

SCHOOL OF ENGINEERING AND SCIENCES & GREENHAVEN-POCKET LIBRARY JOINT-USE PROJECT

Final Environmental Impact Report

SCH# 2007102124



Sacramento City Unified School District

May 2008



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Prepared by:
PLACEMAKERS

in association with

DMJM Harris
LFR



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SCIENCES & GREENHAVEN-POCKET
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INTRODUCTION

1.1 PURPOSE OF THE FINAL ENVIRONMENTAL IMPACT REPORT

This Final Environmental Impact Report (FEIR) has been prepared in the form of an addendum to the Draft Environmental Impact Report (DEIR) for the proposed School of Engineering and Sciences & Greenhaven–Pocket Library Joint-Use Project.

During the public review period (February 25 – April 9, 2008), written comments were made on the DEIR. These written comments and responses to the comments can be found in Chapter 2 of this FEIR. Changes to the text of the DEIR can be found in Chapter 3, with new text shown in underlining and deleted text shown by ~~strike through~~.

This document together with the DEIR will constitute the FEIR, if the Sacramento City Unified School District Board of Education certifies the FEIR as complete and adequate under the California Environmental Quality Act (CEQA).

1.2 ENVIRONMENTAL REVIEW PROCESS

According to CEQA, as the Lead Agency, the Sacramento City Unified School District (District) is required to consult with public agencies having jurisdiction over the proposed Project, and to provide the general public with an opportunity to comment on the DEIR. This FEIR has been prepared to respond to comments received on the DEIR and to clarify any errors, omissions or misinterpretations of the analysis or findings in the DEIR.

The DEIR was made available for a 45-day public review on February 25, 2008 and distributed to local and State responsible and trustee agencies. The general public was advised of the availability of the DEIR through public notice by mail to property owners (located within 300 feet of the project site) and interested citizens. This FEIR will be

presented to the Board of Education at a public hearing on June 5, 2008 at which time the Board of Education may take action regarding the certification of the FEIR as full disclosure of potential impacts, mitigation measures and alternatives. Certification of the EIR does not constitute approval of the project.

1.3 REPORT ORGANIZATION

This FEIR consists of the following chapters:

- **Chapter 1: Introduction.** This chapter includes a discussion of the use and organization of the FEIR.
- **Chapter 2: Comment Letters and Responses.** This chapter contains reproductions of letters received from the public on the DEIR and the names of individuals and agencies commenting on the DEIR. The comments are numbered in the margins of the comment letters and responses are keyed to the comment numbers. Where revisions to the DEIR text are appropriate, these are summarized and the actual text changes are shown in Chapter 3.
- **Chapter 3: Revisions to the DEIR.** Text changes, corrections or clarifications based on comments received on the DEIR are contained in this chapter, including language that has been added or deleted from the DEIR. Underlined text represents language that has been added to the DEIR; text ~~strike through~~ has been deleted from the DEIR. Errata are also shown in this chapter.

COMMENT LETTERS AND RESPONSES

This chapter includes a reproduction of each letter received during the public review period that addressed the DEIR. Comments on the DEIR were received from the state and local agencies as follows:

State Agencies

Governor's Office of Planning and Research
(State Clearinghouse)

Comment Number

A1.1

Regional and Local Agencies

Sacramento Metropolitan Air Quality Management District
City of Sacramento – Development Engineering Division
City of Sacramento – Development Services Department

B1.1 – B1.3
B2.1 – B2.13
B3.1

Individuals

Pamela Yu

C1.1



Letter A1

STATE OF CALIFORNIA

GOVERNOR'S OFFICE of PLANNING AND RESEARCH

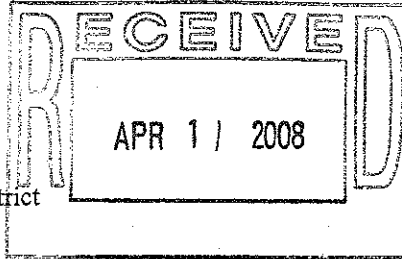
STATE CLEARINGHOUSE AND PLANNING UNIT



ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

April 10, 2008



James Dobson
Sacramento City Unified School District
5735 47th Avenue
Sacramento, CA 95824

Subject: School of Engineering and Science & Greenhaven-Pocket Library Joint-Use Project
SCH#: 2007102124

Dear James Dobson:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on April 9, 2008, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

A1.1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts
Director, State Clearinghouse

Document Details Report
State Clearinghouse Data Base

Letter A1

SCH# 2007102124
Project Title School of Engineering and Science & Greenhaven-Pocket Library Joint-Use Project
Lead Agency Sacramento City Unified School District

Type EIR Draft EIR
Description Construct a grade 9-12 public school, public library, and joint-use school/city park.

Lead Agency Contact

Name James Dobson
Agency Sacramento City Unified School District
Phone (916) 643-9230 **Fax**
email
Address 5735 47th Avenue
City Sacramento **State** CA **Zip** 95824

Project Location

County Sacramento
City Sacramento
Region
Cross Streets Swale River Way and Gloria Drive
Parcel No. 031-0020-057-000, 058-000; 031-0440-028-000, 002-0000
Township **Range** **Section** **Base**

Proximity to:

Highways I-5
Airports Sacramento Executive Airport
Railways
Waterways Havenside Canal
Schools
Land Use Vacant land and Sojourner Truth Park / R-1, Standard Single-Family Detached / Low Density Residential (4-15 dwelling units/net acre)

Project Issues Aesthetic/Visual; Air Quality; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Landuse; Noise; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Water Quality; Water Supply

Reviewing Agencies Resources Agency; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Parks and Recreation; Native American Heritage Commission; Central Valley Flood Protection Board; Department of Fish and Game, Region 2; Department of Water Resources; California Highway Patrol; Caltrans, District 3; Caltrans, Division of Aeronautics

Date Received 02/25/2008 **Start of Review** 02/25/2008 **End of Review** 04/09/2008

**RESPONSE TO LETTER A1:
GOVERNOR'S OFFICE OF PLANNING AND RESEARCH
(STATE CLEARINGHOUSE)**

**Response to
Comment A1.1**

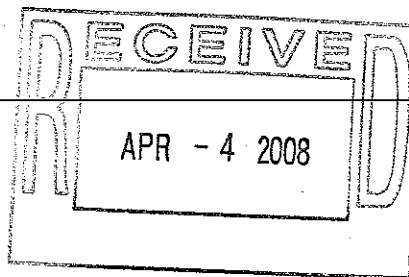
Comment noted. No response necessary.

Letter B1

Larry Greene
AIR POLLUTION CONTROL OFFICER

April 2, 2008

Mr. James Dobson
 Director of Planning and Construction
 Sacramento City Unified School District
 5735 47th Avenue
 Sacramento, CA 95824



**RE: Draft Environmental Impact Report for the School of Engineering and Sciences and Greenhaven/Pocket Library Joint-Use Project
 SMAQMD # SAC200701192**

Dear Mr. Dobson:

Thank you for referring the School of Engineering and Sciences and Greenhaven/Pocket Library Joint-Use Draft Environmental Impact Report (DEIR) to the Sacramento Metropolitan Air Quality Management District (District) for review.

The air quality analysis in the in the DEIR was deficient in a number of areas. The URBEMIS air quality modeling analysis did not reflect a significant number of haul trips which were specified in the Traffic and Circulation Section of the DEIR and the discussion of the project's impact on Climate Change was rather minimal. District staff contacted the preparers of the environmental document, who in turn submitted substantial revisions. These revisions must be incorporated into the Final Environmental Impact Report and the Mitigation Monitoring and Reporting Plan.

Since the new revised air quality analysis indicates that construction NOx emissions exceed the District's threshold of significance, the District's standard construction mitigation must be applied to the project as now indicated in Mitigation Measure 3.4.1.

Category 1: Reducing NOx emissions from off-road diesel powered equipment

The project shall provide a plan, for approval by the lead agency and SMAQMD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction¹ compared to the most recent CARB fleet average at time of construction; and

The project representative shall submit to the lead agency and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

B1.1

Letter B1

and:

Category 2: Controlling visible emissions from off-road diesel powered equipment

The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the lead agency and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other SMAQMD or state rules or regulations.

B1.1

¹Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

This mitigation measure must be included in the Final Environmental Impact Report, along with the supporting revised URBEMIS run and revised text. The District also recommends that this mitigation measure be included in the bid specifications released for the construction of the project.

The revised Climate Change discussion in the new Air Quality Section still remains somewhat marginal. While staff agrees that the project may have a less than significant impact on climate change, proposed attributes of the project that mitigate its impact should be recognized. The document indicates that the library portion of the project will be designed to achieve a LEED Silver Certification. This design feature will mitigate the climate change impacts of the project. The Sacramento City Unified School District should also consider design and operational features for the high school portion of the project which will further reduce climate change impacts. Developing a program which reduces student drop-off and pick-up trips would contribute substantially to reducing climate change as well as neighborhood traffic impacts.

B1.2

In addition, this project is subject to all applicable rules and regulations (see attachment) in effect at the time of construction. Information regarding all District rules can be obtained at www.airquality.org or by calling the Compliance Assistance Hotline at 916.874.4883.

B1.3

Letter B1

Thank you to you and your environmental consultants for your willingness to work with us in ensuring a complete and accurate environmental document. If you have any questions, I can be reached at rmaertz@airquality.org or 916.874.4882.

Sincerely,

A handwritten signature in cursive script that reads "Ron Maertz". The signature is written in black ink and includes a horizontal line extending to the right from the end of the name.

Ron Maertz

Land Use and Mobile Source Division

cc: Scott Johnson, City of Sacramento, Environmental Planning Services

Larry Robinson, Program Coordinator, SMAQMD

Letter B1

SMAQMD Rules & Regulations Statement (revised 1/07)

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

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

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

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

Rule 417: Wood Burning Appliances. Effective October 26, 2007, this rule prohibits the installation of any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

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

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

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

**RESPONSE TO LETTER B1:
SACRAMENTO METROPOLITAN AIR QUALITY
MANAGEMENT DISTRICT**

- Response to Comment B1.1** Section 3.4 Air Quality of the DEIR was revised to include a new UEBEMIS air quality modeling analysis which reflected the estimated number of haul trips identified in Section 3.3 Traffic and Circulation of the DEIR. The revised air quality section was submitted to Mr. Maertz on April 1, 2008 for review. The revised air quality section is included in Appendix A.
- Response to Comment B1.2** Comment noted. No response necessary.
- Response to Comment B1.3** Comment noted. The Project will comply with all applicable rules and regulations in effect at the time of construction.



Letter B2

DEVELOPMENT SERVICES
DEPARTMENT

CITY OF SACRAMENTO
CALIFORNIA

300 Richards Blvd., 3rd Floor
SACRAMENTO, CA 95811
PH. (916)808-7995
FAX (916) 808-2023

DEVELOPMENT ENGINEERING
DIVISION

Date: April 8, 2008

James Dobson, Director Planning and Construction
Sacramento City Unified School District
5735 47th Ave.
Sacramento, CA 95824

**SUBJECT: School of Engineering and Science & Greenhaven-Pocket Library DEIR Comments
(State Clearing House No 2007102124)**

Dear Mr. Dobson:

Thank you for the opportunity to review and comment on the School of Engineering and Science & Greenhaven-Pocket Library DEIR. I am submitting the following comments and request that these comments be considered in the FEIR:

1. Page 3.3-1, paragraph 4, 2nd sentence states "Traffic impacts were evaluated using LOS calculations for the AM (7AM-9AM) peak hour." Tables 3.3-2, 3.3-3 and so on show that LOS calculations were made for both AM and PM peak hours. Please revise. B2.1
2. Samar Hajeer, Supervising Engineer, City of Sacramento, in her letter, dated November 26, 2007 has asked to conduct the traffic impact study for the AM, PM, and school peak hours. It appears that the traffic study was done for the AM and PM peak hours only. Please identify the project's school peak hour and complement the traffic study by adding LOS calculations for the school peak hour. B2.2
3. Page 3.3-5, the last paragraph, 3rd sentence states "For this study, the peak hour delay warrant (Warrant 3A) and the peak hour volume warrant (Warrant 3B) were checked to determine if signalization is warranted to serve peak hour traffic volumes at unsignalized study intersections." Samar Hajeer, Supervising Engineer, City of Sacramento, in her letter, dated November 26, 2007 has asked to prepare a school warrant analysis for nonsignalized intersections per the MUTCD. Please insert ", and the school crossing warrant (Warrant 5)" between "(Warrant 3B)" and "were". B2.3
4. The signal warrant analyses are not included in the transportation chapter. Please revise to include the required signal warrant analyses in the report. B2.4

Letter B2

5. Table 3.3-4 shows the park area as 7 acres. Table 3.3-11 shows the park area as 8.2 acres. Please make the park acreage consistent. B2.5
6. Page 3.3-20, the first paragraph, 3rd sentence states “Traffic attempting to access the main parking lot from eastbound Gloria Drive would not be able to do so from the existing center left-turn lane, allowing through traffic to pass without experiencing additional delay.” The traffic study did not analyze the impact of this situation on the nearby streets and intersections. It would be expected that eastbound traffic to the school will be entering Gloria Drive to drop off students and this will impact Gloria Dr. which was not anticipated to carry this traffic. Please provide a recommendation for this expected situation. B2.6
7. Page 3.3-22, the second paragraph “As part of the build-out of the proposed Project, all sidewalks and pedestrian ramps bordering the Project site would be reconstructed. All ramps adjacent to the Project site are to be upgraded to full American with Disabilities Act (ADA) compliance.” Please remove this sentence from page 3.3-22 and insert it at the end of the first paragraph on page 3.3-21. B2.7
8. Please note that repair or replace/reconstruct any existing deteriorated curb, gutter and sidewalk shall be required by the City of Sacramento. This work shall be per City standards to the satisfaction of the Development Engineering and Division. B2.8
9. Please add a sentence “All off-site improvements shall be to City of Sacramento standard and subject to review and approval by City of Sacramento Development Engineering Division,” on page 3.3-21 at the end of the first paragraph. Please contact Ronald Fong at 916-808-7915 regarding public and frontage improvements B2.9
10. Page 3.3-21, the second paragraph, 2nd sentence. Please revise this sentence as “Considering that the proposed Project is expected to generate a moderate amount of new pedestrian trips, it’s required that the project applicant coordinate with City of Sacramento Traffic Engineer to construct and implement all safety measures to enhance safety for school crossing. This shall include but not limited to crosswalk/s and other potential features such as signals, flashing beacon, traffic calming devices, etc. B2.10
11. All new driveways shall be designed and constructed to City Standards to the satisfaction of the Development Engineering and Finance Division. B2.11
12. The minimum throat distance for all site driveways shall be 100’ (throat distance is that distance a vehicle can move from the public right-of-way into a given site before encountering a conflict with parking stalls, aisles, etc). B2.12
13. Before initiating any work within the public right of way, please submit all plans regarding any construction within the public right of way to the City of Sacramento, Development Services for review and approval. B2.13

Letter B2

Sincerely,

A handwritten signature in cursive script, appearing to read 'Alex Goloveshkin', written in black ink.

Alex Goloveshkin
Associate Engineer

cc: Samar Hajeer, Supervising Engineer

RESPONSE TO LETTER B2: CITY OF SACRAMENTO – DEVELOPMENT ENGINEERING DIVISION

Response to Comment B2.1

The commenter is correct; the text is revised to identify the PM peak hour (4PM – 6PM) as well. The traffic analysis evaluates the Project’s potential impacts during both the morning and evening peak hours of travel. See Chapter 3 of the FEIR.

Response to Comment B2.2

The DEIR traffic study evaluates traffic conditions for the worst case conditions on the surrounding roadway network. These conditions occur during the morning and evening peak commute hours of adjacent street traffic. During the morning peak hour, the peak hour of the Project will coincide with the peak hour of adjacent street traffic. However as is typical, during the afternoon, school will let out prior to the evening peak hour of adjacent street traffic. While school traffic will peak at an earlier time in the afternoon than the evening commute hour, the worst case (highest prevailing volumes) will occur during the 4 to 6 PM evening commute hour. The DEIR traffic analysis focuses on capturing impacts and conditions during these periods wherein conditions are the worst. As demonstrated in the DEIR, traffic conditions are very mild around the Project site during commute hours (generally LOS A through C) when traffic volumes peak.

Response to Comment B2.3

The peak hour delay warrant (Warrant 3A) and the peak hour volume warrant (Warrant 3B) were analyzed to determine whether signalization was warranted at any of the unsignalized study intersections. In general, unsignalized intersections operating at LOS D or better typically do not have the amount of delay required, or the total traffic volumes required to meet either the peak hour delay or peak hour volume warrants. Since the unsignalized study intersections each operate at LOS C or better (most operate at LOS B), none of these warrants were met.

Peak hour delay and peak hour volume warrants are included in Appendix B.

In addition to peak hour delay and peak hour volume warrants, the school crossing warrant (Warrant 5) was checked. Using the data and equations provided in the 2000 Highway Capacity Manual, it was determined that there were sufficient gaps for students to be able to cross Gloria Drive during the AM peak hour. During the school’s afternoon peak hour, traffic levels along Gloria Drive are lower than during peak commute hours. As a result, even more gaps in traffic along Gloria Drive are available.

It is worth noting that currently, crosswalks are not provided at the Swale River Way / Gloria Drive intersection (the closest intersection to the school site). With the concurrence of the City, the Project Sponsors should add crosswalks at this intersection to provide for pedestrian safety. See Response to Comment B2.10.

**Response to
Comment B2.4**

As discussed in Response to Comment B1.3, the peak hour delay warrant (Warrant 3A) and the peak hour volume warrant (Warrant 3B) typically cannot be met by intersections operating at LOS D or better. Since the unsignalized study intersections each operate at LOS C or better (most operate at LOS B), these warrants are not met.

Peak hour delay and peak hour volume warrants are included in Appendix B.

**Response to
Comment B2.5**

Table 3.3-11 is corrected to show seven acres. See Chapter 3 of the FEIR.

**Response to
Comment B2.6**

This is a typographical error. The word “not” is removed. The text goes on to explain that since vehicles attempting to turn left into the school’s parking lot would be able to do so from this center turn lane, local traffic passing through along eastbound Gloria Drive would be unaffected by these left-turning vehicles. See Chapter 3 of the FEIR.

**Response to
Comment B2.7**

The text is revised as requested by the commenter. See Chapter 3 of the FEIR.

**Response to
Comment B2.8**

Comment noted. The Project Sponsors will comply with this requirement.

**Response to
Comment B2.9**

The text is revised as requested by the commenter. See Chapter 3 of the FEIR.

**Response to
Comment B2.10**

The text is revised as requested by the commenter. See Chapter 3 of the FEIR.

**Response to
Comment B2.11**

Comment noted. The Project Sponsors will comply with this requirement.

**Response to
Comment B2.12**

The Project will require a City Encroachment Permit, and will be required to meet all City code and engineering requirements, including those written standards for throat depth. As currently designed, the site does not provide a minimum 100 feet throat depth at any of the Project driveways. However, as the Project site is expected to provide more parking than required, the site plan will be revised to remove the spaces necessary to meet this throat distance requirement, while continuing to provide a sufficient number of parking spaces for the Project.

**Response to
Comment B2.13**

Comment noted. The Project will comply with this requirement.



Letter B3

DEVELOPMENT SERVICES
DEPARTMENT

CITY OF SACRAMENTO
CALIFORNIA

300 RICHARDS BOULEVARD
3rd FLOOR
SACRAMENTO, CA
95811-0218

MEMORANDUM

Date: April 15, 2008

To: James Dobson, Director of Planning and Construction (SCUSD)

From: John Law, Environmental Planning Services

SUBJECT: Comments Received for the School of Engineering and Sciences / Greenhaven / Pocket Library Joint-Use Project

Following are comments received by the City of Sacramento's Utilities and Engineering department:

1. Solid Waste (should be review by Marty Strauss)
2. Storm Water Drainage
3. Sanitary Sewer
4. Water
5. Flood Plain
6. Water Quality (Storm Water)

Discussion was found on Water Quality. It appears that the applicant acknowledges some impacts to storm water utilities, but is not specific otherwise. Discussion in other areas was not found.

Thank you for the opportunity to comment on this Draft Environmental Impact Report. If you have any questions, please feel free to contact me at 916-808-8458 or by email: jlaw@cityofsacramento.org.

B3.1



**RESPONSE TO LETTER B3:
CITY OF SACRAMENTO – DEVELOPMENT SERVICES
DEPARTMENT**

**Response to
Comment B3.1**

Storm water drainage, water quality and flood plain issues are discussed in Section 3.6 Hydrology and Water Quality of the DEIR. Mitigation measures recommended in the DEIR would reduce stormwater runoff and water quality impacts to a less-than-significant level.

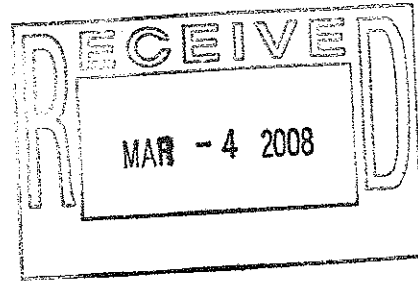
Concerning water consumption, the Project is estimated to consume approximately 8,363 gallons per day (gpd) of water. According to Robert Armijo, Utilities Department, City of Sacramento, the Project can be served by the existing water treatment and conveyance system. The Project will be required to undergo a fire flow test to confirm there is adequate water pressure to serve the site. See Chapter 3 of the FEIR.

Concerning sanitary sewer, the Project is estimated to generate approximately 9,511 gpd of wastewater. According to Robert Armijo, the existing sewer pipelines may not have adequate capacity to serve the Project. This is considered a potentially significant impact. A mitigation measure is included that requires preparation of a sewer capacity study to assess if there is adequate sewer capacity to serve the Project. See Chapter 3 of the FEIR.

Concerning storm drain capacity, the Project could result in significant impacts. See Chapter 3 of the FEIR.

Concerning Solid Waste, the Project would contribute to an increase in solid waste processed by the City of Sacramento. This is considered a potentially significant impact. A mitigation measure is included that requires preparation of a program to recycle a minimum of 30 percent of solid waste generated at the Project site. See Chapter 3 of the FEIR.

Letter C1



Pamela Yu
7300 Havenside Dr.
Sacramento, CA 95831

Thursday, February 28, 2008

Dear Mr. James,

The note is to respond the notice, which I got from the Draft Environmental Impact Report & Greenhaven/Pocket Library Joint-Use Project.

I have been living this area for about twenty years since the summer of 1988. It has been such a long time that my children and I waiting for the library in our residential district so terribly.

Thanks to God! Our beautiful dream is going to come true. We could not wait to see the project to get finished soon.

Of course, we should appreciate the city and the sponsors to support the projects completed. We welcome all the facilities dealing with education in our area to benefit our next generations in the future. The fruit of the tree maybe get harvested within only several years; however, the achievement of the education needs more time than it.

Let's start the project to do something good for our society as soon as possible!

Again, thank you for the great effort for our neighborhood!

Sincerely yours,

A handwritten signature in black ink, appearing to be "Pamela Yu", written over a horizontal line.

Resident of Greenhaven area

C1.1

**RESPONSE TO LETTER C1:
PAMELA YU**

**Response to
Comment C1.1**

Comment noted. No response necessary.

REVISIONS TO THE DRAFT ENVIRONMENTAL IMPACT REPORT

The following text identifies changes made to the DEIR, as addressed in Chapter 2 of this Response to Comments document. The new text is shown with underlining and deleted text is shown with ~~strikeout~~.

The second sentence of paragraph four on page 3.3-1 of the DEIR is changed as follows:

“Traffic impacts were evaluated using LOS calculations for the AM (7AM-9AM) peak hour and PM (4PM-6PM) peak hour.”

The third sentence of the first paragraph on page 3.3-20 of the DEIR is changed as follows:

“Traffic attempting to access the main parking lot from eastbound Gloria Drive would ~~not~~ be able to do so from the existing center left-turn lane, allowing through traffic to pass without experiencing additional delay.”

Add two new sentences at the end of the first paragraph on page 3.2-21:

“As part of the build-out of the proposed Project, all sidewalks and pedestrian ramps bordering the Project site would be reconstructed. All ramps adjacent to the Project site are to be upgraded to full American with Disabilities Act (ADA) compliance. All site improvements shall be to City of Sacramento standard and subject to review and approval by City of Sacramento Development Engineering Division.”

Paragraph three on page 3.3-22 is deleted:

“As part of the build-out of the proposed Project, all sidewalks and pedestrian ramps bordering the Project site would be reconstructed. All ramps adjacent to the Project site are to be upgraded to full American with Disabilities Act (ADA) compliance.”

Table 3.3-11 on page 3.3-18 is changed as follows:

TABLE 3.3-11: PARKING DEMAND SUMMARY

| Land Use/Size | Rate | Parking Spaces |
|--|-----------------------------------|-------------------------|
| Weekday | | |
| School ¹ /500 Students | 0.26 Spaces per Student | 130 |
| Library ² /15,000 Square Feet | 2.61 Spaces per 1,000 Square Feet | 39 |
| Park ³ / 8.2 7 Acres | ---- | ---- |
| Total | | 169 |
| Weekend | | |
| School ¹ /500 Students | ---- | ---- |
| Library ² /15,000 Square Feet | 2.25 Spaces per 1,000 Square Feet | 34 |
| Park ⁴ / 8.2 7 Acres | 5.1 Spaces per Acre | 42 36 |
| Total | | 76 70 |

¹ High School (Land Use 530).

² Library (Land Use 590). Weekend parking demand rate developed through a comparison of Weekday and Weekend Daily trip generation rates.

³ No weekday parking demand available for City Park (Land Use 411).

⁴ Weekend parking demand data for City Park (Land Use 411) based one site surveyed on a Saturday.

Source: *ITE Parking Generation, Third Edition*; DMJM Harris, 2007.

It is noted the change in park acreage reduces the parking demand for weekend use of the park from 42 spaces to 36 spaces.

Insert the following after the “Fire Protection” paragraph on page 3.9-2:

Water Supply The City of Sacramento would provide water service to the Project site. The following water lines are located near the Project site: a 12-inch water pipeline is located in Gloria Drive; a six-inch water pipeline is located in Swale River Way; and an eight-inch water pipeline is located to the east of the adjacent canal. The City expects the primary source of

supply to the aforementioned 12-inch pipe. That pipeline is not currently a looped distribution main (Armijo 2008).

Wastewater The City of Sacramento would provide sanitary sewer service to the Project site. The following sanitary sewer pipelines are located near the Project site: a six-inch line increasing to an eight-inch sanitary sewer pipeline is located in Gloria Drive; an eight-inch sanitary sewer pipeline is located in Swale River Way; and a six-inch line increasing to an eight-inch sanitary sewer pipeline is located to the east of the adjacent Pocket Canal. The City requires a minimum size of eight inches for sanitary sewer pipelines serving new development (Armijo 2008).

Storm Drainage The City of Sacramento would provide storm drain service to the Project site. A 36-inch pipe is located to the south of the site in Gloria Drive. According to the City, the Project site is near the outfall which is sump 132. Like most drainage basins in the City, the storm sewers drain by gravity to a sump, which discharges to a water body (in this case, the Pocket Canal) by means of pumps. The canal drains to the Sacramento River. Sump 132 is part of the basin 132; basin 132 has not yet been master planned by the City. The performance and capacity of this basin is therefore unknown (Armijo 2008).

Flood Plain Per the Letter of Map Revision, effective February 18, 2005, of the FIRM (Flood Insurance Rate Map), the parcel is located in a shaded Zone X area, defined as areas of 500-year flood, areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile and areas protected by levees from 100-year flood. Accordingly, the Project site lies in an area with no flood restrictions. See Section 3.6 Hydrology and Water Quality for a discussion of flooding potential at the Project site.

Solid Waste Solid waste service to the Project site would be provided by the City of Sacramento. The City has a goal of diverting a minimum of 30 percent of solid waste from the landfill through recycling (Strauss 2008). Currently, District schools have daily (Monday – Friday) trash pickup service. Schools are typically provided with four, four cubic yard recycle containers for use in the kitchens, multipurpose rooms, administration and library (Hicks 2008). The District is currently working with the City to locate a recycle container in each classroom; however, this program has not yet been implemented due to a lack of funding (Hicks).

Insert the following the “Demands on Fire Protection Services” paragraph on page 3.9-2:

Demand on Water Supply

The Project is estimated to consume about 8,363 gallons per day (gpd) (Betco 2008). The Project can be served by the existing water treatment and conveyance system. The City has adequate water rights to serve the Project. It is expected that only standard improvement will be required for the Project. The following will be required as part of the Project:

- Many projects within the City of Sacramento require on-site booster pumps for fire suppression and domestic water systems. Prior to design of the Project, the Project Sponsors will request a water supply test to determine what pressure and flows the surrounding public water distribution system can provide to the site. This information can then be used to assist the engineers in the design of the on-site fire suppression system.
- All water connections shall comply with the City of Sacramento’s Cross Connection Policy.
- Per City Code 13.04.070, except for separate irrigation service connections and fire service connections, each lot or parcel shall only have one (1) metered domestic water service. Requests for multiple domestic water service connections to a single commercial lot parcel, consistent with the City’s Department of Utilities (DOU) “Commercial Tap Policy”, may be approved on a case-by-case basis by the DOU. Excess services shall be abandoned to the satisfaction of the DOU (Armijo 2008).

Flood Plain

Project development is not within the 100-year flood hazard zone.

Delete the following on page 3.9-2:

~~The Project would not result in significant impacts to police and fire protection services. No mitigation measures are required.~~

Add the following:

Impact 3.9.1 The existing sewer system may not have capacity to serve the proposed Project. (S)

The Project is estimated to generate about 9,511 gpd (Betco 2008). The existing sewer pipelines may not have adequate capacity to serve the Project. The Project Sponsors will need to prepare a sanitary sewer study as described in Section 9.9 of the City Design and Procedures Manual.

This study and the preparation of a shed map must be approved by DOU. The City has indicated off-site improvements may be required. This is considered a potentially significant impact.

Mitigation Measure 3.9.1 The Project Sponsors shall prepare a sewer capacity study to determine if the existing sewer pipelines that would serve the Project have adequate capacity. The Project Sponsors shall coordinate with the City in the design of the Project's sewer pipelines. (LTS)

Impact 3.9.2 **The existing storm sewer system may not have capacity to serve the Project. (S)**

The Project would result in an increase in stormwater runoff at the site. Due to the proximity of the Project site to the outfall, it is expected that only standard site improvements will be required. However, the performance of the storm system should be studied to confirm the aforementioned assumption.

Mitigation Measure 3.9.2 The Project Sponsors shall prepare a project-specific drainage study for review and approval by the DOU. The 10-year and 100-year hydraulic grade lines (HGL's) for this study shall be calculated using the City's Storm Water Management Model (SWMM). Sufficient off-site and on-site spot elevations shall be provided in the drainage study to determine the direction of storm drain runoff. The drainage study shall include an overland flow release map for the proposed Project. The study shall be prepared by a registered Professional Engineer in the State of California. Prior to preparation of the study, the Project Sponsor's engineer shall consult with the City to determine the criteria of evaluation and design.

An on-site surface drainage system is required and shall be connected to the street drainage system by means of a storm drain service tap. All on-site systems shall be designed to the standard for private storm drainage systems (per Section 11.12 of the Design and Procedures Manual).

Drain inlets shall be at least six inches above the 10-year HGL. Building pad elevations shall be a minimum of 1.2 feet above the 100-year HGL and 1.5 feet above the local controlling overland flow release elevation, whichever is higher. Finished floor elevations shall be a minimum of 1.5 feet above the 100-year HGL and 1.7 feet above the controlling overland release. (LTS)

Impact 3.9.3 **The Project would contribute to an increase in solid waste processed by the City of Sacramento. (S)**

Mitigation Measure 3.9.3 The Project Sponsors shall develop a program to recycle a minimum of 30 percent of solid waste generated at the Project site, including construction waste. The Project Sponsors shall work with the City to identify potential funding sources to assist with implementation of the recycle program. (LTS)

APPENDIX

A

AIR QUALITY REVISED

The following is included in Appendix A:

Section 3.4: Air quality – Revised

Appendix E: URBEMIS Report – Revised

Appendix I: Construction Mitigation Fee Program Calculator – New

3.4 AIR QUALITY

SETTING

Meteorology

The Site is located in Sacramento County within the Sacramento Valley Air Basin. Temperatures in the area range from the high 90's during the day and low 50s in the evening during the summer months, (June-August) and mid 60s during the day and mid 30s in the evening during the winter months (December-February). Rainfall averages a few inches each month during the “rainy season”, occurring from (November - April). Total annual rainfall averages between 15 and 20 inches. Winds direction in the surrounding vicinity is generally from the north.

Ambient Air Quality Standards

The federal Clean Air Act Amendments of 1970 established national ambient air quality standards (NAAQS) to which states are required to adhere. The federal act also afforded individual states the option to adopt standards that are more stringent and/or include other pollutants.

The AAQS are intended to protect the public health and welfare. They are designed to protect those segments of the public most susceptible to respiratory distress, known as “sensitive receptors,” including asthmatics, the very young, the elderly, and people weakened by other illness or disease.

California had established its own air quality standards when federal standards were promulgated. Some of the California Ambient Air Quality Standards (CAAQS) are more stringent than their NAAQS counterparts. Details of both NAAQS and CAAQS are presented in **Table 3.4-1**.

The California Air Resources Board (CARB) is the state agency responsible for regulating air quality. The CARB's responsibilities include establishing CAAQS, emissions standards, and regulations for mobile emission sources (e.g., autos, trucks) and monitoring the efforts of county-wide and multi-county air pollution control districts, which have primary responsibility over stationary sources. The SMAQMD is the regional agency responsible for air quality regulation within the Sacramento Valley Air Basin. The SMAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and enforcement activities.

Ambient Air Quality

As required by the federal Clean Air Act, criteria air pollutants are pollutants for which the federal or State government has established ambient air quality standards. These standards, or criteria, were identified in order to protect public health and welfare. The SMAQMD operates a regional monitoring network that measures the ambient concentrations of six criteria air pollutants: ozone (O₃), carbon monoxide (CO),

TABLE 3.4-1: FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

| Pollutant | Averaging Time | California Standards | Federal Standards |
|--|------------------------|-----------------------|------------------------|
| Ozone | 1-Hour | 0.09 ppm | --- |
| | 8-Hour | 0.070 ppm | 0.08 ppm |
| Particulate Matter (PM ₁₀) | 24-Hour | 50 µg/m ³ | 150 µg/m ³ |
| | Annual Arithmetic Mean | 20 µg/m ³ | 50 µg/m ³ |
| Particulate Matter – Fine (PM _{2.5}) | 24-Hour | --- | 35 µg/m ³ * |
| | Annual Arithmetic Mean | 12 µg/m ³ | 15 µg/m ³ |
| Carbon Monoxide (CO) | 8-Hour | 9.0 ppm | 9 ppm |
| | 1-Hour | 20 ppm | 35 ppm |
| Nitrogen Dioxide (NO ₂) | Annual Average | --- | 0.053 ppm |
| | 1-Hour | 0.25 ppm | --- |
| Sulfur Dioxide (SO ₂) | Annual Average | --- | 0.03 ppm |
| | 24-Hour | 0.04 ppm | 0.14 ppm |
| | 1-Hour | 0.25 ppm | --- |
| Lead | 30 Day Average | 1.5 µg/m ³ | --- |
| | Calendar Quarter | --- | 1.5 µg/m ³ |
| Sulfates | 24-Hour | 25 µg/m ³ | --- |

* U.S. Environmental Protection Agency (U.S. EPA) lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006.

--- = No Standards Available

µg/m³ = micrograms per cubic meter

ppm = parts per million

Sources: California and Federal Standards – Sacramento Metropolitan Air Quality Management District (SMAQMD) and U.S. EPA

small-diameter particulate matter (PM₁₀), lead (Pb), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). The SMAQMD also established a monitoring system for toxic constituents. In addition, monitoring has commenced for fine particulate matter (PM_{2.5}). Descriptions of health-related impacts associated with these pollutants, as well as volatile organic compounds (VOCs), are provided below.

Ozone (O₃)

O₃ is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_x). O₃ is a regional air pollutant because its precursors are transported and diffused by wind

concurrently with O₃ production by the photochemical reaction process. When inhaled, O₃ is readily delivered to terminal respiratory airways and alveolar tissue, the major target sites for its effects. O₃ injures tissue membranes by oxidizing amino acids and polyunsaturated fatty acids, resulting in swelling and disintegration of cellular organelles and inhibition of metabolic pathways. O₃ also causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease.

Carbon Monoxide (CO)

CO is an odorless, invisible gas usually formed from combustion of organic substances (e.g., fuel sources). Exposure to high concentrations of CO may be lethal with death resulting from asphyxiation. Asphyxiation and sub-lethal symptoms are usually caused by poorly vented combustion appliances, idling motor vehicles in closed environments, excessive CO production, and inadequate ventilation associated with a variety of industrial occupational activities. Lower levels of CO can impair the transport of oxygen in the bloodstream and cause fatigue, headaches, nausea, and dizziness, as well as aggravating cardiovascular disease.

Volatile Organic Compounds (VOCs)

VOCs are organic chemicals that easily vaporize at room temperature. They are found in fuels, paints, coatings, consumer products, and cleaning fluids. All of these products can release organic compounds during use and to some degree when they are stored. VOCs include a wide range of individual substances such as aliphatic hydrocarbons, halogenated hydrocarbons such as chlorine, and oxygenated hydrocarbons such as alcohols, ethers, acids, and ketones. VOCs are emitted by a variety of sources, including gasoline and diesel engines in vehicles and construction equipment, building materials and furnishings, and consumer products. VOCs have been found to be major contributors to the production of ozone, a common air pollutant proven to be a public health hazard.

VOCs also have the potential to cause a variety of health effects. As with other pollutants, the extent and nature of the health effect will depend on many factors, including the specific chemicals, level of exposure, and length of time exposed. Health effects of VOCs may include eye, nose, and throat irritation; headaches; dizziness; loss of coordination; nausea; and damage to the liver, kidneys, and central nervous system. Some organics can cause cancer in animals and others are suspected or known to cause cancer in humans.

Particulate Matter (PM₁₀ and PM_{2.5})

The health consequences of atmospheric particulate matter depend on its ability to penetrate respiratory defense mechanisms. In general, defense mechanisms are adequate to remove inhaled particles larger than 10 μm from the inhaled air stream.

PM₁₀ consists of small-diameter ($\leq 10 \mu\text{m}$) particulate matter that is inhalable into deep lung tissue. PM_{2.5} consists of particles that are respirable ($\leq 2.5 \mu\text{m}$) and can enter and be deposited in pulmonary tissue. Particles greater than 2.5 μm are mostly removed in the upper respiratory system. PM₁₀ can include certain substances such as sulfates and nitrates that can cause lung damage directly or can contain absorbed gases and suspended droplets that may be injurious to health (e.g., benzene or other toxic contaminants). The effective toxicity of PM_{2.5} particles may be greater than that of larger particles because proportions of toxic substances such as lead, mercury, zinc, and chromium increase with decreasing particle size.

In July 1997, the U.S. EPA adopted an 8-hour ozone standard and a new standard for PM_{2.5}. PM_{2.5} is considered a better indicator than PM₁₀ of health impact potential from airborne particulate matter because of its ability to penetrate deeply into human lung tissue. PM_{2.5} in urban atmospheres contains substantial quantities of diesel particulate matter (DPM).

Lead

Lead is a highly toxic metal that produces a range of adverse health effects, particularly in young children. It can disturb the gastrointestinal system and cause anemia, kidney disease, and neuromuscular and neurological dysfunction. Present sources include lead smelters, deterioration of lead paint, battery manufacturing, and recycling facilities, while past sources include the combustion of leaded gasoline.

Nitrogen Dioxide (NO₂)

NO₂ is a reddish brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO₂. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO₂ may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Sulfur Dioxide (SO₂)

SO₂ is a colorless acidic gas with a strong odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. Sulfur dioxide can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Other Criteria Air Pollutants

The standards for NO₂, SO₂, and lead are currently being met in the Sacramento Valley Air Basin and the latest pollutant trend information suggests that these standards will not be exceeded in the future.

Five-Year Air Quality Monitoring

Existing and probable future levels of air quality within the Project site vicinity can be best inferred from ambient air quality measurements conducted by the SMAQMD, and reported by the CARB, at the monitoring station located in Sacramento, Sacramento County, California. **Table 3.4-2** is a five-year summary of the monitoring data reported by the SMAQMD and the CARB.

**TABLE 3.4-2: FIVE-YEAR AIR QUALITY MONITORING SUMMARY
 (DAYS STANDARDS WERE EXCEEDED AND MAXIMUM
 CONCENTRATIONS OBSERVED)**

| Pollutant / Standard | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|------|------|------|------|------|
| Ozone (O₃) | | | | | |
| 1-Hr. > 0.09 ppm (S) | 2 | 6 | 4 | 1 | 4 |
| 1-Hr. > 0.12 ppm (F)* | 0 | 0 | 0 | 0 | 0 |
| 8-Hr. > 0.08 ppm (F) | 3 | 3 | 1 | 0 | 1 |
| Max. 1-Hr. Conc. (ppm) | .113 | .109 | .111 | .105 | .108 |
| Carbon Monoxide (CO) | | | | | |
| 1-Hr. > 20 ppm (S) | 0 | 0 | 0 | 0 | 0 |
| 8-Hr. > 9 ppm (S, F) | 0 | 0 | 0 | 0 | 0 |
| Max. 1-Hr. Conc. (ppm) | --- | --- | --- | --- | --- |
| Max. 8-Hr. Conc. (ppm) | 4.41 | 4.31 | 3.4 | 2.96 | 3.64 |
| Particulate Matter (PM₁₀) | | | | | |
| 24-Hr. > 50 µg/m ³ (S) | 5 | 3 | 1 | 1 | 4 |
| 24-Hr. > 150 µg/m ³ (F) | 0 | 0 | 0 | 0 | 0 |
| Max. 24-Hr. Conc. (µg/m ³) | 96.0 | 81.0 | 66.0 | 58.0 | 55.0 |
| Fine Particulates (PM_{2.5}) | | | | | |
| 24-Hr. > 65 µg/m ³ (F)** | 1 | 4 | 0 | 0 | 0 |
| Max. 24-Hr. Conc. (µg/m ³) | 72.0 | 73.0 | 49.0 | 52.5 | 63.8 |

* The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

** U.S. EPA lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006.

--- = No data available

(F) = Federal Clean Air Standard

(S) = State Clean Air Standard

Source: ARB: Sacramento – T Street Monitoring Station

Federal and State Regulations

Federal Standards

The Clean Air Act (CAA) Amendment of 1977 required that the regional planning and air pollution control agencies prepare a regional Air Quality Plan to achieve all standards within the deadline specified in the CAA. The main purpose of an Air Quality Plan is to bring a region into compliance with the requirements of federal and state air quality standards. To bring the Sacramento Valley Air Basin region into attainment, the SMAQMD developed the 1991 Air Quality Attainment Plan (AQAP) to provide a comprehensive strategy to reduce air pollutant emissions.

As summarized in **Table 3.4-3**, the SMAQMD states that the Sacramento Valley Air Basin is currently “in attainment” for the national standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, PM₁₀ (unclassified status at the 24 hour interval) and PM_{2.5}. Sacramento County ozone status for the national 8-hour standard is “non-attainment”. The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005. No national standard for lead is identified.

State Standards

In 1988 California passed the California Clean Air Act (Assembly Bill 2595), which like its federal counterpart, called for designations of areas as attainment or non-attainment based on the state Ambient Air Quality Standards rather than federal standards.

As summarized in **Table 3.4-3**, the SMAQMD states that the Sacramento Valley Air Basin is currently “in attainment” for the state standards for carbon monoxide, nitrogen dioxide, sulfates, sulfur dioxide, and lead. The current status of the Sacramento Valley Air Basin for 1-hour and 8-hour ozone and particulate matter (PM_{2.5} and PM₁₀) standards is “non-attainment”.

Sensitive Receptors

Land uses such as schools, children’s day care centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses are more susceptible to respiratory distress.

Sensitive receptors located within 0.5 mile of the Project site include Martin Luther King Junior Elementary School located southwest of the site.

Toxic Air Contaminants

Toxic air contaminants (TACs) are pollutants that are associated with acute, chronic, or carcinogenic effects but for which no NAAQS or CAAQS has been established; or, in the case of carcinogens, for which no AAQS is appropriate. TAC impacts are evaluated by determining if a particular chemical poses a significant risk to human health and, if

TABLE 3.4-3: AIR QUALITY STANDARDS ATTAINMENT STATUS FOR THE SACRAMENTO VALLEY AIR BASIN

| Parameter | California Standard | Federal Standard |
|--|---|--|
| Ozone (1-Hour) | Non-Attainment 1-hour and 8-hour standards | Non-Attainment 8-hour standard |
| Ozone (8-Hour) | Non-Attainment 24-hour Standard and Annual Mean | Non-Attainment* 24-hour standard |
| Particulate Matter (PM ₁₀) | Non-Attainment Annual Standard | Attainment 24-hour Standard and Annual Mean |
| Particulate Matter – Fine (PM _{2.5}) | Non-Attainment Annual Standard | Attainment 24-hour Standard and Annual Mean |
| Carbon Monoxide | Attainment 1-hour and 8-hour Standards | Attainment 1-hour and 8-hour Standards |
| Nitrogen Dioxide | Attainment 1-hour Standard | Attainment Annual Standard |
| Sulfur Dioxide | Attainment 1-hour and 24-hour Standards | Attainment 3-hour, 24-hour, and Annual Standards |
| Lead | Attainment 30 Day Standard | Attainment Calendar Quarter |
| Sulfates | Attainment 24-hour Standard | No Federal Standard |

* Air quality meets Federal PM-10 Standards. The SMAQMD must request redesignation to attainment and submit a maintenance plan to be formally designated to attainment.
 California Area Designations based on AQ Data collected during 2001-2003

so, under what circumstances. The proposed project would utilize the control measures and best management practices (BMPs) described in “construction related emissions” section and is not expected to increase the exposure of the public to significant levels of TACs. Significant levels are defined as the following: (1) The probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million, or (2) ground-level concentrations of noncarcinogenic toxic air contaminants would result in a Hazard Index greater than one for the MEI.

Indirect Source Review

The Indirect Source Review Rule began on March 1, 2006, and requires developers of larger residential, commercial and industrial projects to reduce smog-forming and particulates emissions generated by their projects. New development projects create air pollution during the construction phase, as well as during the operational phase by prompting more vehicle trips and more pollution-causing activities such as landscape

maintenance, fuel combustion, and use of consumer products. The SMAQMD will determine how the proposed Project fits the Indirect Source Review criteria.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Standards of Significance

For purposes of this EIR, air quality impacts are considered significant if the Project would:

- Violate any air quality standards or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable Federal or State AAQS.
- Conflict with or obstruct implementation of the SMAQMD Air Quality Attainment Plan.
- Expose sensitive receptors to substantial additional pollutant concentrations.
- Expose the public to significant levels of toxic air contaminants, defined as follows: (1) the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million or (2) ground-level concentrations of non-carcinogenic toxic air contaminants would result in a hazard Index greater than one for the MEI.
- Create objectionable odors.
- Have a significant impact on climate change due to potential greenhouse gas emissions.

Method of Analysis

To determine the potential impacts that the construction and operation of the school may have on air quality, the ARB-approved Urban Emissions Model (URBEMIS) 2007 version 9.2.4 was used. URBEMIS is a computer program that can be used to estimate emissions associated with land development projects in California such as residential neighborhoods, shopping centers, and office buildings. **Appendix E** includes the results of the URBEMIS estimates.

Construction

The proposed Project would include the construction of a high school, a library, and joint use school and city park. The Project would require grading (including soil export), transport of materials, and building and installation of new equipment. Emission levels for construction activities vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. URBEMIS 2007 (Version 9.2.4), which assumes typical construction operations based on the size of the site, was used to calculate emissions associated with the project construction.

However, as stated in Impacts 3.3.1, a maximum of 70,000 cubic yards of soil will be excavated during the construction and exported off the site. It is estimated that 20 dump trucks carrying 14 cubic yards of soil each will make a total of 160 trips each day for 28 working days (Construction Fine Soil Grading Phase). The distance traveled by the trucks is estimated to be 7 miles, since this is the approximate distance to the levy, which is the most likely potential location for soil disposal (estimated by one of the project's civil engineers; John Gostomski of PCM3).

Traffic

URBEMIS 2007 (Version 9.2.4) is the latest version that uses emission factors (EMFAC) based on the California Air Resources Board's on-road emissions inventory model to estimate vehicle emissions associated with various land uses. URBEMIS calculates volatile organic compounds reported as reactive organic gases (ROGs), nitrogen oxides, carbon monoxide, PM10, and sulfur dioxide. The URBEMIS 2007 program was used in conjunction with local traffic information provided by DMJM Harris, the traffic consulting firm which prepared the traffic impact analysis for the proposed Project, to assess potential impacts to air quality.

The anticipated traffic conditions of the Project were modeled using URBEMIS 2007 for winter and summer for the year 2009, which is the proposed year for the school to open. Pass-by trips were also included in these calculations.

Stationary Sources

As stated in the *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2004), "stationary sources consist of a single emission source with an identified emission point, such as a stack, at a facility. Stationary point sources are usually associated with manufacturing and industrial processes. Examples of these sources include boilers, electric power plants, and other types of combustion equipment." Based on the definition of stationary sources provided by the SMAQMD, the types of facilities being constructed for the Project (school building, library, and park) are not considered stationary sources. Therefore, no additional stationary sources are anticipated due to the Project.

Impact Overview

Based on the URBEMIS modeling, construction related emissions from equipment and vehicle exhaust would be above the SMAQMD thresholds for NO_x. However, by meeting the "all feasible mitigation" requirement (as described in *Impacts 3.4.1* below), the NO_x emissions are less than significant. Area source emissions and operational emissions generated by the proposed Project would be below SMAQMD thresholds for all pollutants.

Less-than-Significant Impacts

Impact 3.4.1 Potential to Violate Air Quality Standards or Substantially Contribute to Existing Air Quality Violations

According to the *Guide to Air Quality Assessment in Sacramento County* distributed by the SMAQMD, a proposed project may have a substantial impact if SMAQMD threshold emission levels are exceeded, the project would cause a substantial increase of an existing exceedance of a state ambient air quality standard (greater than 5%), and/or would violate CO standards (potential to exceed the state 1-hour standard of 20 ppm of CO and/or the 8-hour standard of 9.0 ppm).

Construction Related Emissions. Emissions from construction activities associated with the construction of the Proposed Engineering and Science High School would occur over a short term. As shown below in **Table 3.4-4**, the unmitigated NO_x emissions exceed 85 lbs/day. However, through compliance with the SMAQMD's "all feasible mitigation" requirement (20% NO_x reduction and 45% PM₁₀ reduction), the emissions would be mitigated and reduced to less than significant levels. The SMAQMD's "all feasible mitigation" requirement is as follows:

Category 1: Reducing NO_x emissions from off-road diesel powered equipment. The project shall provide a plan, for approval by the lead agency and AQMD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction¹ compared to the most recent CARB fleet average at time of construction; and

The project representative shall submit to the lead agency and AQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide AQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

and:

Category 2: Controlling visible emissions from off-road diesel powered equipment. The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for

more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the lead agency and AQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The AQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other AQMD or state rules or regulations.¹

TABLE 3.4-4: CALCULATED AIR EMISSIONS FROM CONSTRUCTION OPERATIONS

| Number and Equipment Type | Emissions (lbs/day) | | | | |
|--|-----------------------------------|-----------------|--|-----------------------------------|-----------------------------------|
| | ROG | NO _x | CO | SO ₂ | PM ₁₀ |
| Total (no mitigation) | 66.99 | 104.66 | 74.59 | 0.07 | 62.07 |
| Total (with mitigation)² | 66.99 | 83.73 | 74.59 | 0.07 | 34.14 |
| SMAQMD Threshold³ | Substantial ⁴ Increase | 85 | Exceedance of CO Standard or Substantial ⁴ Increase | Substantial ⁴ Increase | Substantial ⁴ Increase |

The Off-site Construction Mitigation Fee Program Calculator results are included in **Appendix I** and show that participation in the program is not required following compliance with the “all feasible mitigation” requirement.

By meeting the SMAQMD’s “all feasible mitigation” requirement to bring NO_x emissions to less than significant levels, it may be assumed that “exhaust emissions of other pollutants [i.e. ROG, CO, SO₂, and PM₁₀] from operation of equipment and worker commute vehicles are also not significant.”⁵ Based on this information, it can be

¹ Sacramento Metropolitan Air Quality Management District (the District) Construction Air Quality Mitigation Plan Protocol. Version 4.0. SMAQMD. 2007. <http://www.airquality.org/ceqa/ConstructionMitigationProtocol.pdf>. Page 1.

² With implementation of “all feasible mitigation” measures.

³ Construction Thresholds from are from the Sacramento Metropolitan Air Quality Management District (SMAQMD) CEQA Guide to Air Quality Assessment in Sacramento County (July 2004), Table 2.1.

⁴ “Substantial” is defined as making measurably worse, which is 5% or more of an existing exceedance of a state ambient air quality standard.

⁵ Guide to Air Quality Assessment in Sacramento County. SMAQMD. 2004. Page 3-2.

concluded that potential construction exhaust emissions associated with the Project would be less-than-significant.

Criteria pollutant emissions of reactive organic gases (ROG) and NO_x from construction equipment would incrementally add to the regional atmospheric loading of ozone precursors during Project construction. While these increases are anticipated to be less-than-significant, **Mitigation Measure 3.4.1** would reduce emissions of ozone precursors and particulates.

Fugitive Dust. Fugitive dust emissions are generally associated with demolition, land clearing, exposure, and cut and fill operations. PM_{2.5} results from fuel combustion in motor vehicles, equipment, and industrial sources. A portion of PM₁₀ is derived from dust created by soil disturbance and vehicle turbulence. Some PM₁₀ is derived from natural processes.

The dust generated during construction would vary depending on the level of activity, specific construction activities, and weather conditions. Sensitive receptors within 0.5 mile of the site include Martin Luther King Jr. Elementary School. These sensitive receptors and construction workers at the Project site may be exposed to blowing dust, depending on prevailing wind conditions. Dust from soils and debris transport within and around the Project site could contribute to the Sacramento County's nonattainment of the state PM_{2.5} and PM₁₀ standards.

The U.S. EPA estimates that approximately 1.2 tons of total suspended particulate matter per acre is generated during one month of construction activity. This generation rate assumes a moderate level of construction activity, moderate silt content in the soils being disturbed, and a semi-arid climate. The CARB estimates that 64 percent of construction-related total suspended particulate emissions are composed of PM₁₀. Therefore, the emission factors for uncontrolled, construction-related PM₁₀ emissions are:

- 0.77 ton per acre per month of PM₁₀; or
- 1,540 pounds per acre per month of PM₁₀

The Project site comprises approximately 13.55 acres. The entire Project site is not expected to be under construction at any one time. For purposes of this air quality analysis, it is assumed that 3.09⁶ acres or less of land would be under construction or exposed on any given day. Based on the emission factors listed above, the potential uncontrolled PM₁₀ emissions from construction related activities is 2.38 tons per month.

⁶ Source: URBEMIS 2007 (version 9.2.4) Calculations.

There is no quantitative threshold of significance provided by the SMAQMD for fugitive dust (i.e. lbs/day, tons/year). Due to the small size of the Project and the short duration of construction, fugitive dust from construction activities should not increase the Sacramento County PM₁₀ ambient air concentration by five percent or more. Therefore, the fugitive dust created during construction activities for the Project is anticipated to be a less-than-significant impact. Nevertheless, **Mitigation Measure 3.4.1** is recommended to lower the potential fugitive dust emissions from construction activities.

Operational Air Emissions. The SMAQMD recommends a detailed analysis be conducted for any project that's size is greater than, or within ten percent of, the values indicated in Table 4.2 of the SMAQMD's *Guide to Air Quality Assessment in Sacramento County*. Since the proposed Project comprises approximately 59,568 square feet, which is greater than the 56,000 square foot limit shown in Table 4.2 of the SMAQMD's CEQA document, a detailed analysis is recommended. URBEMIS 2007 (version 9.2.4) was used to calculate emissions associated with Project operations.

Long-term air emission impacts would be those associated with changes in permanent usage of the Project site. Project-related vehicle trips are expected to increase by 1,848 average daily trips based on information provided by DMJM Harris. The potential daily emissions calculated using URBEMIS 2007 version 9.2.4 are shown in **Table 3.4-5** and in the URBEMIS report presented in **Appendix E. Table 3.4-5** identifies the highest potential daily emissions of each pollutant from project operations and area sources. As shown in **Table 3.4-5**, the ROG and NO_x emissions for project operations do not exceed 65 pounds per day. Therefore, as stated in the *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2004), it may be assumed that emissions of other pollutants [i.e., CO, SO₂, and PM₁₀] from Project operations are also not significant⁷. Based on this information, the proposed Project is not anticipated to emit air pollutants in excess of SMAQMD significance thresholds during Project operations.

Local CO Hot Spots. Local ambient air quality is most affected by CO emissions from motor vehicles. CO is typically the contaminant of greatest concern because it is the pollutant created in greatest abundance by motor vehicles and it does not readily disperse into the air, creating pockets of high CO concentrations called "hot spots" in areas of vehicular congestion. These pockets have the potential to exceed the state 1-hour standard of 20 ppm of CO and/or the 8-hour standard of 9.0 ppm.

⁷ Guide to Air Quality Assessment in Sacramento County. SMAQMD. 2004. Page 5-2.

TABLE 3.4-5: CALCULATED AIR EMISSIONS FROM PROJECT OPERATIONS

| Proposed Project Operations | Emissions (lb/day) | | | | |
|---|--------------------|-----------------|---|--------------------------------------|--------------------------------------|
| | ROG | NO _x | CO | SO ₂ | PM ₁₀ |
| Area Source Emissions (natural gas, landscaping, and architectural coatings) | 0.79 | 0.64 | 5.30 | 0.00 | 0.01 |
| Vehicle Emissions | 21.91 | 14.91 | 151.49 | 16.16 | 15.06 |
| Total | 22.70 | 15.55 | 156.79 | 16.16 | 15.07 |
| SMAQMD Thresholds ⁸ | 65 | 65 | Violation of CO Standards (see Local CO Hot Spots) | Substantial ⁹ Increase | Substantial ⁸ Increase |

CO transport is limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels, adversely affecting the health of local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes.

The SMAQMD CEQA Guide to Air Quality Assessment in Sacramento County states that the CO levels of project operations are considered insignificant if the project is smaller than 1,192,000 square feet. Since the total size of the Project site is approximately 59,568 square feet, the potential CO levels of Project operations are considered insignificant. Moreover, the SMAQMD considers development projects that fall below the operational significance thresholds for ROG and NO_x listed in Chapter 4, Table 4.2 (65 pounds per day) also to be insignificant for CO emissions.

Potential to Result in a Considerable Net Increase of any Criteria Pollutant for Which the Region is in Non-Attainment

Currently, the Sacramento County is in “nonattainment” for the state 1-hour and 8-hour ozone, PM₁₀, and PM_{2.5} standards and the federal 8-hour ozone standard. The SMAQMD *California Environmental Quality Act Guidelines* state that a project would result in significant emissions (on both the project and cumulative scales) of criteria pollutants

⁸ Operational thresholds from are from the Sacramento Metropolitan Air Quality Management District (SMAQMD) CEQA Guide to Air Quality Assessment in Sacramento County (July 2004), Table 2.1

⁹ “Substantial” is defined as making measurably worse, which is five percent or more of an existing exceedance of a state ambient air quality standard.

if the project results in the operational emission increase of more than 65 pounds per day of ROG or NO_x or construction emissions of more than 85 pounds per day of NO_x, contributes to local CO Hot Spots, or causes an adverse impact to sensitive receptors from particulate emissions. Based on the information presented above, the Project would not result in considerable or significant increases of NO_x, ROG, or CO emissions.

For other criteria pollutants including PM₁₀ and PM_{2.5}, a “substantial” increase is defined as contributing emissions equivalent to five percent or more of an existing exceedance of a state ambient air quality standard. The SMAQMD considers projects that fall below screening levels for ROG and NO_x to also be insignificant for CO, PM₁₀ and SO₂ emissions and visibility. Therefore, implementation of the proposed Project would not result in substantial cumulative impact to levels of any criteria pollutant.

Compliance with SMAQMD Clean Air Quality Attainment Plan

An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a nonattainment area. The main purpose of an air quality plan is to bring the area into compliance with the requirements of federal and state air quality standards. To bring the Sacramento Valley Air Basin region into attainment, the SMAQMD developed the 1991 Air Quality Attainment Plan (AQAP) to provide a comprehensive strategy to reduce air pollutant emissions and focused on control measures to be implemented. The Sacramento Clean Air Plan was revised and amended in 1994, 1997, 1999, 2001 and 2005.

The attainment status of the Sacramento Valley Air Basin with respect to state and federal standards is presented above in **Table 3.4-3**. Because the proposed Project would not violate air quality standards or exceed emissions thresholds as discussed above, and is generally consistent with current air quality management policies, the Project is not anticipated to conflict with the SMAQMD’s attainment plan.

Potential to Expose Sensitive Receptors to Substantial Additional Pollutant Concentrations

Construction of the proposed Project may expose surrounding land uses and sensitive receptors to airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment). Due to the small size of the Project and the short duration of construction, fugitive dust from construction activities is not anticipated to increase the Sacramento County PM₁₀ ambient air concentration by five percent or more (level of significance). Implementation of **Mitigation Measure 3.4.1** is anticipated to reduce construction-related emissions even further.

Operational impacts from the proposed Project would be limited to less-than-significant emissions of ozone precursor emissions (see **Table 3.4-5**). CO emissions would not result in or create a violation of the CO standard as described above (see Local CO Hot Spots). The SMAQMD also considers projects that fall below screening levels for ROG and NO_x to also be insignificant for CO, PM₁₀ and SO₂ emissions and visibility. PM₁₀ emissions are generated from vehicle trips and are de minimis in comparison to the regional inventory. Therefore, operational impacts to nearby sensitive receptors are also expected to be less-than-significant.

Potential to Expose Public to Significant Levels of Toxic Air Contaminants

Significant levels of toxic air contaminants are defined as the following: (1) The probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million, or (2) ground-level concentrations of noncarcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI. No quantitative toxic risk analysis has been conducted for the Project; however, based on the size of the Project and the types of facilities being constructed and operated, the Project is not anticipated to expose the public to significant levels of toxic air contaminants because:

- No additional stationary sources (concentrated emission points) are anticipated due to the Project.
- The SMAQMD considers projects that fall below screening levels for ROG and NO_x (like this project) to also be insignificant for CO, PM₁₀ and SO₂ emissions and visibility.
- Emissions from project operations (mainly mobile vehicles) are not continuous and are not considered significant under the SMAQMD thresholds of significance.

Objectionable Odors

Some objectionable odors may be generated from the operation of diesel-powered construction equipment during the construction period. However, these odors would be short term. Under most meteorological conditions that are encountered at the Project site, these odors would likely be diluted sufficiently in odor-free air and would not be perceived by individual receptors in surrounding areas, including the nearest sensitive receptor. Therefore, no significant impacts related to objectionable odors are anticipated to result from the proposed Project.

Impact on Climate Change

California Assembly Bill No. 32 (AB-32), also known as the Global Warming Solutions Act, was passed on August 31, 2006. AB 32 codifies the state's goal by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Regulating

carbon dioxide (CO₂), which is the major greenhouse gas contributor to global warming, has been the main focus for achieving the 1990 levels.

Based on URBEMIS, the Project would result in approximately 325 tons of CO₂ from construction activities and approximately 1,700 tons of CO₂ per year from operations. As stated in the SMAQMD's "Addressing Climate Change in CEQA Documents," "local decision-making agencies, the District, the state, and the federal government have not developed specific GHG thresholds of significance for use in preparing environmental analyses under the California Environmental Quality Act (CEQA)."¹⁰ However, in lieu of thresholds, the SMAQMD recommends discussion of the GHG emissions related to the project and their potential impacts.

It should be noted that the majority of the vehicles that are accounted for in the project operations are not new sources of pollution. Many of the students that will attend the high school on the Project site are currently enrolled in other schools and are already using their vehicles to commute.

As discussed with Peter Christianson of the SMAQMD, it is reasonable to assume that if all other pollutants from the Project are determined to be less than significant, the CO₂ emissions can also be deemed less than significant. Since the emissions from this project were determined to be less than significant with compliance to the "all feasible mitigation" requirements, the GHG emissions from construction and operation of the Project will have a less than significant impact on climate change.

Mitigation Measure 3.4.1

In order for the Project to not result in significant air quality impacts, the mitigation measures below are recommended to be followed during construction:

- Utilize CARB-certified low-sulfur fuel in all construction equipment.
- Minimize idling time (no more than 5 minutes).
- Maintain properly tuned equipment.
- Limit hours of operation of heavy duty equipment and/or the amount of equipment in use.
- Enclose, cover or water twice daily all soil piles.
- Water all haul roads twice daily.
- Cover the loads of all haul/dump trucks securely.
- Limit speed of trucks on unpaved roads to 15 miles per hour.
- Follow the "all feasible mitigation" requirement:

¹⁰ Greene, Larry. "Addressing Climate Change in CEQA Documents." SMAQMD. 2007. Page 1.

- *Category 1: Reducing NO_x emissions from off-road diesel powered equipment.* The Project shall provide a plan, for approval by the lead agency and AQMD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction¹ compared to the most recent CARB fleet average at time of construction; and

The Project representative shall submit to the lead agency and AQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide AQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

- *Category 2: Controlling visible emissions from off-road diesel powered equipment.* The Project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the lead agency and AQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The AQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supercede other AQMD or state rules or regulations.¹¹ (LTS)

¹¹ Sacramento Metropolitan Air Quality Management District (the District) Construction Air Quality Mitigation Plan Protocol. Version 4.0. SMAQMD. 2007. <http://www.airquality.org/ceqa/ConstructionMitigationProtocol.pdf>. Page 1.

APPENDIX

E

URBEMIS REPORT – REVISED

Detail Report for Annual Area Source Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

| <u>Source</u> | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|--|-------------|-------------|-------------|-------------|-------------|--------------|---------------|
| Natural Gas | 0.01 | 0.11 | 0.09 | 0.00 | 0.00 | 0.00 | 127.85 |
| Hearth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscape | 0.04 | 0.01 | 0.43 | 0.00 | 0.00 | 0.00 | 0.74 |
| Consumer Products | 0.00 | | | | | | |
| Architectural Coatings | 0.07 | | | | | | |
| TOTALS (tons/year, unmitigated) | 0.12 | 0.12 | 0.52 | 0.00 | 0.00 | 0.00 | 128.59 |

Area Source Changes to Defaults

Urbemis 2007 Version 9.2.4

Detail Report for Summer Area Source Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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

| <u>Source</u> | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|---------------|
| Natural Gas | 0.04 | 0.58 | 0.49 | 0.00 | 0.00 | 0.00 | 700.52 |
| Hearth - No Summer Emissions | | | | | | | |
| Landscape | 0.39 | 0.06 | 4.81 | 0.00 | 0.01 | 0.01 | 8.24 |
| Consumer Products | 0.00 | | | | | | |
| Architectural Coatings | 0.36 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 0.79 | 0.64 | 5.30 | 0.00 | 0.01 | 0.01 | 708.76 |

Area Source Changes to Defaults

Urbemis 2007 Version 9.2.4

Detail Report for Winter Area Source Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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

| <u>Source</u> | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|---------------|
| Natural Gas | 0.04 | 0.58 | 0.49 | 0.00 | 0.00 | 0.00 | 700.52 |
| Hearth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping - No Winter | | | | | | | |
| Consumer Products | 0.00 | | | | | | |
| Architectural Coatings | 0.36 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 0.40 | 0.58 | 0.49 | 0.00 | 0.00 | 0.00 | 700.52 |

Area Source Changes to Defaults

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 12.35

Maximum Daily Acreage Disturbed: 3.09

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 1129.03

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 3.09

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10 Dust</u> | <u>PM10 Exhaust</u> | <u>PM10 Total</u> | <u>PM2.5 Dust</u> | <u>PM2.5 Exhaust</u> | <u>PM2.5 Total</u> | <u>CO2</u> |
|---------------------------------------|--------------|---------------|--------------|-------------|------------------|---------------------|-------------------|-------------------|----------------------|--------------------|------------------|
| Time Slice 11/30/2007-12/27/2007 | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading 11/30/2007-01/11/2008 | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.52 | 29.64 | 14.18 | 0.00 | 0.00 | 1.49 | 1.49 | 0.00 | 1.37 | 1.37 | 2,247.32 |
| Fine Grading On Road Diesel | 2.34 | 36.31 | 12.68 | 0.04 | 0.16 | 1.57 | 1.73 | 0.05 | 1.44 | 1.49 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.36 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 12/28/2007-12/31/2007 | <u>10.47</u> | <u>89.89</u> | <u>42.86</u> | <u>0.05</u> | <u>61.99</u> | <u>4.98</u> | <u>66.97</u> | <u>12.97</u> | <u>4.58</u> | <u>17.55</u> | <u>8,906.58</u> |
| Asphalt 12/28/2007-01/11/2008 | 4.57 | 23.87 | 14.64 | 0.01 | 0.02 | 1.92 | 1.95 | 0.01 | 1.77 | 1.78 | 2,002.28 |
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.57 | 21.07 | 10.67 | 0.00 | 0.00 | 1.80 | 1.80 | 0.00 | 1.66 | 1.66 | 1,418.44 |
| Paving On Road Diesel | 0.17 | 2.66 | 0.93 | 0.00 | 0.01 | 0.11 | 0.13 | 0.00 | 0.11 | 0.11 | 332.99 |
| Paving Worker Trips | 0.09 | 0.14 | 3.05 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 250.85 |
| Fine Grading 11/30/2007-01/11/2008 | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.52 | 29.64 | 14.18 | 0.00 | 0.00 | 1.49 | 1.49 | 0.00 | 1.37 | 1.37 | 2,247.32 |
| Fine Grading On Road Diesel | 2.34 | 36.31 | 12.68 | 0.04 | 0.16 | 1.57 | 1.73 | 0.05 | 1.44 | 1.49 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.36 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/1/2008-1/10/2008 Active | 9.93 | 84.95 | 40.98 | 0.05 | 61.99 | 4.69 | 66.67 | 12.97 | 4.31 | 17.28 | 8,906.58 |
| Asphalt 12/28/2007-01/11/2008 | 4.36 | 22.64 | 14.26 | 0.01 | 0.02 | 1.84 | 1.86 | 0.01 | 1.69 | 1.70 | 2,002.28 |
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.37 | 20.00 | 10.53 | 0.00 | 0.00 | 1.73 | 1.73 | 0.00 | 1.59 | 1.59 | 1,418.44 |
| Paving On Road Diesel | 0.16 | 2.51 | 0.87 | 0.00 | 0.01 | 0.10 | 0.12 | 0.00 | 0.10 | 0.10 | 332.99 |
| Paving Worker Trips | 0.08 | 0.13 | 2.87 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 250.85 |
| Fine Grading 11/30/2007-01/11/2008 | 5.58 | 62.31 | 26.72 | 0.04 | 61.96 | 2.85 | 64.81 | 12.96 | 2.62 | 15.58 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.31 | 28.00 | 13.56 | 0.00 | 0.00 | 1.41 | 1.41 | 0.00 | 1.30 | 1.30 | 2,247.32 |
| Fine Grading On Road Diesel | 2.23 | 34.25 | 11.88 | 0.04 | 0.16 | 1.43 | 1.59 | 0.05 | 1.32 | 1.37 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.27 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/11/2008-1/11/2008 Active | <u>14.68</u> | <u>104.66</u> | <u>74.59</u> | <u>0.07</u> | <u>62.07</u> | <u>6.08</u> | <u>68.15</u> | <u>13.00</u> | <u>5.59</u> | <u>18.59</u> | <u>12,491.47</u> |

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| | | | | | | | | | | | |
|--------------------------------------|--------------|-------|-------|------|-------|------|-------|-------|------|-------|----------|
| Asphalt 12/28/2007-01/11/2008 | 4.36 | 22.64 | 14.26 | 0.01 | 0.02 | 1.84 | 1.86 | 0.01 | 1.69 | 1.70 | 2,002.28 |
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.37 | 20.00 | 10.53 | 0.00 | 0.00 | 1.73 | 1.73 | 0.00 | 1.59 | 1.59 | 1,418.44 |
| Paving On Road Diesel | 0.16 | 2.51 | 0.87 | 0.00 | 0.01 | 0.10 | 0.12 | 0.00 | 0.10 | 0.10 | 332.99 |
| Paving Worker Trips | 0.08 | 0.13 | 2.87 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 250.85 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 1,863.07 |
| Fine Grading 11/30/2007-01/11/2008 | 5.58 | 62.31 | 26.72 | 0.04 | 61.96 | 2.85 | 64.81 | 12.96 | 2.62 | 15.58 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.31 | 28.00 | 13.56 | 0.00 | 0.00 | 1.41 | 1.41 | 0.00 | 1.30 | 1.30 | 2,247.32 |
| Fine Grading On Road Diesel | 2.23 | 34.25 | 11.88 | 0.04 | 0.16 | 1.43 | 1.59 | 0.05 | 1.32 | 1.37 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.27 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/14/2008-8/7/2008 Active | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 3,584.88 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 1,863.07 |
| Time Slice 8/8/2008-8/22/2008 Active | 66.99 | 19.75 | 34.53 | 0.02 | 0.09 | 1.40 | 1.49 | 0.03 | 1.28 | 1.31 | 3,665.85 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 1,863.07 |
| Coating 08/08/2008-09/05/2008 | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 80.96 |
| Architectural Coating | 62.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.03 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 80.96 |
| Time Slice 8/25/2008-9/5/2008 Active | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 80.96 |
| Coating 08/08/2008-09/05/2008 | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 80.96 |
| Architectural Coating | 62.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.03 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 80.96 |

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description
 Total Acres Disturbed: 12.35
 Maximum Daily Acreage Disturbed: 3.09
 Fugitive Dust Level of Detail: Default
 20 lbs per acre-day
 On Road Truck Travel (VMT): 1129.03
 Off-Road Equipment:

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- 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 3.09

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Urbemis 2007 Version 9.2.4

Detail Report for Winter Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10 Dust</u> | <u>PM10 Exhaust</u> | <u>PM10 Total</u> | <u>PM2.5 Dust</u> | <u>PM2.5 Exhaust</u> | <u>PM2.5 Total</u> | <u>CO2</u> |
|--------------------------------------|--------------|---------------|--------------|-------------|------------------|---------------------|-------------------|-------------------|----------------------|--------------------|------------------|
| Time Slice 11/30/2007-12/27/2007 | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading 11/30/2007- | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.52 | 29.64 | 14.18 | 0.00 | 0.00 | 1.49 | 1.49 | 0.00 | 1.37 | 1.37 | 2,247.32 |
| Fine Grading On Road Diesel | 2.34 | 36.31 | 12.68 | 0.04 | 0.16 | 1.57 | 1.73 | 0.05 | 1.44 | 1.49 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.36 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 12/28/2007-12/31/2007 | <u>10.47</u> | <u>89.89</u> | <u>42.86</u> | <u>0.05</u> | <u>61.99</u> | <u>4.98</u> | <u>66.97</u> | <u>12.97</u> | <u>4.58</u> | <u>17.55</u> | <u>8,906.58</u> |
| Asphalt 12/28/2007-01/11/2008 | 4.57 | 23.87 | 14.64 | 0.01 | 0.02 | 1.92 | 1.95 | 0.01 | 1.77 | 1.78 | 2,002.28 |
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.57 | 21.07 | 10.67 | 0.00 | 0.00 | 1.80 | 1.80 | 0.00 | 1.66 | 1.66 | 1,418.44 |
| Paving On Road Diesel | 0.17 | 2.66 | 0.93 | 0.00 | 0.01 | 0.11 | 0.13 | 0.00 | 0.11 | 0.11 | 332.99 |
| Paving Worker Trips | 0.09 | 0.14 | 3.05 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 250.85 |
| Fine Grading 11/30/2007- | 5.90 | 66.01 | 28.21 | 0.04 | 61.96 | 3.06 | 65.02 | 12.96 | 2.81 | 15.77 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.52 | 29.64 | 14.18 | 0.00 | 0.00 | 1.49 | 1.49 | 0.00 | 1.37 | 1.37 | 2,247.32 |
| Fine Grading On Road Diesel | 2.34 | 36.31 | 12.68 | 0.04 | 0.16 | 1.57 | 1.73 | 0.05 | 1.44 | 1.49 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.36 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/1/2008-1/10/2008 Active | 9.93 | 84.95 | 40.98 | 0.05 | 61.99 | 4.69 | 66.67 | 12.97 | 4.31 | 17.28 | 8,906.58 |
| Asphalt 12/28/2007-01/11/2008 | 4.36 | 22.64 | 14.26 | 0.01 | 0.02 | 1.84 | 1.86 | 0.01 | 1.69 | 1.70 | 2,002.28 |
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.37 | 20.00 | 10.53 | 0.00 | 0.00 | 1.73 | 1.73 | 0.00 | 1.59 | 1.59 | 1,418.44 |
| Paving On Road Diesel | 0.16 | 2.51 | 0.87 | 0.00 | 0.01 | 0.10 | 0.12 | 0.00 | 0.10 | 0.10 | 332.99 |
| Paving Worker Trips | 0.08 | 0.13 | 2.87 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 250.85 |
| Fine Grading 11/30/2007- | 5.58 | 62.31 | 26.72 | 0.04 | 61.96 | 2.85 | 64.81 | 12.96 | 2.62 | 15.58 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.31 | 28.00 | 13.56 | 0.00 | 0.00 | 1.41 | 1.41 | 0.00 | 1.30 | 1.30 | 2,247.32 |
| Fine Grading On Road Diesel | 2.23 | 34.25 | 11.88 | 0.04 | 0.16 | 1.43 | 1.59 | 0.05 | 1.32 | 1.37 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.27 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/11/2008-1/11/2008 | 14.68 | 104.66 | 74.59 | 0.07 | 62.07 | 6.08 | 68.15 | 13.00 | 5.59 | 18.59 | 12,491.47 |
| Asphalt 12/28/2007-01/11/2008 | 4.36 | 22.64 | 14.26 | 0.01 | 0.02 | 1.84 | 1.86 | 0.01 | 1.69 | 1.70 | 2,002.28 |

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| | | | | | | | | | | | | |
|--------------------------------------|--------------|-------|-------|------|-------|------|-------|-------|------|-------|-------|----------|
| Paving Off-Gas | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 3.37 | 20.00 | 10.53 | 0.00 | 0.00 | 1.73 | 1.73 | 0.00 | 1.59 | 1.59 | 1.59 | 1,418.44 |
| Paving On Road Diesel | 0.16 | 2.51 | 0.87 | 0.00 | 0.01 | 0.10 | 0.12 | 0.00 | 0.10 | 0.10 | 0.10 | 332.99 |
| Paving Worker Trips | 0.08 | 0.13 | 2.87 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 250.85 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 0.06 | 1,863.07 |
| Fine Grading 11/30/2007- | 5.58 | 62.31 | 26.72 | 0.04 | 61.96 | 2.85 | 64.81 | 12.96 | 2.62 | 15.58 | 15.58 | 6,904.30 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 61.80 | 0.00 | 61.80 | 12.91 | 0.00 | 12.91 | 12.91 | 0.00 |
| Fine Grading Off Road Diesel | 3.31 | 28.00 | 13.56 | 0.00 | 0.00 | 1.41 | 1.41 | 0.00 | 1.30 | 1.30 | 1.30 | 2,247.32 |
| Fine Grading On Road Diesel | 2.23 | 34.25 | 11.88 | 0.04 | 0.16 | 1.43 | 1.59 | 0.05 | 1.32 | 1.37 | 1.37 | 4,545.49 |
| Fine Grading Worker Trips | 0.04 | 0.06 | 1.27 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 111.49 |
| Time Slice 1/14/2008-8/7/2008 Active | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 1.31 | 3,584.88 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 0.06 | 1,863.07 |
| Time Slice 8/8/2008-8/22/2008 Active | 66.99 | 19.75 | 34.53 | 0.02 | 0.09 | 1.40 | 1.49 | 0.03 | 1.28 | 1.31 | 1.31 | 3,665.85 |
| Building 01/11/2008-08/22/2008 | 4.74 | 19.71 | 33.61 | 0.02 | 0.09 | 1.39 | 1.48 | 0.03 | 1.28 | 1.31 | 1.31 | 3,584.88 |
| Building Off Road Diesel | 4.07 | 18.22 | 11.80 | 0.00 | 0.00 | 1.33 | 1.33 | 0.00 | 1.22 | 1.22 | 1.22 | 1,621.20 |
| Building Vendor Trips | 0.04 | 0.53 | 0.52 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.02 | 0.02 | 0.02 | 100.62 |
| Building Worker Trips | 0.63 | 0.96 | 21.28 | 0.02 | 0.08 | 0.04 | 0.12 | 0.03 | 0.03 | 0.06 | 0.06 | 1,863.07 |
| Coating 08/08/2008-09/05/2008 | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 80.96 |
| Architectural Coating | 62.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.03 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 80.96 |
| Time Slice 8/25/2008-9/5/2008 Active | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 80.96 |
| Coating 08/08/2008-09/05/2008 | 62.25 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 80.96 |
| Architectural Coating | 62.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.03 | 0.04 | 0.92 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 80.96 |

Phase Assumptions

Phase: Fine Grading 11/30/2007 - 1/11/2008 - Default Fine Site Grading Description
 Total Acres Disturbed: 12.35
 Maximum Daily Acreage Disturbed: 3.09
 Fugitive Dust Level of Detail: Default
 20 lbs per acre-day
 On Road Truck Travel (VMT): 1129.03
 Off-Road Equipment:
 1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 12/28/2007 - 1/11/2008 - Default Paving Description

Acres to be Paved: 3.09

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/11/2008 - 8/22/2008 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 8/8/2008 - 9/5/2008 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

| <u>Source</u> | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|--|-------------|-------------|--------------|-------------|-------------|-------------|-----------------|
| High school | 2.33 | 1.46 | 14.52 | 0.01 | 1.65 | 0.32 | 964.20 |
| Library | 1.16 | 1.21 | 11.99 | 0.01 | 1.27 | 0.25 | 750.45 |
| City park | 0.04 | 0.03 | 0.25 | 0.00 | 0.03 | 0.01 | 16.77 |
| TOTALS (tons/year, unmitigated) | 3.53 | 2.70 | 26.76 | 0.02 | 2.95 | 0.58 | 1,731.42 |

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2009 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---------------|---------|-----------|------------|-----------|-----------------|-----------------|
| High school | | 1.71 | students | 500.00 | 855.00 | 5,235.87 |
| Library | | 63.90 | 1000 sq ft | 15.00 | 958.50 | 4,037.36 |
| City park | | 2.28 | acres | 7.00 | 15.96 | 91.03 |
| | | | | | 1,829.46 | 9,364.26 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Auto | 47.7 | 1.7 | 97.9 | 0.4 |
| Light Truck < 3750 lbs | 10.0 | 4.0 | 88.0 | 8.0 |
| Light Truck 3751-5750 lbs | 22.5 | 0.9 | 98.7 | 0.4 |
| Med Truck 5751-8500 lbs | 10.1 | 1.0 | 99.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.1 | 0.0 | 76.2 | 23.8 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 6.2 | 18.8 | 75.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.5 | 0.0 | 20.0 | 80.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.0 | 0.0 | 0.0 | 0.0 |
| Motorcycle | 3.5 | 71.4 | 28.6 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 0.9 | 11.1 | 77.8 | 11.1 |

Travel Conditions

| | Residential | | | Commercial | | |
|---------------------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commuter | Non-Work | Customer |
| Urban Trip Length (miles) | 10.8 | 7.3 | 7.5 | 10.8 | 7.3 | 7.3 |
| Rural Trip Length (miles) | 15.0 | 10.0 | 10.0 | 15.0 | 10.0 | 10.0 |
| Trip speeds (mph) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |

% of Trips - Commercial (by land use)

| | | | |
|-------------|------|-----|------|
| High school | 10.0 | 5.0 | 85.0 |
| Library | 5.0 | 2.5 | 92.5 |
| City park | 5.0 | 2.5 | 92.5 |

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Detail Report for Summer Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

| <u>Source</u> | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|--------------------------------------|--------------|--------------|---------------|-------------|--------------|-------------|------------------|
| High school | 15.47 | 6.89 | 82.68 | 0.06 | 9.03 | 1.75 | 5,643.05 |
| Library | 6.20 | 5.70 | 67.37 | 0.04 | 6.97 | 1.35 | 4,389.46 |
| City park | 0.24 | 0.12 | 1.44 | 0.00 | 0.16 | 0.03 | 98.13 |
| TOTALS (lbs/day, unmitigated) | 21.91 | 12.71 | 151.49 | 0.10 | 16.16 | 3.13 | 10,130.64 |

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2009 Temperature (F): 95 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---------------|---------|-----------|------------|-----------|-----------------|-----------------|
| High school | | 1.71 | students | 500.00 | 855.00 | 5,235.87 |
| Library | | 63.90 | 1000 sq ft | 15.00 | 958.50 | 4,037.36 |
| City park | | 2.28 | acres | 7.00 | 15.96 | 91.03 |
| | | | | | 1,829.46 | 9,364.26 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Auto | 47.7 | 1.7 | 97.9 | 0.4 |
| Light Truck < 3750 lbs | 10.0 | 4.0 | 88.0 | 8.0 |
| Light Truck 3751-5750 lbs | 22.5 | 0.9 | 98.7 | 0.4 |
| Med Truck 5751-8500 lbs | 10.1 | 1.0 | 99.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.1 | 0.0 | 76.2 | 23.8 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 6.2 | 18.8 | 75.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.5 | 0.0 | 20.0 | 80.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.0 | 0.0 | 0.0 | 0.0 |
| Motorcycle | 3.5 | 71.4 | 28.6 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 0.9 | 11.1 | 77.8 | 11.1 |

Travel Conditions

| | Residential | | | Commercial | | |
|---------------------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commuter | Non-Work | Customer |
| Urban Trip Length (miles) | 10.8 | 7.3 | 7.5 | 10.8 | 7.3 | 7.3 |
| Rural Trip Length (miles) | 15.0 | 10.0 | 10.0 | 15.0 | 10.0 | 10.0 |
| Trip speeds (mph) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |

% of Trips - Commercial (by land use)

| | | | |
|-------------|------|-----|------|
| High school | 10.0 | 5.0 | 85.0 |
| Library | 5.0 | 2.5 | 92.5 |
| City park | 5.0 | 2.5 | 92.5 |

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Detail Report for Winter Operational Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

| <u>Source</u> | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|--------------------------------------|--------------|--------------|---------------|-------------|--------------|-------------|-----------------|
| High school | 7.39 | 10.31 | 73.40 | 0.05 | 9.03 | 1.75 | 4,563.73 |
| Library | 6.74 | 8.42 | 62.35 | 0.04 | 6.97 | 1.35 | 3,557.20 |
| City park | 0.13 | 0.18 | 1.29 | 0.00 | 0.16 | 0.03 | 79.36 |
| TOTALS (lbs/day, unmitigated) | 14.26 | 18.91 | 137.04 | 0.09 | 16.16 | 3.13 | 8,200.29 |

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2009 Temperature (F): 50 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---------------|---------|-----------|------------|-----------|-----------------|-----------------|
| High school | | 1.71 | students | 500.00 | 855.00 | 5,235.87 |
| Library | | 63.90 | 1000 sq ft | 15.00 | 958.50 | 4,037.36 |
| City park | | 2.28 | acres | 7.00 | 15.96 | 91.03 |
| | | | | | 1,829.46 | 9,364.26 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|-------------------------------------|--------------|--------------|----------|--------|
| Light Auto | 47.7 | 1.7 | 97.9 | 0.4 |
| Light Truck < 3750 lbs | 10.0 | 4.0 | 88.0 | 8.0 |
| Light Truck 3751-5750 lbs | 22.5 | 0.9 | 98.7 | 0.4 |
| Med Truck 5751-8500 lbs | 10.1 | 1.0 | 99.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 2.1 | 0.0 | 76.2 | 23.8 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.9 | 0.0 | 55.6 | 44.4 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.6 | 6.2 | 18.8 | 75.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.5 | 0.0 | 20.0 | 80.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.0 | 0.0 | 0.0 | 0.0 |
| Motorcycle | 3.5 | 71.4 | 28.6 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 0.9 | 11.1 | 77.8 | 11.1 |

Travel Conditions

| | Residential | | | Commercial | | |
|---------------------------|-------------|-----------|------------|------------|----------|----------|
| | Home-Work | Home-Shop | Home-Other | Commuter | Non-Work | Customer |
| Urban Trip Length (miles) | 10.8 | 7.3 | 7.5 | 10.8 | 7.3 | 7.3 |
| Rural Trip Length (miles) | 15.0 | 10.0 | 10.0 | 15.0 | 10.0 | 10.0 |
| Trip speeds (mph) | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |

% of Trips - Commercial (by land use)

| | | | |
|-------------|------|-----|------|
| High school | 10.0 | 5.0 | 85.0 |
| Library | 5.0 | 2.5 | 92.5 |
| City park | 5.0 | 2.5 | 92.5 |

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10 Dust</u> | <u>PM10 Exhaust</u> | <u>PM10</u> | <u>PM2.5 Dust</u> | <u>PM2.5</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------------|------------|------------|-----------|------------|------------------|---------------------|-------------|-------------------|--------------|--------------|------------|
| 2007 TOTALS (tons/year unmitigated) | 0.07 | 0.75 | 0.32 | 0.00 | 0.68 | 0.04 | 0.72 | 0.14 | 0.03 | 0.18 | 77.95 |
| 2008 TOTALS (tons/year unmitigated) | 1.08 | 1.97 | 2.90 | 0.00 | 0.29 | 0.13 | 0.42 | 0.06 | 0.12 | 0.18 | 329.51 |

AREA SOURCE EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (tons/year, unmitigated) | 0.12 | 0.12 | 0.52 | 0.00 | 0.00 | 0.00 | 128.59 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (tons/year, unmitigated) | 3.53 | 2.70 | 26.76 | 0.02 | 2.95 | 0.58 | 1,731.42 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|---------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (tons/year, unmitigated) | 3.65 | 2.82 | 27.28 | 0.02 | 2.95 | 0.58 | 1,860.01 |

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10 Dust</u> | <u>PM10 Exhaust</u> | <u>PM10</u> | <u>PM2.5 Dust</u> | <u>PM2.5</u> | <u>PM2.5</u> | <u>CO2</u> |
|-----------------------------------|------------|------------|-----------|------------|------------------|---------------------|-------------|-------------------|--------------|--------------|------------|
| 2007 TOTALS (lbs/day unmitigated) | 10.47 | 89.89 | 42.86 | 0.05 | 61.99 | 4.98 | 66.97 | 12.97 | 4.58 | 17.55 | 8,906.58 |
| 2008 TOTALS (lbs/day unmitigated) | 66.99 | 104.66 | 74.59 | 0.07 | 62.07 | 6.08 | 68.15 | 13.00 | 5.59 | 18.59 | 12,491.47 |

AREA SOURCE EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 0.79 | 0.64 | 5.30 | 0.00 | 0.01 | 0.01 | 708.76 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 21.91 | 12.71 | 151.49 | 0.10 | 16.16 | 3.13 | 10,130.64 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 22.70 | 13.35 | 156.79 | 0.10 | 16.17 | 3.14 | 10,839.40 |

Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name: C:\Documents and Settings\amhale\Application Data\Urbemis\Version9a\Projects\SacCity032808PM.urb924

Project Name: SCUSD - 032708PM

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10 Dust</u> | <u>PM10 Exhaust</u> | <u>PM10</u> | <u>PM2.5 Dust</u> | <u>PM2.5</u> | <u>PM2.5</u> | <u>CO2</u> |
|-----------------------------------|------------|------------|-----------|------------|------------------|---------------------|-------------|-------------------|--------------|--------------|------------|
| 2007 TOTALS (lbs/day unmitigated) | 10.47 | 89.89 | 42.86 | 0.05 | 61.99 | 4.98 | 66.97 | 12.97 | 4.58 | 17.55 | 8,906.58 |
| 2008 TOTALS (lbs/day unmitigated) | 66.99 | 104.66 | 74.59 | 0.07 | 62.07 | 6.08 | 68.15 | 13.00 | 5.59 | 18.59 | 12,491.47 |

AREA SOURCE EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 0.40 | 0.58 | 0.49 | 0.00 | 0.00 | 0.00 | 700.52 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 14.26 | 18.91 | 137.04 | 0.09 | 16.16 | 3.13 | 8,200.29 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | <u>ROG</u> | <u>NOx</u> | <u>CO</u> | <u>SO2</u> | <u>PM10</u> | <u>PM2.5</u> | <u>CO2</u> |
|-------------------------------|------------|------------|-----------|------------|-------------|--------------|------------|
| TOTALS (lbs/day, unmitigated) | 14.66 | 19.49 | 137.53 | 0.09 | 16.16 | 3.13 | 8,900.81 |

APPENDIX

I

**CONSTRUCTION MITIGATION FEE
PROGRAM CALCULATOR – NEW**

Construction Emissions Mitigation Fee Calculation

PART 1: PROJECT INFORMATION

| | | | |
|-------------------------------|------------------------------------|--|-------|
| Project Name: | School of Engineering and Sciences | | |
| Control/Application #: | | | |
| Single Family Dwelling Units: | 0 | <i>Note: Enter information only in blue bordered cells</i> | |
| Multi Family Dwelling Units: | 0 | Total Residential Acreage: | 0 |
| Non-residential Square Feet: | 59568 | Total Non-residential Acreage: | 13.55 |

PART 2: EMISSIONS INFORMATION

| Year | Activity Phase | NOx (lbs/day) unmitigated | NOx (lbs/day) mitigated* | NOx over threshold (lbs/day) | duration (days) | Total significant NOx (lbs) |
|------|--|---------------------------|--------------------------|------------------------------|-----------------|-----------------------------|
| | Demolition (on road) | | | | | |
| | Demolition (off road) | | 0.00 | | | |
| | TOTAL Demolition | | 0.00 | 0 | 0 | 0.00 |
| | Grading | 66.01 | 52.81 | 0 | 0 | 0.00 |
| | Building Construction | 19.71 | 15.77 | 0 | 0 | 0.00 |
| | Building Construction | | 0.00 | 0 | 0 | 0.00 |
| | Building Construction | | 0.00 | 0 | 0 | 0.00 |
| | Asphalt | 22.64 | 18.11 | 0 | 0 | 0.00 |
| | <i>Total project Nox over threshold (lbs)</i> | | <i>0.00</i> | | | |
| | <i>Total project Nox over threshold (tons)</i> | | <i>0.00</i> | | | |

PART 3: MITIGATION FEE RESULTS

| | | | |
|---------------------------------|------------|--|--|
| MITIGATION FEE (\$14,300/TON)** | \$0 | | |
| ADMINISTRATIVE FEE (5.0%) | \$0 | | |
| TOTAL FEE | \$0 | | |

>>> Fee is to be paid to the SMAQMD, either in total or on a by acre basis, prior to any ground disturbance.

| | | | |
|---------------------------------|---------------|--|--|
| | | | |
| Mitigation Fee (\$/acre) | \$0.00 | | |

* Assumes a construction mitigation plan which achieves a 20% reduction in NOx from on-site, off-road equipment.

** Or the \$/ton of NOx cost-effectiveness value in effect at the time the fee is collected.

APPENDIX

B

PEAK HOUR SIGNAL WARRANTS

TECHNICAL APPENDIX
PEAK HOUR SIGNAL WARRANTS

Cumulative plus Project Conditions – AM Peak Hour
 Intersection #5: Las Positas (West) / Havenside Drive

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2003 Edition
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

PART A or **PART B** satisfied YES NO

PART A **PART A** satisfied YES NO

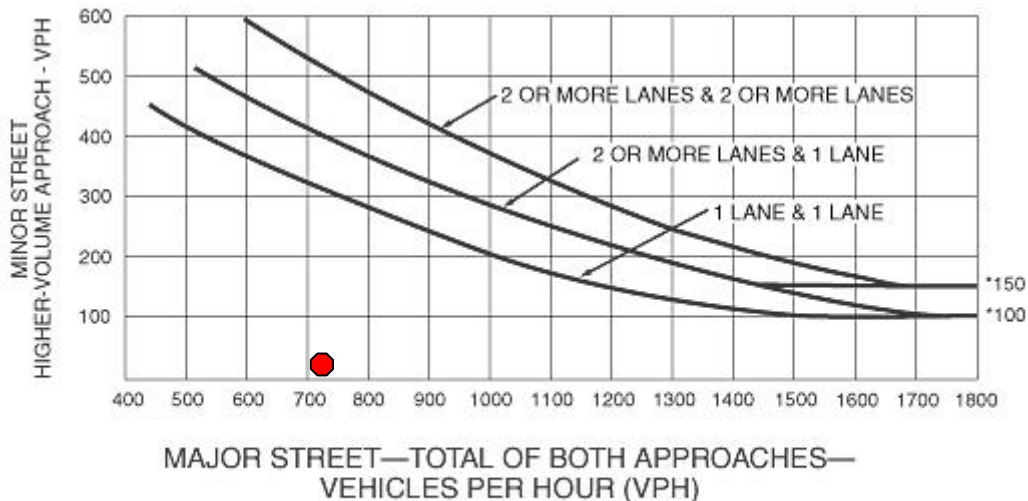
(All parts 1, 2, and 3 below must be satisfied)

- | | |
|---|---|
| 4. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 0.1 veh-h |
| 5. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 16 veh |
| 6. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 736 veh |

PART B **PART B** satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative plus Project Conditions – AM Peak Hour

Intersection #6: Swale River / Gloria Drive

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2003 Edition
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

PART A or PART B satisfied YES NO

PART A satisfied YES NO

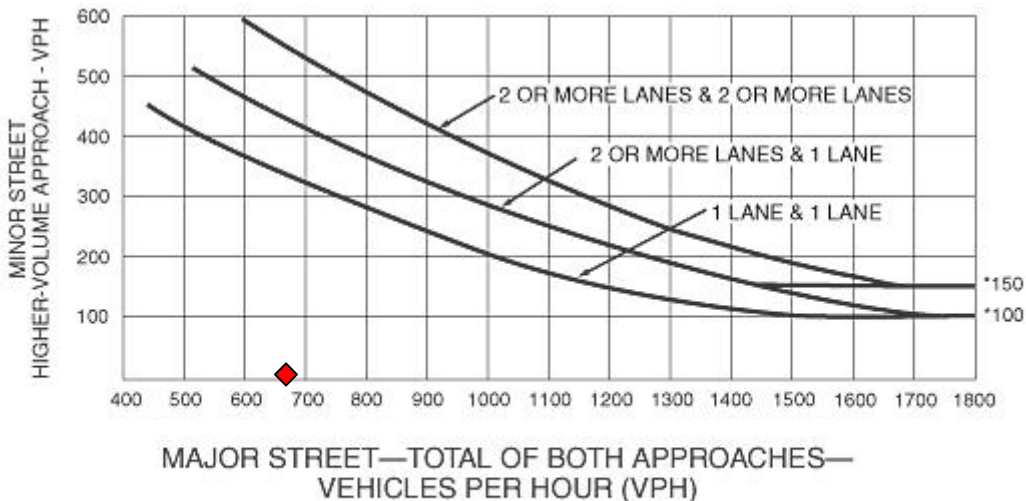
(All parts 1, 2, and 3 below must be satisfied)

- 7. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and Yes No 0.1 veh-h
- 8. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and Yes No 18 veh
- 9. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. Yes No 702 veh

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative plus Project Conditions – AM Peak Hour

Intersection #7: Swale River / Gloria Drive

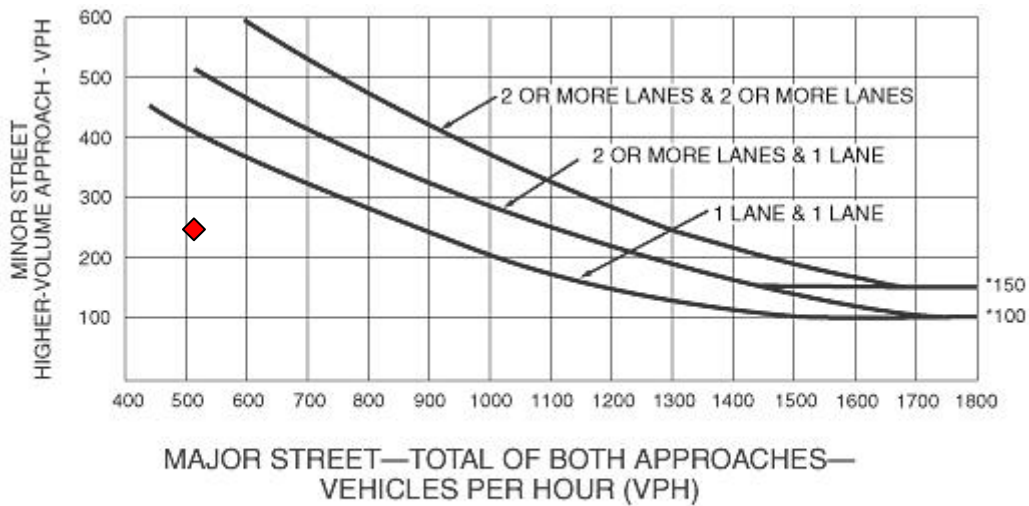
Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2003 Edition
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative plus Project Conditions – AM Peak Hour

Intersection #9: Gloria Drive / Rivergate

Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2003 Edition
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

PART A or PART B satisfied YES NO

PART A satisfied YES NO

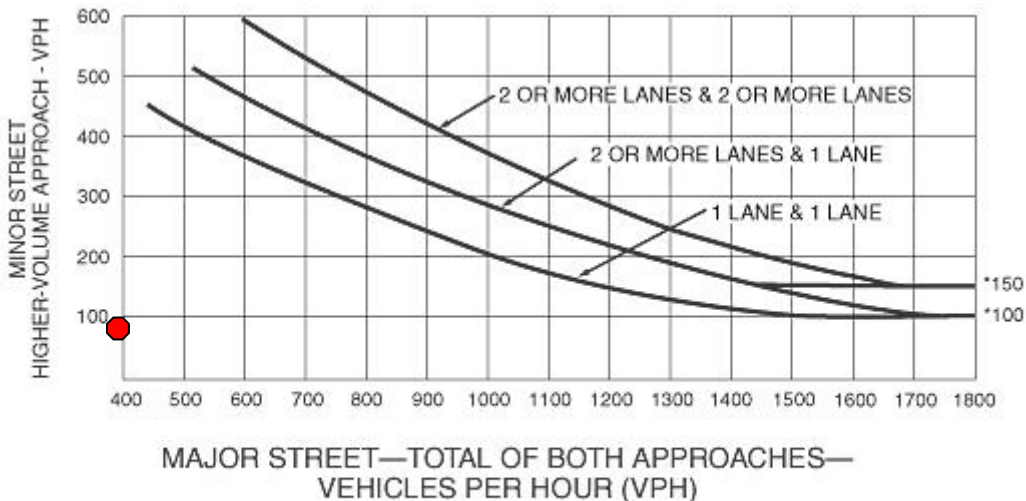
(All parts 1, 2, and 3 below must be satisfied)

13. The total stopped time delay experienced by the traffic on one minor-street approach controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach; or 5 vehicle-hours for a two-lane approach, and Yes No 0.3 veh-h
14. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and Yes No 77 veh
15. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches. Yes No 494 veh

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Cumulative plus Project Conditions – PM Peak Hour

Intersection #7: Swale River / Gloria Drive

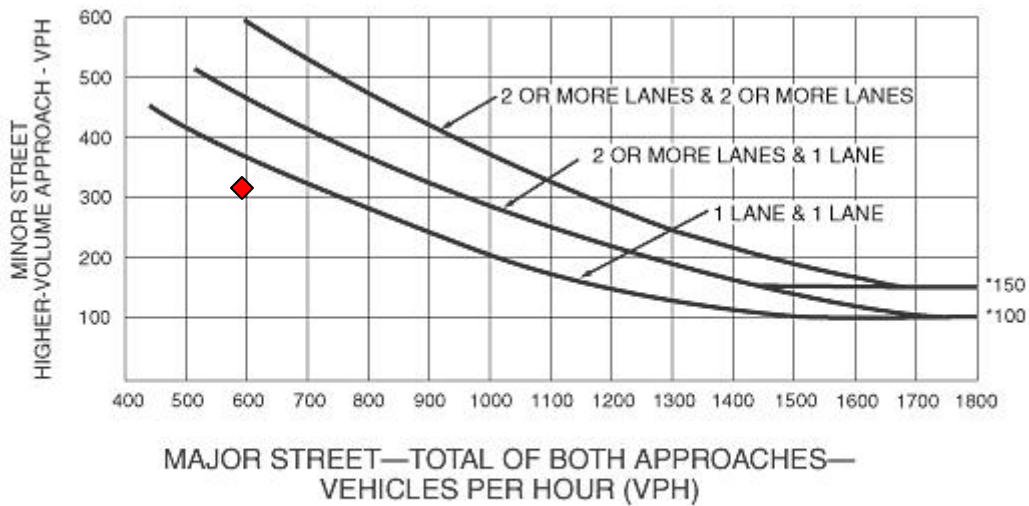
Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways 2003 Edition
Warrant 3 (Peak Hour) Traffic Signal Warrant Worksheet

PART B

PART B satisfied YES NO

The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in **Figure 4C-3** for the existing combination of approach lanes.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

