APPENDIX A

City of Sacramento Letter Dated March 19, 2007 to USFWS and DFG

PLANNING DEPARTMENT
Administration Office

CITY OF SACRAMENTO

915 I Street
New City Hall 3rd Floor
Sacramento, CA 95814
Phone: 916-808-8368

March 19, 2007

Cay Goude
Assistant Field Supervisor
U.S. Fish & Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

Kent Smith
California Department of Fish & Game
Sacramento Valley- Central Sierra Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Re: Greenbriar Project HCP

Dear Cay and Kent:

Thank you for your comments on the Greenbriar Project Environmental Impact Report ("Greenbriar EIR") and for meeting with the City of Sacramento ("City"), Sacramento County Local Agency Formation Commission (LAFCO), and Greenbriar Project representatives on March 8th to discuss the Greenbriar Project Habitat Conservation Plan ("HCP") and its relationship to the Natomas Basin HCP.

As you know, the Natomas Basin HCP and its associated Implementation Agreement ("IA") anticipated the development of a total of 17,500 acres within the Natomas Basin. The Natomas Basin HCP and Section 3.1.1[a] of the IA provide that approval by the City of future urban development beyond the 8,050 acres within the City's Permit Area included within the 17,500 acres, or approval of future development outside the City's Permit Area, would trigger a reevaluation of the Natomas Basin HCP, a new effects analysis, potential amendments and/or revisions to the HCP and ITPs, a separate conservation strategy and the need to obtain a new take permit by the permittee for that additional development. The Greenbriar Project is located outside of the City's Permit Area and would result in approximately 547 acres of additional development beyond the 8,050 acres authorized for the City's Permit Area.

In accordance with the Natomas Basin HCP provisions, the City and Greenbriar prepared an analysis of the effects of the Greenbriar Project on the effectiveness of the Natomas Basin HCP (hereinafter, the "Effects Analysis"). The City included the Effects Analysis as a part of the Greenbriar EIR. Following certification of the EIR later this Summer, the City and LAFCO plan to take action on the local approvals, including the expansion of the Sphere of Influence boundaries, the general plan amendment, pre-zoning, annexation and tentative subdivision approvals in accordance with the process outlined in Section 1.3 of the Effects Analysis. The developers of the Greenbriar project (the "applicant") soon plan to file an application with the Service for a project-specific HCP. We understand that the U.S. Fish & Wildlife Service ("Service") will initiate preparation of an environmental impact statement as part of the HCP process.

Based on our discussions, we understand that the Service and Department of Fish & Game ("Department") concur that by completing the Effects Analysis prior to the City's consideration of the pre-zoning application and LAFCO's decision on the annexation, the City complied with the terms of the Natomas Basin HCP, IA and incidental take permit with respect to the City's local approvals process for the Greenbriar Project. The City and applicant anticipate that the Service and Department would consider approval of the Greenbriar HCP and issuance of the necessary incidental take authorizations prior to final subdivision map approval. With that understanding, the applicant is completing the Greenbriar HCP for review and submittal to the City, Service and Department in the upcoming weeks.

We look forward to working with both wildlife agencies and participating in regular meetings as the Greenbriar team proceeds with the Greenbriar HCP effort.

Very truly yours,

Carol Shearly
Director of Planning

ACG/ntg

cc: Lynn Cox
John Mattox
Nancy Miller
Rich Archibald
Scot Mende
Tina Thomas
Bob Uram
Alicia Guerra

APPENDIX B

Regional Transit Letters Dated
November 1, 2005, September 5, 2006, and July 11, 2007

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency
and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
(29th St. Light Rail Station/
Bus 36,38,50,67,68)

Light Rail Office:
2700 Academy Way
Sacramento, CA 95815
(916) 648-8400

Public Transit Since 1973

www.sacrt.com

November 1, 2005

Peter Brundage
Executive Officer
Sacramento Local Agency Formation Commission (LAFCO)
1112 I Street, Suite 100
Sacramento, CA 95814

Dear Mr. Brundage:

On August 3, 2005 on behalf of the Sacramento Regional Transit District (RT), I made a presentation to the Sacramento County Board of Supervisors in strong support of the Greenbriar project along the Downtown/Natomas/Airport (DNA) alignment corridor. This letter reiterates RT's basis for supporting the Greenbriar project.

Transit-supportive land use and ridership are two of the most critical factors that our federal funding agency considers in making its decision on whether or not to fund new light rail projects. As I noted during my presentation to you, these federal funds are highly competitive discretionary dollars for which Regional Transit must nationally compete. From a national perspective, fewer than 20% of the many light rail projects advanced by communities ever receive a full federal funding commitment. Over the past several years, the Federal Transit Administration's (FTA) Technical Guidance on Section 5309, New Starts Criteria, has increasingly emphasized the degree of transit supportive land use as a key evaluation factor. Specifically, FTA looks at six major factors in the area of land use:

- Existing land use;
- Containment of sprawl;
- Transit supportive corridor policies;
- Supportive zoning regulations near transit stations;
- Tools to implement land use policies; and
- Performance of land use policies.

Several sub-factors such as mixed use development, employment and population density, and parking policies are also considered.

The Greenbriar project proposes the creation of an environment in which the proposed land uses promote high transit usage. A total of 3,723 residential units are proposed with the majority of the development located within a ¼-mile radius of the future Greenbriar station. There is abundant national research and experience which demonstrate the importance of the area within a ¼-mile radius of a light rail station as critical to the ultimate ridership and overall enhancement of a transit station.

RT has specific development requirements in order for us to be able to implement future extension of light rail. For this project, the developer has agreed to and exceeded our minimum requirements. To date, specific project development commitments include the following:

1. The dedication of 40 feet light rail right-of-way (ROW) to accommodate light rail tracks and 60 feet by 400 feet (width) for the station platform area.

2. The provision of a 2-acre park and ride parcel (to be used either exclusively or as joint use). These park and ride spaces will contribute to the success of the DNA line operations.

3. A revised site plan that demonstrates applicant's commitment to provide good pedestrian and bicycle circulation and connectivity within the subject site and adjoining roads/uses to facilitate ease of access by future residents to transit services. This will facilitate a variety of transportation choices and a high level of pedestrian linkage encouraging pedestrian activities around the rail station.

4. Diversification of land uses in accordance with the North Natomas Community Plan Transit-Oriented Development vision. The high and medium density residential units, the mixed use residential and support retail located within a ¼ mile of the future light rail station are highly compatible transit supportive land uses.

    (a) These mixed land uses are also compatible with RT's Transit Master Plan which recommends:

        - "Locate mixed use, high density developments in areas surrounding existing, programmed and adopted light rail and bus transit corridors according to specific site design guidelines." (Pg. 7-10), and,

        - "Encourage the development of mixed use projects within the pedestrian thresholds of transit and light rail stations." (Pg. 7-21).

    (b) The project provides a mix of residential uses in addition to retail uses and public facilities (elementary school).

5. The project site plan provides a total of 128.2 acres of open space (including neighborhood park, lake, landscape corridor, open space buffer, etc) adjacent to residential neighborhoods and along the transit corridor which will help to preserve open space, farmland and natural beauty through natural resources conservation.

As an additional consideration, it should be noted that local developer fees are an important part of the financing strategy for the construction of the Downtown-Natomas-Airport light rail extension. The future contribution by this development to a transit fee should fund land acquisition for station sites, right of way, and assist the development of light rail. In the transitional period (before rail service becomes operational), the transit fee could also fund buses or other interim systems, including considerations for transit operating costs, until the rail line is constructed.

In the final analysis, the Greenbriar project as currently designed will significantly improve our region's competitiveness for federal dollars in extending light rail to the Sacramento International Airport.

Thank you.

Sincerely,

Beverly A Scott, Ph.D.
General Manager/CEO

c RT Board of Directors
Mike Wiley, AGM Planning and Transit System Development, RT
Taiwo Jaiyeoba, Director of Planning, RT
Carol Shearly, Interim Planning Director, City of Sacramento

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency
and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
[illegible]

Light Rail Office
[illegible]

September 5, 2006

Dana Allen
Environmental Planning Service
CITY OF SACRAMENTO
2101 Arena Boulevard, Second Floor
Sacramento, CA 95834

NAME OF DEVELOPMENT: Greenbriar Development Project

CONTROL NUMBER: State Clearinghouse No: 2005062144

TYPE OF DOCUMENT: Draft EIR

Dear Ms. Allen:

Regional Transit (RT) staff has reviewed the Draft EIR for the proposed Greenbriar Development Project and provide the following comments:

This letter is consistent with previous letters sent to the City by RT on July 21, 2005, January 27, 2005, and April 12, 2002. These letters requested land for:

- light rail track and station area along the alignment within the Greenbriar property including track area, 40 feet wide; and station area, 60 feet wide and 400 feet in length,
- a .25 acre adjacent to the track for a substation, and
- a 2-acre park and ride area.

The site is situated north of Interstate 5 and west of Highway 99 approximately two miles east of the Sacramento International Airport. RT currently does not provide any service in the subject area. The nearest transit service now available operates along North Market Boulevard, Truxel Road and the Natomas Marketplace via bus Routes 11, 13 and 14 on an hourly basis, seven days a week.

Planning for the Downtown Natomas Airport (DNA) Light Rail Extension includes light rail service along Meister Way through the project area.

RT supports the proposed Greenbriar project as being a transit-oriented development (TOD). Land uses proposed with the project must be provided at high densities to support transit and generate ridership. They must also integrate with surrounding land uses. The additional ridership

generated by the development will help justify the project for federal funding, and support the major capital investment.

The DEIR indicates that a shuttle service from the project to the Central Business District of Sacramento will be funded and operated by the project applicant as an interim mitigation measure (DEIR, pg. 6.1-85). RT appreciates that other provisions, including the dedication of land and construction of a light rail station by the project applicant at a cost of $2,260,130 (2006$), with no cost to RT will be included in the project. These funds will be kept current with inflation through the finance plan (Draft Greenbriar Finance Plan, page A-6).

If you have further questions regarding these comments, please contact me at 556-0507, or Don Smith at 556-0506, dsmith@sacrt.com.

Sincerely,

Taiwo Jaiyeoba
Planning Director

c: Joanne Koegel, DNA Project Manager
Myrna Valdez, PB Company
Bryan Porter, PB Company
Don Smith, RT

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency
and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
(29th St. Light Rail Station/
Bus 36,38,50,67,68)

Light Rail Office:
2700 Academy Way
Sacramento, CA 95815
(916) 648-8400

Public Transit Since 1973

www.sacrt.com

July 11, 2007

Tom Buford
Senior Planner
City of Sacramento
Development Services Department
915 I Street
Sacramento, CA 95814

Re: Greenbriar Property

Dear Mr. Buford:

This letter is to confirm Regional Transit's (RT's) continuing plans to extend light rail from downtown Sacramento to the Sacramento International Airport.

As you may be aware, RT has been involved over the last years in the lengthy Federal Transit Administration (FTA) New Starts funding process that requires four major steps: i.e. Alternatives Analysis, Preliminary Engineering, Final Design, and Construction.

The Alternatives Analysis/Draft Environmental Impact Statement/Report was initiated in 2001 and will be completed within the next month. This will lead to the Preliminary Engineering and Final Environmental Impact Statement and Report that is scheduled to begin early next year. Our plans are to continue earnestly on this track until the extension is constructed. The timing will be dependent on funding which will become clearer in the next year or so.

We continue to support the Greenbriar proposal, and we look forward to its supporting the transit system by focusing appropriate transit-oriented development along the proposed DNA alignment. I am enclosing our September 5, 2006 comments sent to the City of Sacramento in response to the Greenbriar Draft EIR.

If you have any further questions regarding the Greenbriar Property, please contact RoseMary Covington, Assistant General Manager of Planning and Transit System Development at 916/556-0340.

Sincerely,

RoseMary Covington
AGM Planning and Transit Systems Development

Enclosure

c: Beverly A. Scott, General Manager/CEO
Joanne Koegel, DNA Project Manager
Don Smith, Senior Planner, RT

APPENDIX C

Wood Rodgers Memorandum

WOOD RODGERS

Draft Memorandum

Date: July 27, 2007

From: Mark Rodgers
Wood Rodgers Inc

To: Samar Hajeer
City of Sacramento
Department of Transportation

Re: Greenbriar
Order of Magnitude Estimate
Caltrans Facilities

The purpose of this memorandum is to outline our approach to overall mitigation of impacts to Caltrans Facilities as presented in the Draft Environmental Impact Report (DEIR) and as determined by the City of Sacramento. This is a draft memorandum intended to present preliminary findings for the following:

1. Recap Caltrans related Improvements included within the current Capital Improvement Program (CIP) and Finance Plan for Greenbriar.
2. Recap current related transit Improvements included within the CIP and Finance Plan for Greenbriar.
3. Present preliminary cost share information for Caltrans Freeway Mainline improvements associated with Interstate 5 and Highway 99.
4. Combine the above information into a summary that includes the above described improvement estimates to demonstrate the overall approach to a reduction of trips and a commitment to share in future improvements and upgrades that benefit the Caltrans System of Freeway, Highway, Interchange and Overcrossing improvements.

This memorandum includes cost information based on various estimates, analysis and review of available financing plan information. Details regarding the information provided herein can be provided and updated based on comments received from the City.

The goal of this submittal is to provide a basis to obtain a consensus between the City and Caltrans as to the proposed Caltrans improvements and cost shares. We anticipate that this information may be included and / or referenced in the Final Environmental Impact Report (FEIR) and Finance Plan for the Project to adequately address comments relative to the mitigation of Caltrans facility Impacts.

Exhibit A is a summary of the improvement costs that are both directly and indirectly related to Caltrans Facilities for the project. Details regarding the total costs are presented in the remaining Exhibits B through D.

Exhibit A includes total costs and fair share funding amounts relative to the Current CIP, Transit Facilities associated with the future construction of the extension of the Light Rail Transit Downtown Natomas Airport Line (LRT-DNA) and estimated amounts for Mainline Freeway Contribution. In order to analyze the cost burden for these facilities, we have provided estimated costs per Equivalent Single Family Dwelling Unit (EDU) based on the land plan prepared for the project.

Exhibit B provides the detail for Caltrans related facilities currently identified in the CIP for the project. Items include interchange facilities, R/W land values and City roadway improvements associated with the construction of the Meister Way Overcrossing. This information is included within the CIP with the exception of R/W land values that are to be dedicated to Caltrans and the City based on proposed Conditions of Approval for the project.

Exhibit C provides the detail for transit facilities funded through the finance plan for the project. These facilities are directly associated with the extension of the LRT-DNA. This funding information is included in the Finance Plan for the project with the exception of R/W land values that are to be dedicated to Sacramento Regional Transit Authority (RT) based on the proposed Conditions of Approval for the project.

Exhibit D provides the detail for the preliminary estimated fair share contribution to mainline improvements to Interstate 5 (I-5) and Highway 99/70 (99/70). This information is based on calculation of fair share percentages based on the project peak hour traffic volume to the cumulative plus project peak hour traffic volume, applied to an estimated cost for each mainline segment studied.

The assumed number of lanes included in the estimate for mainline widening are as follows:

1. I-5 (I-80 to Del Paso) 6 lanes to 8 lanes
2. I-5 (Del Paso to 99/70) 6 lanes to 8 lanes
3. I-5 (99/70 to Power Line Road) 4 lanes to 8 lanes
4. 99/70 (I-5 to Elkhorn) 4 lanes to 6 lanes
5. 99/70 (Elkhorn to Elverta) 4 lanes to 6 lanes
6. North I-5 to North 99/70 Ramp 1 lane to 2 lanes

The cost for mainline improvements have been derived from the approved Caltrans Project Study Report (PSR) titled "Elkhorn Blvd Interchange Modification, Elverta Road Interchange and Meister Way Overcrossing" dated June 1999. We have applied the cost index from 1999 to 2007 based on California State Department of Transportation. Summary, Price Index for Selected Highway Construction Items, First quarter Ending March 31, 2007, Prepared by the Caltrans Division of Engineering Services, May 10, 2007. Based on this information, the cost per lane mile of widening has been estimated at $2,147,000. The overall length of freeway mainline improvements totals 8.7 miles. The cumulative length of single lane widening totals 22.6 miles.

Exhibit E is a map of the proposed improvements keyed to the detailed estimate sheets provided herein. Exhibit E also identifies the proposed alignment of the LRT-DNA line. The LRT-DNA line is a key facility proposed by the City and County of Sacramento to reduce future cumulative plus project impacts to existing Caltrans facilities.

This information has been prepared to illustrate the Project Team's comprehensive approach to mitigation of impacts to Caltrans facilities as presented in the DEIR and as directed by the City of Sacramento. We look forward to presenting this information for consideration, and working with the City and Caltrans to further refine and incorporate this information into the Finance Plan for the Project.

DRAFT
27-Jul-07

Exhibit A

Greenbriar
Caltrans Related Improvements
Summary
Preliminary Estimate

Item	Estimated Total Cost	Estimated Future Reimb	Estimated Future Net Cost	Greenbriar Total Cost Per EDU	Greenbriar Net Cost Per EDU
CIP Improvements	$15,159,551	$6,810,809	$8,348,742	$5,272	$2,904
Transit Improvements	$5,432,599	$0	$5,432,599	$1,889	$1,889
Mainline Contributions	$1,135,904	$0	$1,135,904	$395	$395
Total	**$21,728,054**	**$6,810,809**	**$14,917,245**	**$7,557**	**$5,188**

Notes:
1. Costs based on CIP dated January 2007. CIP to be updated in July / August2007 based on review of improvement costs.
2. Land dedication costs identified herein has not been included in the CIP and is proposed for dedication in accordance with the Conditions of Approval for the Project.

DRAFT
27-Jul-07

Exhibit B

Greenbriar
Caltrans Improvements
CIP Improvement Items
Preliminary Estimate

Item	Segment	Description	Total Project Costs	Estimated Future Reimb	Estimated Future Net Cost
CIP Construction Items					
Meister Way					
R2.2	Street 28 to East side of HWY 99	State Route 99/Meister Way Overcrossing	$8,273,936	$5,307,895	$2,966,041
R2.3	East side of HWY 99 Overcrossing to East Commerce Way	76' Street Section	$354,415	$0	$354,415
Meister Way R/W Dedication	Street 28 to Wast side of HWY 99	Land Dedication for Overcrossing. Include Slope Bank	$1,240,200	$0	$1,240,200
Meister Way R/W Purchase	West side of Highway 99 to East Commerce Way	Purchase of R/W for Meister Way on the East side of Highway 99 to conect to East Commerce Way	$800,000	$0	$800,000
Meister Way Sub-Total:			**$10,668,551**	**$5,307,895**	**$5,360,656**
Freeway Interchange / Intersection					
R4.1a	State Route 99 Northbound Off Ramp @ Elkhorn Boulevard	Widen, Signalize and restripe off Ramp	$1,179,900	$1,134,364	$45,536
R4.1b	State Route 99 Southbound Off Ramp @ Elkhorn Boulevard	Restripe Off Ramp Intersection	$472,500	$368,550	$103,950
R20.1	State Route 99/Elverta Road Intersection	Restripe existing WB Elverta Approach	$229,500	$0	$229,500
R21.1	I-5 & Metro Air Park Drive Northbound Off Ramp	Restripe and signalization upgrade	$141,750	$0	$141,750
R23.1	I-5 & Metro Air Park Drive Southbound Off Ramp	Restripe and signalization upgrade	$141,750	$0	$141,750
R24.1	I-5 & Metro Air Park Drive Southbound On Ramp	Widen and Restripe On Ramp	$639,900	$0	$639,900
Elkhorn Interchange R/W Dedication	State Route 99 Southbound On-Ramp	Dedicate expanded R/W for future widened southbound on-ramp	$889,200	$0	$889,200
Freeway Interchange / Intersection Sub-Total:			**$3,694,500**	**$1,502,914**	**$2,191,586**

DRAFT
27-Jul-07

Exhibit B

Greenbriar

Caltrans Improvements

CIP Improvement Items

Preliminary Estimate

Item	Segment	Description	Total Project Costs	Estimated Future Reimb	Estimated Future Net Cost
Intersection					
R4.3	East Commerce & Meister Way Intersection Improvements	Intersection & 3- Way Traffic Signal	$533,250	$0	$533,250
Intersection Sub-Total:			**$533,250**	**$0**	**$533,250**
Subtotal Construction			**$14,896,301**	**$6,810,809**	**$8,085,492**
CIP Fair Share Items Freeway Segments					
R25.1	Interstate 5 Widening (Assume 10% Fair Share)	Widen mainline I-5 from Power Line Road to Metro Air Park Drive Add 2-Lanes (1 each North & South)	$263,250	$0	$263,250
Subtotal CIP Fair Share Items Freeway Segments			**$263,250**	**$0**	**$263,250**
Total CIP Improvement Items			**$15,159,551**	**$6,810,809**	**$8,348,742**

Notes:

1. Costs based on CIP dated January 2007. CIP to be updated in July / August 2007 based on review of improvement costs.
2. Land dedication identified herein has not been included in the CIP and is proposed for dedication in accordance with Conditions of Approval for the Project.
3. Land cost per acre based on the North Natomas Land Acquisition value per acre last adjusted in 2007. Value per acre = $468,000.

DRAFT
27-Jul-07

Exhibit C

Greenbriar
Caltrans Improvements
CIP Transit Improvement Items
Preliminary Estimate

Item	Segment	Description	Total Project Costs	Estimated Future Reimb	Estimated Future Net Cost
Transit Improvements					
DNA Line Improvements					
On-Site LRT DNA Line Station	On-Site DNA Line	Fund Construction of On-site Transit Station	$2,432,719	$0	$2,432,719
On-Site LRT DNA Line Station	On-Site DNA Line	Dedicate Land for On-site Transit Station	$468,000	$0	$468,000
On-Site LRT DNA Line	On-Site DNA Line	Dedicate Land for 40-foot wide LRT Corridor	$2,531,880	$0	$2,531,880
Subtotal DNA Line Improvements			**$5,432,599**	**$0**	**$5,432,599**
Total Transit Improvements			**$5,432,599**	**$0**	**$5,432,599**

1. Costs based on Finance Plan dated January 2007. CIP to be updated in July / August 2007 based on review of improvement costs.
2. Land dedication identified herein has not been included in the CIP and is proposed for dedication in accordance with Conditions of Approval for the Project.
3. Land cost per acre based on the North Natomas Land Acquisition value per acre last adjusted in 2007. Value per acre = $468,000.

DRAFT **Exhibit D**

July 27, 2007

Greenbriar
CIP Estimate
Opinion of Probable Cost

Mainline Freeway Widening
Summary

Item	Segment	Existing Lanes	Proposed Lanes	Total Est Cost	Project Est Share
R27.1	I-5 (I-80 to Del Paso)	6	8	$9,016,966	$228,983
R28.1	I-5 (Del Paso to 99/70)	4	8	$8,587,587	$243,995
R29.1	I-5 (99/70 to Power Line)	4	8	$16,316,415	$108,912
R30.1	H 99/70 (I-5 to Elkhorn Blvd)	4	6	$4,723,173	$301,450
R31.1	H 99/70 (Elkhorn Blvd to Elverta Road)	4	6	$8,587,587	$153,229
R32.1	North I-5 to North 99/70 Ramp	1	2	$1,288,138	$99,335
	Total			**$48,519,866**	**$1,135,904**

1. The cost for these improvements are derived from the approved Caltrans Project Study Report (PSR) titled "Elkhorn Blvd Interchange Modification, Elverta Road Interchange and Meister Way Overcrossing" dated June 1999.
2. The cost index from 1999 to 2007 is based on California State Department of Transportation. Summary, Price Index for Selected Highway Construction Items, First quarter Ending March 31, 2007, Prepared by the Division of Engineering Services, May 10, 2007.
3. The Cumulative Plus Project Peak Hour Traffic values are based on the Table 6.1-40 of the Recirculated Draft EIR dated June 2007,Table 6.1-36.

PROPOSED CALTRANS RELATED IMPROVEMENTS

GREENBRIAR

SACRAMENTO COUNTY, CALIFORNIA

JULY 27, 2007

EXHIBIT E

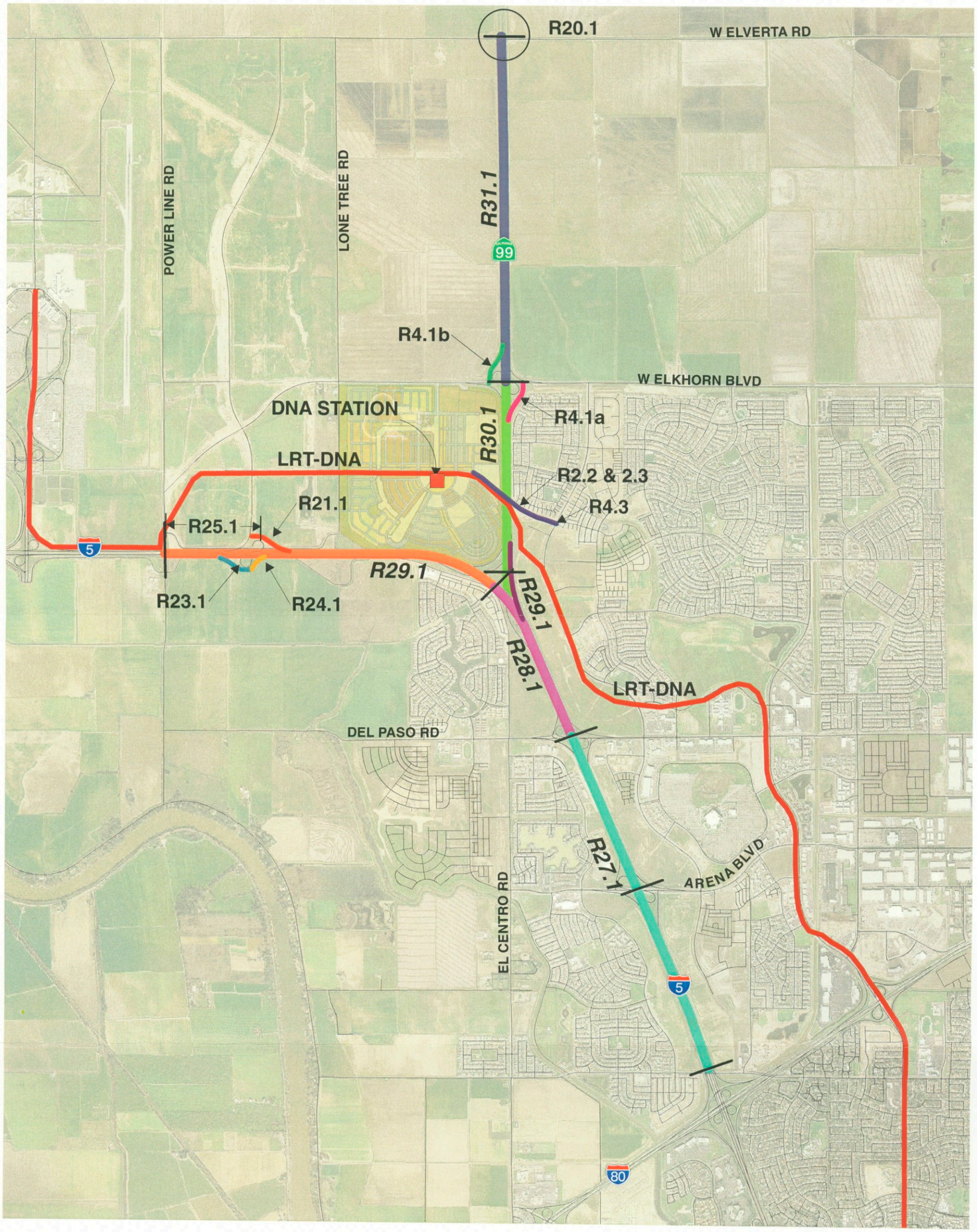


EXHIBIT E

NORTH

0 1,500 3,000 6,000 Feet

PRELIMINARY

WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
3301 C Street, Bldg. 100-B Tel: 916.341.7760
Sacramento, CA 95816 Fax: 916.341.7767

J:\Jobs\1116-Greenbriar-Farms\Greenbriar-OA\GIS\Exhibits\CalTrans\Cal-Trans_improvements.mxd 7/27/2007 @ 9:54:29 AM

APPENDIX D

Rio Linda Union School District Initial Site Evaluation Determination Letter

RIO LINDA
UNION SCHOOL
DISTRICT

627 L Street
Rio Linda
California 95673
916•566•1600
916•991•6593 FAX

July 19, 2007

Mr. Phil Serna, Principal
Serna Consulting, LLC
1415 L Street, Suite 250
Sacramento, CA 95814

RE: Greenbriar Phase I Evaluations

Dear Mr. Serna:

The California Department of Education (CDE) performed an Initial Site Evaluation for the Elementary School to be located in the Greenbriar Planned Unit Development. Due to the inaccessibility of the overall site and the inability to specifically locate the boundaries of that site, the CDE was not able to make a determination regarding the suitability of the school site.

However, the evaluator noted a number of issues that will require mitigation by the developer and/or school district. These include the location within two nautical miles of an airport runway, potential noise and air quality issues from highways within 500 feet, levee flood protection status, unknown prior agricultural use, no apparent police or fire facilities planned within the project, not centrally located in the serving residential area (due to the location of the airport) and safe walking routes across Meister Way.

The Rio Linda Union School District feels strongly that none of the aforementioned issues raised by the CDE are insurmountable nor will they require relocation of the school site.

Please contact me if you have any questions.

Quality education and caring lead to success.

Sincerely,

Rob Ball, R.S.B.A.
Assistant Superintendent
Business Services

cc: Frank Porter, RLUSD Superintendent

APPENDIX F

CSD-1 Letter

SRCSD

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

Wastewater Treatment
RECEIVED
JUL 09 2007
SACRAMENTO LOCAL AGENCY
FORMATION COMMISSION

July 3, 2007

Mr. Don Lockhart
Sacramento Local Agency Formation Commission
1112 I St, Suite 100
Sacramento, Ca 95814

Subject: Greenbrier Annexation into SRCSD and CSD-1

The County Sanitation District 1 (CSD-I) and Sacramento Regional County Sanitation District (SRCSD) acknowledges that the Sacramento Local Agency Formation Commission (LAFCO) anticipates receiving an amended Municipal Services Review (MSR) for Greenbrier in the City of Sacramento.

As discussed with the Greenbrier Developer, the subject property will connect to the CSD-1 sewer facility at the end of Greg Thatch Circle. Furthermore, based on the information to date, SRCSD and CSD-1 has the means and capacity to serve Greenbrier, Metro Air Park and Sacramento County Airports development efforts.

If you have any questions regarding these comments please contact me at (916) 875-7123.

Sincerely,

Michael Meyer
Policy and Planning

cc: Ruben Robles
Wendell Kido
Christoph Dobson
Rosemary Clark
Steve Norris

APPENDIX G

Air Quality Modeling

URBEMIS 8.7 Modeling Output for
Site Preparation of Entire Site and Operation of all Proposed Uses

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
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: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
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

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	6.82	46.37	55.28	0.00	106.61	1.88	104.73

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	113.48	10.98	159.94	0.40	22.03

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	42.84	46.05	428.61	0.26	43.93

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	156.32	57.03	588.54	0.66	65.96

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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

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
TOTAL EMISSIONS (lbs/day)	237.38	323.26	2,642.72	1.41	240.73

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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/962. to 6.7226/226.1
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/36.69 to 6.72/29.9
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

Changes made to the default values for Area

The arch. coatings option switch changed from on to off.
The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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
TOTAL EMISSIONS (lbs/day)	233.43	216.87	2,201.43	1.42	240.73

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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/962. to 6.7226/226.1
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/36.69 to 6.72/29.9
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

Changes made to the default values for Area

The arch. coatings option switch changed from on to off.
The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_site preparation_1_2_operati
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
(Tons/Year)

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 (tons/year)

Source *** 2007***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	104.73	-	104.73
Off-Road Diesel	6.74	46.27	53.51	-	1.88	1.88	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.08	0.10	1.77	0.00	0.01	0.00	0.00
Total tons/year	6.82	46.37	55.28	0.00	106.61	1.88	104.73
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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total all phases tons/yr	6.82	46.37	55.28	0.00	106.61	1.88	104.73

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 (Tons per Year, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.67	8.70	4.24	0.00	0.02
Hearth	80.79	2.15	147.55	0.35	21.98
Landscaping	1.02	0.13	8.15	0.05	0.03
Consumer Prdcts	31.01	-	-	-	-
Architectural Coatings	0.00	-	-	-	-
TOTALS (tpy, unmitigated)	113.48	10.98	159.94	0.40	22.03

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing low	22.02	24.39	227.20	0.14	24.35
Apartments/Senior/Mixed-U	4.48	4.96	46.19	0.03	4.95
Elementary school	1.92	1.60	14.85	0.01	1.49
park/water/openspace/oth	0.38	0.00	0.00	0.00	0.00
Community/Village Commerc	14.04	15.10	140.35	0.08	13.13
TOTAL EMISSIONS (tons/yr)	42.84	46.05	428.61	0.26	43.93

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 Season: Annual

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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/962. to 6.7226/226.1
The Trip Rate and/or Acreage values for Apartments low rise have changed from the defaults 6.9/36.69 to 6.72/29.9
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

Changes made to the default values for Area

The arch. coatings option switch changed from on to off.
The landscape year changed from 2005 to 2010.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The double counting option switch changed from off to on.
The operational emission year changed from 2005 to 2010.

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_buildingconstruction_1.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

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	68.07	370.19	837.53	0.27	17.31	16.04	1.27

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	67.38	353.24	842.10	0.27	15.96	14.69	1.27

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	66.66	335.80	846.62	0.27	15.07	13.80	1.27

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	88.31	422.39	976.01	0.30	16.64	15.33	1.31

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_1.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

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	68.07	370.19	837.53	0.27	17.31	16.04	1.27

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	67.38	353.24	842.10	0.27	15.96	14.69	1.27

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	66.66	335.80	846.62	0.27	15.07	13.80	1.27

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	88.31	422.39	976.01	0.30	16.64	15.33	1.31

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_1.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
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	5.12	28.39	62.62	0.02	1.33	1.23	0.10

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	8.84	46.53	109.93	0.04	2.10	1.93	0.17

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	8.80	44.33	111.75	0.04	1.99	1.82	0.17

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	4.07	19.58	49.25	0.01	0.81	0.74	0.07

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_1.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: 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	44.84	342.10	331.79	-	15.24	15.24	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	68.07	370.19	837.53	0.27	17.31	16.04	1.27
Max lbs/day all phases	68.07	370.19	837.53	0.27	17.31	16.04	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	44.84	325.51	343.90	-	13.90	13.90	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	67.38	353.24	842.10	0.27	15.96	14.69	1.27
Max lbs/day all phases	67.38	353.24	842.10	0.27	15.96	14.69	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	44.84	308.48	356.45	-	13.00	13.00	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	66.66	335.80	846.62	0.27	15.07	13.80	1.27
Max lbs/day all phases	66.66	335.80	846.62	0.27	15.07	13.80	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	44.84	291.89	368.56	-	11.66	11.66	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	16.10	93.38	136.85	-	2.58	2.58	0.00
Asphalt On-Road Diesel	0.75	11.42	2.76	0.03	0.33	0.31	0.02
Asphalt Worker Trips	0.07	0.04	0.91	0.00	0.02	0.00	0.02
Maximum lbs/day	88.31	422.39	976.01	0.30	16.64	15.33	1.31
Max lbs/day all phases	88.31	422.39	976.01	0.30	16.64	15.33	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
22	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
7	Pavers	132	0.590	8.0
7	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing have changed from the defaults 9.57/563. to 0/114.2
The Trip Rate and/or Acreage values for Apartments low rise have changed from the defaults 6.9/19.19 to 0/15.8
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_1.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: 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	44.84	342.10	331.79	-	15.24	15.24	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	68.07	370.19	837.53	0.27	17.31	16.04	1.27
Max lbs/day all phases	68.07	370.19	837.53	0.27	17.31	16.04	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	44.84	325.51	343.90	-	13.90	13.90	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	67.38	353.24	842.10	0.27	15.96	14.69	1.27
Max lbs/day all phases	67.38	353.24	842.10	0.27	15.96	14.69	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	44.84	308.48	356.45	-	13.00	13.00	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	66.66	335.80	846.62	0.27	15.07	13.80	1.27
Max lbs/day all phases	66.66	335.80	846.62	0.27	15.07	13.80	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	44.84	291.89	368.56	-	11.66	11.66	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	16.10	93.38	136.85	-	2.58	2.58	0.00
Asphalt On-Road Diesel	0.75	11.42	2.76	0.03	0.33	0.31	0.02
Asphalt Worker Trips	0.07	0.04	0.91	0.00	0.02	0.00	0.02
Maximum lbs/day	88.31	422.39	976.01	0.30	16.64	15.33	1.31
Max lbs/day all phases	88.31	422.39	976.01	0.30	16.64	15.33	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
22	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
7	Pavers	132	0.590	8.0
7	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/563. to 0/114.2
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/19.19 to 0/15.8
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_1.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
(Tons/Year)

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 (tons/year)

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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	3.45	26.34	25.55	-	1.17	1.17	0.00
Bldg Const Worker Trips	1.67	2.05	37.07	0.02	0.16	0.06	0.10
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
Total tons/year	5.12	28.39	62.62	0.02	1.33	1.23	0.10
Total all phases tons/yr	5.12	28.39	62.62	0.02	1.33	1.23	0.10
*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	5.92	42.97	45.39	-	1.83	1.83	0.00
Bldg Const Worker Trips	2.92	3.56	64.54	0.04	0.27	0.10	0.17
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
Total tons/year	8.84	46.53	109.93	0.04	2.10	1.93	0.17
Total all phases tons/yr	8.84	46.53	109.93	0.04	2.10	1.93	0.17

*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	5.92	40.72	47.05	-	1.72	1.72	0.00
Bldg Const Worker Trips	2.88	3.61	64.70	0.04	0.27	0.10	0.17
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
Total tons/year	8.80	44.33	111.75	0.04	1.99	1.82	0.17
Total all phases tons/yr	8.80	44.33	111.75	0.04	1.99	1.82	0.17

*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	2.47	16.05	20.27	-	0.64	0.64	0.00
Bldg Const Worker Trips	1.15	1.45	26.20	0.01	0.11	0.04	0.07
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	0.12	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.32	1.85	2.71	-	0.05	0.05	0.00
Asphalt On-Road Diesel	0.01	0.23	0.05	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Total tons/year	4.07	19.58	49.25	0.01	0.81	0.74	0.07
Total all phases tons/yr	4.07	19.58	49.25	0.01	0.81	0.74	0.07

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
22	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
7	Pavers	132	0.590	8.0
7	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/563. to 0/114.2
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/19.19 to 0/15.8
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

URBEMIS 8.7 Modeling Output for
Building of Proposed Uses South of Meister

URBEMIS 2002 For Windows 8.7.0

?ile Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
?roject Name: Greenbriar Building Construction of Phase 2
?roject Location: Lower Sacramento Valley Air Basin
)n-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

)ONSTRUCTION EMISSION ESTIMATES

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	55.40	296.57	655.33	0.21	13.32	12.33	0.99

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	54.88	281.29	660.34	0.21	12.11	11.12	0.99

*** 2011 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	54.88	281.29	660.34	0.21	12.11	11.12	0.99

*** 2012 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	74.04	373.16	774.57	0.24	14.70	13.68	1.02

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
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 - Winter)

CONSTRUCTION EMISSION ESTIMATES

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	55.40	296.57	655.33	0.21	13.32	12.33	0.99

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	54.88	281.29	660.34	0.21	12.11	11.12	0.99

*** 2011 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	54.88	281.29	660.34	0.21	12.11	11.12	0.99

*** 2012 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	74.04	373.16	774.57	0.24	14.70	13.68	1.02

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
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
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

*** 2009 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	4.19	22.76	49.21	0.02	1.02	0.94	0.08

*** 2010 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	7.21	37.06	86.36	0.03	1.60	1.47	0.13

*** 2011 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	7.24	37.13	87.17	0.03	1.60	1.47	0.13

*** 2012 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (tpy, unmitigated)	3.40	17.29	38.56	0.01	0.71	0.66	0.05

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
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	40.48	278.49	321.80	-	11.74	11.74	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	55.40	296.57	655.33	0.21	13.32	12.33	0.99
Max lbs/day all phases	55.40	296.57	655.33	0.21	13.32	12.33	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	40.48	263.51	332.73	-	10.52	10.52	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	54.88	281.29	660.34	0.21	12.11	11.12	0.99
Max lbs/day all phases	54.88	281.29	660.34	0.21	12.11	11.12	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	40.48	263.51	332.73	-	10.52	10.52	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	54.88	281.29	660.34	0.21	12.11	11.12	0.99
Max lbs/day all phases	54.88	281.29	660.34	0.21	12.11	11.12	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	40.48	263.51	332.73	-	10.52	10.52	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	14.53	84.30	123.55	-	2.33	2.33	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	0.81	0.00	0.01	0.00	0.01
Maximum lbs/day	74.04	373.16	774.57	0.24	14.70	13.68	1.02
Max lbs/day all phases	74.04	373.16	774.57	0.24	14.70	13.68	1.02

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
20	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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/399. to 7.53/111.9
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/17.5 to 6.58/14.1
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
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	40.48	278.49	321.80	-	11.74	11.74	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	55.40	296.57	655.33	0.21	13.32	12.33	0.99
Max lbs/day all phases	55.40	296.57	655.33	0.21	13.32	12.33	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	40.48	263.51	332.73	-	10.52	10.52	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	54.88	281.29	660.34	0.21	12.11	11.12	0.99
Max lbs/day all phases	54.88	281.29	660.34	0.21	12.11	11.12	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	40.48	263.51	332.73	-	10.52	10.52	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	54.88	281.29	660.34	0.21	12.11	11.12	0.99
Max lbs/day all phases	54.88	281.29	660.34	0.21	12.11	11.12	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	40.48	263.51	332.73	-	10.52	10.52	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	14.53	84.30	123.55	-	2.33	2.33	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	0.81	0.00	0.01	0.00	0.01
Maximum lbs/day	74.04	373.16	774.57	0.24	14.70	13.68	1.02
Max lbs/day all phases	74.04	373.16	774.57	0.24	14.70	13.68	1.02

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
20	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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/399. to 7.53/111.9
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/17.5 to 6.58/14.1
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\greenbriar_buildingconstruction_2.urb
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
(Tons/Year)

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 (tons/year)

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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	3.12	21.44	24.78	-	0.90	0.90	0.00
Bldg Const Worker Trips	1.07	1.32	24.43	0.02	0.12	0.04	0.08
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	4.19	22.76	49.21	0.02	1.02	0.94	0.08
Total all phases tons/yr	4.19	22.76	49.21	0.02	1.02	0.94	0.08
*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	5.34	34.78	43.92	-	1.39	1.39	0.00
Bldg Const Worker Trips	1.87	2.28	42.44	0.03	0.21	0.08	0.13
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
Total tons/year	7.21	37.06	86.36	0.03	1.60	1.47	0.13
Total all phases tons/yr	7.21	37.06	86.36	0.03	1.60	1.47	0.13

*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	5.34	34.78	43.92	-	1.39	1.39	0.00
Bldg Const Worker Trips	1.90	2.35	43.25	0.03	0.21	0.08	0.13
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
Total tons/year	7.24	37.13	87.17	0.03	1.60	1.47	0.13
Total all phases tons/yr	7.24	37.13	87.17	0.03	1.60	1.47	0.13

*** 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
Total tons/year	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
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	2.23	14.49	18.30	-	0.58	0.58	0.00
Bldg Const Worker Trips	0.78	0.96	17.75	0.01	0.09	0.03	0.05
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	0.09	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.29	1.67	2.45	-	0.05	0.05	0.00
Asphalt On-Road Diesel	0.01	0.17	0.04	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Total tons/year	3.40	17.29	38.56	0.01	0.71	0.66	0.05
Total all phases tons/yr	3.40	17.29	38.56	0.01	0.71	0.66	0.05

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
20	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

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/399. to 7.53/111.9
The Trip Rate and/or Acreage values for Apartments low rise
have changed from the defaults 6.9/17.5 to 6.58/14.1
The Primary Trip % for City park changed from 70 to 50
The Diverted Trip % for City park changed from 25 to 40
The Pass-By Trip % for City park changed from 5 to 10

Changes made to the default values for Construction

Construction Fee Calculation

Construction Emissons Mitigation Fee

PART 1: PROJECT INFORMATION

Project Name:	Greenbriar				
Control/Application #:					
	Single Family Dwelling Units:	2886			
	Multi Family Dwelling Units:	587000		Total Residential Acreage:	256
	Non-residential Square Feet:	410400		Total Non-residential Acreage:	321

*Non-residential SF includes 288 ksf of community/village commercial and 122.4 ksf school.

*Total non-residential acreage includes non-residential SF and all other uses (e.g., park, buffer, ..) to sum the project size of 577 acres.

PART 2: EMISSIONS INFORMATION

	Activity Phase	NOx (lbs/day) unmitigated	NOx (lbs/day) mitigated*	NOx over threshold (lbs/day)	duration (days)	Total significant NOx (lbs)
	Grading-All of Site prior to construction of Phase 1	638.70	510.96	425.96	145	61764.20
Year 1 of Phase 1	Building Construction-Phase 1	370.19	296.15	211.15	154	32517.41
Year 2 of Phase 1	Building Construction-Phase 1	353.24	282.59	197.59	264	52164.29
Year 3 of Phase 1	Building Construction-Phase 1	335.80	268.64	183.64	264	48480.96
Year 4 of Phase 1	Building Construction-Phase 1	318.83	255.06	170.06	110	18707.04
Year 4 of Phase 1	Asphalt-Phase 1	104.84	83.87	0	40	0.00
Year 1 of Phase 2	Building Construction-Phase 2	296.57	237.26	237.26	154	36537.42
Year 2 of Phase 2	Building Construction-Phase 2	281.29	225.03	225.03	264	59408.45
Year 3 of Phase 2	Building Construction-Phase 2	281.29	225.03	140.03	264	36968.45
Year 4 of Phase 2	Building Construction-Phase 2	281.29	225.03	140.03	110	15403.52
Year 4 of Phase 2	Asphalt-Phase 2	92.86	74.29	0	40	0.00
	Total project Nox over threshold (lbs)		*361951.74*			
	Total project Nox over threshold (tons)		*180.98*			

PART 3: MITIGATION FEE RESULTS

	Total Mitigation fee ($14,300/ton)	*$2,587,955*				
		Mitigation Fee ($/acre)		**$4,485.19**		

* assumes a construction mitigation plan which achieves a 20% reduction in NOx

sierra research

1801 J Street
Sacramento, CA 95814
Tel: (916) 444-6666
Fax: (916) 444-8373

Ann Arbor, MI
Tel: (734) 761-6666
Fax: (734) 761-6755

November 21, 2005

Memo to: Tina Thomas
Remy, Thomas, Moose and Manley

From: Gary Rubenstein

Subject: Greenbriar Farms Development

Enclosed for your information is a copy of the screening level health risk analysis we performed of the potential air quality impacts of the traffic on Interstate 5, State Route 99 and the I-5/SR-99 interchange on the proposed new Greenbriar Farms development. This site-specific analysis demonstrates that the health risks associated with the freeway at residences and an elementary school in the proposed development are much lower than those identified by the California Air Resources Board in its Air Quality and Land Use Handbook. 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 freeways vis-à-vis the proposed development, local meteorology, and the expected decline in vehicle emissions over time.

If you have any questions, or need additional information, please don't hesitate to contact me.

enclosure

Health Risk Assessment for the Proposed Greenbriar Farms Development

November 21, 2005

Summary

The California Air Resource Board's (CARB's) guidance document entitled "Air Quality and Land Use Handbook: A Community Health Perspective[1]," 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, and for a school site within the proposed development.

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. For the school site, the maximum acute and chronic non-cancer health risks are more than an order of magnitude below established regulatory significance levels, and the 9-year average increased cancer risk to children is 2% or less of recent background risk levels.

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:

[1] Published in April 2005.

- Use of sound walls to enhance the dispersion of emissions from freeways; or

- Use of dense 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.

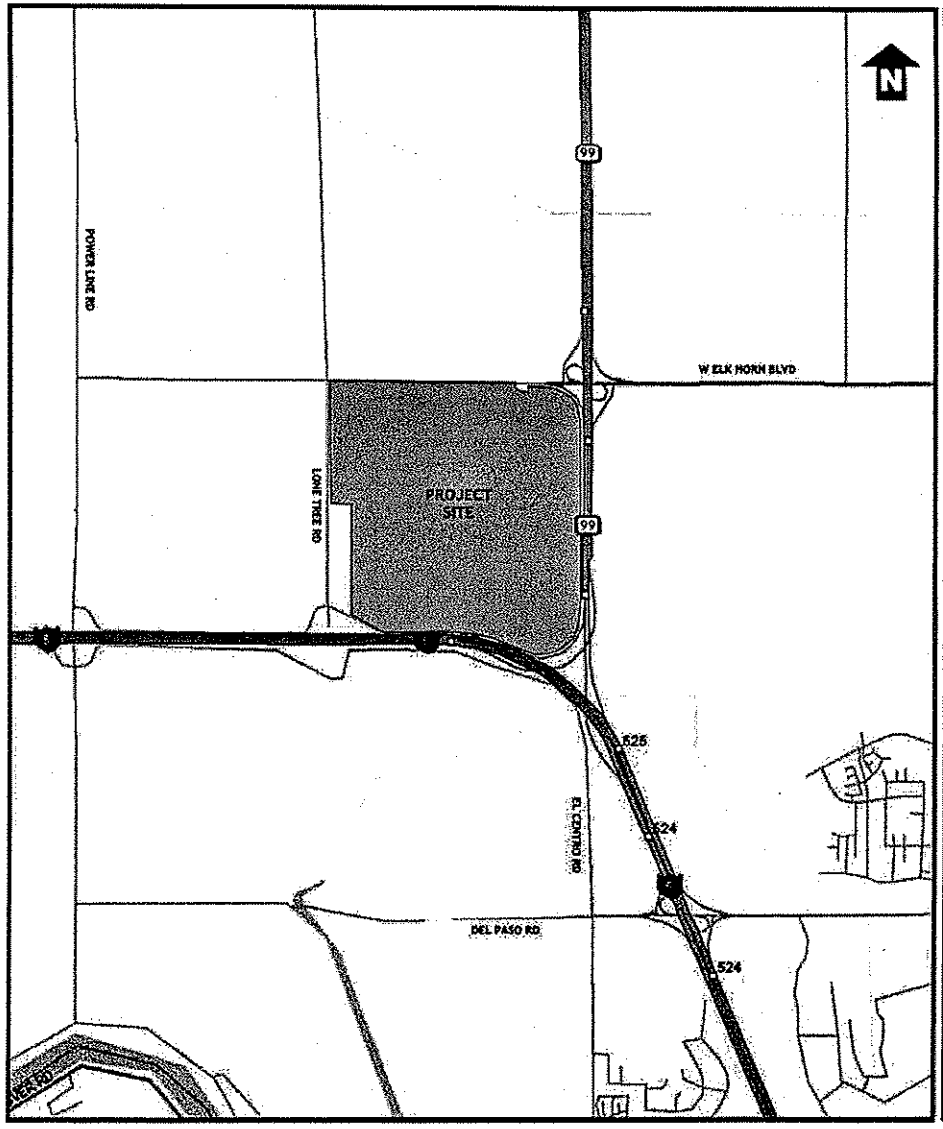
Introduction

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)[2] 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.

[2] "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



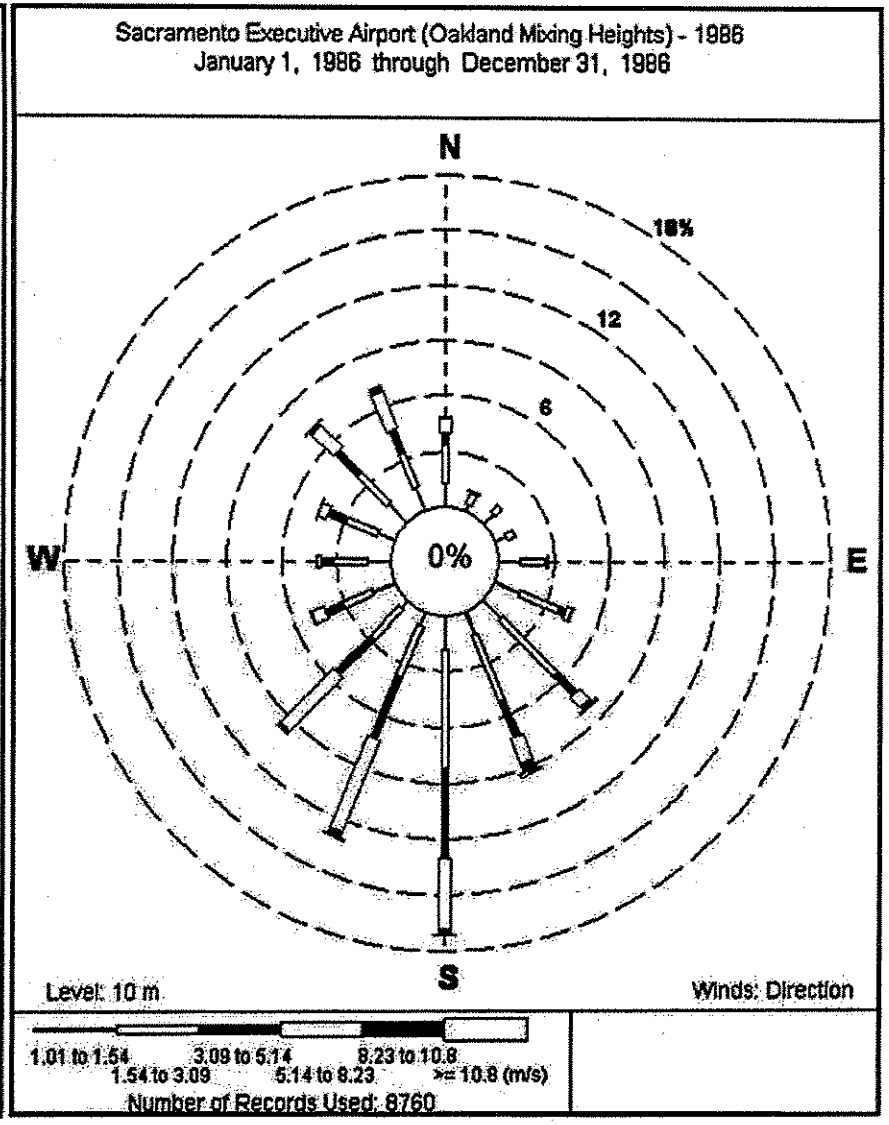


Table 1 21 Mobile Source Air Toxic Pollutants Identified by EPA		
Acetaldehyde	Diesel Particulate Matter (PM) and Diesel Exhaust Organic Gases	MTBE
Acrolein		Naphthalene
Arsenic Compounds		Nickel Compounds
Benzene	Formaldehyde	Polycyclic Organic Matter (POM)
1,3-Butadiene	n-Hexane	
Chromium Compounds	Lead Compounds	Styrene
Dioxins/Furans	Manganese Compounds	Toluene
Ethylbenzene	Mercury Compounds	Xylene

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[3] 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_{10}) from gasoline and Diesel vehicles specifically for Sacramento County.

EMFAC runs were developed to generate average TOG, ROG, and PM_{10} 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_{10}) from EPA. For example,

MSAT (g/mi) = TOG (g/mi) * MSAT/TOG.

The most current version of EPA's MOBILE model[4] 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.

In addition to the six MSATs explicitly modeled in MOBILE, emissions for dioxins, naphthalene, ethylbenzene, n-hexane, styrene, toluene, xylene, a representative group of

[3] EMFAC2002 dated April 21, 2003.
[4] MOBILE6.2 dated September 24, 2003.

POMs,[5] chromium (Cr^{6+} and Cr^{3+}), 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_{10} emissions, and emission factors in milligrams per mile were obtained for the metals and dioxins[6]. Because the EMFAC model does not generate hydrocarbon emissions as VOC, the model emissions for ROG were used with the VOC-based ratios.[7]

After MSAT emission factors were developed for each vehicle class from the combination of the TOG, ROG, or PM_{10} 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:

MSAT (g/mi) * VMT (mi/s) = 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)[8] 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[9] 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[10] 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, 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

---

[5] 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.

[6] No health risk factors were available for furans; therefore, emission factors for furans were not sought beyond the EPA sources referenced.

[7] The differences between VOC and ROG are believed to be insignificant in the context of this analysis.

[8] Robert McCrary, SACOG. Personal communication. September 2005.

[9] 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.

[10] 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.

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.

Table 2
Annual Average and Peak VMT on Freeway System (I-5, SR-99 and Interchange) Adjacent to the Greenbriar Farms Development

	Annual Average		Peak Period	
Calendar Year	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^3 or $\mu g/m^3$) to generate emissions-weighted risk per 1 $\mu g/m^3$ 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).[11] 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 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. Separate risk

[11] HARP version 1.0 with update 230221 and update to the health and pollutant tables dated September 21, 2004.

factors were developed for adult receptors (70-year exposure) and child receptors (9-year exposure).

Dispersion Modeling

The dispersion model used in the analysis is EPA's CAL3QHCR model,[12] 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.[13] 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.

For assessing residential exposure, 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.

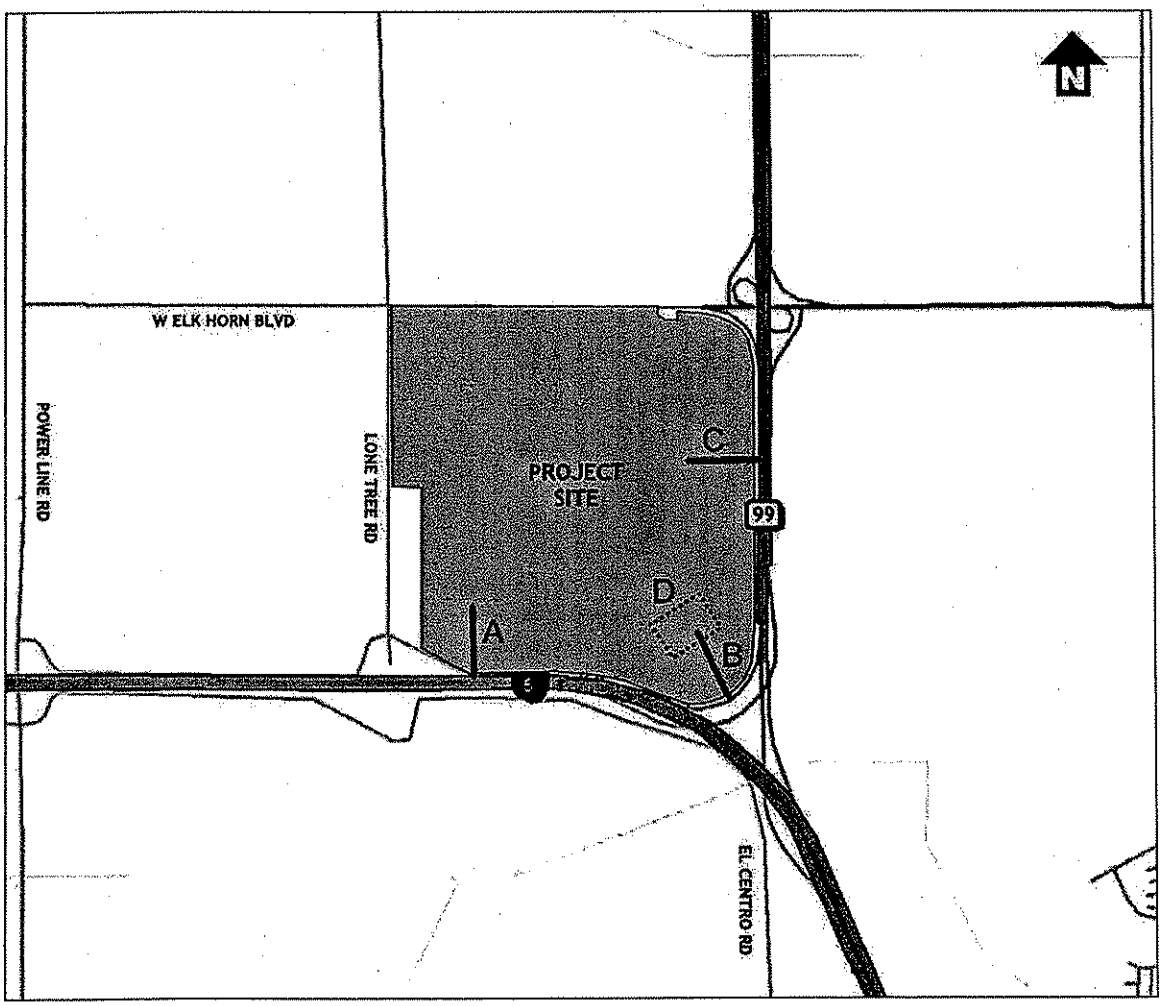
---

[12] CAL3QHCR version dated September 7, 2004

[13] 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.

For assessing exposure at the school site, receptors were placed at the boundary of the proposed school site, spaced at 25-meter intervals. These receptors are also shown in Figure 2.

Figure 2
Location of Dispersion Modeling Residential Receptors (Rows A, B and C) and School Site Receptors (Rectangle D) For Greenbriar Farms



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.

Health Risk Assessment Results

Residential Risks

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.

Figures 3, 4, and 5 show the average residential 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."[14] The estimated basin risk takes into account emissions of 10 select toxic air contaminants[15] (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

[14] http://www.arb.ca.gov/aqd/almanac/almanac05/almanac05.htm

[15] 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.

line for the residences that are nearest to the freeways, the 70-year average incremental residential cancer risk for the project is less than 6% of recent background levels.

Figure 3
Average Residential Cancer Risk By Distance From I-5 Mixing Zone Edge

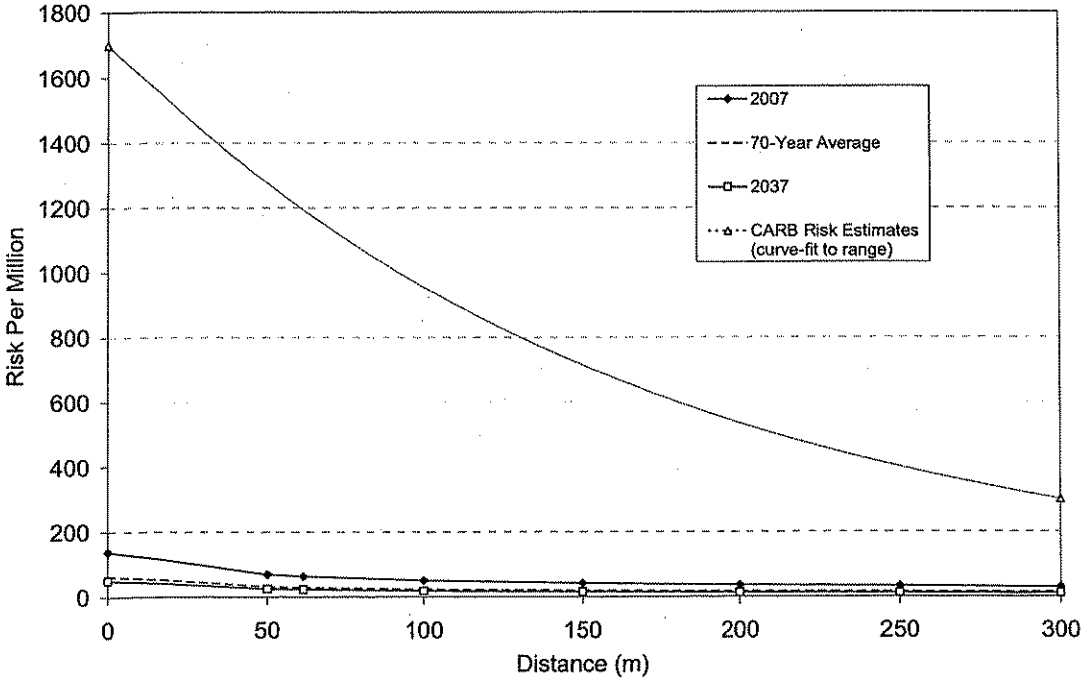


Figure 4
Average Residential Cancer Risk By Distance From SR-99 Mixing Zone Edge

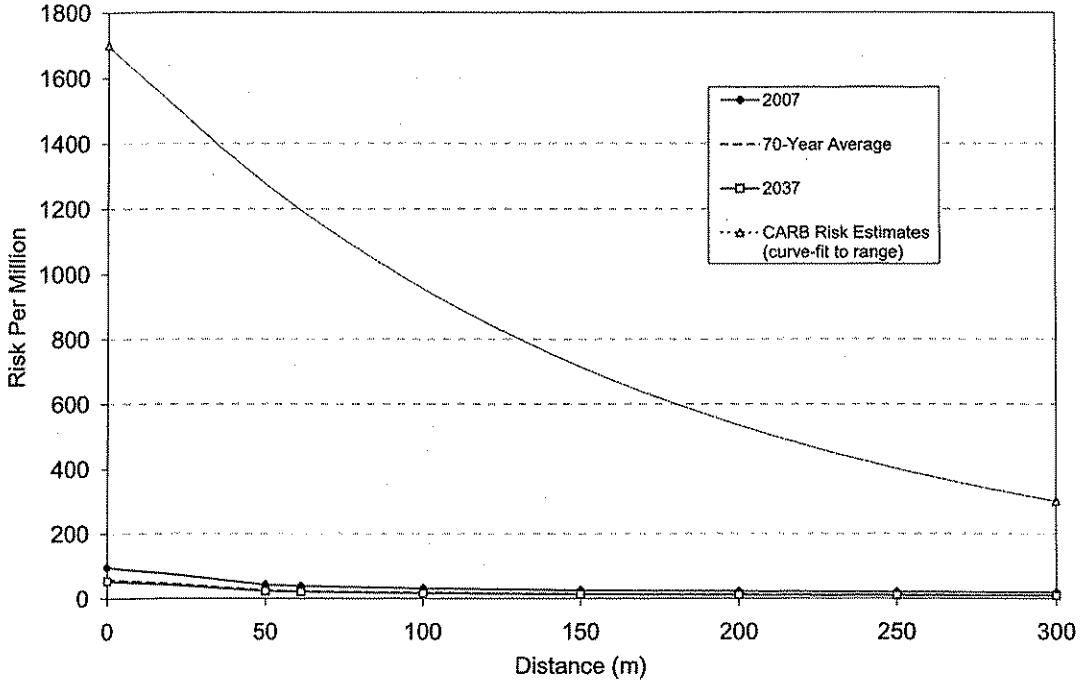
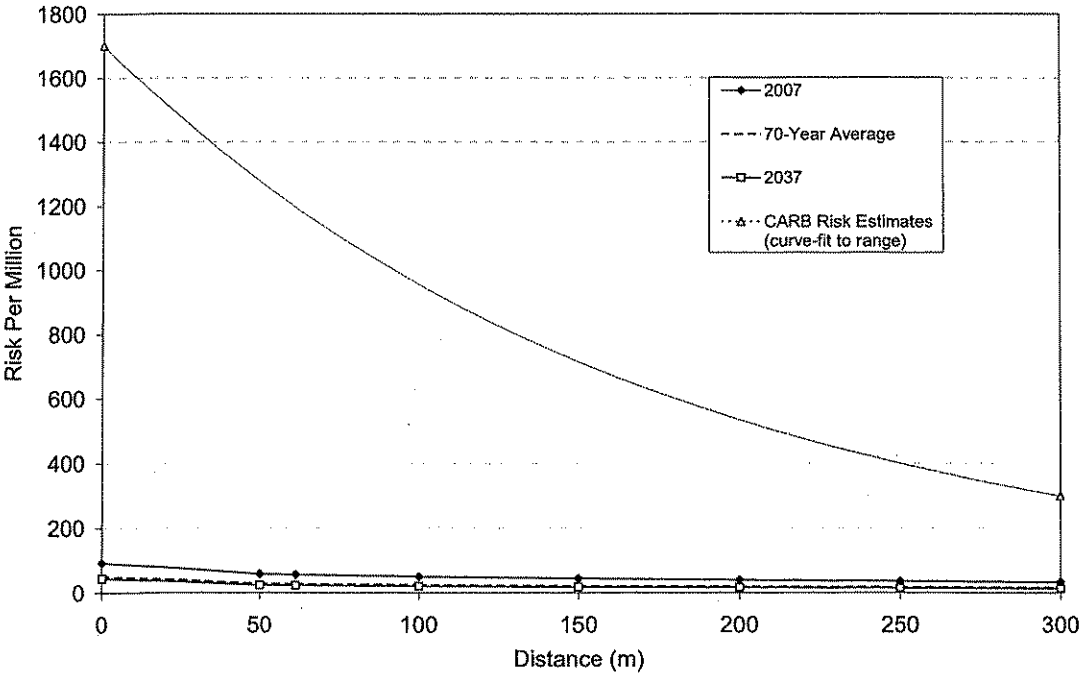


Figure 5
Average Residential Cancer Risk By Distance From I-5/SR-99 Interchange Mixing Zone Edge



Risks at the School Site

Potential cancer and noncancer health risks to children at the proposed elementary school site were estimated using the model default 9-year exposure period and children's mean and high-end breathing rates. Maximum modeled cancer risks to children, which are predicted to occur at the southwest corner of the school property, are a small fraction of the basinwide risk and well below the residential risks. The highest modeled cancer risks to children at the school site are also shown in Table 3.

Table 3
Cancer Risk As % of 2000 Total Average Risk for the Sacramento Valley Air Basin

Meters from I-5 Mixing Zone Edge	% Of Basin Background Risk by Distance/Calendar Year		
	2007	2037	70-Yr Average
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%
Meters from SR-99 Mixing Zone Edge	2007	2037	70-Yr Average
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%
Meters from Interchange Mixing Zone Edge	2007	2037	70-Yr Average
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 Maximum Risk at School Site	2007	2037	9-Yr Average
	2.6%	1.2%	2.3%

* 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; or
- Use of dense 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.

APPENDIX H

City's Letter to FEMA

DEPARTMENT
OF UTILITIES

ENGINEERING
SERVICES DIVISION

CITY OF SACRAMENTO
CALIFORNIA

1395 35th AVENUE
SACRAMENTO, CA
95822-2911

PH 916-808-1400
FAX 916-808-1497/1498

June 29, 2007
70351:DB:DRS

Ms. Sally M. Ziolkowski
Mitigation Division Director
Federal Emergency Management Agency Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Subject: A99 Flood Insurance Rate Map Revision for the Natomas Basin City of Sacramento, Sacramento County, Sutter County

Dear Ms. Ziolkowski:

In accordance with your agency's December 29, 2006 letter, the City of Sacramento, Sacramento County and Sutter County (City and Counties) are submitting this Flood Insurance Rate Map revision request for the Natomas Basin. After critical analysis and close coordination with FEMA staff and the Sacramento Area Flood Control Agency, the City and Counties are requesting that the current Basin flood zone designation, shaded Zone X, be revised to an A99 zone. As shown in the attached Figure 1, the Natomas Basin is bounded on the south by the north levee of the American River, on the west by the east levee of the Sacramento River, on the north by the south levee of the Natomas Cross Canal and on the east by the west levee of the Natomas East Main Drainage Canal (NEMDC).

The Sacramento City Council, Sacramento County Board of Supervisors and Sutter County Board of Supervisors have passed resolutions directing staff to apply for the A99 rezone (see attached resolutions 2007-432, 2007-0834 and 07-038, respectively).

Background

The history of flood projects for the greater Sacramento area spans a period of time from the late 1800's to the present day. More recently, since 1945, the Federal government, in partnership with State and local governments, has provided funds for flood protection systems within the American and Sacramento River watersheds. Major projects include Shasta dam and reservoir, Oroville dam and reservoir, Folsom dam and reservoir, and various Sacramento and American River levee improvement projects. These Federally sponsored projects represent an ongoing effort to improve the flood protection system for northern California and the greater Sacramento area.

The flood control program for the Natomas Basin (Basin) is one component of this long-term, ongoing flood control plan for the greater Sacramento area to provide 200-year protection to the region. As the City and Counties work to achieve 200-year protection, the regulatory flood zone designation for the Basin has been a continual work in progress.

Improving the levees that protect the City and the Basin began following the record storms of 1986 after which the Army Corps of Engineers (Corps) decertified the levee systems protecting the Sacramento urban area. In 1989, the Sacramento Area Flood Control Agency (SAFCA) was formed, funded and embarked on its stated goal of achieving a minimum of 200-year level of flood protection for Sacramento. Since that time, SAFCA in partnership with the Corps and the State has spent over $460 million in levee improvements and other flood control enhancements. These ongoing efforts have resulted in the restoration of a minimum of a 100-year level of flood protection for most of the Sacramento urban area.

In 1998, after a significant portion of the Natomas Basin project had been completed, the Army Corps of Engineers certified the levees as providing 100-year protection for the Basin. However, the flood control project for the Basin and, in fact, the entire Sacramento area did not stop at that point and has continued with the ultimate goal of providing greater than 200-year protection for the Basin and the entire Sacramento area. As part of this ongoing flood control project for the Natomas Basin, the Sacramento Area Flood Control Agency conducted a study entitled Natomas Levee Evaluation Study, July 14, 2006 to evaluate the levee system and determine the improvements needed to provide the Basin with 200-year level of protection. SAFCA's study concluded that selected reaches of the levee system, certified in 1998, failed to meet freeboard criteria based on new hydraulic modeling and failed to meet new Corps criteria for underseepage. In addition, several erosion sites have developed since the 1998 certification. In a letter dated July 20, 2006, the Corps concurred with SAFCA's findings and informed FEMA that they would no longer support their 1998 certification of these levees.

Construction elements identified in the SAFCA report to address freeboard, underseepage and erosion are collectively referred to as the Natomas Levee Improvement Project (NLIP) and are shown in Figure 1. The table included in Figure 1 provides quantities for the length of improvements needed for each construction element.

The NLIP consists of two phases. SAFCA estimates that Phase 1 will cost approximately $260 million and when completed will provide 100-year level of protection for the Basin. SAFCA estimates that Phase 2 will cost an additional $154 million and when completed will provide 200-year level of protection. The total estimated cost for Phases 1 and 2 is $414 million. Funding for Phase 1 will be secured through a combination of Federal, State and local funds and includes (1) Federal funding of approximately $6 million; (2) State funding of approximately $182 million authorized through Measure 1E bonds approved by the voters in the last general election; and (3) local funding of approximately $72 million authorized by SAFCA through the successful passage on April 26, 2007 of the local assessment district. No development fees are required to fund Phase 1 of the project. As has been the case since Sacramento embarked on this flood control project over the last several decades, there are later phases to the Natomas Levee Improvement Project that will eventually provide 200-year protection. The total estimated project cost for all phases is $414 million to be funded by Federal, State and local funds.

As noted previously, it is anticipated the State of California will provide approximately $182 million of funding for Phase 1 by appropriation of Measure 1E monies over the length of Phase 1 construction. Presently, the State's budget for fiscal year 2007-2008 includes a commitment of approximately $37 million for Phase 1 and SAFCA is working on obtaining an agreement with the State indicating the State's intent of funding the balance of the $182 million in succeeding years.

Qualification for A99

The applicants have determined that the Natomas Basin meets the "adequate progress" criteria set forth in the Federal regulations for A99 Zone status. Specifically, the existing flood control infrastructure including the original levees, constructed with the Sacramento River Flood Control Project, and other project work accomplished such as the Sacramento Urban Area Levee Reconstruction Project, North Area Local Project, Sacramento River Bank Protection Project and the American River Watershed Common Features Project are all part of the ongoing and long-term plan for flood control for the Natomas Basin. These features and projects constitute a flood control system that meets or exceeds the requirements of 44 CFR Section 61.12.

The projects which qualify the City and Counties for this map revision are listed below. The dollar amounts for each project have been adjusted to April 2007 using the Engineering News Record (ENR) indexing cost factors.

- **Sacramento River Flood Control Project** – This project consisting of levees, weirs and bypasses of the Sacramento River and its major tributaries and distributaries was essentially complete in 1960. The present value of the Natomas portion of this project has been conservatively estimated for purposes of this application to be $75 million. However, using current levee construction cost estimates of $3.5 million per mile of levee places the value at approximately $150 million.

- **Sacramento Urban Area Levee Reconstruction Project** – This project strengthened and stabilized approximately 33 miles of the east levee of the Sacramento River from Freeport to Verona and was completed in 1993. The present value of the Natomas portion of this project is $30 million.

- **North Area Local Project** – This project improved the levees and flood control systems along the Natomas Cross Canal, Pleasant Grove Creek Canal, the NEMDC and lower Dry and Arcade Creeks and was completed in 1997. The present value of work on levees protecting the Natomas Basin is $82 million.

- **Sacramento River Bank Protection Project** – This federal flood control project, authorized in 1960, provides for construction of erosion control works to protect the Sacramento River Flood Control Project from erosion damage. The present value of prior project erosion control work on the Natomas levees is $16 million.

- **Sacramento River, Sand Cove Emergency Streambank Protection Project** – This project, consisting of about 700 lineal feet of erosion control work along the Sacramento River, was constructed by the Corps of Engineers in 2006 at a cost of $1.3 million.

- **American River Watershed Common Features Project** – This project, authorized in the 1996 Water Resources Development Act, provides for strengthening the American and Sacramento River levees protecting the Sacramento area. The present value of project work on Natomas levees is $13.5 million.

- **Sacramento River Levee Project near Pritchard Lake** – This is an ongoing project to improve approximately 600 feet of levees on the east side of the Sacramento River. Estimated project cost is $6 million.

- **Natomas Levee Improvement Project First Phase** – As described above, this project provides for construction of levee repairs to address freeboard, underseepage and erosion. The cost for Phase 1 is estimated by SAFCA to be $260 million and funds will be secured through a combination of Federal, State and local monies.

Other federally funded projects, not included in the preceding list, which also provide flood protection to the Natomas Basin include: Folsom dam and reservoir (completed 1956); Shasta dam and reservoir (completed 1945); Oroville dam and reservoir (completed 1968); and other smaller dams and reservoirs in the Sacramento River basin.

Because of the progress on the various flood control projects, as noted above, the City and Counties are requesting FEMA revise the FIRM panels for the Natomas Basin from the current shaded X Zone designation to an A99 zone designation.

Compliance with 44 CFR Section 61.12

The local agencies request for an A99 designation is in compliance with the requirements of 44 CFR Section 61.12 as described below and detailed in the attached Table 1 (dollar amounts in Table 1 have been adjusted to April 2007 using ENR indexing cost factors):

- 100% of the total financial project cost of the completed flood protection system has been authorized.
- At least 60% of the total financial project cost of the completed flood protection system has been appropriated.
- At least 50% of the total financial project cost of the complete flood protection system has been expended.
- All critical features of the flood protection system are under construction and each critical feature is 50% completed as measured by the actual expenditure.
- The community has not been responsible for any delay in the completion of the flood protection system.

As noted in Table 1, 100% of the project costs have been authorized or will be by the effective date of the revised FIRM by a combination of Federal, State and local funds; 72% of the project costs have been appropriated; and 55% of the costs have been expended. Since the levees protecting the Basin and the significant, ongoing improvements made to these levees are the critical features

of the project, the 55% expended represents the percentage of critical features completed. Furthermore, since the levee system and the significant improvements, including several miles of slurry wall are in place (Sacramento River Flood Control Project – Natomas), at least 50% of all critical features of the flood protection system have been constructed. The figures presented in Table 1 are consistent with past requests by the City for an A99 Zone designation in the Natomas Basin.

As noted above, the community has a long history of prioritizing flood control and supporting needed levee improvements as demonstrated by the overwhelming support and passage of local assessments in 2000 and the recently passed 2007 SAFCA assessment. This financial commitment and the City Council's and the Board of Supervisors in both Sacramento and Sutter Counties long standing priority on flood control have assured that the community has never been responsible for any delay in the completion of the flood protection system.

Natomas Basin Internal Drainage System

As part of the overall flood protection system, the Natomas basin is protected from internal sources of flooding by an existing internal drainage system. In the developed areas of the basin, the system includes storm drain inlets, pipes, detention basins, canals and pump stations. These facilities have been designed and constructed to protect structures from the 100-year event. As an added measure of safety, most of the large developments have been mass graded to provide overland release to detention basins. In the undeveloped, agricultural areas, the land is drained by a series of ditches, canals and pump stations.

Contacts

The City and Counties appreciate this opportunity to request revision of the flood insurance rate maps for the Natomas Basin. If you need additional information or have questions, please contact Dave Brent (916-808-1420) or David Schamber (916-808-1423) with the City of Sacramento Department of Utilities or Michael Peterson with the Sacramento County Department of Water Resources (916-874-6851).

Respectfully submitted,

Ray Kerridge
City Manager
City of Sacramento

Terry Schutten
County Executive
Sacramento County

Curt Coad
~~Assistant~~ County Administrator (Interim)
Sutter County

Cc U.S. Senator Dianne Feinstein (w/o attachments)
U.S. Senator Barbara Boxer (w/o attachments)
Congresswomen Doris Matsui (w/o attachments)
Mayor Heather Fargo (w/o attachments)
City of Sacramento Councilmembers (w/o attachments)
Sacramento County Board of Supervisors (w/o attachments)
Sutter County Board of Supervisors (w/o attachments)
Kathleen Schaefer, FEMA
Stein Buer, Executive Director, SAFCA
Pete Ghelfi, Director of Engineering, SAFCA
Marty Hanneman, Assistant City Manager, City of Sacramento
Gary Reents, Director of Utilities, City of Sacramento
Dave Brent, Division Manager, City of Sacramento
David Schamber, Supervising Engineer, City of Sacramento
Keith Devore, Director DWR, Sacramento County
Michael Peterson, Principal Engineer, Sacramento County
George Booth, Senior Engineer, Sacramento County
Al Sawyer, Sutter County

Attachments:

Figure 1 – Natomas Levee Improvement Project
Resolutions 2007-432, 2007-0834 and 07-038
Table 1 – Natomas Basin A99 Evaluation