
09:00		380			21:00		116		
09:15		380			21:15		115		
09:30		352			21:30		100		
09:45		320	1432		21:45		124	455	455
10:00		349			22:00		104		
10:15		289			22:15		86		
10:30		340			22:30		96		
10:45		306	1284		22:45		82	368	368
11:00		313			23:00		58		
11:15		323			23:15		51		
11:30		297			23:30		39		
11:45		308	1241		23:45		50	198	198

**Total Vol.** 14072 **14072** 10966 **10966**

	Daily Totals				Combined
	NB	SB	EB	WB	
		25038			25038

Split %	AM		PM	
	100.0%	56.2%	100.0%	43.8%

<b>Peak Hour</b>	06:45	<b>06:45</b>	15:30	<b>15:30</b>
<b>Volume</b>	3044	<b>3044</b>	1540	<b>1540</b>
<b>P.H.F.</b>	0.96	<b>0.96</b>	0.87	<b>0.87</b>

Volumes for: Tuesday, June 14, 2005

City: Sacramento

Project #: 05-7066-012

Location: I-5 NB off ramp to SR-99 NB

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	73				12:00	271			
00:15	61				12:15	276			
00:30	52				12:30	261			
00:45	34	220		220	12:45	293	1101		1101
01:00	29				13:00	313			
01:15	37				13:15	303			
01:30	23				13:30	295			
01:45	26	115		115	13:45	310	1221		1221
02:00	24				14:00	312			
02:15	26				14:15	390			
02:30	21				14:30	413			
02:45	37	108		108	14:45	445	1560		1560
03:00	25				15:00	481			
03:15	32				15:15	481			
03:30	25				15:30	546			
03:45	40	122		122	15:45	603	2111		2111
04:00	53				16:00	667			
04:15	72				16:15	743			
04:30	96				16:30	759			
04:45	103	324		324	16:45	792	2961		2961
05:00	159				17:00	844			
05:15	183				17:15	796			
05:30	215				17:30	799			
05:45	236	793		793	17:45	604	3043		3043
06:00	331				18:00	529			
06:15	415				18:15	436			
06:30	389				18:30	347			
06:45	360	1495		1495	18:45	305	1617		1617
07:00	292				19:00	263			
07:15	304				19:15	228			
07:30	262				19:30	212			
07:45	242	1100		1100	19:45	222	925		925
08:00	239				20:00	181			
08:15	264				20:15	219			
08:30	240				20:30	169			
08:45	256	999		999	20:45	195	764		764
09:00	258				21:00	161			
09:15	302				21:15	182			
09:30	235				21:30	173			
09:45	278	1073		1073	21:45	180	696		696
10:00	252				22:00	150			
10:15	234				22:15	159			
10:30	243				22:30	132			
10:45	273	1002		1002	22:45	102	543		543
11:00	256				23:00	99			
11:15	269				23:15	92			
11:30	269				23:30	64			
11:45	272	1066		1066	23:45	59	314		314
<b>Total Vol.</b>	8417			<b>8417</b>		16856			<b>16856</b>
								<b>Daily Totals</b>	
						NB	SB	EB	WB
						25273			
									<b>25273</b>
								<b>PM</b>	
<b>Split %</b>	100.0%			<b>33.3%</b>		100.0%			<b>66.7%</b>
<b>Peak Hour</b>	06:00			<b>06:00</b>		16:45			<b>16:45</b>
<b>Volume</b>	1495			<b>1495</b>		3231			<b>3231</b>
<b>P.H.F.</b>	0.90			<b>0.90</b>		0.96			<b>0.96</b>

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CALTRANS TRAFFIC VOLUMES  
LATEST TRAFFIC YEAR SELECTED  
PEAK HOUR VOLUME DATA

DI	RTE	CO	PRE	PM CS	LEG	YR	DIR	1 WAY				AM PEAK				KD				1 WAY				PM PEAK				KD							
								PHV	%	K	D	PHV	%	K	D	PHV	%	K	D	PHV	%	K	D	PHV	%	K	D	PHV	%	K	D	PHV	%	K	D
10	099	SJ		6.654	6	A	02	N	2728	7.79	73.83	5.75	8	WED	MAR	N	2478	8.91	58.64	5.22	16	FRI	JUL	8.91	58.64	5.22	16	FRI	JUL	8.91	58.64	5.22	16	FRI	JUL
10	099	SJ		18.68	96	A	02	S	4293	7.84	54.22	4.25	9	THU	NOV	N	4179	8.19	50.51	4.14	17	FRI	MAY	8.19	50.51	4.14	17	FRI	MAY	8.19	50.51	4.14	17	FRI	MAY
10	099	SJ		19.29	282	A	02	S	3812	7.18	55.48	3.99	7	FRI	MAY	N	3983	7.9	52.7	4.16	17	THU	JUN	7.9	52.7	4.16	17	THU	JUN	7.9	52.7	4.16	17	THU	JUN
10	099	SJ		21.67	115	A	02	S	4257	7.76	60.96	4.73	8	WED	FEB	N	4148	7.98	57.73	4.61	18	THU	MAY	7.98	57.73	4.61	18	THU	MAY	7.98	57.73	4.61	18	THU	MAY
10	099	SJ		22.92	265	A	02	S	3378	8.03	63.68	5.11	8	TUE	FEB	S	3727	8.74	64.49	5.64	14	SAT	FEB	8.74	64.49	5.64	14	SAT	FEB	8.74	64.49	5.64	14	SAT	FEB
10	099	SJ		29.50	18	B	02	S	2820	7.39	60.91	4.5	8	THU	JAN	N	2784	8.37	53.12	4.45	17	THU	SEP	8.37	53.12	4.45	17	THU	SEP	8.37	53.12	4.45	17	THU	SEP
10	099	SJ		31.58	209	A	02	S	2497	6.7	62.04	4.15	8	FRI	MAR	N	2782	8.7	53.17	4.63	17	FRI	MAR	8.7	53.17	4.63	17	FRI	MAR	8.7	53.17	4.63	17	FRI	MAR
03	099	SAC		.123	500	O	02	S	2231	6.69	57.4	3.84	8	THU	MAR	S	2585	8.7	51.17	4.45	17	FRI	MAY	8.7	51.17	4.45	17	FRI	MAY	8.7	51.17	4.45	17	FRI	MAY
03	099	SAC		3.525	307	A	02	N	2559	6.52	64.54	4.21	7	THU	NOV	S	2745	8.25	54.77	4.52	18	FRI	NOV	8.25	54.77	4.52	18	FRI	NOV	8.25	54.77	4.52	18	FRI	NOV
03	099	SAC		6.008	501	A	00	S	2255	6.81	59.89	4.08	7	TUE	NOV	N	2580	8.54	54.64	4.66	17	FRI	MAR	8.54	54.64	4.66	17	FRI	MAR	8.54	54.64	4.66	17	FRI	MAR
03	099	SAC		17.24	520	B	02	N	5146	6.44	59.78	3.85	8	FRI	JAN	S	5666	6.97	60.82	4.24	18	THU	APR	6.97	60.82	4.24	18	THU	APR	6.97	60.82	4.24	18	THU	APR
03	099	SAC		17.24	521	A	00	N	4139	6.68	63.42	4.24	8	THU	FEB	S	4333	7.06	62.83	4.43	18	THU	MAR	7.06	62.83	4.43	18	THU	MAR	7.06	62.83	4.43	18	THU	MAR
03	099	SAC		33.36	545	B	02	S	3314	10.3	77.92	8.03	8	TUE	MAY	N	3509	11.69	72.71	8.5	17	FRI	DEC	11.69	72.71	8.5	17	FRI	DEC	11.69	72.71	8.5	17	FRI	DEC
03	099	SUT	R	8.07	344	B	02	S	1578	7.26	83.8	6.08	7	WED	OCT	N	1625	9.54	65.66	6.26	18	FRI	AUG	9.54	65.66	6.26	18	FRI	AUG	9.54	65.66	6.26	18	FRI	AUG
03	099	SUT	R	8.07	547	A	02	S	864	8.3	77.07	6.4	8	TUE	SEP	N	895	9.02	73.42	6.62	18	THU	JUN	9.02	73.42	6.62	18	THU	JUN	9.02	73.42	6.62	18	THU	JUN
03	099	SUT	R	19.69	549	B	02	S	942	8.14	81.42	6.62	7	TUE	MAY	N	944	9.94	66.81	6.64	17	FRI	MAY	9.94	66.81	6.64	17	FRI	MAY	9.94	66.81	6.64	17	FRI	MAY
03	099	SUT		20.99	550	B	02	S	717	7.58	78.79	5.97	8	TUE	NOV	N	735	9.9	61.87	6.12	17	FRI	OCT	9.9	61.87	6.12	17	FRI	OCT	9.9	61.87	6.12	17	FRI	OCT
03	099	SUT		20.99	551	A	02	S	839	7.3	77.97	5.69	7	TUE	MAY	N	915	10.06	61.74	6.21	18	FRI	SEP	10.06	61.74	6.21	18	FRI	SEP	10.06	61.74	6.21	18	FRI	SEP
03	099	SUT		28.67	558	A	02	N	1310	7.13	63.35	4.51	9	WED	SEP	N	1499	9.22	56.02	5.17	18	FRI	SEP	9.22	56.02	5.17	18	FRI	SEP	9.22	56.02	5.17	18	FRI	SEP
03	099	SUT		28.67	559	B	02	S	901	5.9	65.58	3.87	7	WED	SEP	N	1147	8.35	59	4.93	18	FRI	JUN	8.35	59	4.93	18	FRI	JUN	8.35	59	4.93	18	FRI	JUN
03	099	SUT		29.67	553	A	02	N	1236	6.77	56.59	3.83	11	SAT	AUG	N	1585	8.75	56.13	4.91	17	FRI	MAY	8.75	56.13	4.91	17	FRI	MAY	8.75	56.13	4.91	17	FRI	MAY
03	099	SUT		30.03	560	A	02	N	1159	7.11	52.92	3.76	12	FRI	AUG	N	1501	9.16	53.19	4.87	18	FRI	NOV	9.16	53.19	4.87	18	FRI	NOV	9.16	53.19	4.87	18	FRI	NOV
03	099	SUT	T	30.63	562	A	02	S	936	6.86	67.24	4.61	8	FRI	MAY	N	1065	8.95	58.68	5.25	18	FRI	NOV	8.95	58.68	5.25	18	FRI	NOV	8.95	58.68	5.25	18	FRI	NOV
03	099	BUT		11.16	572	B	00	S	467	8.66	52.12	4.51	9	TUE	NOV	S	573	10.43	53.11	5.54	17	WED	NOV	10.43	53.11	5.54	17	WED	NOV	10.43	53.11	5.54	17	WED	NOV
03	099	BUT		11.16	573	A	00	S	468	8.65	51.6	4.46	9	TUE	NOV	S	577	9.84	55.91	5.5	15	WED	NOV	9.84	55.91	5.5	15	WED	NOV	9.84	55.91	5.5	15	WED	NOV
03	099	BUT		13.16	574	B	02	S	433	7.9	50.41	3.98	8	WED	MAY	S	537	9.39	52.6	4.94	16	FRI	MAY	9.39	52.6	4.94	16	FRI	MAY	9.39	52.6	4.94	16	FRI	MAY
03	099	BUT		21.81	306	A	02	S	1263	8.94	57.02	5.1	8	MON	APR	S	1293	9.86	52.95	5.22	16	FRI	MAR	9.86	52.95	5.22	16	FRI	MAR	9.86	52.95	5.22	16	FRI	MAR
03	099	BUT	R	30.60	585	B	02	S	1891	9.21	63.54	5.85	8	THU	FEB	N	1795	9.44	58.85	5.55	16	TUE	FEB	9.44	58.85	5.55	16	TUE	FEB	9.44	58.85	5.55	16	TUE	FEB
03	099	BUT	R	36.31	590	A	02	S	1040	8.61	64.44	5.54	8	THU	NOV	N	1033	9.66	57.01	5.51	18	FRI	FEB	9.66	57.01	5.51	18	FRI	FEB	9.66	57.01	5.51	18	FRI	FEB
02	099	TEH		0	182	O	02	S	516	7.83	57.65	4.52	8	TUE	FEB	N	643	10.36	54.31	5.63	17	FRI	MAY	10.36	54.31	5.63	17	FRI	MAY	10.36	54.31	5.63	17	FRI	MAY
02	099	TEH		24.94	141	B	00	N	519	8.08	67.14	5.43	8	TUE	NOV	S	472	8.9	55.46	4.94	18	WED	FEB	8.9	55.46	4.94	18	WED	FEB	8.9	55.46	4.94	18	WED	FEB
07	101	LA	S	.907	131	A	01	N	4128	5.93	57.45	3.41	7	WED	MAY	S	4568	6.54	57.67	3.77	16	THU	MAR	6.54	57.67	3.77	16	THU	MAR	6.54	57.67	3.77	16	THU	MAR
07	101	LA		.46	441	A	01	N	8274	6.12	62.51	3.83	8	FRI	DEC	S	7458	6.15	56.13	3.45	17	THU	OCT	6.15	56.13	3.45	17	THU	OCT	6.15	56.13	3.45	17	THU	OCT



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CALTRANS TRAFFIC VOLUMES  
 LATEST TRAFFIC YEAR SELECTED  
 PEAK HOUR VOLUME DATA

DI	RTE	CO	PRE	PM CS	LEG	YR	Dir	AM PEAK			PM PEAK			1 WAY PHV	Dir	Mnth	Day	Mnth	Day	Mnth	%		
								%	K	D	%	K	D										
06	005	KER		13.52	631	A	02	N	3654	8.96	63.28	5.67	8	SAT	MAY	S	4656	13.65	52.95	7.23	16	WED	DEC
06	005	KER		19.61	640	A	02	N	2179	11.52	64.97	7.48	12	SAT	NOV	S	2714	13.31	70.02	9.32	18	SAT	DEC
06	005	KER		33.49	158	A	00	N	1053	7.84	57.04	4.47	12	FRI	JUN	S	1500	11.69	54.49	6.37	17	SUN	JUN
06	005	KER		47.55	201	A	01	S	1176	7.82	52.15	4.08	11	FRI	APR	N	1915	12.02	55.22	6.64	14	SUN	JUL
06	005	KIN		16.57	203	A	02	S	2269	12.48	56.44	7.05	12	THU	DEC	N	2865	17.16	51.87	8.9	15	SUN	JUL
06	005	FRE		48.99	851	A	02	S	2407	9.74	71.47	6.96	7	THU	NOV	N	2895	16.63	50.33	8.37	14	SUN	NOV
10	005	MER		6.28	304	A	01	S	1603	9.04	58.02	5.24	11	MON	MAY	N	2292	13.57	55.24	7.5	17	SUN	JUL
10	005	MER		17.58	284	A	01	S	1358	9.23	53.05	4.89	12	SUN	JUL	N	1962	10.74	65.86	7.07	21	SUN	APR
10	005	MER		21.84	50	A	01	N	1642	10.68	50.35	5.38	12	SAT	SEP	N	2183	10.96	65.2	7.15	20	SUN	JUL
10	005	SJ		3.444	183	A	01	S	1017	8.51	61.12	5.2	12	MON	APR	N	1212	11.74	52.79	6.2	16	FRI	AUG
10	005	SJ		6.467	82	A	02	S	1036	9.32	53.35	4.97	12	SAT	AUG	N	1275	11.04	55.41	6.12	18	FRI	JUN
10	005	SJ	R	12.62	13	A	01	S	5972	6.59	71.56	4.72	7	TUE	SEP	N	6250	7.4	66.7	4.94	16	FRI	OCT
10	005	SJ		28.53	55	A	02	S	5730	7.8	63.15	4.92	7	MON	APR	N	5756	8.41	58.82	4.95	16	THU	MAY
10	005	SJ		32.66	161	A	02	N	2732	6.78	57.54	3.9	12	SAT	APR	N	3448	9.36	52.56	4.92	17	FRI	FEB
10	005	SJ		39.57	180	A	02	N	3231	7.37	81.65	6.02	12	FRI	MAR	N	4139	9.35	82.5	7.71	17	FRI	JUL
10	005	SJ		39.57	230	B	02	S	2363	6.72	61.63	4.14	12	FRI	DEC	S	2988	7.95	65.86	5.23	14	SUN	NOV
10	005	SJ		44.71	24	B	01	N	2048	7.21	59.52	4.29	11	SAT	OCT	N	2448	9.78	52.47	5.13	18	FRI	AUG
03	005	SAC		10.29	8	A	02	N	2847	7.62	63.58	4.85	8	MON	APR	S	3134	9.79	54.48	5.33	17	FRI	JUL
03	005	SAC		12.04	10	A	02	N	4920	8.29	69.49	5.76	8	TUE	MAR	S	4996	9.51	61.47	5.85	18	FRI	MAR
03	005	SAC		17.19	12	B	02	N	5595	8.27	70.98	5.87	8	MON	AUG	S	5726	9.63	62.36	6	17	FRI	MAR
03	005	SAC		17.19	15	A	02	N	7007	8.45	73.4	6.2	7	THU	APR	S	6932	9.02	68.03	6.13	18	TUE	OCT
03	005	SAC		23.18	25	A	00	N	7728	8.96	56.6	5.07	8	THU	MAR	S	7471	9.35	52.47	4.9	17	FRI	FEB
03	005	SAC		23.80	30	A	00	N	7439	8.86	55.51	4.92	8	MON	NOV	N	7976	9.47	55.65	5.27	18	FRI	JUN
03	005	SAC		26.72	39	B	02	S	6623	8.22	58.89	4.84	8	THU	SEP	N	6731	8.13	60.51	4.92	18	TUE	JUL
03	005	SAC		26.72	40	A	02	S	5150	7.72	63.53	4.9	8	THU	JUN	N	5771	8.14	67.49	5.5	18	THU	JAN
03	005	SAC		29.91	50	A	02	N	2604	7.01	52.03	3.65	12	FRI	JUL	S	3043	8.09	52.74	4.26	18	FRI	JUL
03	005	YOL	R	6.5	70	A	02	S	1492	6.8	56.43	3.84	8	WED	JAN	S	1762	8.3	54.6	4.53	16	FRI	APR
03	005	YOL	R	7.086	75	A	02	N	1345	7.06	60.26	4.26	11	THU	JUL	S	1685	9.15	58.28	5.33	14	SUN	JUL
03	005	YOL	R	22.61	79	B	02	N	1115	9.03	56.57	5.11	12	FRI	AUG	S	1300	10.97	54.28	5.95	14	SUN	NOV
03	005	YOL	R	22.61	80	A	02	N	1763	10.9	50.82	5.54	12	THU	NOV	S	2161	9.38	72.44	6.79	19	MON	MAY
03	005	COL	R	6.793	82	B	02	N	1194	7.84	53.45	4.19	12	FRI	OCT	S	1691	9.37	63.31	5.93	15	SUN	OCT
03	005	COL	R	17.98	85	B	02	N	1633	10.5	57.52	6.04	12	SAT	AUG	S	2013	12.57	59.22	7.45	15	SUN	AUG
03	005	GLE	R	27.81	95	A	02	N	1375	9.22	61	5.62	12	WED	JUL	S	1781	10.19	71.47	7.28	19	SUN	JUL

RTE 99, Sac Co

2002 TRAFFIC VOLUMES

RTE 99, Sut Co

Mile-post	Description	Peak Hour	ADT		Mile-post	Description	Peak Hour	ADT	
			Pk. Mo.	Annual				Pk. Mo.	Annual
4.39	Mingo Road	5,300	70,000	61,000	35.37	Elverta Road	3,050	35,500	31,000
6.01	Arno Road	5,300	68,000	61,000	36.86 =0.00	<b>Sacramento County Sutter County</b>	3,050	35,500	31,000
7.36	Dillard Road	5,300	68,000	60,000	0.95	Riego Road	2,450	29,000	26,000
8.96	Eschinger Road	5,100	66,000	60,000	R8.07	Jct. Rte. 70 North			
10.07	Grant Line Road	4,750	65,000	55,000	R8.11 =8.18	Milepost Equation	1,350	14,800	13,400
12.76	Elk Grove Boulevard	6,800	95,000	80,000	11.98	Garden Highway (to Nicolaus)			
13.84	Laguna Boulevard/Bond Road	9,100	116,000	106,000	12.03	Feather River Bridge	1,400	15,200	14,000
14.87	Sheldon Road				13.68	Sacramento Avenue	1,400	15,600	14,200
15.90	Cosumnes River Boulevard/ Calvine Road	8,300	131,000	117,000	R19.69	Garden Highway; Tudor, East	1,150	13,300	12,000
17.24	Sacramento, Stockton Boulevard	7,900	108,000	103,000	20.99	Jct. Rte. 113	1,450	16,300	14,700
17.66	Sacramento, Mack Road	13,300	179,000	172,000	25.62	Oswald Road	1,600	18,300	17,000
19.61	Florin Road	13,200	172,000	160,000	26.12	Barry Road	1,650	19,400	18,400
20.86	47th Avenue	17,400	195,000	193,000	27.65	Bogue Road	2,050	25,500	23,300
21.57	Martin Luther King Jr. Boulevard	15,700	187,000	185,000	28.67	Lincoln Road	2,650	32,000	29,000
21.94	Sacramento, Fruitridge Road	17,800	199,000	195,000	29.67	Franklin Road	3,050	36,000	34,500
23.13	Sacramento, 12th Avenue				30.03	Yuba City, Bridge Street	2,800	34,000	32,000
R24.35	Sacramento, Jct. Rte. 51, North Jct. Rte. 50; End Freeway	16,600	224,000	216,000	30.39	Yuba City, Onstott Road	3,150	34,000	32,000
	(Break in Route)				T30.63	Yuba City, Jct. Rte. 20	1,850	21,500	20,200
R32.12	Jct. Rte. 5, El Centro Road	4,800	45,500	41,000	R30.88	Begin Freeway	1,800	20,300	19,300
33.36	Elkhorn Boulevard	3,600	36,500	31,000	R31.31	Yuba City, Queens Avenue	1,350	18,500	17,900
35.37	Elverta Road				R33.95	Eager Road	1,550	18,200	16,300
					T34.97	End Freeway			
					T35.96	Lomo, Encinal Road/ Live Oak Highway	1,550	17,000	15,700

RTE 5, SJ Co

2002 TRAFFIC VOLUMES

RTE 5, Yol Co

Mile-post	Description	Peak Hour	ADT		Mile-post	Description	Peak Hour	ADT	
			Pk. Mo.	Annual				Pk. Mo.	Annual
R21.44	Mathews Road.....	9,000	83,000	70,000	8.49	Hood-Franklin Road.....	5,700	60,000	50,000
R22.51	French Camp Turnpike.....	9,500	93,000	84,000	10.83	Elk Grove Boulevard.....	5,700	66,000	56,000
24.64	Stockton, Eighth Street.....	10,400	102,000	91,000	12.04	Laguna Boulevard.....	4,900	55,000	55,000
25.37	Stockton, Jct. Rte. 4, Charter Way.....	11,200	113,000	100,000	16.15	Sacramento, Pocket/ Meadowview Roads.....	8,300	96,000	85,000
		12,500	122,000	105,000			9,100	105,000	95,000
26.19	Stockton, Jct. Rte. 4.....				17.19	Sacramento, Florin Road.....			
		13,100	131,000	113,000			10,800	122,000	112,000
27.00	Stockton, Pershing Avenue.....				18.65	Sacramento, 43rd Avenue.....			
27.92	Stockton, Monte Diablo Avenue.....	12,300	114,000	111,000			10,700	138,000	126,000
		12,200	107,000	105,000	19.30	Sacramento, Seamas Avenue.....			
28.53	Country Club Boulevard.....						11,000	138,000	127,000
29.52	Plymouth Road/Ryde Avenue (Calaveras River).....	13,400	126,000	116,000	20.53	Sacramento, Sutterville Road.....			
		11,500	106,000	105,000			14,200	136,000	129,000
29.99	Stockton, March Lane.....				22.57	Sacramento, Jct. Rte. 50.....			
		10,800	98,000	98,000			14,400	160,000	156,000
31.45	Stockton, Benjamin Holt Drive.....				23.18	Sacramento, P/Q Streets.....			
		10,600	104,000	100,000			14,100	167,000	158,000
32.66	Stockton, Hammer Lane.....				23.80	Sacramento, I Street.....			
		7,700	77,000	70,000			14,200	169,000	157,000
35.30	Atherton/Eight Mile Roads.....				24.65	Sacramento, Richards Boulevard.....			
		5,100	56,000	56,000			15,300	170,000	159,000
39.57	Jct. Rte. 12.....	5,100	56,000	53,000	25.34	Sacramento, Garden Highway.....			
		4,850	59,000	55,000	25.97	Sacramento, West El Camino Avenue.....	14,300	169,000	149,000
44.71	Peltier Road.....						12,000	141,000	136,000
		4,800	56,000	51,000	26.72	Sacramento, Jct. Rte. 80.....			
47.60	Walnut Grove Road.....						8,500	111,000	101,000
49.82	<b>San Joaquin-Sacramento County Line.....</b>	4,950	55,000	51,000	29.02	Sacramento, Del Paso Road.....			
							9,200	107,000	97,000
					29.91	Sacramento, Jct. Rte. 99 North.....			
							5,800	81,000	71,000
0.02	<b>San Joaquin-Sacramento County Line.....</b>				32.73	Airport Boulevard.....			
		4,600	54,000	47,000			4,400	61,000	56,000
2.13	Twin Cities Road.....				33.72	Southbound Access to the Elkhorn Safety Roadside Rest Area.....			
		5,000	57,000	49,000	34.65	<b>Sacramento County Yolo County</b>			
8.49	Hood-Franklin Road.....				=0.00		4,400	61,000	56,000
					0.52	Elkhorn Road.....			

DISTRICT 3

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**APPENDIX B – LEVEL OF SERVICE WORKSHEETS: EXISTING  
CONDITIONS**













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- Intersection Analysis
- Freeway Mainline Analysis















Greenbriar Development  
1: Elverta Road & Powerline Road

Existing A.M. Peak Hour Traffic Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	1	17	2	4	34	1	3	8	3	5	19	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1	18	2	4	37	1	3	9	3	5	21	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	22	42	15	32								
Volume Left (vph)	1	4	3	5								
Volume Right (vph)	2	1	3	5								
Hadj (s)	0.0	0.0	-0.1	0.0								
Departure Headway (s)	4.0	4.1	4.0	4.0								
Degree Utilization, x	0.02	0.05	0.02	0.04								
Capacity (veh/h)	879	622	872	887								
Control Delay (s)	7.1	7.3	7.1	7.2								
Approach Delay (s)	7.1	7.3	7.1	7.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.2									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%		ICU Level of Service				A			

Greenbriar Development  
1: Elverta Road & Powerline Road

Existing P.M. Peak Hour Traffic Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	1	31	2	3	10	4	1	14	15	1	4	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1	34	2	3	11	4	1	15	16	1	4	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	37	18	33	7								
Volume Left (vph)	1	3	1	1								
Volume Right (vph)	2	4	16	1								
Hadj (s)	0.0	-0.1	-0.3	0.0								
Departure Headway (s)	4.0	4.0	3.8	4.0								
Degree Utilization, x	0.04	0.02	0.03	0.01								
Capacity (veh/h)	886	629	932	885								
Control Delay (s)	7.2	7.0	6.9	7.0								
Approach Delay (s)	7.2	7.0	6.9	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							



Greenbriar Development  
2: Elverta Road & SR 70/99

Existing A.M. Peak Hour Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1829	1583	1681	1692	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.982		0.950	0.956		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	1681	1692	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			21			33			57			8
Volume (vph)	3	5	19	428	17	30	47	911	52	28	2322	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	5	21	465	18	33	51	990	57	30	2524	17
Lane Group Flow (vph)	0	8	21	235	248	33	51	990	57	30	2524	17
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Detector Phases	7	7		8	8		5	2	2	1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		2.0	8.0	8.0	2.0	8.0	8.0
Minimum Split (s)	21.5	21.5		17.5	17.5		5.5	19.0	19.0	5.5	19.0	19.0
Total Split (s)	15.0	15.0	0.0	27.0	27.0	0.0	15.0	75.0	75.0	15.0	75.0	75.0
Total Split (%)	11%	11%	0%	20%	20%	0%	11%	57%	57%	11%	57%	57%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	1.5	1.5		1.5	1.5		0.5	2.0	2.0	0.5	2.0	2.0
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		5.8	111.1	20.0	20.0	111.1	7.3	74.8	74.8	6.2	71.8	71.8
Actuated g/C Ratio		0.05	1.00	0.18	0.18	1.00	0.06	0.67	0.67	0.05	0.65	0.65
v/c Ratio		0.09	0.01	0.78	0.82	0.02	0.44	0.42	0.05	0.32	1.10	0.02
Uniform Delay, d1		56.4	0.0	46.8	47.1	0.0	54.0	10.6	0.0	55.6	22.3	4.5
Delay		57.4	0.0	49.2	50.9	0.0	53.0	10.1	2.8	54.4	82.7	7.6
LOS		E	A	D	D	A	D	B	A	D	F	A
Approach Delay		15.8			46.9			11.8			81.9	
Approach LOS		B			D			B			F	

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 111.1

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.10

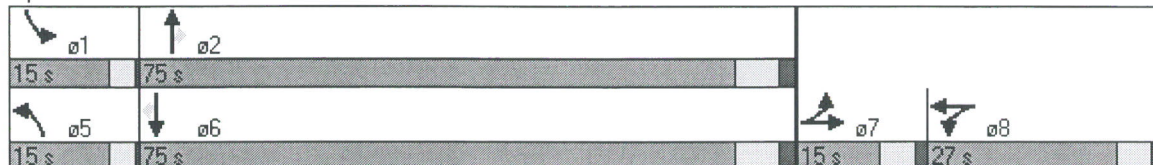
Intersection Signal Delay: 58.9

Intersection LOS: E

Intersection Capacity Utilization 96.5%

ICU Level of Service E

Splits and Phases: 2: Elverta Road & SR 70/99





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frts			0.850			0.850			0.850			0.850
Flt Protected		0.982		0.950	0.956		0.950			0.950		
Satd. Flow (prot)	0	1829	1583	1681	1692	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.982		0.950	0.956		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	1681	1692	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			21			33			57			9
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	3	5	19	428	17	30	47	911	52	28	2322	16
Adj. Flow (vph)	3	5	21	465	18	33	51	990	57	30	2524	17
Lane Group Flow (vph)	0	8	21	235	248	33	51	990	57	30	2524	17
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Total Split (s)	21.5	21.5	0.0	24.0	24.0	0.0	8.0	93.7	93.7	10.8	96.5	96.5
Act Effct Green (s)		5.9	130.7	20.0	20.0	130.7	4.0	94.3	94.3	5.9	92.6	92.6
Actuated g/C Ratio		0.04	1.00	0.15	0.15	1.00	0.03	0.72	0.72	0.04	0.71	0.71
v/c Ratio		0.10	0.01	0.91	0.96	0.02	0.94	0.39	0.05	0.38	1.01	0.02
Uniform Delay, d1		66.0	0.0	57.8	58.3	0.0	66.2	9.0	0.0	65.7	21.2	3.1
Delay		63.9	0.0	77.3	85.5	0.0	132.7	8.0	2.0	62.3	35.5	4.4
LOS		E	A	E	F	A	F	A	A	E	D	A
Approach Delay		17.6			76.3			13.5			35.6	
Approach LOS		B			E			B			D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 130.7

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 34.7

Intersection LOS: C

Intersection Capacity Utilization 96.5%

ICU Level of Service E

Splits and Phases: 2: Elverta Road & SR 70/99

10.8 s	93.7 s										
8 s	96.5 s					21.5 s		24 s			



Greenbriar Development  
2: Elverta Road & SR 70/99

Existing P.M. Peak Hour Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1844	1583	1681	1694	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.990		0.950	0.957		0.950			0.950		
Satd. Flow (perm)	0	1844	1583	1681	1694	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			27			7			280			4
Volume (vph)	8	31	25	63	4	6	39	1806	410	54	1038	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	34	27	68	4	7	42	1963	446	59	1128	4
Lane Group Flow (vph)	0	43	27	35	37	7	42	1963	446	59	1128	4
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Detector Phases	7	7		8	8		5	2	2	1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		2.0	8.0	8.0	2.0	8.0	8.0
Minimum Split (s)	21.5	21.5		17.5	17.5		5.5	19.0	19.0	5.5	19.0	19.0
Total Split (s)	15.0	15.0	0.0	27.0	27.0	0.0	15.0	75.0	75.0	15.0	75.0	75.0
Total Split (%)	11%	11%	0%	20%	20%	0%	11%	57%	57%	11%	57%	57%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	1.5	1.5		1.5	1.5		0.5	2.0	2.0	0.5	2.0	2.0
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		7.7	110.2	7.6	7.6	110.2	6.8	79.4	79.4	7.7	82.5	82.5
Actuated g/C Ratio		0.07	1.00	0.07	0.07	1.00	0.06	0.72	0.72	0.07	0.75	0.75
v/c Ratio		0.35	0.02	0.31	0.32	0.00	0.40	0.77	0.37	0.48	0.43	0.00
Uniform Delay, d1		53.0	0.0	51.8	51.9	0.0	54.2	12.2	2.3	52.6	7.0	0.0
Delay		49.8	0.0	49.5	49.5	0.0	50.5	17.1	3.5	48.9	8.4	5.5
LOS		D	A	D	D	A	D	B	A	D	A	A
Approach Delay		30.6			45.1			15.2			10.4	
Approach LOS		C			D			B			B	

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 110.2

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

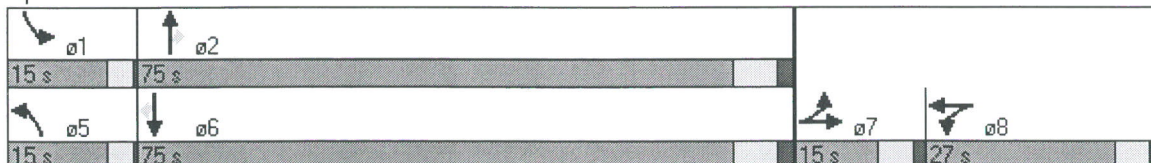
Intersection Signal Delay: 14.6

Intersection LOS: B

Intersection Capacity Utilization 69.6%

ICU Level of Service B

Splits and Phases: 2: Elverta Road & SR 70/99



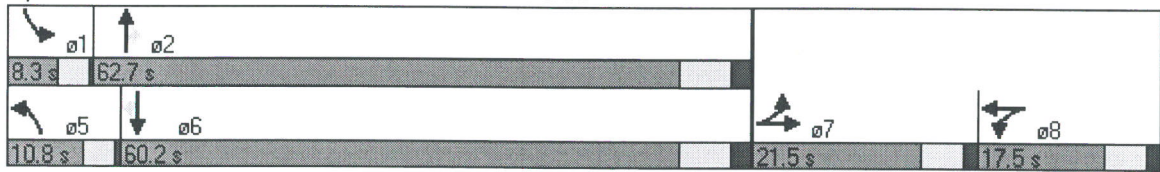


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.990		0.950	0.957		0.950			0.950		
Satd. Flow (prot)	0	1844	1583	1681	1694	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.990		0.950	0.957		0.950			0.950		
Satd. Flow (perm)	0	1844	1583	1681	1694	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			27			7			333			4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	8	31	25	63	4	6	39	1806	410	54	1038	4
Adj. Flow (vph)	9	34	27	68	4	7	42	1963	446	59	1128	4
Lane Group Flow (vph)	0	43	27	35	37	7	42	1963	446	59	1128	4
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Total Split (s)	21.5	21.5	0.0	17.5	17.5	0.0	10.8	62.7	62.7	8.3	60.2	60.2
Act Effct Green (s)		7.4	95.7	7.3	7.3	95.7	6.0	68.3	68.3	4.4	72.1	72.1
Actuated g/C Ratio		0.07	1.00	0.07	0.07	1.00	0.06	0.71	0.71	0.05	0.75	0.75
v/c Ratio		0.31	0.02	0.28	0.30	0.00	0.40	0.78	0.36	0.72	0.42	0.00
Uniform Delay, d1		46.2	0.0	46.1	46.2	0.0	48.0	11.1	1.4	47.9	7.0	0.0
Delay		40.4	0.0	40.6	40.6	0.0	42.4	15.3	2.3	71.2	8.5	5.8
LOS		D	A	D	D	A	D	B	A	E	A	A
Approach Delay		24.8			37.0			13.4			11.6	
Approach LOS		C			D			B			B	

Intersection Summary










Cycle Length: 110  
 Actuated Cycle Length: 95.7  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 13.5  
 Intersection Capacity Utilization 69.6%  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 2: Elverta Road & SR 70/99



Greenbriar Development  
3: Elkhorn Boulevard & Powerline Road

Existing A.M. Peak Hour Traffic Conditions

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (veh/h)	2	5	10	5	3	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	2	5	11	5	3	39
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total (vph)	8	16	42			
Volume Left (vph)	2	0	3			
Volume Right (vph)	5	5	0			
Hadj (s)	-0.3	-0.2	0.0			
Departure Headway (s)	3.6	3.8	4.0			
Degree Utilization, x	0.01	0.02	0.05			
Capacity (veh/h)	667	944	899			
Control Delay (s)	6.6	6.9	7.2			
Approach Delay (s)	6.6	6.9	7.2			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.0			
HCM Level of Service			A			
Intersection Capacity Utilization	13.3%		ICU Level of Service	A		





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Sign Control	Stop		Stop			Stop
Volume (veh/h)	5	15	65	1	0	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	5	16	71	1	0	49

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	22	72	49
Volume Left (vph)	5	0	0
Volume Right (vph)	16	1	0
Hadj (s)	-0.4	0.0	0.0
Departure Headway (s)	3.7	4.0	4.0
Degree Utilization, x	0.02	0.08	0.05
Capacity (veh/h)	658	880	884
Control Delay (s)	6.8	7.4	7.3
Approach Delay (s)	6.8	7.4	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay		7.2	
HCM Level of Service		A	
Intersection Capacity Utilization	13.8%		ICU Level of Service A



Greenbriar Development  
4: Elkhorn Boulevard & Lone Tree Road

Existing A.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↖	↗	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	8	0	0	7	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	9	0	0	8	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume			9		16	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1611		1002	1073
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	9	8	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1611	1700			
Volume to Capacity	0.01	0.00	0.00			
Queue Length (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A



Greenbriar Development  
 4: Elkhorn Boulevard & Lone Tree Road

Existing P.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1	0	0	20	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1	0	0	22	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			1		23	1
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1622		993	1083
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	1	22	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1622	1700			
Volume to Capacity	0.00	0.00	0.00			
Queue Length (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A



Greenbriar Development  
 5: Elkhorn Boulevard & SR 99 SB off ramp

Existing A.M. Peak Hour Traffic Conditions









Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	9	21	0	121	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	0	10	23	0	132	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
vC, conflicting volume	23				33	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				87	99
cM capacity (veh/h)	1592				981	1054
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	10	23	132	9		
Volume Left	0	0	132	0		
Volume Right	0	0	0	9		
cSH	1700	1700	981	1054		
Volume to Capacity	0.01	0.01	0.13	0.01		
Queue Length (ft)	0	0	12	1		
Control Delay (s)	0.0	0.0	9.2	8.4		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			7.5			
Intersection Capacity Utilization			17.3%	ICU Level of Service	A	



Greenbriar Development  
 5: Elkhorn Boulevard & SR 99 SB off ramp

Existing P.M. Peak Hour Traffic Conditions

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	9	16	0	99	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	0	10	17	0	108	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	17				27	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				89	99
cM capacity (veh/h)	1600				988	1061
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	10	17	108	8		
Volume Left	0	0	108	0		
Volume Right	0	0	0	8		
cSH	1700	1700	988	1061		
Volume to Capacity	0.01	0.01	0.11	0.01		
Queue Length (ft)	0	0	9	1		
Control Delay (s)	0.0	0.0	9.1	8.4		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			7.3			
Intersection Capacity Utilization		16.0%		ICU Level of Service		A



Greenbriar Development  
6: Elkhorn Boulevard & SR 99 NB off ramp

Existing A.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↗	↖
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↖
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	121	0	0	845	8	327
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	132	0	0	918	9	355
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			132		1050	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	61
cM capacity (veh/h)			1454		252	918
Direction, Lane #	EB 1	WB 1	NE 1	NE 2		
Volume Total	132	918	9	355		
Volume Left	0	0	9	0		
Volume Right	0	0	0	355		
cSH	1700	1700	252	918		
Volume to Capacity	0.08	0.54	0.03	0.39		
Queue Length (ft)	0	0	3	46		
Control Delay (s)	0.0	0.0	19.8	11.4		
Lane LOS			C	B		
Approach Delay (s)	0.0	0.0	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		58.3%		ICU Level of Service		A

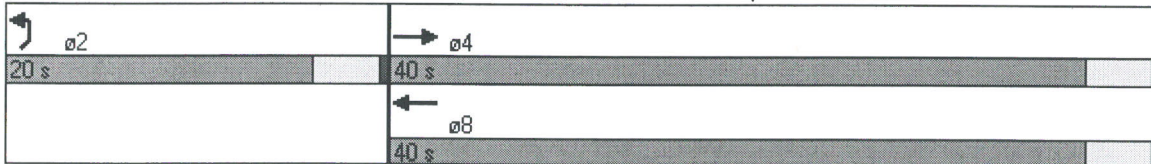


	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↖
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1583
Satd. Flow (RTOR)						355
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	121	0	0	845	8	327
Adj. Flow (vph)	132	0	0	918	9	355
Lane Group Flow (vph)	132	0	0	918	9	355
Turn Type						Free
Protected Phases	4			8	2	
Permitted Phases						Free
Total Split (s)	40.0	0.0	0.0	40.0	20.0	0.0
Act Effct Green (s)	24.4			24.4	6.1	38.9
Actuated g/C Ratio	0.63			0.63	0.16	1.00
v/c Ratio	0.11			0.79	0.03	0.22
Uniform Delay, d <sub>1</sub>	2.8			5.1	13.7	0.0
Delay	2.5			5.2	18.2	0.0
LOS	A			A	B	A
Approach Delay	2.5			5.2	0.5	
Approach LOS	A			A	A	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 38.9  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 3.7  
 Intersection Capacity Utilization 58.3%  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 6: Elkhorn Boulevard & SR 99 NB off ramp





Greenbriar Development  
6: Elkhorn Boulevard & SR 99 NB off ramp

Existing P.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↗	↘
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	86	0	0	277	13	1280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	93	0	0	301	14	1391
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			93		395	93
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	0
cM capacity (veh/h)			1501		610	964
Direction, Lane #	EB 1	WB 1	NE 1	NE 2		
Volume Total	93	301	14	1391		
Volume Left	0	0	14	0		
Volume Right	0	0	0	1391		
cSH	1700	1700	610	964		
Volume to Capacity	0.05	0.18	0.02	1.44		
Queue Length (ft)	0	0	2	1548		
Control Delay (s)	0.0	0.0	11.0	220.0		
Lane LOS			B	F		
Approach Delay (s)	0.0	0.0	217.9			
Approach LOS			F			
<b>Intersection Summary</b>						
Average Delay			170.2			
Intersection Capacity Utilization			97.7%		ICU Level of Service	E

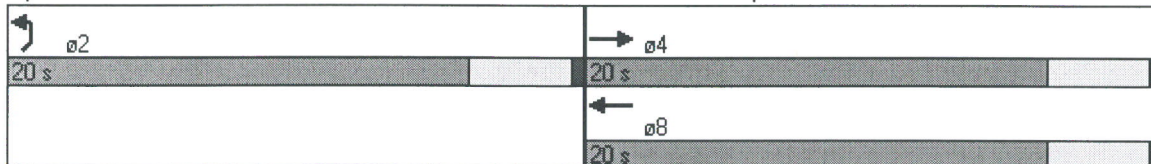


	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↖
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1583
Satd. Flow (RTOR)						951
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	86	0	0	277	13	1280
Adj. Flow (vph)	93	0	0	301	14	1391
Lane Group Flow (vph)	93	0	0	301	14	1391
Turn Type						Free
Protected Phases	4			8	2	
Permitted Phases						Free
Total Split (s)	20.0	0.0	0.0	20.0	20.0	0.0
Act Effct Green (s)	9.4			9.7	10.1	25.1
Actuated g/C Ratio	0.35			0.36	0.40	1.00
v/c Ratio	0.14			0.46	0.02	0.88
Uniform Delay, d <sub>1</sub>	6.3			7.1	5.1	0.0
Delay	4.4			5.1	7.3	4.3
LOS	A			A	A	A
Approach Delay	4.4			5.1	4.3	
Approach LOS	A			A	A	

Intersection Summary

Cycle Length: 40  
 Actuated Cycle Length: 25.1  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 4.4  
 Intersection Capacity Utilization 25.8%  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 6: Elkhorn Boulevard & SR 99 NB off ramp





	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	403	52	58	760	68	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	438	57	63	826	74	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume			495		1390	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		50	93
cM capacity (veh/h)			1069		148	619
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	438	57	63	826	74	45
Volume Left	0	0	63	0	74	0
Volume Right	0	57	0	0	0	45
cSH	1700	1700	1069	1700	148	619
Volume to Capacity	0.26	0.03	0.06	0.49	0.50	0.07
Queue Length (ft)	0	0	5	0	60	6
Control Delay (s)	0.0	0.0	8.6	0.0	51.7	11.3
Lane LOS			A		F	B
Approach Delay (s)	0.0		0.6		36.5	
Approach LOS					E	
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			54.2%		ICU Level of Service	A

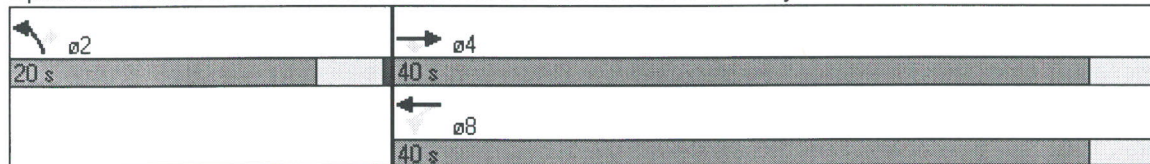


	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850				0.850
Fl <sub>t</sub> Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Fl <sub>t</sub> Permitted			0.456		0.950	
Satd. Flow (perm)	1863	1583	849	1863	1770	1583
Satd. Flow (RTOR)		57				45
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	403	52	58	760	68	41
Adj. Flow (vph)	438	57	63	826	74	45
Lane Group Flow (vph)	438	57	63	826	74	45
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Total Split (s)	40.0	40.0	40.0	40.0	20.0	20.0
Act Effct Green (s)	21.9	21.9	21.9	21.9	7.4	7.4
Actuated g/C Ratio	0.58	0.58	0.58	0.58	0.19	0.19
v/c Ratio	0.41	0.06	0.13	0.77	0.21	0.13
Uniform Delay, d <sub>1</sub>	4.1	0.0	3.4	5.7	12.5	0.0
Delay	4.2	1.2	3.4	6.1	16.4	7.2
LOS	A	A	A	A	B	A
Approach Delay	3.9			5.9	12.9	
Approach LOS	A			A	B	

Intersection Summary

Cycle Length: 60  
 Actuated Cycle Length: 38  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 5.8  
 Intersection Capacity Utilization 54.2%  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 7: Elkhorn Boulevard & East Commerce Way





Greenbriar Development  
7: Elkhorn Boulevard & East Commerce Way

Existing P.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	954	60	34	333	33	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1037	65	37	362	36	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			1102		1473	1037
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		73	82
cM capacity (veh/h)			633		131	281
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	1037	65	37	362	36	50
Volume Left	0	0	37	0	36	0
Volume Right	0	65	0	0	0	50
cSH	1700	1700	633	1700	131	281
Volume to Capacity	0.61	0.04	0.06	0.21	0.27	0.18
Queue Length (ft)	0	0	5	0	26	16
Control Delay (s)	0.0	0.0	11.0	0.0	42.3	20.6
Lane LOS			B		E	C
Approach Delay (s)	0.0		1.0		29.7	
Approach LOS					D	
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			64.6%		ICU Level of Service	B

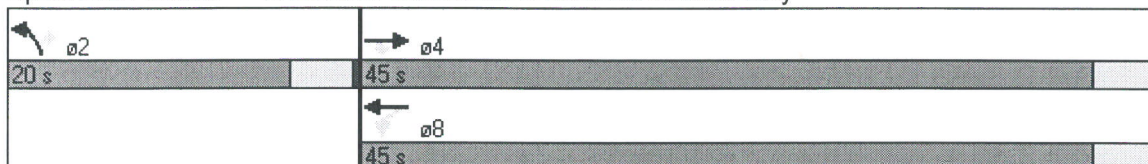


	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.098		0.950	
Satd. Flow (perm)	1863	1583	183	1863	1770	1583
Satd. Flow (RTOR)		65				50
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	954	60	34	333	33	46
Adj. Flow (vph)	1037	65	37	362	36	50
Lane Group Flow (vph)	1037	65	37	362	36	50
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Total Split (s)	45.0	45.0	45.0	45.0	20.0	20.0
Act Effct Green (s)	31.2	31.2	31.2	31.2	6.8	6.8
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.15	0.15
v/c Ratio	0.83	0.06	0.30	0.29	0.14	0.18
Uniform Delay, d1	5.4	0.0	3.0	2.9	17.1	0.0
Delay	6.3	0.8	4.0	2.9	21.2	8.3
LOS	A	A	A	A	C	A
Approach Delay	6.0			3.0	13.7	
Approach LOS	A			A	B	

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 46.4  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 5.7  
 Intersection Capacity Utilization 64.6%  
 Intersection LOS: A  
 ICU Level of Service B










Splits and Phases: 7: Elkhorn Boulevard & East Commerce Way





Greenbriar Development  
8: Del Paso Road & Powerline Road

Existing A.M. Peak Hour Traffic Conditions

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	4	0	34	2	3	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	4	0	37	2	3	93
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	138	38			39	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	853	1034			1571	










Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	4	39	97
Volume Left	4	0	3
Volume Right	0	2	0
cSH	853	1700	1571
Volume to Capacity	0.01	0.02	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	9.2	0.0	0.3
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	0.3
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	15.2%	ICU Level of Service	A



Greenbriar Development  
8: Del Paso Road & Powerline Road

Existing P.M. Peak Hour Traffic Conditions

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	2	31	1	1	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	0	2	34	1	1	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	103	34			35	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	895	1039			1577	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	2	35	67
Volume Left	0	0	1
Volume Right	2	1	0
cSH	1039	1700	1577
Volume to Capacity	0.00	0.02	0.00
Queue Length (ft)	0	0	0
Control Delay (s)	8.5	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	8.5	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	13.6%	ICU Level of Service	A

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**APPENDIX C – LEVEL OF SERVICE WORKSHEETS: EXISTING PLUS  
APPROVED PROJECTS CONDITIONS**













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- Intersection Analysis
- Freeway Mainline Analysis

Greenbriar Development

1: Elverta Road & Powerline Road

Existing plus Approved Projects A.M. Peak Hour Traffic Conditions













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	1	17	2	4	34	1	3	8	3	5	19	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1	18	2	4	37	1	3	9	3	5	21	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	22	42	15	32								
Volume Left (vph)	1	4	3	5								
Volume Right (vph)	2	1	3	5								
Hadj (s)	0.0	0.0	-0.1	0.0								
Departure Headway (s)	4.0	4.1	4.0	4.0								
Degree Utilization, x	0.02	0.05	0.02	0.04								
Capacity (veh/h)	879	622	872	887								
Control Delay (s)	7.1	7.3	7.1	7.2								
Approach Delay (s)	7.1	7.3	7.1	7.2								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.2									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%		ICU Level of Service				A			



Greenbriar Development

1: Elverta Road & Powerline Road

Existing plus Approved Projects P.M. Peak Hour Traffic Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	1	31	2	3	10	4	1	14	15	1	4	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1	34	2	3	11	4	1	15	16	1	4	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	37	18	33	7								
Volume Left (vph)	1	3	1	1								
Volume Right (vph)	2	4	16	1								
Hadj (s)	0.0	-0.1	-0.3	0.0								
Departure Headway (s)	4.0	4.0	3.8	4.0								
Degree Utilization, x	0.04	0.02	0.03	0.01								
Capacity (veh/h)	886	629	932	885								
Control Delay (s)	7.2	7.0	6.9	7.0								
Approach Delay (s)	7.2	7.0	6.9	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
HCM Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							



Greenbriar Development  
2: Elverta Road & SR 70/99

Existing plus Approved A.M. Peak Hour Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1829	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.982		0.950	0.955		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			30			33			73			8
Volume (vph)	3	5	28	496	17	30	54	936	67	28	2428	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	5	30	539	18	33	59	1017	73	30	2639	17
Lane Group Flow (vph)	0	8	30	272	285	33	59	1017	73	30	2639	17
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Detector Phases	7	7		8	8		5	2	2	1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		2.0	8.0	8.0	2.0	8.0	8.0
Minimum Split (s)	21.5	21.5		17.5	17.5		5.5	19.0	19.0	5.5	19.0	19.0
Total Split (s)	15.0	15.0	0.0	27.0	27.0	0.0	15.0	75.0	75.0	15.0	75.0	75.0
Total Split (%)	11%	11%	0%	20%	20%	0%	11%	57%	57%	11%	57%	57%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	1.5	1.5		1.5	1.5		0.5	2.0	2.0	0.5	2.0	2.0
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		5.9	113.7	22.4	22.4	113.7	7.7	74.8	74.8	6.2	71.5	71.5
Actuated g/C Ratio		0.05	1.00	0.20	0.20	1.00	0.07	0.66	0.66	0.05	0.63	0.63
v/c Ratio		0.09	0.02	0.82	0.85	0.02	0.50	0.44	0.07	0.32	1.19	0.02
Uniform Delay, d1		57.6	0.0	47.0	47.4	0.0	55.2	11.8	0.0	56.7	23.6	5.0
Delay		57.6	0.0	56.6	59.9	0.0	53.3	10.7	2.5	54.7	110.5	7.6
LOS		E	A	E	E	A	D	B	A	D	F	A
Approach Delay		12.1			55.0			12.4			109.2	
Approach LOS		B			E			B			F	

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 113.7

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.19

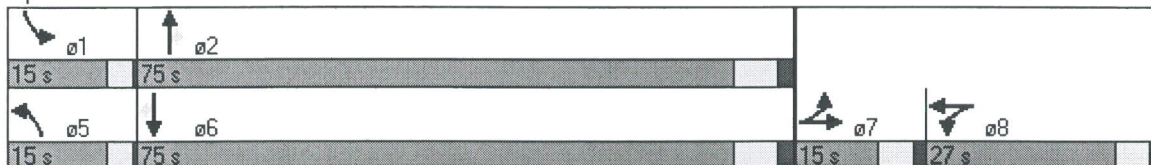
Intersection Signal Delay: 76.3

Intersection LOS: E

Intersection Capacity Utilization 101.7%

ICU Level of Service F

Splits and Phases: 2: Elverta Road & SR 70/99



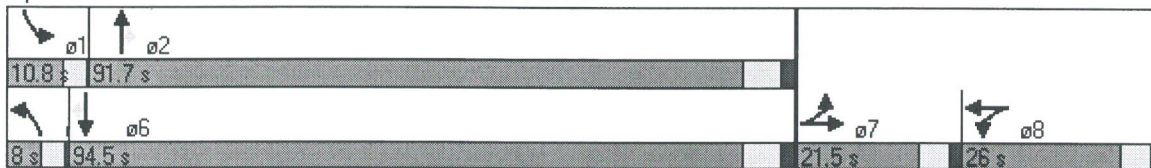


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frts			0.850			0.850			0.850			0.850
Flt Protected		0.982		0.950	0.955		0.950			0.950		
Satd. Flow (prot)	0	1829	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.982		0.950	0.955		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			30			30			73			8
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	3	5	28	496	17	30	54	936	67	28	2428	16
Adj. Flow (vph)	3	5	30	539	18	33	59	1017	73	30	2639	17
Lane Group Flow (vph)	0	8	30	271	286	33	59	1017	73	30	2639	17
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Total Split (s)	21.5	21.5	0.0	26.0	26.0	0.0	8.0	91.7	91.7	10.8	94.5	94.5
Act Effct Green (s)		5.9	130.7	22.0	22.0	130.7	4.0	92.3	92.3	5.9	90.6	90.6
Actuated g/C Ratio		0.04	1.00	0.17	0.17	1.00	0.03	0.71	0.71	0.04	0.69	0.69
v/c Ratio		0.10	0.02	0.96	1.00	0.02	1.09	0.41	0.06	0.38	1.08	0.02
Uniform Delay, d1		66.0	0.0	57.3	57.2	0.0	66.2	10.0	0.0	65.7	22.2	3.9
Delay		63.9	0.0	82.7	91.9	0.0	157.8	8.9	2.0	62.3	58.7	5.1
LOS		E	A	F	F	A	F	A	A	E	E	A
Approach Delay		13.4			82.5			16.1			58.4	
Approach LOS		B			F			B			E	

Intersection Summary

Cycle Length: 150  
 Actuated Cycle Length: 130.7  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.09  
 Intersection Signal Delay: 50.3  
 Intersection Capacity Utilization 101.7%  
 Intersection LOS: D  
 ICU Level of Service F

Splits and Phases: 2: Elverta Road & SR 70/99





Greenbriar Development  
2: Elverta Road & SR 70/99

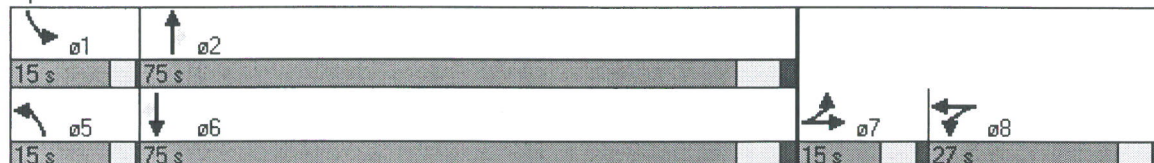
Existing plus Approved P.M. Peak Hour Traffic Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1844	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.990		0.950	0.955		0.950			0.950		
Satd. Flow (perm)	0	1844	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			37			7			287			4
Volume (vph)	8	31	34	130	4	6	45	1835	428	54	1136	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	34	37	141	4	7	49	1995	465	59	1235	4
Lane Group Flow (vph)	0	43	37	71	74	7	49	1995	465	59	1235	4
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Detector Phases	7	7		8	8		5	2	2	1	6	6
Minimum Initial (s)	4.0	4.0		4.0	4.0		2.0	8.0	8.0	2.0	8.0	8.0
Minimum Split (s)	21.5	21.5		17.5	17.5		5.5	19.0	19.0	5.5	19.0	19.0
Total Split (s)	15.0	15.0	0.0	27.0	27.0	0.0	15.0	75.0	75.0	15.0	75.0	75.0
Total Split (%)	11%	11%	0%	20%	20%	0%	11%	57%	57%	11%	57%	57%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	1.5	1.5		1.5	1.5		0.5	2.0	2.0	0.5	2.0	2.0
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		7.8	113.6	9.9	9.9	113.6	7.3	77.9	77.9	7.8	80.6	80.6
Actuated g/C Ratio		0.07	1.00	0.09	0.09	1.00	0.06	0.69	0.69	0.07	0.71	0.71
v/c Ratio		0.35	0.02	0.49	0.50	0.00	0.44	0.82	0.40	0.50	0.49	0.00
Uniform Delay, d1		54.1	0.0	51.3	51.4	0.0	55.4	14.5	2.8	53.8	8.8	0.0
Delay		51.8	0.0	49.0	49.0	0.0	52.2	21.9	4.1	51.3	10.4	6.5
LOS		D	A	D	D	A	D	C	A	D	B	A
Approach Delay		27.8			46.7			19.2			12.2	
Approach LOS		C			D			B			B	

Intersection Summary

Cycle Length: 132  
 Actuated Cycle Length: 113.6  
 Natural Cycle: 110  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 18.2  
 Intersection Capacity Utilization 72.5%  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 2: Elverta Road & SR 70/99





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.990		0.950	0.955		0.950			0.950		
Satd. Flow (prot)	0	1844	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.990		0.950	0.955		0.950			0.950		
Satd. Flow (perm)	0	1844	1583	1681	1690	1583	1770	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			37			7			342			4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	8	31	34	130	4	6	45	1835	428	54	1136	4
Adj. Flow (vph)	9	34	37	141	4	7	49	1995	465	59	1235	4
Lane Group Flow (vph)	0	43	37	71	74	7	49	1995	465	59	1235	4
Turn Type	Split		Free	Split		Free	Prot		Perm	Prot		Perm
Protected Phases	7	7		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			6
Total Split (s)	21.5	21.5	0.0	17.5	17.5	0.0	11.3	62.7	62.7	8.3	59.7	59.7
Act Effct Green (s)		7.5	99.6	9.4	9.4	99.6	6.3	67.7	67.7	4.4	70.1	70.1
Actuated g/C Ratio		0.07	1.00	0.09	0.09	1.00	0.06	0.68	0.68	0.04	0.70	0.70
v/c Ratio		0.32	0.02	0.46	0.47	0.00	0.45	0.83	0.39	0.76	0.50	0.00
Uniform Delay, d1		47.4	0.0	45.5	45.6	0.0	49.2	13.3	1.7	49.2	8.7	0.0
Delay		42.8	0.0	40.5	40.5	0.0	44.4	21.0	2.7	79.4	10.5	6.5
LOS		D	A	D	D	A	D	C	A	E	B	A
Approach Delay		23.0			38.7			18.0			13.6	
Approach LOS		C			D			B			B	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 99.6

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

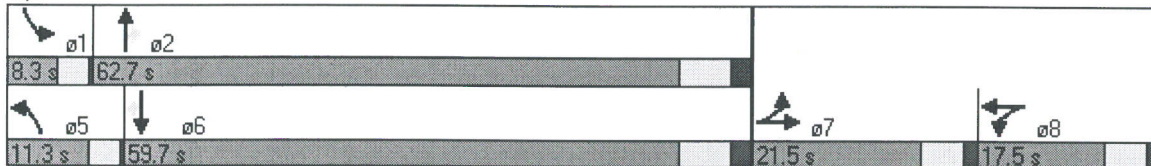
Intersection Signal Delay: 17.5

Intersection LOS: B

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Splits and Phases: 2: Elverta Road & SR 70/99



Greenbriar Development

3: Elkhorn Boulevard & Powerline Road Existing plus Approved Projects A.M. Peak Hour Traffic Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Sign Control	Stop		Stop			Stop
Volume (veh/h)	14	5	10	8	3	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	15	5	11	9	3	39

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	21	20	42
Volume Left (vph)	15	0	3
Volume Right (vph)	5	9	0
Hadj (s)	0.0	-0.2	0.0
Departure Headway (s)	4.0	3.7	4.0
Degree Utilization, x	0.02	0.02	0.05
Capacity (veh/h)	624	951	892
Control Delay (s)	7.1	6.8	7.2
Approach Delay (s)	7.1	6.8	7.2
Approach LOS	A	A	A

Intersection Summary			
Delay		7.1	
HCM Level of Service		A	
Intersection Capacity Utilization	13.3%		ICU Level of Service A



Greenbriar Development

3: Elkhorn Boulevard & Powerline Road Existing plus Approved Projects P.M. Peak Hour Traffic Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘ ↙		↑			↖ ↗
Sign Control	Stop		Stop			Stop
Volume (veh/h)	11	15	65	4	0	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	12	16	71	4	0	49

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	28	75	49
Volume Left (vph)	12	0	0
Volume Right (vph)	16	4	0
Hadj (s)	-0.2	0.0	0.0
Departure Headway (s)	3.9	4.0	4.1
Degree Utilization, x	0.03	0.08	0.06
Capacity (veh/h)	640	881	880
Control Delay (s)	7.0	7.4	7.3
Approach Delay (s)	7.0	7.4	7.3
Approach LOS	A	A	A

Intersection Summary			
Delay		7.3	
HCM Level of Service		A	
Intersection Capacity Utilization	14.0%		ICU Level of Service A

Greenbriar Development

4: Elkhorn Boulevard & Lone Tree Road Existing plus Approved Projects A.M. Peak Hour Traffic Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	10	0	0	17	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	11	0	0	18	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume			11		29	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1608		985	1070
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	11	18	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1608	1700			
Volume to Capacity	0.01	0.00	0.00			
Queue Length (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A



Greenbriar Development

4: Elkhorn Boulevard & Lone Tree Road Existing plus Approved Projects P.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	3	0	0	24	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	3	0	0	26	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume			3		29	3
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1619		985	1081
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	3	26	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1619	1700			
Volume to Capacity	0.00	0.00	0.00			
Queue Length (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A



Greenbriar Development

5: Elkhorn Boulevard & SR 99 SB off ramp

Existing plus Approved A.M. Peak Hour Traffic Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↙	↘
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	11	31	0	129	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	0	12	34	0	140	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	34				46	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	99
cM capacity (veh/h)	1578				964	1040
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	12	34	140	9		
Volume Left	0	0	140	0		
Volume Right	0	0	0	9		
cSH	1700	1700	964	1040		
Volume to Capacity	0.01	0.02	0.15	0.01		
Queue Length (ft)	0	0	13	1		
Control Delay (s)	0.0	0.0	9.4	8.5		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	9.3			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			7.1			
Intersection Capacity Utilization			17.8%		ICU Level of Service	A



Greenbriar Development

5: Elkhorn Boulevard & SR 99 SB off ramp

Existing plus Approved P.M. Peak Hour Traffic Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	11	20	0	104	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	0	12	22	0	113	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	22				34	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				88	99
cM capacity (veh/h)	1594				980	1055







Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	12	22	113	8
Volume Left	0	0	113	0
Volume Right	0	0	0	8
cSH	1700	1700	980	1055
Volume to Capacity	0.01	0.01	0.12	0.01
Queue Length (ft)	0	0	10	1
Control Delay (s)	0.0	0.0	9.2	8.4
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	9.1	
Approach LOS			A	

Intersection Summary			
Average Delay		7.1	
Intersection Capacity Utilization	16.3%		ICU Level of Service A



Greenbriar Development

6: Elkhorn Boulevard & SR 99 NB off ramp Existing plus Approved Projects A.M. Peak Hour Traffic Conditions

						
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	131	0	0	1065	8	419
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	142	0	0	1158	9	455
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			142		1300	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	50
cM capacity (veh/h)			1440		178	905
Direction, Lane #	EB 1	WB 1	NE 1	NE 2		
Volume Total	142	1158	9	455		
Volume Left	0	0	9	0		
Volume Right	0	0	0	455		
cSH	1700	1700	178	905		
Volume to Capacity	0.08	0.68	0.05	0.50		
Queue Length (ft)	0	0	4	72		
Control Delay (s)	0.0	0.0	26.3	12.9		
Lane LOS			D	B		
Approach Delay (s)	0.0	0.0	13.2			
Approach LOS			B			
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization		70.9%		ICU Level of Service		C



	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↖
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1583
Satd. Flow (RTOR)						455
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	131	0	0	1065	8	419
Adj. Flow (vph)	142	0	0	1158	9	455
Lane Group Flow (vph)	142	0	0	1158	9	455
Turn Type						Free
Protected Phases	4			8	2	
Permitted Phases						Free
Total Split (s)	55.0	0.0	0.0	55.0	20.0	0.0
Act Effct Green (s)	38.9			38.9	6.2	53.6
Actuated g/C Ratio	0.73			0.73	0.12	1.00
v/c Ratio	0.10			0.86	0.04	0.29
Uniform Delay, d <sub>1</sub>	2.0			5.0	20.9	0.0
Delay	1.9			5.8	26.4	0.0
LOS	A			A	C	A
Approach Delay	1.9			5.8	0.5	
Approach LOS	A			A	A	

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 53.6  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 4.1  
 Intersection Capacity Utilization 70.9%  
 Intersection LOS: A  
 ICU Level of Service C

Splits and Phases: 6: Elkhorn Boulevard & SR 99 NB off ramp

↖ ø2	→ ø4
20 s	55 s
	↙ ø8
	55 s



Greenbriar Development

6: Elkhorn Boulevard & SR 99 NB off ramp Existing plus Approved Projects P.M. Peak Hour Traffic Conditions



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	93	0	0	505	13	1373
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	101	0	0	549	14	1492
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume			101		650	101
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	0
cM capacity (veh/h)			1491		434	954

Direction, Lane #	EB 1	WB 1	NE 1	NE 2
Volume Total	101	549	14	1492
Volume Left	0	0	14	0
Volume Right	0	0	0	1492
cSH	1700	1700	434	954
Volume to Capacity	0.06	0.32	0.03	1.56
Queue Length (ft)	0	0	3	1869
Control Delay (s)	0.0	0.0	13.6	272.6
Lane LOS			B	F
Approach Delay (s)	0.0	0.0	270.2	
Approach LOS			F	

Intersection Summary			
Average Delay		188.8	
Intersection Capacity Utilization	104.4%	ICU Level of Service	F

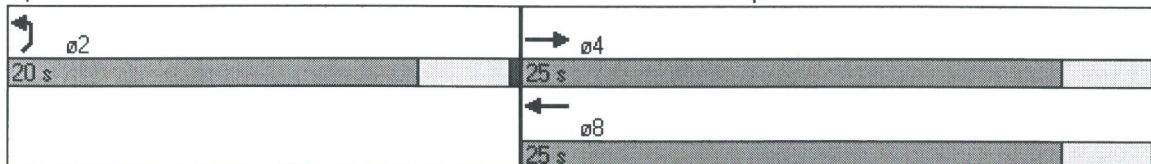


	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑	↘	↖
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1863	0	0	1863	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	1863	0	0	1863	1770	1583
Satd. Flow (RTOR)						942
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	93	0	0	505	13	1373
Adj. Flow (vph)	101	0	0	549	14	1492
Lane Group Flow (vph)	101	0	0	549	14	1492
Turn Type						Free
Protected Phases	4			8	2	
Permitted Phases						Free
Total Split (s)	25.0	0.0	0.0	25.0	20.0	0.0
Act Effct Green (s)	13.1			13.1	6.0	27.3
Actuated g/C Ratio	0.48			0.48	0.22	1.00
v/c Ratio	0.11			0.62	0.04	0.94
Uniform Delay, d <sub>1</sub>	3.8			5.1	8.3	0.0
Delay	3.6			5.1	10.8	9.6
LOS	A			A	B	A
Approach Delay	3.6			5.1	9.6	
Approach LOS	A			A	A	

Intersection Summary

Cycle Length: 45  
 Actuated Cycle Length: 27.3  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 8.2  
 Intersection Capacity Utilization 38.9%  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 6: Elkhorn Boulevard & SR 99 NB off ramp





Greenbriar Development

7: Elkhorn Boulevard & East Commerce Way - Existing plus Approved Projects A.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	403	154	139	770	282	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	438	167	151	837	307	136
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume			605		1577	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		0	78
cM capacity (veh/h)			973		102	619
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	438	167	151	837	307	136
Volume Left	0	0	151	0	307	0
Volume Right	0	167	0	0	0	136
cSH	1700	1700	973	1700	102	619
Volume to Capacity	0.26	0.10	0.16	0.49	3.01	0.22
Queue Length (ft)	0	0	14	0	Err	21
Control Delay (s)	0.0	0.0	9.4	0.0	Err	12.4
Lane LOS			A		F	B
Approach Delay (s)	0.0		1.4		6931.9	
Approach LOS					F	
Intersection Summary						
Average Delay			1507.0			
Intersection Capacity Utilization			67.7%		ICU Level of Service	B



	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↖	↗
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.450		0.950	
Satd. Flow (perm)	1863	1583	838	1863	1770	1583
Satd. Flow (RTOR)		167				136
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	403	154	139	770	282	125
Adj. Flow (vph)	438	167	151	837	307	136
Lane Group Flow (vph)	438	167	151	837	307	136
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Total Split (s)	39.0	39.0	39.0	39.0	21.0	21.0
Act Effct Green (s)	25.1	25.1	25.1	25.1	12.6	12.6
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.27	0.27
v/c Ratio	0.44	0.18	0.33	0.83	0.64	0.26
Uniform Delay, d <sub>1</sub>	6.1	0.0	5.7	8.5	14.5	0.0
Delay	6.7	1.3	6.7	10.6	17.3	4.1
LOS	A	A	A	B	B	A
Approach Delay	5.2			10.0	13.3	
Approach LOS	A			A	B	

**Intersection Summary**

Cycle Length: 60  
 Actuated Cycle Length: 46.5  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 9.3  
 Intersection Capacity Utilization 67.7%  
 Intersection LOS: A  
 ICU Level of Service B

**Splits and Phases: 7: Elkhorn Boulevard & East Commerce Way**

↖ ø2 21 s	→ ø4 39 s
	← ø8 39 s



Greenbriar Development

7: Elkhorn Boulevard & East Commerce Way Existing plus Approved Projects P.M. Peak Hour Traffic Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↙	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	954	160	117	350	252	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	1037	174	127	380	274	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			1211		1672	1037
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		0	51
cM capacity (veh/h)			576		82	281
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	1037	174	127	380	274	137
Volume Left	0	0	127	0	274	0
Volume Right	0	174	0	0	0	137
cSH	1700	1700	576	1700	82	281
Volume to Capacity	0.61	0.10	0.22	0.22	3.34	0.49
Queue Length (ft)	0	0	21	0	Err	63
Control Delay (s)	0.0	0.0	13.0	0.0	Err	29.4
Lane LOS			B		F	D
Approach Delay (s)	0.0		3.3		6675.8	
Approach LOS					F	
Intersection Summary						
Average Delay			1288.9			
Intersection Capacity Utilization			86.8%		ICU Level of Service	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↖	↗
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.098		0.950	
Satd. Flow (perm)	1863	1583	183	1863	1770	1583
Satd. Flow (RTOR)		174				124
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	954	160	117	350	252	126
Adj. Flow (vph)	1037	174	127	380	274	137
Lane Group Flow (vph)	1037	174	127	380	274	137
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Total Split (s)	45.0	45.0	45.0	45.0	20.0	20.0
Act Effct Green (s)	41.1	41.1	41.1	41.1	13.5	13.5
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.22	0.22
v/c Ratio	0.85	0.16	1.06	0.31	0.72	0.31
Uniform Delay, d1	8.3	0.0	10.7	4.6	22.7	1.8
Delay	14.5	1.0	102.5	5.3	23.0	5.8
LOS	B	A	F	A	C	A
Approach Delay	12.6			29.6	17.3	
Approach LOS	B			C	B	

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 62.6  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 17.5  
 Intersection Capacity Utilization 86.8%  
 Intersection LOS: B  
 ICU Level of Service D

Splits and Phases: 7: Elkhorn Boulevard & East Commerce Way

↖ ø2 20 s	→ ø4 45 s
	↖ ø8 45 s



Greenbriar Development

8: Del Paso Road & Powerline Road Existing plus Approved Projects A.M. Peak Hour Traffic Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑		↙	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	6	103	34	30	44	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	7	112	37	33	48	95
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	243	53			70	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	89			97	
cM capacity (veh/h)	722	1014			1531	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	70	142
Volume Left	7	0	48
Volume Right	112	33	0
cSH	992	1700	1531
Volume to Capacity	0.12	0.04	0.03
Queue Length (ft)	10	0	2
Control Delay (s)	9.1	0.0	2.7
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	2.7
Approach LOS	A		

Intersection Summary			
Average Delay		4.4	
Intersection Capacity Utilization	28.2%	ICU Level of Service	A



Greenbriar Development

8: Del Paso Road & Powerline Road Existing plus Approved Projects P.M. Peak Hour Traffic Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘ ↙		↑		↘ ↙	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	2	98	31	35	64	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (veh/h)	2	107	34	38	70	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	259	53			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	90			95	
cM capacity (veh/h)	696	1015			1528	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	109	72	137
Volume Left	2	0	70
Volume Right	107	38	0
cSH	1006	1700	1528
Volume to Capacity	0.11	0.04	0.05
Queue Length (ft)	9	0	4
Control Delay (s)	9.0	0.0	4.0
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	4.0
Approach LOS	A		

Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization	27.4%	ICU Level of Service	A

## **APPENDIX C**

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### **DRAFT GREENBRIAR FINANCE PLAN**

## **APPENDIX D**

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### **AIR QUALITY MODELING DATA AND FEE WORKSHEET**

**SMAQMD CO SCREENING ANALYSIS WORKSHEET**

	EXISTING ISOPLETH CONC.	PREDICTED CONCENTRATION (ppm)*	
		PHASE I (YR 2009)	PHASE I & II (YR2012)
BACKGROUND CONCENTRATIONS 1-HR	6	3.06	2.64
BACKGROUND CONCENTRATIONS 8-HR	3	1.53	1.32
ESTIMATED DAILY TRIPS - PHASE I:**	11,178.85		
ESTIMATED DAILY TRIPS - PHASE II:**	24,352.06		
TOTAL DAILY TRIPS - PHASE I & II:	35,530.91		
CALCULATED PEAK-HOUR TRIPS - PHASE I:	1,117.89		
CALCULATED PEAK-HOUR TRIPS - PHASE I & II:	3,553.09		
PREDICTED CO CONCENTRATION CONTRIBUTION:**			
	1-HR	3.1	9.2
	8-HR	2.17	6.5
TOTAL PREDICTED CONCENTRATION:			
	1-HR	6.16	11.84
	8-HR	3.7	7.8
CALIFORNIA AMBIENT AIR QUALITY STANDARDS (CAAQS):			
	1-HR	20	
	8-HR	9.0	
PREDICTED CONCENTRATIONS EXCEED CAAQS?			
	1-HR	NO	NO
	8-HR	NO	NO

\*\* Project's contribution to local CO concentrations based on a trend analysis of SMAQMD-recommended contribution values (see attached worksheet).

\* Daily trip generation rates were calculated based on proposed land uses identified in the Project development phasing plan and the trip generation rates for corresponding land uses obtained from the traffic analysis prepared for this project.

PREDICTED PROJECT CO CONTRIBUTION WORKSHEET

	PEAK HOUR VOLUME	PPM CO	
		1-HOUR	8-HOUR
SMAQMD-RECOMMENDED VALUES	100	0.4	0.28
	200	0.7	0.49
	300	1.1	0.77
	500	1.7	1.19
	1000	3.1	2.17
	2000	5.6	3.92
	3000	7.7	5.39
TREND VALUES	3400	8.9	6.2
	3500	9.2	6.5
	3600	9.5	6.7
	3700	9.8	6.9
	3800	10.1	7.1
*Trend values are approximate, based on trend analysis of SMAQMD-recommended contribution values.			



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**URBEMIS 8.7 MODELING OUTPUT FOR SITE PREPARATION OF ENTIRE  
SITE AND OPERATION OF ALL PROPOSED USES**

URBEMIS MODELING OUTPUT FILE

INITIAL SITE PREPARATION  
OPERATIONAL EMISSIONS - BUILDOUT

URBEMIS 2002 For Windows 8.7.0

file Name: H:\Projects2\_6\Greenbriar\GradingandOperation1\_2.urb  
project Name: Greenbriar Grading of Entire Site and Operational Emissions  
project Location: Lower Sacramento Valley Air Basin  
on-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 *** TOTALS (lbs/day,unmitigated)	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	184.89	49.15	113.77	0.58	0.38

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	233.43	216.87	2,201.43	1.42	240.73

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	418.32	266.02	2,315.19	2.00	241.12

URBEMIS 2002 For Windows 8.7.0

File Name: H:\Projects2\_6\Greenbriar\GradingandOperation1\_2.urb  
Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
Project Location: Lower Sacramento Valley Air Basin  
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 *** TOTALS (lbs/day,unmitigated)	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	2,144.87	115.00	3,628.41	8.57	537.48

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	237.38	323.26	2,642.72	1.41	240.73

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	2,382.25	438.27	6,271.13	9.98	778.22

File Name: H:\Projects2\_6\Greenbriar\GradingandOperation1\_2.urb  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
 (Pounds/Day - Winter)

Construction Start Month and Year: June, 2007  
 Construction Duration: 60  
 Total Land Use Area to be Developed: 577 acres  
 Maximum Acreage Disturbed Per Day: 144.25 acres  
 Single Family Units: 2886 Multi-Family Units: 587  
 Retail/Office/Institutional/Industrial Square Footage: 732312

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	1,442.50	-	1,442.50
Off-Road Diesel	92.89	637.27	737.07	-	25.83	25.83	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	1.18	1.43	25.67	0.01	0.10	0.04	0.06
Maximum lbs/day	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions  
 Start Month/Year for Phase 2: Jun '07  
 Phase 2 Duration: 6.6 months  
 On-Road Truck Travel (VMT): 0  
 Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
15	Crawler Tractors	143	0.575	8.0
15	Graders	174	0.575	8.0
15	Off Highway Tractors	255	0.410	8.0
15	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions  
 Start Month/Year for Phase 3: Dec '07  
 Phase 3 Duration: 53.4 months  
 SubPhase Building Turned OFF  
 SubPhase Architectural Coatings Turned OFF  
 SubPhase Asphalt Turned OFF



02/10/2006 2:10 PM

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)						
Source	ROG	NOx	CO	SO2	PM10	
Natural Gas	3.65	47.67	23.22	0	0.09	
Hearth	1,971.31	67.34	3,605.19	8.57	537.39	
Landscaping - No winter emissions						
Consumer Prdcts	169.91	-	-	-	-	
Architectural Coatings	0.00	-	-	-	-	
TOTALS (lbs/day, unmitigated)	2,144.87	115.00	3,628.41	8.57	537.48	

## UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing low	115.03	171.78	1,356.52	0.78	133.45
Apartments/Senior/Mixed-U	23.39	34.93	275.80	0.16	27.13
Elementary school	8.58	11.23	92.58	0.05	8.19
park/water/openspace/oth	0.00	0.00	0.00	0.00	0.00
Community/Village Commerc	90.39	105.33	917.82	0.42	71.96
<b>TOTAL EMISSIONS (lbs/day)</b>	<b>237.38</b>	<b>323.26</b>	<b>2,642.72</b>	<b>1.41</b>	<b>240.73</b>

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 11.13 % reduction. Nonresidential trips: 11.32 % reduction.

## OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

## Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing low	226.10	5.97 trips/dwelling unit	2,886.00	17,241.31
Apartments/Senior/Mixed-U	29.90	5.97 trips/dwelling unit	587.00	3,505.45
Elementary school		3.54 trips/1000 sq. ft.	444.31	1,572.89
park/water/openspace/oth		0.00 trips/acres	283.40	0.00
Community/Village Commerc		65.28 trips/1000 sq. ft.	288.00	18,799.37
Sum of Total Trips				41,119.02
Total Vehicle Miles Traveled				158,491.01

## Vehicle Assumptions:

## Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

## Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
Elementary school				20.0	10.0	70.0
park/water/openspace/other				0.0	0.0	100.0
Community/Village Commercial				2.0	1.0	97.0

URBEMIS 2002 For Windows 8.7.0

File Name: H:\Projects2\_6\Greenbriar\GradingandOperation1\_2.urb  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
 (Pounds/Day ~ Summer)

Construction Start Month and Year: June, 2007  
 Construction Duration: 60  
 Total Land Use Area to be Developed: 577 acres  
 Maximum Acreage Disturbed Per Day: 144.25 acres  
 Single Family Units: 2886 Multi-Family Units: 587  
 Retail/Office/Institutional/Industrial Square Footage: 732312

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	1,442.50	-	1,442.50
Off-Road Diesel	92.89	637.27	737.07	-	25.83	25.83	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	1.18	1.43	25.67	0.01	0.10	0.04	0.06
Maximum lbs/day	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	94.07	638.70	762.74	0.01	1,468.43	25.87	1,442.56

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions  
 Start Month/Year for Phase 2: Jun '07  
 Phase 2 Duration: 6.6 months  
 On-Road Truck Travel (VMT): 0  
 Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
15	Crawler Tractors	143	0.575	8.0
15	Graders	174	0.575	8.0
15	Off Highway Tractors	255	0.410	8.0
15	Rubber Tired Loaders	165	0.465	8.0

Phase 3 - Building Construction Assumptions  
 Start Month/Year for Phase 3: Dec '07  
 Phase 3 Duration: 53.4 months  
 SubPhase Building Turned OFF  
 SubPhase Architectural Coatings Turned OFF  
 SubPhase Asphalt Turned OFF

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	3.65	47.67	23.22	0	0.09
Hearth - No summer emissions					
Landscaping	11.33	1.48	90.55	0.58	0.29
Consumer Prdcts	169.91	-	-	-	-
Architectural Coatings	0.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	184.89	49.15	113.77	0.58	0.38

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing low	123.48	114.55	1,189.15	0.79	133.45
Apartments/Senior/Mixed-U	25.11	23.29	241.78	0.16	27.13
Elementary school	11.50	7.55	75.81	0.05	8.19
park/water/openspace/oth	3.15	0.00	0.00	0.00	0.00
Community/Village Commerc	70.20	71.48	694.69	0.43	71.96
<b>TOTAL EMISSIONS (lbs/day)</b>	<b>233.43</b>	<b>216.87</b>	<b>2,201.43</b>	<b>1.42</b>	<b>240.73</b>

Includes correction for passby trips.

Includes the following double counting adjustment for internal trips:

Residential trips: 11.13 % reduction. Nonresidential trips: 11.32 % reduction.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing low	226.10	5.97 trips/dwelling unit	2,886.00	17,241.31
Apartments/Senior/Mixed-U	29.90	5.97 trips/dwelling unit	587.00	3,505.45
Elementary school		3.54 trips/1000 sq. ft.	444.31	1,572.89
park/water/openspace/oth		0.00 trips/acres	283.40	0.00
Community/Village Commerc		65.28 trips/1000 sq. ft.	288.00	18,799.37
Sum of Total Trips				41,119.02
Total Vehicle Miles Traveled				158,491.01

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

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

% of Trips - Commercial (by land use)

Elementary school	20.0	10.0	70.0
park/water/openspace/other	0.0	0.0	100.0
Community/Village Commercial	2.0	1.0	97.0



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**URBEMIS 8.7 MODELING OUTPUT FOR BUILDING OF PROPOSED USES  
NORTH OF MEISTER**

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstructi  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
 (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day,unmitigated)	54.37	265.66	736.15	0.27	12.65	11.38	1.27
*** 2008 ***							
TOTALS (lbs/day,unmitigated)	53.68	253.78	737.02	0.27	11.72	10.45	1.27
*** 2009 ***							
TOTALS (lbs/day,unmitigated)	52.96	241.54	737.71	0.27	11.09	9.82	1.27
*** 2010 ***							
TOTALS (lbs/day,unmitigated)	78.65	356.55	897.80	0.30	13.73	12.42	1.31

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstruct  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
 (Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 *** TOTALS (lbs/day,unmitigated)	54.37	265.66	736.15	0.27	12.65	11.38	1.27
*** 2008 *** TOTALS (lbs/day,unmitigated)	53.68	253.78	737.02	0.27	11.72	10.45	1.27
*** 2009 *** TOTALS (lbs/day,unmitigated)	52.96	241.54	737.71	0.27	11.09	9.82	1.27
*** 2010 *** TOTALS (lbs/day,unmitigated)	78.65	356.55	897.80	0.30	13.73	12.42	1.31

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstruction  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
(Pounds/Day - Winter)

Construction Start Month and Year: June, 2007  
 Construction Duration: 36  
 Total Land Use Area to be Developed: 302.77 acres  
 Maximum Acreage Disturbed Per Day: 75.7 acres  
 Single Family Units: 1689 Multi-Family Units: 307  
 Retail/Office/Institutional/Industrial Square Footage: 288000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	31.14	237.57	230.41	-	10.59	10.59	0.00
Bldg Const Worker Trips	23.24	28.08	505.74	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	54.37	265.66	736.15	0.27	12.65	11.38	1.27
Max lbs/day all phases	54.37	265.66	736.15	0.27	12.65	11.38	1.27
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	31.14	226.05	238.82	-	9.65	9.65	0.00
Bldg Const Worker Trips	22.54	27.72	498.20	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.68	253.78	737.02	0.27	11.72	10.45	1.27
Max lbs/day all phases	53.68	253.78	737.02	0.27	11.72	10.45	1.27
*** 2009***							

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	31.14	214.22	247.54	-	9.03	9.03	0.00
Bldg Const Worker Trips	21.83	27.32	490.17	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	52.96	241.54	737.71	0.27	11.09	9.82	1.27
Max lbs/day all phases	52.96	241.54	737.71	0.27	11.09	9.82	1.27

\*\*\* 2010\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	31.14	202.70	255.94	-	8.10	8.10	0.00
Bldg Const Worker Trips	21.16	26.94	482.58	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	6.06	-	-	-	-	-	-
Asphalt Off-Road Diesel	20.13	116.73	171.06	-	3.22	3.22	0.00
Asphalt On-Road Diesel	0.75	11.42	2.76	0.03	0.33	0.31	0.02
Asphalt Worker Trips	0.09	0.04	1.12	0.00	0.02	0.00	0.02
Maximum lbs/day	78.65	356.55	897.80	0.30	13.73	12.42	1.31
Max lbs/day all phases	78.65	356.55	897.80	0.30	13.73	12.42	1.31

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jun '07  
Phase 3 Duration: 36 months  
Start Month/Year for SubPhase Building: Jun '07  
SubPhase Building Duration: 36 months  
Off-Road Equipment  
No. Type Horsepower Load Factor Hours/Day  
15 Other Equipment 190 0.620 8.0  
SubPhase Architectural Coatings Turned OFF  
Start Month/Year for SubPhase Asphalt: Apr '10  
SubPhase Asphalt Duration: 1.8 months  
Acres to be Paved: 91.6  
Off-Road Equipment  
No. Type Horsepower Load Factor Hours/Day  
9 Pavers 132 0.590 8.0  
9 Rollers 114 0.430 8.0





URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstructio  
 Project Name: Greenbriar Grading of Entire Site and Operational Emissions  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2007  
 Construction Duration: 36  
 Total Land Use Area to be Developed: 302.77 acres  
 Maximum Acreage Disturbed Per Day: 75.7 acres  
 Single Family Units: 1689 Multi-Family Units: 307  
 Retail/Office/Institutional/Industrial Square Footage: 288000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	31.14	237.57	230.41	-	10.59	10.59	0.00
Bldg Const Worker Trips	23.24	28.08	505.74	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	54.37	265.66	736.15	0.27	12.65	11.38	1.27
Max lbs/day all phases	54.37	265.66	736.15	0.27	12.65	11.38	1.27
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	31.14	226.05	238.82	-	9.65	9.65	0.00
Bldg Const Worker Trips	22.54	27.72	498.20	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.68	253.78	737.02	0.27	11.72	10.45	1.27
Max lbs/day all phases	53.68	253.78	737.02	0.27	11.72	10.45	1.27
*** 2009***							

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	31.14	214.22	247.54	-	9.03	9.03	0.00
Bldg Const Worker Trips	21.83	27.32	490.17	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	52.96	241.54	737.71	0.27	11.09	9.82	1.27

Max lbs/day all phases 52.96 241.54 737.71 0.27 11.09 9.82 1.27

\*\*\* 2010\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	31.14	202.70	255.94	-	8.10	8.10	0.00
Bldg Const Worker Trips	21.16	26.94	482.58	0.27	2.06	0.79	1.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	6.06	-	-	-	-	-	-
Asphalt Off-Road Diesel	20.13	116.73	171.06	-	3.22	3.22	0.00
Asphalt On-Road Diesel	0.75	11.42	2.76	0.03	0.33	0.31	0.02
Asphalt Worker Trips	0.09	0.04	1.12	0.00	0.02	0.00	0.02
Maximum lbs/day	78.65	356.55	897.80	0.30	13.73	12.42	1.31

Max lbs/day all phases 78.65 356.55 897.80 0.30 13.73 12.42 1.31

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jun '07

Phase 3 Duration: 36 months

Start Month/Year for SubPhase Building: Jun '07

SubPhase Building Duration: 36 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
15	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF

Start Month/Year for SubPhase Asphalt: Apr '10

SubPhase Asphalt Duration: 1.8 months

Acres to be Paved: 91.6

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
9	Pavers	132	0.590	8.0
9	Rollers	114	0.430	8.0



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**URBEMIS 8.7 MODELING OUTPUT FOR BUILDING OF PROPOSED USES  
SOUTH OF MEISTER**



URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstruction  
 Project Name: Greenbriar Building Construction of Phase 2  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
 (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009 *** TOTALS (lbs/day,unmitigated)	42.95	210.88	556.31	0.21	9.71	8.72	0.99
*** 2010 *** TOTALS (lbs/day,unmitigated)	42.43	200.21	557.96	0.21	8.87	7.88	0.99
*** 2011 *** TOTALS (lbs/day,unmitigated)	42.43	200.21	557.96	0.21	8.87	7.88	0.99
*** 2012 *** TOTALS (lbs/day,unmitigated)	<del>62.27</del>	<del>295.98</del>	677.94	0.24	11.56	10.54	1.02

62.8 296.96

URBEMIS 2002 For Windows 8.7.0

file Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstructi  
project Name: Greenbriar Building Construction of Phase 2  
project Location: Lower Sacramento Valley Air Basin  
n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT  
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009 *** TOTALS (lbs/day,unmitigated)	42.95	210.88	556.31	0.21	9.71	8.72	0.99
*** 2010 *** TOTALS (lbs/day,unmitigated)	42.43	200.21	557.96	0.21	8.87	7.88	0.99
*** 2011 *** TOTALS (lbs/day,unmitigated)	42.43	200.21	557.96	0.21	8.87	7.88	0.99
*** 2012 *** TOTALS (lbs/day,unmitigated)	62.27	295.88	677.94	0.24	11.56	10.54	1.02

62.8 296.94

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstructio  
 Project Name: Greenbriar Building Construction of Phase 2  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
 (Pounds/Day - Winter)

Construction Start Month and Year: June, 2009  
 Construction Duration: 36  
 Total Land Use Area to be Developed: 274.27 acres  
 Maximum Acreage Disturbed Per Day: 68.57 acres  
 Single Family Units: 1197 Multi-Family Units: 280  
 Retail/Office/Institutional/Industrial Square Footage: 444310

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	28.02	192.80	222.78	-	8.13	8.13	0.00
Bldg Const Worker Trips	14.92	18.08	333.53	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.95	210.88	556.31	0.21	9.71	8.72	0.99
Max lbs/day all phases	42.95	210.88	556.31	0.21	9.71	8.72	0.99
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.43	200.21	557.96	0.21	8.87	7.88	0.99
Max lbs/day all phases	42.43	200.21	557.96	0.21	8.87	7.88	0.99

\*\*\* 2011\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.43	200.21	557.96	0.21	8.87	7.88	0.99

Max lbs/day all phases 42.43 200.21 557.96 0.21 8.87 7.88 0.99

\*\*\* 2012\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	4.53	-	-	-	-	-	-
Asphalt Off-Road Diesel	15.21	88.19	129.25	-	2.43	2.43	0.00
Asphalt On-Road Diesel	0.56	8.53	2.06	0.03	0.25	0.23	0.02
Asphalt Worker Trips	0.07	0.03	0.86	0.00	0.02	0.00	0.02
Maximum lbs/day	62.27	295.98	677.94	0.24	11.56	10.54	1.02

Max lbs/day all phases 62.27 295.98 677.94 0.24 11.56 10.54 1.02

62.8 296.84

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jun '09  
 Phase 3 Duration: 36 months  
 Start Month/Year for SubPhase Building: Jun '09  
 SubPhase Building Duration: 36 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
14	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF  
 Start Month/Year for SubPhase Asphalt: Apr '12  
 SubPhase Asphalt Duration: 1.8 months

Acres to be Paved: 68.4

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
7	Pavers	132	0.590	8.0
7	Rollers	114	0.430	8.0

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URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar\_buildingconstructor  
 Project Name: Greenbriar Building Construction of Phase 2  
 Project Location: Lower Sacramento Valley Air Basin  
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT  
 (Pounds/Day - Summer)

Construction Start Month and Year: June, 2009  
 Construction Duration: 36  
 Total Land Use Area to be Developed: 274.27 acres  
 Maximum Acreage Disturbed Per Day: 68.57 acres  
 Single Family Units: 1197 Multi-Family Units: 280  
 Retail/Office/Institutional/Industrial Square Footage: 444310

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	28.02	192.80	222.78	-	8.13	8.13	0.00
Bldg Const Worker Trips	14.92	18.08	333.53	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.95	210.88	556.31	0.21	9.71	8.72	0.99
Max lbs/day all phases	42.95	210.88	556.31	0.21	9.71	8.72	0.99
*** 2010***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.43	200.21	557.96	0.21	8.87	7.88	0.99
Max lbs/day all phases	42.43	200.21	557.96	0.21	8.87	7.88	0.99

\*\*\* 2011\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	42.43	200.21	557.96	0.21	8.87	7.88	0.99

Max lbs/day all phases 42.43 200.21 557.96 0.21 8.87 7.88 0.99

\*\*\* 2012\*\*\*

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	28.02	182.43	230.35	-	7.29	7.29	0.00
Bldg Const Worker Trips	14.40	17.78	327.62	0.21	1.58	0.59	0.99
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	4.53	-	-	-	-	-	-
Asphalt Off-Road Diesel	15.21	88.19	129.25	-	2.43	2.43	0.00
Asphalt On-Road Diesel	0.56	8.53	2.06	0.03	0.25	0.23	0.02
Asphalt Worker Trips	0.07	0.03	0.86	0.00	0.02	0.00	0.02
Maximum lbs/day	62.27	295.98	677.94	0.24	11.56	10.54	1.02

Max lbs/day all phases ~~62.27~~ 295.98 677.94 0.24 11.56 10.54 1.02

628294.94

Phase 2 - Site Grading Assumptions: Phase Turned OFF

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jun '09  
 Phase 3 Duration: 36 months  
 Start Month/Year for SubPhase Building: Jun '09  
 SubPhase Building Duration: 36 months

No.	Type	Horsepower	Load Factor	Hours/Day
14	Other Equipment	190	0.620	8.0

SubPhase Architectural Coatings Turned OFF  
 Start Month/Year for SubPhase Asphalt: Apr '12  
 SubPhase Asphalt Duration: 1.8 months

Acres to be Paved: 68.4

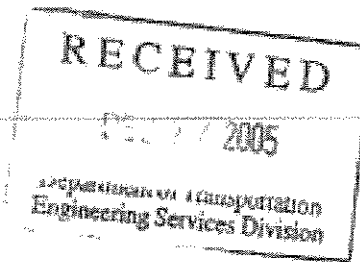
No.	Type	Horsepower	Load Factor	Hours/Day
7	Pavers	132	0.590	8.0
7	Rollers	114	0.430	8.0

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# **APPENDIX E**

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## **GREENBRIAR MASTER AQ/TSM PLAN**



December 21, 2005

Ms. Elizabeth Hughes  
660 J Street, Suite 444  
Sacramento, CA 95814

**Subject: GREENBRIAR AQ PLAN**

Dear Ms. Hughes:

Thank you for providing this project for review by the Sacramento Metropolitan Air Quality District (District) staff. District staff comments follow.

The provisions of the air quality plan meet the expectations of District staff. As a smart growth project located along the proposed Downtown Natomas Airport (DNA) Light Rail Line, many of the goals for a responsive air quality plan are met by the design and strategic location of the project. Since the DNA Line does not yet exist, the greatest air quality impacts will be realized once that RT project is completed.

In staff comments to the project proponents we highlighted the recent guidance provided by the California Air Resources Board regarding the potential hazards of projects located near freeways. In that guidance ARB noted that there are possible toxic hazards for sensitive receptors residing near major freeways. Lacking specific details for what those hazards will be, District staff met with representatives of Greenbriar to discuss possible mitigation measures. At that meeting, Greenbriar proponents agreed to plant trees and other physical/natural barriers between the few homes that would be impacted and the I-5 freeway. They further agreed to place the latest technology in windows design. If the District receives further guidance from ARB, we will send it to you.

If you have questions, please contact Jean Borkenhagen at 874-4885 or [jborkenhagen@airquality.org](mailto:jborkenhagen@airquality.org) as I will be retiring from the District effective January 6, 2006. It has been my privilege to work with you on this project and many others during my tenure at the District.

Sincerely,

Art Smith, Associate Air Quality Planner Analyst

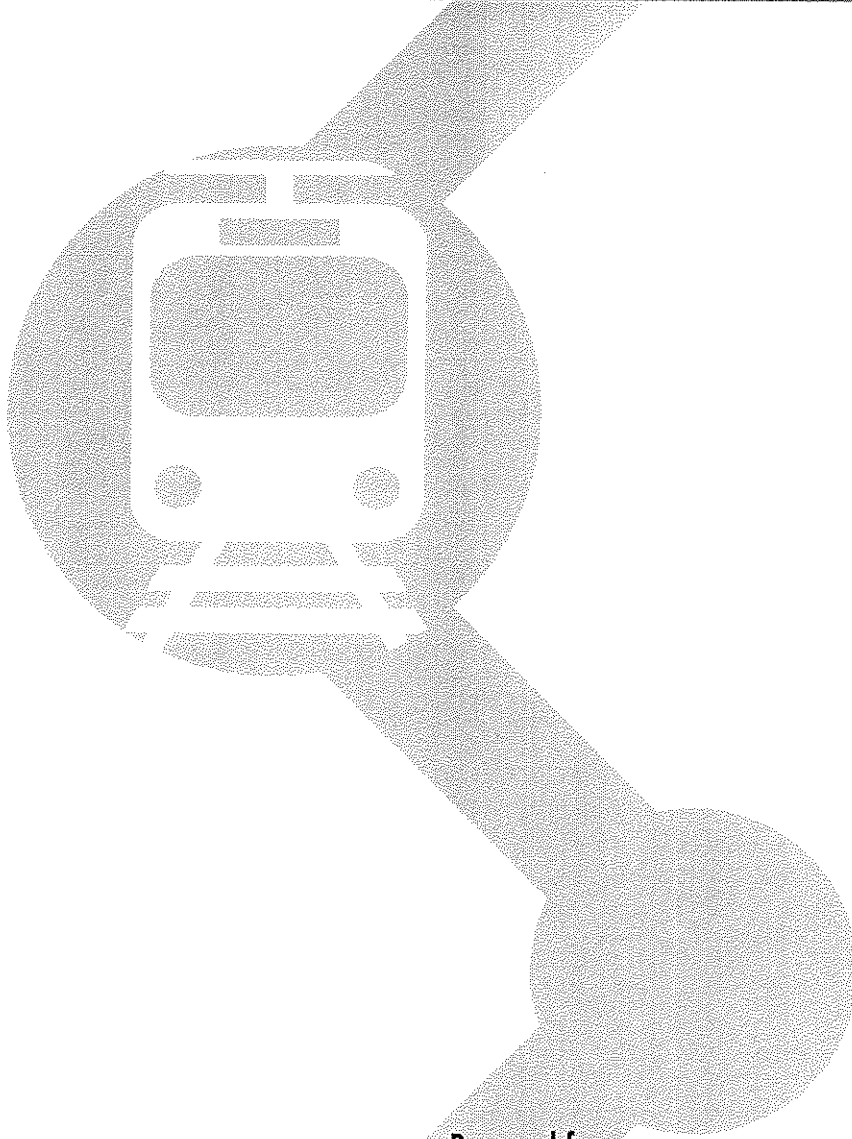
cc: Ed Cox, City of Sacramento, Ron Maertz, SMAQMD

LMSO/Land Use & Transportation/Land Use/SAC900400004 AQ Plan



# GREENBRIAR

## MASTER AQ/TSM PLAN



Prepared for:  
North Natomas 575 Investors, LLC

CITY OF SACRAMENTO &  
SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

 THE HOYT COMPANY    October 5, 2005

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- Sample Kiosk

## 1.0 PROJECT DESCRIPTION (#29 - 1.0%, #26 - 1.5%, #31 - 0.5%)

North Natomas 575 Investors, LLC proposes to develop Greenbriar, a 577-acre mixed use transit oriented development in the North Natomas community. Greenbriar consists of low, medium and high density housing. Increased density directly relates to improved air quality. The higher the density, the more likely one is to meet a neighbor to form a carpool or walking/bicycling group, or to take transit. Greenbriar has a diversity of housing with 12 different proposed housing types. The overall average residential density of 12 dwelling units per acre.

The Greenbriar community will serve as a focal point with 9 parks, an elementary school, retail and commercial uses. A pedestrian paseo surrounds an extensive water feature that runs through the project. The project is a true suburban infill TOD in keeping with the SACOG Blueprint project. Unique for a suburban development, the project has been strategically designed around a future light rail station on the DNA line. This light rail line will 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.

Greenbriar is bound by I-5 to the south, Highway 99 to the east, and Elkhorn Boulevard to the north and Lone Tree Road to the west. Metro Air Park, a master planned commercial and industrial development with an estimated 35,000 jobs at build out, lies immediately to the west of Greenbriar.

A schematic plan for the project is located on page 2.

The Smart Growth design of Greenbriar supports the air quality and trip reduction goals described in the North Natomas Community Plan<sup>1</sup> and those of the City of Sacramento.

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<sup>1</sup> *North Natomas Community Plan*, May 1994.





## 2.0 BACKGROUND ON SACRAMENTO AIR QUALITY

Ground-level ozone, a primary ingredient in smog, is formed when volatile organic compounds (VOCs) and NO<sub>x</sub> react chemically in the presence of sunlight. Cars, trucks, power plants and industrial facilities are primary sources of these emissions. Ozone pollution is a concern during the summer months when weather conditions are suitable for the formation of ground-level ozone. Ozone also aggravates asthma, damages the lining of the lungs and makes breathing more difficult.

Sacramento has been designated as a nonattainment area for ozone pollution. The region is not in compliance with standards set forth in either the Federal or State Clean Air Acts (does not meet the 8-hour ozone standard: 0.08 parts per million (ppm), averaged over eight hours). Sacramento must meet the federally mandated deadlines established by the 1990 Amendment to the Clean Air Act to be compliant with the national ambient air quality standards. In the interim, the nonattainment area must demonstrate to the EPA that they are making reasonable progress toward improving their air quality. The deadline for meeting the 8-hour ozone standard for Sacramento is 2013. Federal monies received for roadways and other transportation improvements may be reduced significantly if attainment is not met.

In order to meet the requirements of the Clean Air Act, most 8-hour ozone nonattainment areas will be required to submit a state implementation plan to the EPA by April 2007. Through this plan, states will design their approach to reducing the ozone level in the air and emissions of ozone precursors. Working with the EPA, nonattainment areas will also implement programs to further reduce emissions of ozone precursors from sources such as cars, fuels, and consumer/commercial products and activities.<sup>2</sup>

## 3.0 INTRODUCTION TO TRANSPORTATION MANAGEMENT

Transportation management is a combination of services, incentives, facilities, and actions that reduce single occupancy vehicle (SOV) trips to help relieve traffic congestion and air pollution especially during peak periods. Transportation management also encourages more efficient use of alternative transportation systems.

The basic premise of transportation management is the maximum utilization of existing transportation resources. The Sacramento region, as is typical of urban areas in the United States, has billions of dollars invested in roadway infrastructure and hundreds of millions of dollars invested in public transit infrastructure. The goal of transportation management is to more efficiently and economically take advantage of these major capital investments.

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<sup>2</sup> U.S. Environmental Protection Agency, 2005, [www.epa.gov/ozonedesignations](http://www.epa.gov/ozonedesignations)  
Sacramento Metropolitan Area Management District, 2005, [www.airquality.org/news.html#8hourdesignation](http://www.airquality.org/news.html#8hourdesignation).

The four basic goals that can be achieved through effective utilization of transportation management measures are:

1. Converting SOV trips to an alternative mode of transportation (i.e., transit, carpools, vanpools, bicycles or walking)
2. Reducing air pollution (i.e. technological solutions such as high-efficiency HVAC systems)
3. Reducing energy consumption (i.e., purchasing less gasoline)
4. Eliminating trips (i.e., telecommuting)

The concept is very similar to what private industry has done for decades. Private businesses have always managed their assets to produce the maximum output of a fixed capital investment. For example, if an automobile manufacturer experiences more demand for their product than can be produced at an existing plant, they do not build another expensive plant, they add a second and eventually a third shift. The manufacturer utilizes its existing resources (capital investment in machinery) over a longer period of time (asset management).

Until recently in the United States, the answer to relieving congestion on roads and in parking structures has been to build more roads and parking structures (similar to building another automobile manufacturing plant). Current economics, limited resources, and the need to reduce air pollution affect the ability to build and maintain more roads or parking structures. This reality necessitates better utilization of the existing transportation infrastructure (similar to adding a second shift). Transportation management measures support this transition to a greater use of existing alternative transportation options.

Transportation management can be the solution, or at least one element of the solution, to three basic concerns:

1. Air pollution
2. Traffic congestion
3. Energy consumption

The Sacramento Metropolitan area, as a growing urban area, needs to address all three of these concerns. The Greenbriar project has the opportunity to be part of the solution through the transportation management programs identified in this plan.

#### 4.0 AQ/TSM PLAN GOAL

To reduce air quality pollution and traffic resulting from development in North Natomas, the City of Sacramento and the Sacramento Metropolitan Air Quality Management District (SMAQMD) require new development in North Natomas to mitigate air pollution and automobile trips. The City of Sacramento and the SMAQMD have developed a listing of different Air Quality Mitigation Measures and Transportation Systems Management (TSM) measures that, when incorporated into new development, will reduce air pollutants and automobile trips.

The City of Sacramento and North Natomas Community Plan require an AQ/TSM Plan for major projects:

*The property owner of every Major Project shall be required to obtain a Transportation Management Plan (TSM Plan) permit subject to approval by the Planning Director and the Traffic Engineer.... Major Project defined as...any development proposal which is expected to be the primary place of business of 100 or more employees.<sup>3</sup>*

*Each non-residential project shall comply with the Citywide Transportation Management (TSM) ordinance and a Transportation Management Plan shall be required.<sup>4</sup>*

Separate specific AQ/TSM Plans for SC and C-2 uses will be created and submitted as the project develops. The plan will follow the guidelines set forth in this Master Plan.

The following sections provide details of the mitigation measures included in the Greenbriar development which support the required 35% mitigation for commercial land uses and 15% for residential land uses. Specifics for commercial development regarding actual number of required carpool spaces, bicycle storage spaces, etc. will be provided in a subsequent AQ/TSM Plan.

**Sacramento has the 7th worst air quality in the nation.** However, our region's air quality is improving in part from compliance of these requirements by projects, such as Greenbriar. Implementation of TSM and air pollution reducing strategies will continue to be an important component of cleaning up the air for a healthier economy and lifestyle.

**Section 17.184.060 of the City of Sacramento zoning code states that the plan obligations shall either be included in the covenants, conditions, and restrictions prepared for the development and recorded as part of that document, or separately recorded. The filing fee for this permit shall be in an amount specified by resolution of the city council. At any time after the original plan has been approved, the property owner may request modification of the plan by filing an application and processing fee in the amount specified by resolution of the city council. (Ord. 99-015 § 6-1-F)**

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<sup>3</sup> City of Sacramento Zoning Ordinance.

<sup>4</sup> *North Natomas Community Plan*, May 1994, Pg. 47.

## 5.0 TMA MEMBERSHIP (#51 - 2.5%)

Transportation Management Associations (TMA)s are private, nonprofit organizations run by a voluntary board of directors with typically a small staff. They help businesses, residents, developers, building owners, local government representatives, and others to work together to collectively establish policies, programs and services to address local transportation problems. The key to TMAs lies in the synergism of multiple groups banding together to address and accomplish more than any employer, resident, building operator or developer could do alone.

Currently Greenbriar is not served by a TMA. The TMA closest to Greenbriar is the North Natomas Transportation Management Association (NNTMA). The NNTMA offers its employee and residential members services such as shuttle service, Guaranteed Ride Home Program, transportation fairs, ridematching assistance, and vanpool assistance. Membership fees are automatically paid by residents and tenants through annual assessments to the Community Facilities District.

The NNTMA also provides the following programs:

**Bicycle Incentive** - The NNTMA has a program geared towards increasing bicycle usage. They offer rebates toward the purchase of a new bicycle.

**Save Money and Air by Reducing Trips (SMART)** - Transportation options and information will be provided to those who join the SMART club. Prizes are offered as incentives to keeping informed.

**School Program** - The NNTMA can help set up an all-volunteer "Walk-to-School" program at the elementary school within Greenbriar. This program provides students an organized, safe and healthy option for their trip to school.

Greenbriar will join a TMA and participate in programs and services offered by the TMA. Greenbriar's Transportation Coordinator (see Section 6.0) will work with the TMA to promote TMA programs for the purpose of reducing employee commute trips. The TMA will also promote programs to residents through marketing, transportation fairs, and through their Web site and publications.

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

### 5.1 Vanpool Assistance Program

Greenbriar's TC will work directly with the TMA and residents, with the purpose of forming vanpools. Typically, vanpools are created and used by employees who live 25 miles or more from their worksite. The North Natomas TMA has found that targeting employees who live closer to their worksites has been successful in the formation of vanpools.

## 6.0 TRANSPORTATION COORDINATOR (#57 - 0.2%)

Greenbriar will provide a Transportation Coordinator (TC) who will have the primary responsibility for implementing the measures found in this Master Plan.

This position will be temporarily filled by:

Name: Ms. Elizabeth Hughes, The Hoyt Company  
Address: 660 J Street, Suite 444  
Sacramento, CA 95814  
Phone: (916) 448-2440  
Email: elizabeth@thehoytco.com

If land is sold, the new property owner(s) will provide a TC. The land owner will inform the City with the name(s) of the TC(s). The TC will provide the following services and functions in coordination with the TMA:

1. Implement programs found in the Master AQ/TSM Plan for Greenbriar.
2. Develop and maintain liaison with the TMA serving Greenbriar.
3. Coordinate and manage various aspects of the Master Plan that require periodic updates or monitoring such as Guaranteed Ride Home Program registration, carpool registration, parking assignment and enforcement, locker assignment and enforcement.
4. Coordinate the transportation needs of the project specifically related to alternative modes of transportation such as shuttles or vanpooling.
5. Provide information and resource materials on the full range of transportation choices available (update the kiosk/centers of information).
  - Transit information (when RT implements and modifies service)
  - Bicycle information such as bicycle maps, new routes, etc. (available from Sacramento Area Council of Governments (SACOG), the TMA, and Sacramento Area Bicycle Advocates)
  - Carpooling/vanpooling information
6. The TC will be responsible for informational items provided at the sales/rental office for potential home buyers/lessors to review. A display will contain transit schedules, maps, bicycle and rideshare information, and the new resident transportation flyer. In addition, the TC will give each new homeowner/lesor a packet containing these materials at the close of escrow/lease signing. The TC will



update the information at least once per year until the project has been sold out. The TC will also work with the rental office(s) to keep an updated display in the common areas of the apartment complex(es)/senior living area

7. Develop relationship with tenant employees by on-site visits, transportation fairs and emails; promoting TSM and AQ programs.
8. Conduct an annual survey of tenant employee commute methods for the entire development and distribute summarized results to the tenant and to the City of Sacramento Department of Planning Department and the SMAQMD as part of the annual report process. (Please refer to Section 16.0 Expiration of Plan, page 18.)
9. Evaluate survey results for alternative transportation use and potential.
10. Promote telecommuting (working from home, which eliminates trips) and flextime (work schedules are flexible to accommodate carpooling or taking transit) where appropriate.

The TC will coordinate with TMA staff for program implementation such as the Guaranteed Ride Home Program and for information dissemination such as current bicycle maps, shuttle schedules, promotional incentives, and when appropriate, RT schedules. The TC must be provided with this Master AQ/TSM Plan so that the TC will know what the responsibilities are for this project. If there are any TC training opportunities provided by the TMA or other local agency, the TC must attend. The TC will also coordinate with the TMA staff to occasionally attend TMA board meetings or other regional meetings having to do with TSM or air quality.

If the person performing the duties of the TC changes, the City of Sacramento Transportation Department must be informed.

References to various air quality agencies are attached and are provided for benefit of the TC.

## 7.0 INFORMATION KIOSK (#8 - 0.5%)

Prior to occupancy, all tenants and residents will have available to them information that promotes improved air quality. The leasing/sales office will display information such as shuttle information, transit schedules (when appropriate), regional ridesharing programs, bicycle commuting programs, and other TMA or SMAQMD programs.

A permanent display will be provided in an employee common area with pertinent alternative mode information (see example on following page). Two outdoor kiosks will also be provided for the benefit of visitors to Greenbriar. The information will be updated as necessary (at a minimum annually) by the TC. This information will also be

distributed to employees when they are newly hired. The following are the types of information that will be provided:

- Maps and schedules for shuttles, Regional Transit bus routes and light rail, and transit pass subsidy program (when appropriate);
- Regional ridesharing programs (i.e., Rideshare Week, SACOG Rideshare's 511 rideshare matching program)
- Bicycle commuting programs (i.e., SACOG Rideshare's bicycle buddy matching, Bike to Work Day)
- Sacramento Metropolitan Air Quality Management District and TMA programs (i.e., GRH Program, Spare the Air)
- Commute alternative allowance program
- TC contact information

## **8.0 BICYCLE/PEDESTRIAN IMPROVEMENTS**

### **8.1 Project Located Within 1/2 Mile of Class I or Class II Bikeway (#5 - 1.0%)**

Bicycle lanes are planned throughout Greenbriar 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 page 2 to view the project's street sections.

Please refer to the bikeways map on page 11 to view the project in relation to the City's planned and existing bikeways.

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

### **8.2 Pedestrian Pathways (#6 - 1.0%)**

Five foot (5') sidewalks will be constructed throughout Greenbriar. All sidewalks (with the exception of a portion of Meister Way, will have additional "buffer" landscaping to separate pedestrians from the roadways. Please refer to page 2 to view the project's street sections for exact dimensions.

### **8.3 Separate Bicycle/Pedestrian Path (#32 - 2.0%)**

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

In addition to the fifteen foot paseo, land for a 100 ft. buffer will be dedicated to the City of Sacramento for construction along the freeway and the project property line. The buffer area will be landscaped and will make possible for a future twelve foot (12') off-street bikeway.

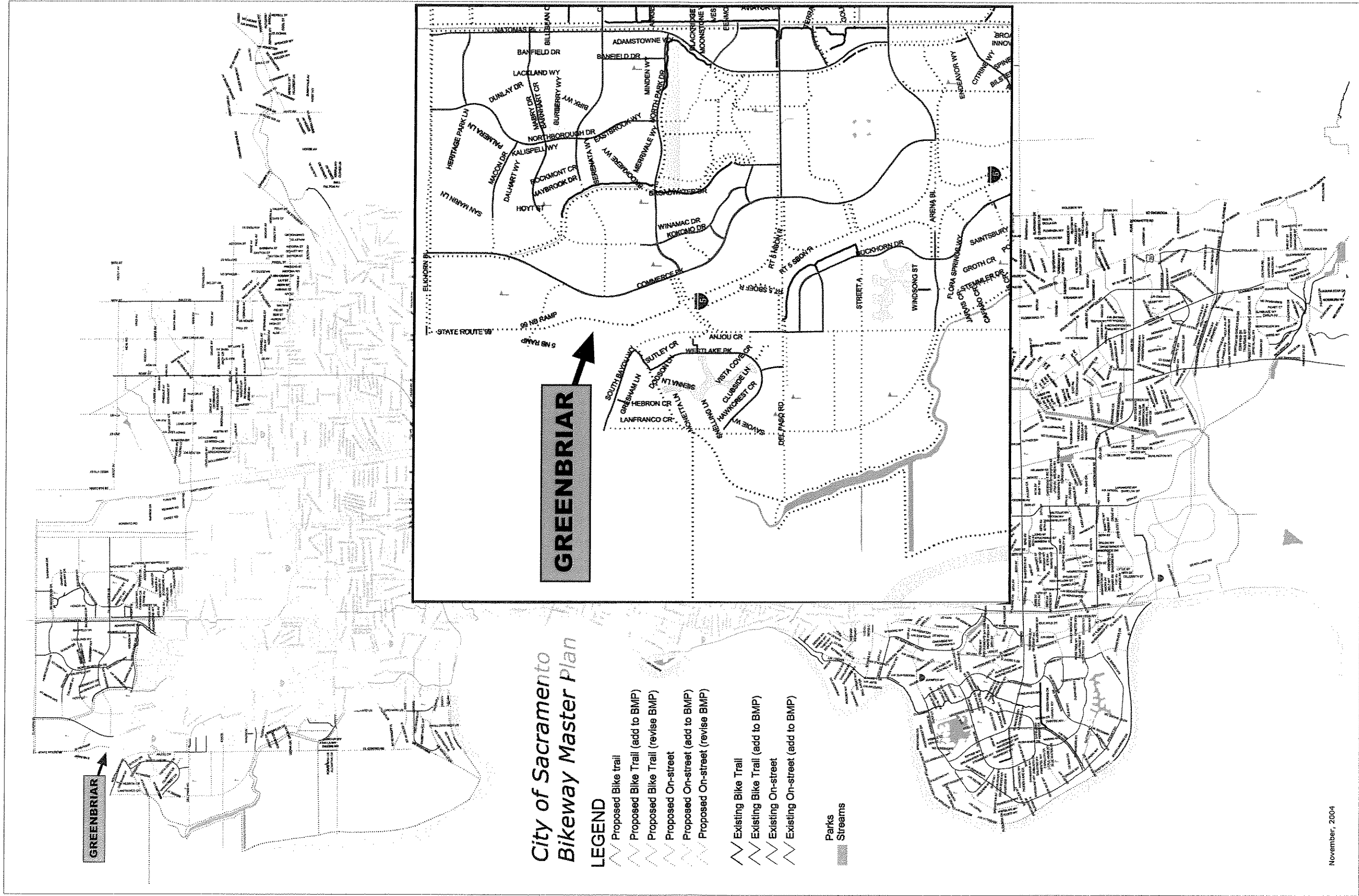
### **8.4 Eliminates Residential Uses that Impede Bicycle/Pedestrian Circulation (#33 - 1.0%)**

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

### **8.5 Bicycle Storage (1.0%)**

Having a secure place to store bicycles is a concern for those who would like to bicycle to work. Class I lockers, fully enclosed and locked units, provide the optimum storage for bicycles. In a locker a bicycle is completely protected from the elements and theft. Class II racks are those that one would chain a bicycle to and are usually in front of building entrances. Frame locking racks are convenient and deter from theft.

Greenbriar will provide Class I and Class II bicycle parking throughout the commercial area of the project at a ratio one (1) bicycle storage space for every 20 required parking spaces. Fifty Percent (50%) of the storage spaces will be Class I with the remaining spaces Class II (frame locking style).



## 9.0 TRANSIT (#10 - 0.5%, #29 - 1.0, 5.0%, 5.0%)

Greenbriar is a transit oriented **mixed-use** project with high-density uses within 1/4 mile of planned transit. Greenbriar has **dedicated land** along Meister Way for the purposes of a light rail station. Additional land has been reserved for a Regional Transit sub-station as well as a **park-n-ride lot**. The lot will include spaces for cars as well as Class I lockers for bicyclists.

The Greenbriar development plan embodies several planning strategies aimed at optimizing the potential for transit ridership when the planned RT Light Rail line from downtown to the Sacramento International Airport is built and a station is established at the center of Greenbriar:

- Higher density housing near the station site
- Mixed-use development adjacent to the station site
- Residential block sizes that encourage pedestrian and bicycle activity
- Open space/park network for easier pedestrian/bicycle trips

Initially Greenbriar will 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 will serve this project as it builds out (see Section 9.1). As the new residents begin to occupy homes and as commercial areas develop in North Natomas, residents and employees will be served by increased bus service and ultimately, light rail provided by Regional Transit.

### 9.1 Shuttle Service (10.0%)

Because transit service is not readily available, the NNTMA has developed a shuttle program that serves the residents in the North Natomas community.

Shuttle service will adjust as development occurs; however, current service provides residents in North Natomas with three types of service: commuter, shopper, and dial-a-ride. The following information details shuttle service.<sup>5</sup>

#### **Commuter Subscription**

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.

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<sup>5</sup> NNTMA Web site, <http://www.northnatomastma.org>, 2005.



**Dial-A-Ride**

This service is for the occasional rider. \$1 each way; free to destinations in North Natomas. Residents will 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 to space available.

**Shopper's Shuttle**

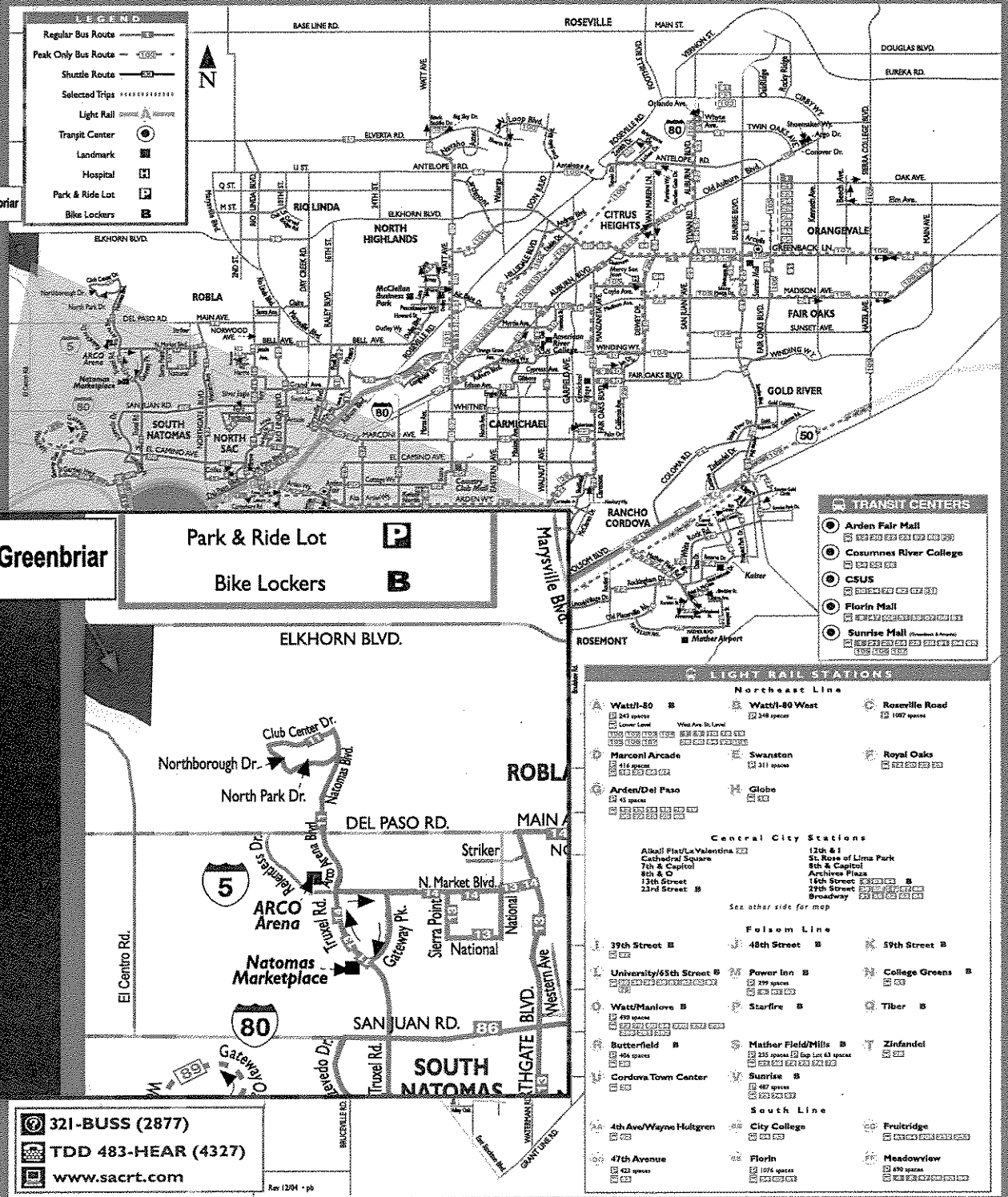
Operates from 10:00 a.m. to 4:00 p.m., Monday through Friday. Provides shuttle service on a fixed route to shopping and recreational facilities within the North Natomas community. Free to all users.

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

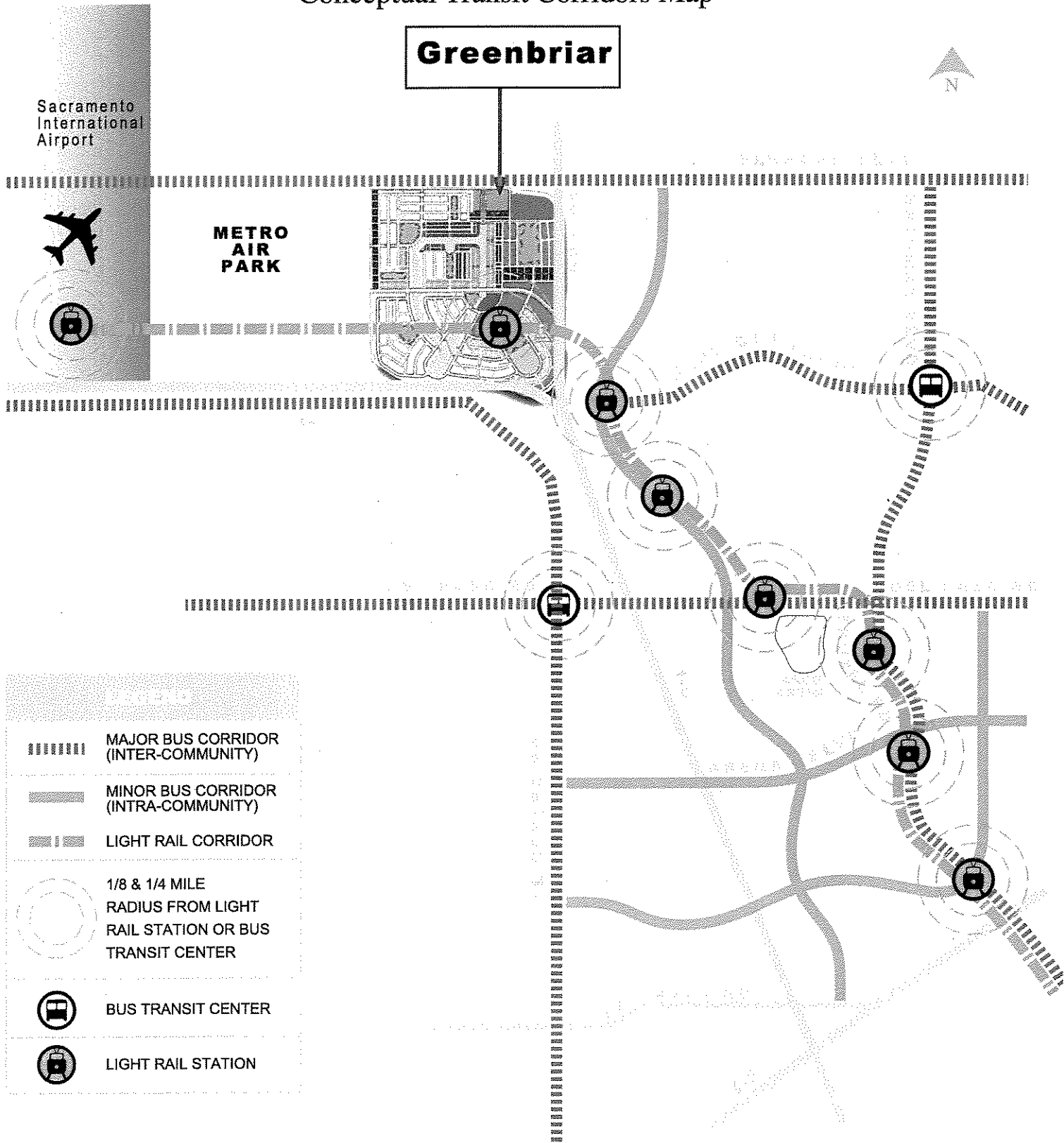
Greenbriar is aware that until RT transit service is readily available, shuttle service is an important component in their alternative mode program. Greenbriar will provide their community with shuttle service that will include a commuter line as well as other midday service. Greenbriar is currently in negotiations including the NNTMA to procure this kind of service.

# BUS & LIGHT RAIL SYSTEM MAP

EFFECTIVE JUNE 19, 2005



### Conceptual Transit Corridors Map



## **10.0 PREFERENTIAL PARKING FOR CARPOOLS/VANPOOLS (5.0%)**

As an incentive to rideshare, one effective measure is to reserve the most preferred parking spaces for exclusive use by carpools. Preferential parking not only provides the direct benefit of convenience to employees, but also provides a certain degree of prestige as reserved, prime parking spaces are normally only given to upper management.

Ten percent (10%) of all employee parking spaces at Greenbriar's commercial areas will be reserved for carpools (exact numbers and locations will be provided in a subsequent AQ/TSM Plan). These spaces will be located as close to the building entrances as possible to provide maximum benefit and convenience to those who use an alternative mode of transportation.

The TC will promote carpooling and spaces, if necessary, and be responsible for assigning the spaces.

## **11.0 PARKING (#12 - 0.5%)**

The amount of parking provided at a site is directly related to the amount of alternative mode use. If there is an abundance of parking it makes it easier to drive to work. However, limiting the amount of parking provides an incentive to carpool, bicycle, or walk to work.

Greenbriar will provide the minimum amount of parking spaces required by the City of Sacramento (1 space/400 s.f. for EC; 1 space/250 s.f. for HC; and 1.5 spaces/d.u. + 1 space/15 d.u. for HD).

### **11.1 Parking Lot Shading (#15 - 0.5%)**

The City of Sacramento requires that a certain percentage of a development's parking lot be shaded by 50% within 15 years of the establishment of the parking lot. To improve air quality conditions, Greenbriar will provide an additional 10% of parking lot shading by adding more trees.

## **12.0 GUARANTEED RIDE HOME (2.0%)**

All employees or residents who commute to work using transit or in a carpool or vanpool will be guaranteed a ride home in the case of a personal emergency or when they unexpectedly have to work late, thereby missing the last bus or their normal carpool home.

The program will be provided by the TMA and be available to employees and residents of the project as a membership benefit. This program has proven very successful elsewhere in California. It removes one of the major objections employees have to giving up their private automobiles (i.e., not being able to get home in case of an emergency), especially for those with young families.

### **13.0 PERSONAL MATCHING ASSISTANCE (2.0%)**

Forming carpools is an important step in reducing the number of commute trips into and out of the Sacramento area. Carpools help reduce traffic congestion on surface streets and, typically, reduce commute time (especially on freeways with High Occupancy Vehicle lanes - carpool lanes). The Personal Matching Assistance (PMA) program will provide assistance to employees wishing to carpool.

SACOG has partnered with the California Department of Transportation (Caltrans) to launch a 511 transportation information system for the six-county Sacramento region that will assist in the formation of carpools.

The 511 telephone number is accompanied by a Web site, [www.sacregion511.org](http://www.sacregion511.org). The number and Web site will give commuters the information they need to make better choices when planning trips. By calling in or logging on, commuters can get up-to-the-minute information about traffic conditions, public transportation options, ridesharing, and bicycling anytime, anywhere throughout the Greater Sacramento area and Northern California.

The six-county Sacramento system will be the second 511 service to go on-line in California. It will provide links to 511 systems in the Bay Area, Oregon and Nevada and will be available from any phone, provided the carrier supports 511. Most counties in the region will have wireless and landline access to the service through the major carriers.

Residents and employees will be provided with information on this program, and, if necessary, personal assistance from the TC in order to register their commute information or to find/form carpools with employees within Greenbriar. The TC will work with the TMA to promote this program and to utilize their assistance if required.

### **14.0 LANDSCAPING (#58 - 2.0%)**

Most small-engine landscape maintenance equipment is very 'dirty' in air quality terms. These small internal combustion engines often have very high pollutant emissions. Since landscaping companies use the equipment almost continuously throughout a workday, the cumulative impacts of these machines becomes a moderate source of air pollutants in the Sacramento Valley.



The project proponent will contract with commercial landscapers who use either 50% electric or low-emission equipment certified by the California Air Resources Board (CARB).

Contractors will provide documentation (a one-page letter) confirming use of new equipment. The letter will include date of purchase and kind of equipment used. This letter will then be forwarded to the City's Planning Department and the SMAQMD.

#### 15.0 FURNACE (#42 - 0.5%)

Natural gas burners, used in furnaces, are the primary energy source for manufacturing, industrial processing and space heating, and commercial and residential space heating and hot water. U.S. homes, businesses, industry, and power generators burned nearly 23 trillion cubic feet of natural gas in 2000, generating 22.6 quadrillion British Thermal Units (BTUs) of energy and emitting nearly 22 million metric tons of NO<sub>x</sub>.<sup>6</sup>

In an effort to reduce NO<sub>x</sub> pollution, Greenbriar will be installing the lowest emitting commercially available furnaces in their buildings.

#### 16.0 EXPIRATION OF PLAN

All measures in this Master Plan shall continue to be implemented by the applicant. Informational promotions, such as displaying flyers or transit schedules at the information kiosk, will continue to be provided and updated as necessary. Updated information may be obtained by the Executive Director of the TMA, SACOG, the SMAQMD, and/or any other relevant agency.

Periodic monitoring will be conducted by the City of Sacramento by telephone or by on-site visits, to ensure that measures in this Master Plan are being implemented.

#### *Annual Report*

Each year an annual report will be carried out by the TC as follows:

1. Conduct a survey representing all employees within the Greenbriar project. The survey must determine the employee commute mode split (how employees are getting to and from work).
2. Collect data and summarize the results including progress toward attainment of the alternative commute mode goal of the city. If alternative commute mode goal has not been attained, a plan for additional TSM measures shall be implemented.

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<sup>6</sup> Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory, 2003.

3. The TSM Plan Annual Report Summary will be forwarded to the City of Sacramento, Transportation Department and the SMAQMD for review and processing at the one year occupancy anniversary and thereafter annually.

**Failure to comply with reporting is a violation and shall be enforced pursuant to Section 18.12.060 of the Zoning Ordinance.**

## 17.0 CONCLUSION

The Greenbriar proposed transit oriented mixed-use development is consistent with the emission reduction goals contained in the North Natomas Community Plan and trip reduction goals of the City of Sacramento. For a suburban development, it is unusual in terms of its higher density and pedestrian/bicycle/transit oriented design. This Plan is designed to improve air quality and traffic through emission and trip reducing mitigation measures.

As future commercial projects are developed, specifics regarding actual number of parking spaces, bicycle storage facilities, and preferential parking spaces, etc., will be provided through subsequent AQ/TSM Plans.

Please see the following pages for the required forms that summarize the proposed measures contained in this Plan: Compliance, Project Profile, and City of Sacramento. Also attached is a listing of air quality contacts, sample survey questions and an example of a kiosk of information.

# COMPLIANCE FORM

**AIR QUALITY PLAN COMPLIANCE FORM  
GREENBRIAR**

A total of 35% trip reduction and 15% air pollution reduction is required for this project.

<b>A. TSM Measures</b>	<b>Credit</b>
Preferential parking	5.0%
Land dedication for transit	5.0%
Bicycle storage	1.0%
Community Shuttle	10.0%
PMA	2.0%
GRH	2.0%
Vanpool assistance program	5.0%
Park-n-ride lot	5.0%
<b>Subtotal</b>	<b>35.0%</b>

<b>B. Air Quality Mitigation Measures</b>	<b>Credit</b>
5 Located within 1/2 mile of existing Class I or Class II bike lane	1.0%
6 Provides pedestrian improvements	1.0%
8 Provide a display case/kiosk displaying transportation information	0.5%
10 Residential use within 1/4 mile of planned transit	0.5%
12 Minimum amount of parking	0.5%
15 Increase parking lot shading by 10%	0.5%
26 Average residential density 7 d.u. per acre or greater	1.5%
29 Mixed use	1.0%
31 Neighborhood serves as focal point	0.5%
32 Separate & safe bicycle & pedestrian paths connecting residential, commercial & office uses	2.0%
33 Provide development pattern that eliminates physical barriers that impede ped./bike activity	1.0%
42 Install low emitting furnaces	0.5%
51 Permanent TMA membership	2.5%
57 Transportation Coordinator	0.2%
58 Contract with landscapers complying w/CARB standards	2.0%
<b>Subtotal</b>	<b>15.2%</b>

Greenbriar  
Project Name

Applicant Name

Applicant Signature

Approved By:

City of Sacramento Transportation Department

City of Sacramento Planning Department

**ATTACHMENT**



**AIR QUALITY INFORMATION  
CONTACTS**

## INFORMATION CONTACTS

### **American Lung Association Sacramento Emigrant Trails chapter**

909 12th Street  
Sacramento, California 95814  
Phone: (916) 444-5864 (LUNG) or (800) LUNG-USA  
Fax: (916) 444-6661  
Email: [staff@alaset.org](mailto:staff@alaset.org)  
Website: <http://www.alaset.org>

### **North Natomas Transportation Management Association (TMA)**

Mr. Bill Fairbairn  
2101 Arena Boulevard, Suite 200  
Sacramento, CA 95834  
Phone: (916) 808-7735 ext. 4  
Website: <http://www.northnatomastma.org>

### **California Air Resource Board (CARB)**

1001 I Street  
Sacramento, California 95814  
Phone: (916) 322-2990  
Website: <http://www.arb.ca.gov>

### **Sacramento Regional Transit District (RT)**

P.O. Box 2110  
Sacramento, California 95812-2110  
Customer Relations Phone: (916) 321-2850 or (916) 321-2877 (BUSS)  
Customer Relations Fax: (916) 444-0502  
Website: <http://www.sacrt.com>

### **Sacramento Area Council of Government (SACOG)**

1415 L Street, Suite 300  
Sacramento, California 95816-7056  
Phone: (916) 321-9000  
Fax: (916) 321-9551  
Website: <http://www.sacog.org>

### **Sacramento Metropolitan Air Quality Management District (SMAQMD)**

777 12th Street, 3rd Floor  
Sacramento, California 95814  
Community Education Phone: (916) 874-4888  
Community Education Fax: (916) 874-4899  
Website: <http://www.airquality.org>

# **SURVEY QUESTIONS**



Please complete the following questionnaire. Your company is developing a transportation program for employees and the information you provide will help determine the facilities and services that would be most valuable to you. All of your answers are strictly confidential.

1. Based on the definitions at the right, how did you get to work today?  
(Check only one space)

- |  |  |
|--|--|
| <input type="checkbox"/> Drove alone                 | <input type="checkbox"/> Transit           |
| <input type="checkbox"/> Carpool driver              | <input type="checkbox"/> Carpool passenger |
| <input type="checkbox"/> Vanpool driver              | <input type="checkbox"/> Vanpool passenger |
| <input type="checkbox"/> Walked                      | <input type="checkbox"/> Bicycled          |
| <input type="checkbox"/> Buspool driver              | <input type="checkbox"/> Buspool passenger |
| <input type="checkbox"/> Telecommuted/Worked at home | <input type="checkbox"/> Other _____       |

2. Counting the trip to work as one trip and the trip home as a second trip, how many commute trips do you make Monday through Friday?  
\_\_\_\_\_ trips per week

3. Of the weekly trips noted in Question 2, how many are by:  
 \_\_\_\_\_ Carpool                  \_\_\_\_\_ Vanpool                  \_\_\_\_\_ Buspool  
 \_\_\_\_\_ Transit                  \_\_\_\_\_ Bicycle                  \_\_\_\_\_ Walking  
 \_\_\_\_\_ Telecommuting\*

\* Indicate the number of trips you did not take because you used this option

4. Do you normally come to work either between the hours of 6:00 a.m. and 9:00 a.m. or between 3:30 p.m. and 6:30 p.m.?  Yes  No

5. Do you normally go home from work either between the hours of 3:30 p.m. and 6:30 p.m. or between 6:00 p.m. and 9:00 a.m.?  Yes  No

6. How far from work do you live (one way only)?  
(Check one box only)

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> 0 - 0.9 miles     | <input type="checkbox"/> 1.0 - 2.9 miles   | <input type="checkbox"/> 3.0 - 5.0 miles   |
| <input type="checkbox"/> 5.1 - 9.9 miles   | <input type="checkbox"/> 10.0 - 14.9 miles | <input type="checkbox"/> 15.0 - 19.9 miles |
| <input type="checkbox"/> 20.0 - 24.9 miles | <input type="checkbox"/> 25 or more miles  |  |

7. If you drive a car or motorcycle: a) Where do you normally park?  
(Check the most appropriate box)

- |  |
|--|
| <input type="checkbox"/> In the company (including county, state, or federal) lot.     |
| <input type="checkbox"/> On the street: <input type="checkbox"/> 10 hour parking meter |
| <input type="checkbox"/> 2 hour parking meter  |
| <input type="checkbox"/> No time restrictions  |
| <input type="checkbox"/> Permits required  |
| <input type="checkbox"/> In a lot with company provided space.                         |
| <input type="checkbox"/> In a public or private lot open to everyone.                  |
| <input type="checkbox"/> In a vacant field.  |
| <input type="checkbox"/> Other: specify _____  |

## DEFINITIONS

### Driving alone:

Driving your car or motorcycle to work without a passenger.

### Carpooling:

Riding or driving to work in a car carrying at least one passenger. This includes being dropped off if the driver goes to work at another site.

### Vanpooling:

Riding or driving to work with 6 or more passengers in the same vehicle.

### Transit:

Riding a bus or using light rail to get to work.

### Buspooling:

Riding a bus that does not return home until the end of a work day.

### Bicycling:

Riding a non-motorized bicycle to work.

### Walking:

Traveling from home to work on foot (walking from a transit stop or a parking lot does not count).

### Telecommuting:

Working at home or at a satellite office instead of at your employer's normal worksite.

b) How much do you pay for parking each month?  
(Check the appropriate box)

- |  |
|--|
| <input type="checkbox"/> Nothing: Free Parking |
| <input type="checkbox"/> Employer pays         |
| <input type="checkbox"/> \$1 - 20              |
| <input type="checkbox"/> \$21 - 40             |
| <input type="checkbox"/> \$41 - 60             |
| <input type="checkbox"/> \$61 - 80             |
| <input type="checkbox"/> \$81 - 100            |
| <input type="checkbox"/> Over \$100 per month  |

Thank you for completing this survey. Please return it today to \_\_\_\_\_.

**SAMPLE KIOSK**



### 10 FACTS ABOUT THE ALTERNATIVE COMUTE PROGRAM

1. **FREE Guaranteed Ride Home Program** is available to all employees who use the program.
2. **Monthly Transit & Vanpool Subsidies** are available to all employees who use the program.
3. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
4. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
5. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
6. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
7. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
8. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
9. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.
10. **Monthly Guaranteed Ride Home Program** is available to all employees who use the program.

# STOP!

CONSIDER AN ALTERNATIVE COMUTE OPTION

- 1. 80% TRANSIT & VANPOOL SUBSIDIES**  
Monthly transit and vanpool subsidies are available to all employees who use the program.
- 2. ONPARK TRANSIT**  
12 monthly on-park transit passes are available to all employees who use the program.
- 3. CONVERT AT A TRANSIT/VEHICLE SALES**  
Purchase 12 passes of transit or vehicle sales at a discounted rate.
- 4. FREE GUARANTEED RIDE HOME**  
Monthly guaranteed ride home program is available to all employees who use the program.
- 5. FREE BICYCLE LOCKERS**  
Free bicycle lockers are available to all employees who use the program.
- 6. FREE PREFERENTIAL CARPOOL SPACES**  
Free preferential carpool spaces are available to all employees who use the program.
- 7. ONPARK AGENTIES**  
On-park agent agencies are available to all employees who use the program.
- 8. FREE BICYCLE LOCKERS**  
Free bicycle lockers are available to all employees who use the program.
- 9. FREE PREFERENTIAL CARPOOL SPACES**  
Free preferential carpool spaces are available to all employees who use the program.

### TRY TRANSIT!

Free Trial Transit Passes

Get a free trial transit pass for 10 days. No purchase necessary. While supplies last.

1. 10 Day  
2. 10 Day  
3. 10 Day

### 80% TRANSIT & VANPOOL SUBSIDIES

Monthly transit and vanpool subsidies are available to all employees who use the program.

1. 80% Transit  
2. 80% Vanpool

### FREE GUARANTEED RIDE HOME

Monthly guaranteed ride home program is available to all employees who use the program.

1. Free Ride Home  
2. Free Ride Home

### RIDESHARE

Monthly rideshare program is available to all employees who use the program.

1. Rideshare  
2. Rideshare

## Save the Date!

# TRANSPORTATION FAIR

Wednesday, July 9, 2003  
Courtyard between Raven Ho and Tolantik  
10:30 a.m. to 12:30 p.m.

Learn about and try out the latest in transportation technology.

Transit • Carpool • Bicycle • Walk • Vanpool • Foodprep • Air Quality • Foodprep • Air Quality • Foodprep • Air Quality


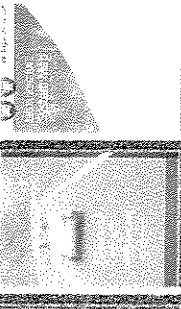
### Bicycle Commute Guide

511 Transportation Services




### Your Driving Costs 2004

511 Transportation Services

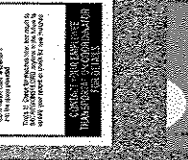

### RIDESHARE Your Commute To Work

511 Transportation Services




### FREE BICYCLE LOCKERS

511 Transportation Services

### FREE PREFERENTIAL CARPOOL SPACES

511 Transportation Services






### ONPARK TRANSIT

511 Transportation Services




### CONVERT AT A TRANSIT/VEHICLE SALES

511 Transportation Services

### 80% TRANSIT & VANPOOL SUBSIDIES

511 Transportation Services




## **APPENDIX F**

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### **AIR QUALITY HEALTH RISK ASSESSMENT**

## DRAFT

# Health Risk Assessment for the Proposed Greenbriar Farms Development

October 4, 2005

### Summary

The California Air Resource Board's (CARB's) guidance document entitled "Air Quality and Land Use Handbook: A Community Health Perspective<sup>1</sup>," recommends, among other things, that new residences should not be sited within 500 feet of a freeway. This recommendation was based on analyses suggesting that health risks were increased within 300 feet of a freeway, and that a 70% reduction in ambient particulate levels is seen at 500 feet from the source. As a consequence, a site-specific health risk assessment was performed for the Greenbriar Farms development project, which entails the proposed construction of residences within about 200 feet of Interstate 5 (I-5) and State Route 99 (SR-99) where the two freeways intersect in northern Sacramento.

The analysis of the potential health risks associated with the impact of freeway emissions on the proposed Greenbriar Farms development was prepared based on CARB and U.S. Environmental Protection Agency (EPA) emission factors, EPA dispersion models, and traffic data provided by the Sacramento Area Council of Governments (SACOG). This analysis indicates that risks from nearby I-5, SR-99, and the freeway interchange on proposed residences in the Greenbriar Farms development are lower than those suggested in CARB's land use guidance document. For the residences nearest the freeways, the acute and chronic non-cancer health risks are below all established regulatory significance levels, and the 70-year average increased cancer risk is less than 6% of recent background risk levels attributable to toxic air pollutants in the Sacramento area.

The lower risks identified for this project, in comparison with the values presented in the CARB Land Use Guidance document, are the result of a number of site-specific factors, including vehicle traffic volumes, the relative orientation of the freeway vis-à-vis the proposed development, local meteorology, and the expected decline in vehicle emissions over time. Notwithstanding the fact that these impacts are substantially lower than those upon which CARB's siting recommendations are based, if additional mitigation measures are desired, the following measures should be considered:

- Use of sound walls to enhance the dispersion of emissions from freeways; and
- Use of tiered tree planting to enhance the dispersion of emissions from freeways.

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<sup>1</sup> Published in April 2005.

These two measures are intended to enhance the dispersion of emissions, and hence reduce concentrations of pollutants at residences that are closest to the freeway. Unfortunately, there are no tools available at the present time to quantify the potential benefits of these measures.

## Introduction

In April 2005, the California Air Resource Board (CARB) published a guidance document entitled "Air Quality and Land Use Handbook: A Community Health Perspective," which recommended, among other things, that new residences should not be sited within 500 feet of a freeway. This recommendation was based on analyses suggesting that additional health risks were strongest within 300 feet of a freeway and that a 70% reduction in ambient particulate levels is seen at 500 feet from the source. The CARB recommendation directly affects the proposed Greenbriar Farms development, which entails the proposed construction of residences within about 200 feet of the freeway edges. Figure 1 shows a map of the proposed development site adjacent to the intersection of Interstate 5 (I-5) and State Route 99 (SR-99), along with the typical wind patterns in the area based on historical meteorology. As shown in the wind rose plot, the winds are strongest from the south and southwest. This would effectively minimize the exposure of the proposed site to emissions from SR-99 and the interchange; however, emissions from I-5 would be directed towards the proposed development under prevailing wind conditions. A site-specific health risk assessment was performed in order to quantify the risk associated with the combination of meteorology and traffic volumes from the adjacent freeways, including I-5, SR-99, and the interchange.

To assess the risk associated with exposure to mobile source air toxics (MSATs) emitted from vehicles on the freeways adjacent to the development, vehicle emissions on the freeways segments were quantified and the cancer and non-cancer risks due to exposure were estimated at various distances from I-5, SR-99, and the interchange using dispersion modeling. The MSATs included in the study are the 21 toxic air pollutants identified by the U.S. Environmental Protection Agency (EPA)<sup>2</sup> and listed in Table 1. The analysis was performed for calendar year 2007 and every five years thereafter until 2037 using projected emission rates and traffic activity on the given stretch of freeway. This report summarizes the traffic data and methodology used and the results of the assessment.

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<sup>2</sup> "List of Mobile Source Air Toxics (MSATs)," U.S. Environmental Protection Agency, Mobile Source Air Toxics Website, <http://www.epa.gov/otaq/toxics.htm>, Accessed July 26, 2005.

Figure 1  
Greenbriar Farms Development Site Map And Wind Direction

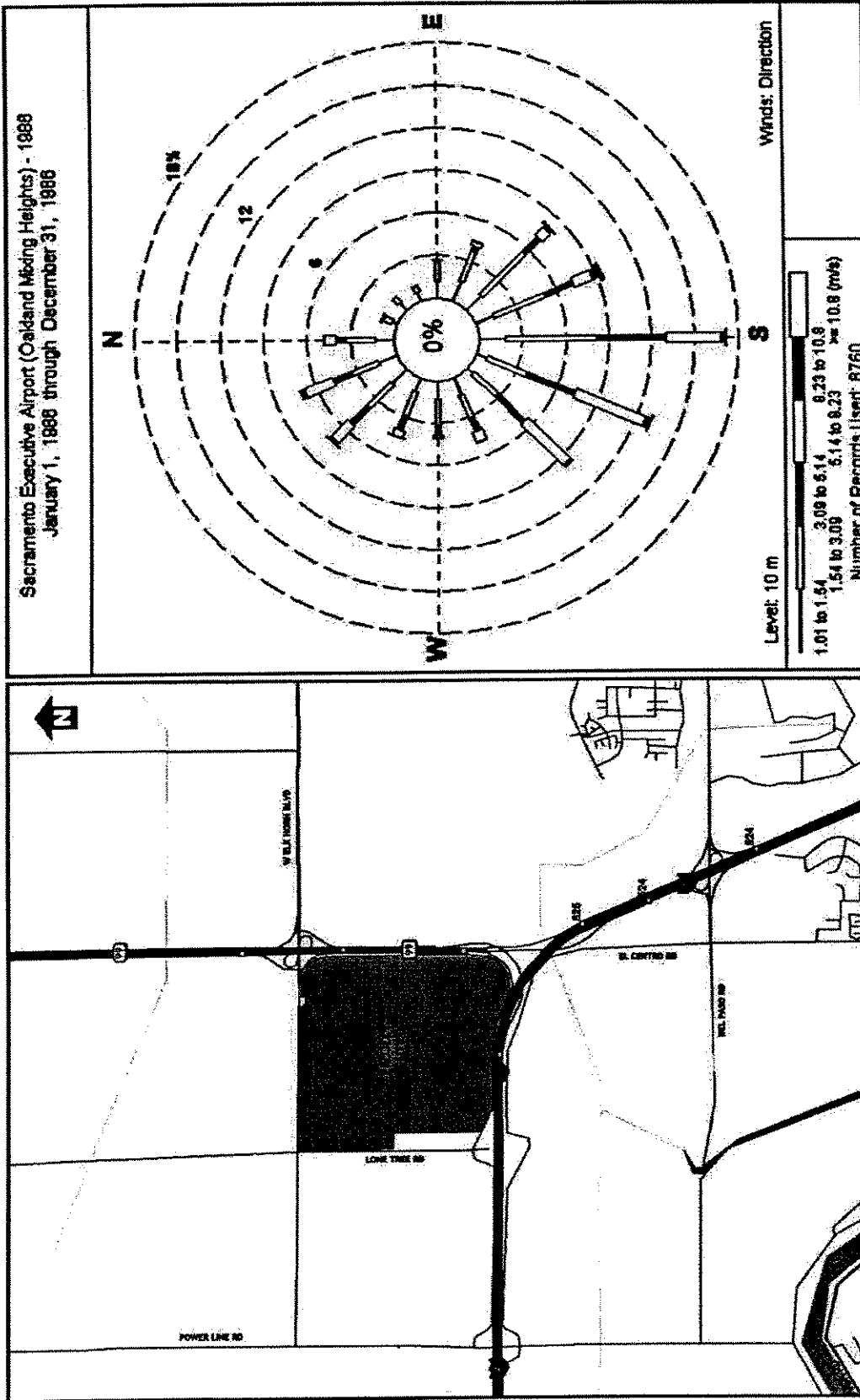


Table 1 21 Mobile Source Air Toxic Pollutants Identified by EPA		
Acetaldehyde	Diesel Particulate Matter (PM) and Diesel Exhaust	MTBE
Acrolein	Organic Gases	Naphthalene
Arsenic Compounds	Formaldehyde	Nickel Compounds
Benzene	n-Hexane	Polycyclic Organic Matter (POM)
1,3-Butadiene	Lead Compounds	Styrene
Chromium Compounds	Manganese Compounds	Toluene
Dioxins/Furans	Mercury Compounds	Xylene
Ethylbenzene		

### Estimating MSAT Emission Levels

To be consistent with the development timeline, the analysis years were chosen to begin in 2007, and were projected as far into the future as the emissions modeling would permit at five-year increments to 2037. CARB's most current version of the EMFAC emissions inventory model<sup>3</sup> was used as the basis for the analysis; this model projects emissions through calendar year 2040. The EMFAC model has the capability to estimate emissions of hydrocarbons (in the form of total organic gases [TOG] and reactive organic gases [ROG], among others) and particulate matter greater than 10 microns in diameter (PM<sub>10</sub>) from gasoline and Diesel vehicles specifically for Sacramento County.

EMFAC runs were developed to generate average TOG, ROG, and PM<sub>10</sub> emission factors in grams per mile for Sacramento County for each of the 13 vehicle classes in the model, by technology group (non-catalyst, catalyst, and Diesel), for a total of 39 combinations. Because the EMFAC model does not estimate MSAT emissions, the emission factors generated from the model runs were multiplied by air toxic pollutant emission ratios (expressed as MSAT/TOG, MSAT/volatile organic compounds (VOC), and MSAT/PM<sub>10</sub>) from EPA. For example,

$$\text{MSAT (g/mi)} = \text{TOG (g/mi)} * \text{MSAT/TOG.}$$

The most current version of EPA's MOBILE model<sup>4</sup> provides ratios to estimate emissions for benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, and MTBE from TOG emissions and average fuel properties. The fuel used in Sacramento County for 2007 through 2037 was assumed to fall within the requirements of the California Phase 3 Reformulated Gasoline flat limits, and the winter fuel Reid vapor pressure (RVP) was estimated to be 13 psi based on historical winter gasoline in the area.

<sup>3</sup> EMFAC2002 dated April 21, 2003.

<sup>4</sup> MOBILE6.2 dated September 24, 2003.



In addition to the six MSATs explicitly modeled in MOBILE, emissions for dioxins, naphthalene, ethylbenzene, n-hexane, styrene, toluene, xylene, a representative group of POMs,<sup>5</sup> chromium (Cr<sup>6+</sup> and Cr<sup>3+</sup>), manganese, nickel, mercury, and arsenic were estimated using ratios and emissions factors developed by EPA for use in creating the 2002 National Emissions Inventory (NEI). The ratios for naphthalene, ethylbenzene, n-hexane, styrene, toluene, and xylene from the NEI were based on VOC emissions, the POM ratios were based on the PM<sub>10</sub> emissions, and emission factors in milligrams per mile were obtained for the metals and dioxins<sup>6</sup>. Because the EMFAC model does not generate hydrocarbon emissions as VOC, the model emissions for ROG were used with the VOC-based ratios.<sup>7</sup>

After MSAT emission factors were developed for each vehicle class from the combination of the TOG, ROG, or PM<sub>10</sub> emissions from EMFAC, and ratios and emission factors from EPA, separate Diesel and gasoline fleet-average MSAT emission factors were estimated using the fraction of vehicle miles traveled (VMT) by vehicle class in EMFAC for Sacramento County for each analysis year. The average gasoline and Diesel MSAT emission factors were then combined with the estimated average annual and peak period total VMT for each fuel type for the adjacent freeways for the study years using the following equation:

$$\text{MSAT (g/mi)} * \text{VMT (mi/s)} = \text{MSAT (g/s)}$$

The VMT (the product of roadway length and traffic volume) for vehicles traveling on I-5, SR-99, and the interchange were estimated from local traffic volume data derived from the Sacramento Regional Travel Demand Model (SACMET) and obtained from the Sacramento Area Council of Governments (SACOG)<sup>8</sup> and freeway segment lengths estimated to affect the proposed Greenbriar Farms development. The SACOG traffic volume data included the annual average and 3-hour AM peak-period traffic volumes for the north (west) and southbound (eastbound) portions of I-5, the north and southbound portions of SR-99, and the interchange<sup>9</sup> for 2005, along with the volume projections for 2027. The freeway segment lengths selected were based on the length of the freeway adjacent to the proposed development plus an additional 1,000 feet in all directions<sup>10</sup> in order to ensure that all emissions with potential to result in near-field impacts to the development were captured. This resulted in about two miles of I-5, one mile of SR-99,

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<sup>5</sup> A group of seven polynuclear aromatic hydrocarbons (7-PAH)—benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenz(ah)anthracene, and indeno(1,2,3-cd)pyrene—was used as a surrogate for the larger group of POM compounds.

<sup>6</sup> No health risk factors were available for furans; therefore, emission factors for furans were not sought beyond the EPA sources referenced.

<sup>7</sup> The differences between VOC and ROG are believed to be insignificant in the context of this analysis.

<sup>8</sup> Robert McCrary, SACOG. Personal communication. September 2005.

<sup>9</sup> 2005 and projected 2027 traffic volumes were obtained from SACOG for the northbound SR-99 freeway ramps from I-5 and for the southbound I-5 freeway ramps from SR-99. Traffic volumes for the other interchanges (northbound SR-99 freeway ramps from I-5) and interchange through traffic (vehicles continuing down I-5 north and southbound past the SR-99 interchange) were estimated from a traffic volume balance over the entire interchange system since all traffic is conserved within the two freeways.

<sup>10</sup> The freeway segments adjacent to the development were extended by 1,000 feet west and 1,000 feet southeast for I-5 and 1,000 feet north for SR-99.

and more than three miles of interchange connectors being included in the freeway system analyzed. The resulting VMT for I-5, SR-99 and the interchange were combined to result in the total VMT for the freeway system for each data year (2005 and 2027). The data were interpolated to develop VMT estimates for 2007, 2012, 2017, and 2022 and extrapolated for travel estimates for 2032 and 2037. The total VMT estimates for the entire freeway system are shown in Table 2.

Calendar Year	Annual Average		Peak Period	
	VMT/Hour	VMT/Sec	VMT/Hour	VMT/Sec
2007	9,466	2.63	17,338	4.82
2012	10,087	2.80	18,300	5.08
2017	10,707	2.97	19,261	5.35
2022	11,328	3.15	20,222	5.62
2027	11,949	3.32	21,183	5.88
2032	12,570	3.49	22,144	6.15
2037	13,190	3.66	23,105	6.42

To generate fuel-specific VMT, the total yearly VMT shown in Table 2 were multiplied by the VMT fraction for gasoline and Diesel vehicles derived from the EMFAC model. The fuel-specific VMT were used along with the gasoline and Diesel average MSAT emission factors in the equation shown above to result in MSAT emissions by fuel type in grams per second. The resulting gram-per-second MSAT emission levels were then combined with the cancer and non-cancer risk factors (in per microgram/meter<sup>3</sup> or  $\mu\text{g}/\text{m}^3$ ) to generate emissions-weighted risk per  $1 \mu\text{g}/\text{m}^3$  per gram/second.

Cancer risk factors and acute and chronic risk health hazard indices (HHIs) were generated using CARB's Hotspots Analysis and Reporting Program (HARP).<sup>11</sup> Risk factors for the MSATs from gasoline-powered vehicles were weighted separately by multiplying the pollutant emission level by the cancer risk factors and HHIs for each individual MSAT. The cancer risk factors and chronic risk HHIs were weighted using the pollutant emission levels generated from the annual average traffic volumes on the freeway system, whereas the acute risk HHIs were weighted using the emission levels during the peak traffic hour. The resulting products were then summed for all MSATs to result in the total risk for gasoline vehicles. For Diesel-powered vehicles, the Diesel PM risk factor in HARP includes all of the MSATs from Diesel exhaust, so only the Diesel PM emission rate and the Diesel PM cancer risk factor were used to account for all of the toxic risk from Diesel exhaust. As with gasoline vehicles, the Diesel cancer risk factor

<sup>11</sup> HARP version 1.0 with update 230221 and update to the health and pollutant tables dated September 21, 2004.

and chronic risk HHI were weighted using the annual average traffic emission levels. No acute non-cancer risk HHI is available for Diesel vehicles from HARP.

### Dispersion Modeling

The dispersion model used in the analysis is EPA's CAL3QHCR model,<sup>12</sup> which is designed to predict pollutant concentrations near roadways. Unit impacts (assuming a total of 1 gram per second is emitted by all the freeway segments) were generated by the model runs for each calendar year at different distances from the freeway. These unit impacts were then combined with the emissions-weighted risk values generated above to estimate the overall impacts of the freeway traffic emissions. The modeling procedure is described in more detail below.

Fifty freeway segments were modeled, all associated with the I-5/Highway 99 interchange. The emission factor for each segment was adjusted, reflecting changing traffic volumes with time, so that the total emission rate from the I-5, SR-99 and the interchange equaled 1.0 gram per second for each scenario year. The number of lanes modeled was derived from SACOG link attributes where available, and supplemented by aerial photos of the interchange. Each lane was assumed to be a standard 12 feet in width. The traffic volumes for the runs were based on the volumes on each freeway segment obtained from SACOG.<sup>13</sup> Freeway dimensions were taken from the DeLorme Road Atlas software and imported into the TOPO! software map to generate UTM coordinates (NAD27). The two segment sources were modeled following CAL3QHCR's standard line source/mixing zone approach. Meteorological data collected in 1986 at Sacramento Executive Airport were used for the dispersion modeling. Meteorological differences between the Airport and the project site are not likely to significantly affect the reported results.

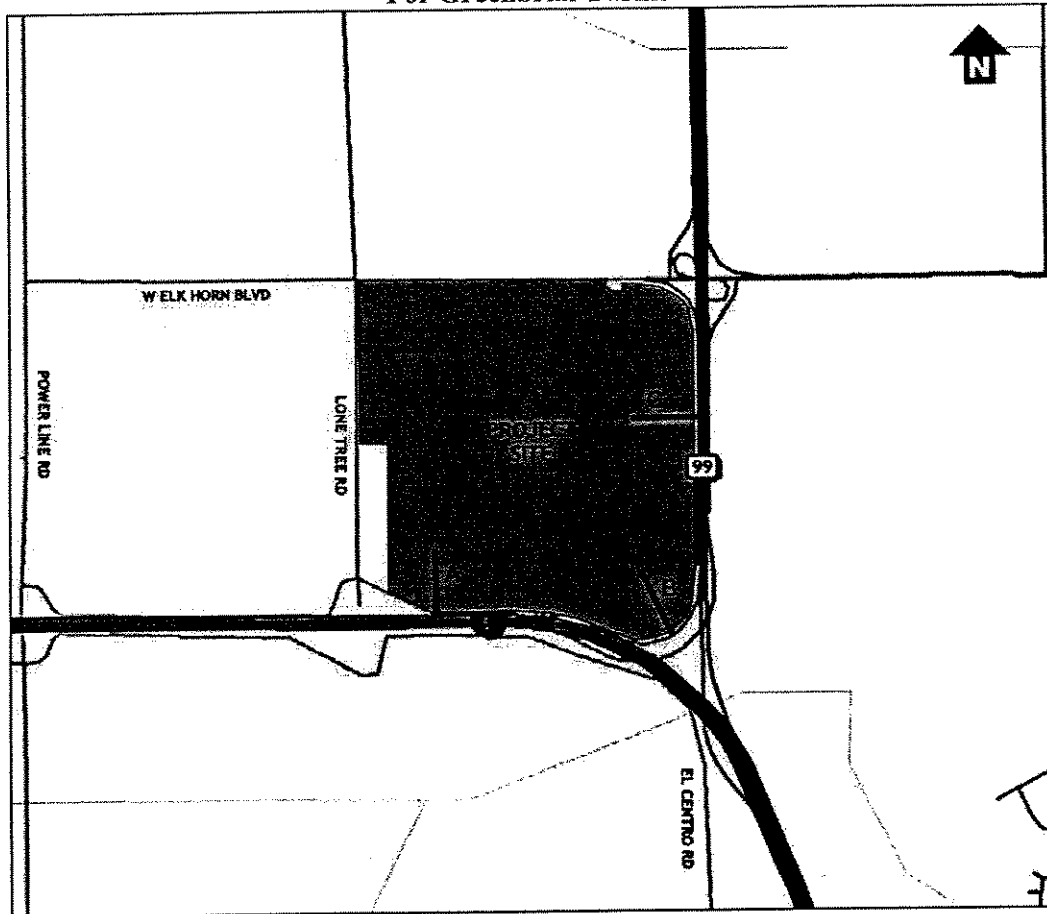
Three rows of 33 receptors each were modeled (for a total of 99 receptors), with each row extending 300 meters into the housing development. Receptor rows were modeled perpendicular to I-5, SR-99, and the interchange roadway segments, from midway along each segment. The location of the receptors relative to the freeway segments and the Greenbriar Farms developments is shown in Figure 2. In general, the receptors were spaced at 10-meter intervals, starting with the first receptor at the edge of the mixing zone (the boundary of which is defined as 10 feet past the edge of the freeway/traveled way). Two additional receptors were placed in each receptor row at the distances where the edges of the project development and the nearest residential property are estimated to be. The distances between the nearest residential property and I-5, SR-99, and the interchange were estimated using the tentative subdivision map for Greenbriar Farms and aerial photos of the site. The receptor flagpole height was set at the standard 1.8 meters (breathing height) for all CAL3QHCR runs.

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<sup>12</sup> CAL3QHCR version dated September 7, 2004

<sup>13</sup> Traffic volumes on each segment (north and southbound I-5, north and southbound SR-99 and interchange connectors) are inputs to the model to account for the emissions dispersion attributable to moving vehicles on the roadway.

**Figure 2**  
**Location of Dispersion Modeling Receptors (Rows A, B and C)**  
**For Greenbriar Farms**



### Health Risk Assessment Results

The cancer and non-cancer risks associated with freeway emissions were estimated for the range of distances from 0 to 300 meters from the edge of the mixing zone (i.e., from 10 to 994 feet from edge of freeway traveled way) of each freeway segment extending into the development, as shown in the receptor map in Figure 2, for each analysis year. In addition, the 70-year average impacts were estimated by assuming that the results for 2007 through 2032 represent the average for the given year and the subsequent four years, and that the results for 2037 represent the average for that year and the next 40 years. This represents a very conservative assumption for the 70-year average, since the cancer and non-cancer risks from vehicle sources tend to decrease with time.

Both the chronic and acute non-cancer risk indices were below the significance level of 1.0 at all distances from the freeway segments and for all years analyzed. The highest acute and chronic non-cancer indices of 0.63 and 0.26 per million, respectively, occur for 2007 at the edge of the I-5 mixing zone (10 feet from the freeway edge). The non-cancer risks at the edge of the SR-99 and interchange mixing zones in 2007 are less at 0.54 and 0.37 per million for acute risk, respectively, and 0.18 and 0.17 per million for chronic risk, respectively. The risk decreases with time and distance from all the freeway segments.

Figure 3, 4, and 5 show the average cancer risk estimated by distance from I-5, SR-99, and the interchange mixing zones, respectively, for 2007, 2037, and the 70-year average. As shown, the estimated average cancer risk is well below the range of relative cancer risk estimated by CARB in its land use handbook. The handbook, which recommends not siting residences within 500 feet of a freeway, estimates a range of relative cancer risk of 300-1,700 chances in a million. The risk values estimated for the proposed Greenbriar Farms development at the nearest residential property line are about 5 to 8 times lower than the low-end of CARB's range in 2007 and 13 to 15 times lower than the low end of the range in 2037.

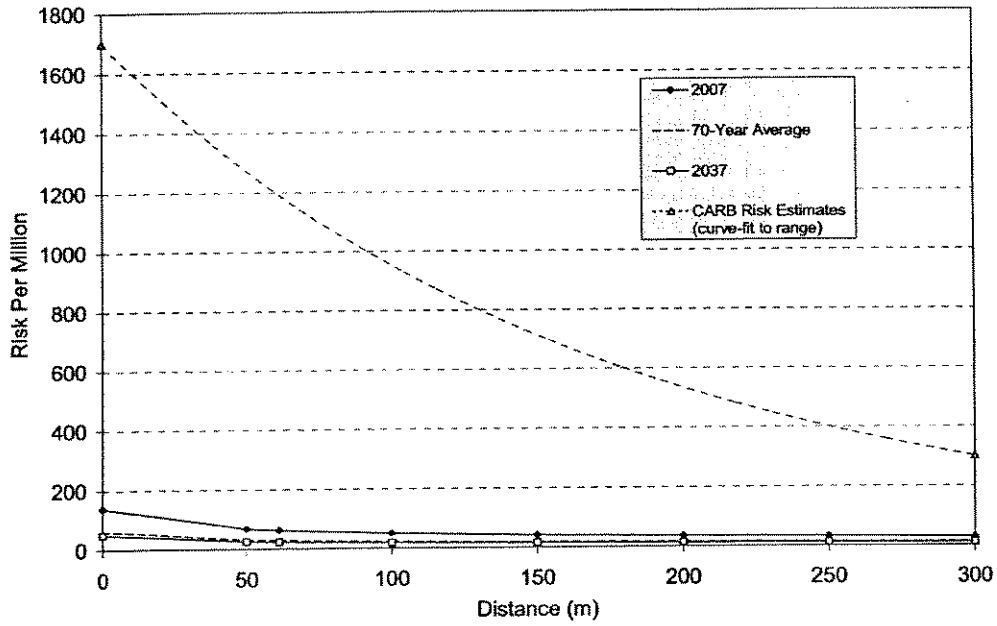
In Table 3, the 2007, 2037, and 70-year average cancer risks for the project are presented as a percentage of the 2000 total average cancer risk estimated by CARB for the Sacramento Valley Air Basin. CARB estimated the average basin cancer risk due to air toxics to be 520 per million as part of "The California Almanac of Emissions and Air Quality - 2005 Edition."<sup>14</sup> The estimated basin risk takes into account emissions of 10 select toxic air contaminants<sup>15</sup> (those that pose the greatest health risk in California based primarily on ambient air quality data) from all sources. Therefore, the actual total average basin risk would be higher when all air toxic pollutants are accounted for, and the percentages shown in the table would be lower. These data indicate that, at the property line for the residences that are nearest to the freeways, the 70-year average incremental cancer risk for the project is less than 6% of recent background levels.

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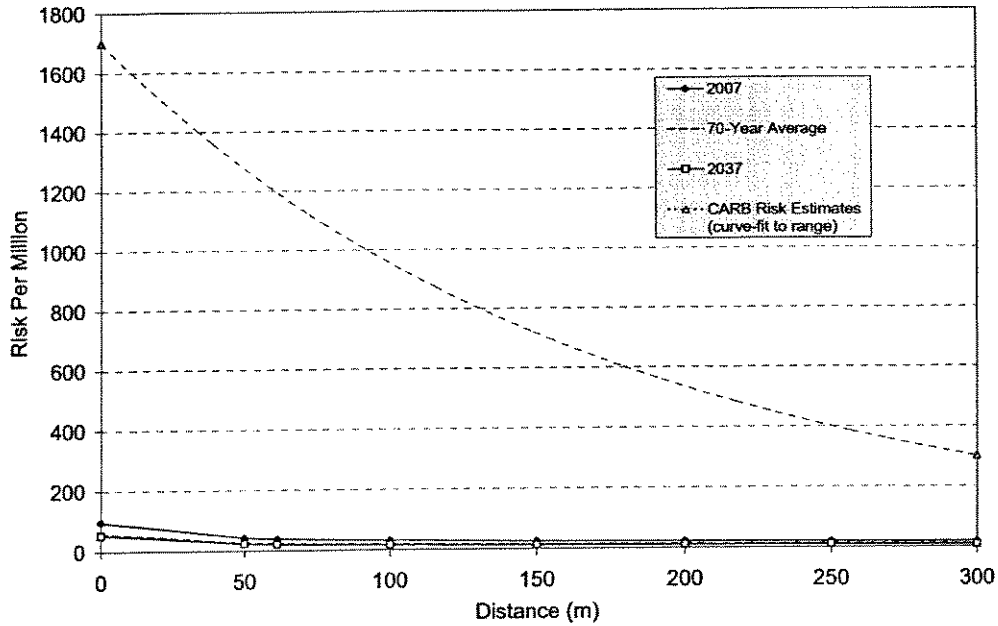
<sup>14</sup> <http://www.arb.ca.gov/aqd/almanac/almanac05/almanac05.htm>

<sup>15</sup> The selected 10 toxic air contaminants are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and Diesel particulate matter.

**Figure 3**  
**Average Cancer Risk By Distance From I-5 Mixing Zone Edge**

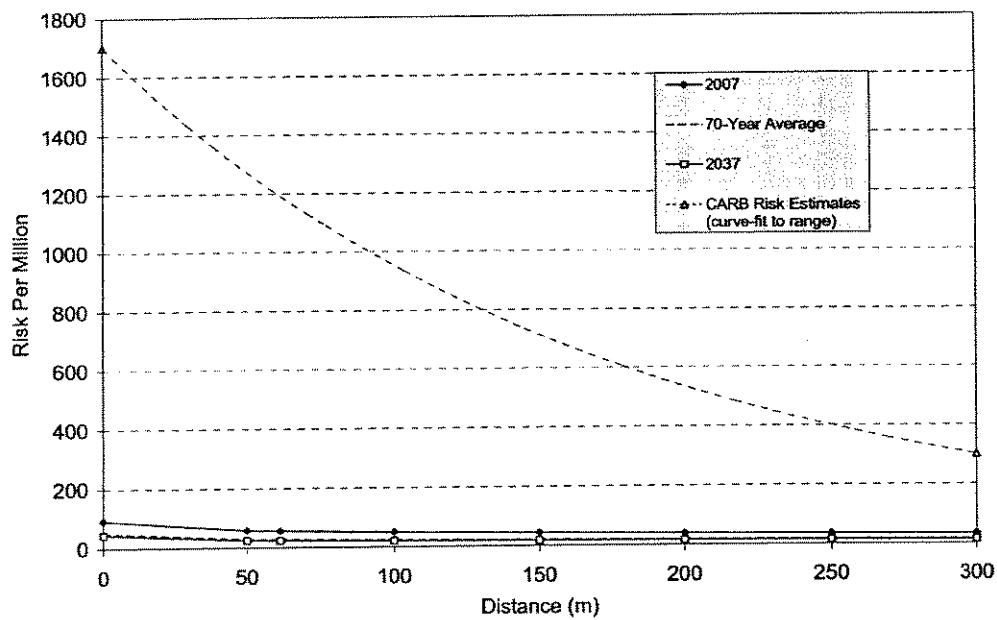


**Figure 4**  
**Average Cancer Risk By Distance From SR-99 Mixing Zone Edge**





**Figure 5**  
**Average Cancer Risk By Distance From I-5/SR-99 Interchange**  
**Mixing Zone Edge**



<b>Table 3</b>			
<b>Cancer Risk As % of 2000 Total Average Risk for the Sacramento Valley Air Basin</b>			
<b>Meters from I-5 Mixing Zone Edge</b>	<b>% Of Basin Background Risk by Distance/Calendar Year</b>		
	<b>2007</b>	<b>2037</b>	<b>70-Yr Average</b>
0	26.6%	9.6%	12.0%
50	13.2%	4.8%	6.0%
61.4*	12.2%*	4.4%*	5.5%*
100	9.8%	3.6%	4.5%
150	8.0%	2.9%	3.7%
200	7.0%	2.6%	3.2%
250	6.2%	2.3%	2.9%
300	5.6%	2.1%	2.6%
<b>Meters from SR-99 Mixing Zone Edge</b>	<b>2007</b>	<b>2037</b>	<b>70-Yr Average</b>
0	18.5%	10.3%	11.3%
50	8.2%	4.4%	4.9%
63.8*	7.4%*	3.9%*	4.4%*
100	6.0%	3.1%	3.5%
150	4.9%	2.5%	2.8%
200	4.3%	2.1%	2.4%
250	3.9%	1.9%	2.1%
300	3.6%	1.7%	1.9%
<b>Meters from Interchange Mixing Zone Edge</b>	<b>2007</b>	<b>2037</b>	<b>70-Yr Average</b>
0	17.7%	8.6%	9.8%
50	11.2%	4.6%	5.5%
59.3*	10.8%*	4.4%*	5.3%*
100	9.6%	3.9%	4.7%
150	8.4%	3.4%	4.1%
200	7.6%	3.0%	3.7%
250	6.9%	2.8%	3.4%
300	6.4%	2.6%	3.1%

\* Location of property line for residences nearest to freeway segment

## Conclusions and Recommendations

A site-specific analysis of the potential health risks associated with the impact of freeway emissions on the proposed Greenbriar Farms development indicates that risks are lower than those suggested in CARB's land use guidance document. This is the result of a number of factors, including vehicle traffic volumes, the relative orientation of the freeway vis-à-vis the proposed development, local meteorology, and the expected decline in vehicle emissions over time. Notwithstanding the fact that these impacts are substantially lower than those upon which CARB's siting recommendations are based, if additional mitigation measures are desired the following measures should be considered:

- Use of sound walls to enhance the dispersion of emissions from freeways; and
- Use of tiered tree-planting to enhance the dispersion of emissions from freeways.

These two measures are intended to enhance the dispersion of emissions, and hence reduce concentrations of pollutants at residences that are closest to the freeway. Unfortunately, there are no tools available at the present time to quantify the potential benefits of these measures.