Appendix A

Appendix I

NOTICE OF PREPARATION

To: Office of Planning and Research
1400 Tenth Street
(Address)
Sacramento, CA 95812-3044

From: Environmental Affairs Department
City of Los Angeles
200 N. Spring Street, 19th Floor
(Address)
Los Angeles, CA 90012

Subject: Notice of Preparation of a Draft Environmental Impact Report

City of Los Angeles
Environmental Affairs Department will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Wayne Tsuda at the address shown above. We will need the name for a contact person in your agency.

Project Title: Sun Valley Solid Waste Facility EIR

Project Applicant, if any: Arakelian Enterprises, Inc. dba American Waste

Date 3/13/07

Signature Wayne Tsuda

Title LEA Director

Telephone 213-978-0892

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Sun Valley Solid Waste Facility

Environmental Impact Report (EIR)

Project Description and Environmental Effects

Notice of Public Scoping Meeting

Project Description:

The applicant, Arakelian Enterprises, Inc. dba American Waste (AW), proposes to (1) modify the design and operation of its existing construction and demolition (C&D) material diversion facility to include municipal solid waste (MSW), and (2) obtain a Solid Waste Facilities Permit (SWFP) for the facility. The facility is located on a 4.9-acre site at 11121 Pendleton Street, Sun Valley California 91353, in the northeast San Fernando Valley portion of the City of Los Angeles. The project site location is shown in Figure 1.

The project includes the following:

- The facility will accept up to 1,500 tons per day (tpd) of C&D materials and municipal solid waste (MSW). Of the total, the facility will accept approximately 500 tpd of C&D materials and 1,000 tpd of MSW.
- Recovery operations, for both C&D and MSW, will take place in covered buildings with misting and ventilation systems.
- The proposed buildings and site activities include: Transfer Station Building/MRF Building, Administrative Offices, Processing Buildings, and Landscaping.
- The facility will continue to operate from 7 AM to 8 PM daily.

In conformance with State Minimum Standards for the operation of Transfer Stations (Title 14, Chapter 3, Article 5.95 and Article 6), the applicant will implement a series of environmental control measures related to the control of dust, odor, vectors and litter. In compliance with these standards, the project will also include implementation of load check programs and other measures to control any household hazardous waste detected in incoming loads.

The City of Los Angeles, Environmental Affairs Department (EAD), acting in its capacity as the State-designated Local Enforcement Agency (LEA) is the designated Lead Agency under CEQA, responsible for the preparation and certification of this proposed Environmental Impact Report (EIR) in accordance with the CEQA statute and guidelines. In an October 24, 2006 letter to AWI, EAD determined that an EIR is the appropriate CEQA compliance document for this project.

SOURCE: GlobeXplorer 2006; ESA 2006.

AWI Transfer Station MND . 206197

Figure 1
SITE LOCATION MAP

CH2MHILL

Environmental Effects

The EIR will address the following impacts:

- Aesthetics (including light and glare)
- Air quality including (NOx, SOx, CO and PM).
- Water Quality including storm water runoff
- Population and housing
- Noise
- Transportation and circulation
- Cumulative Impacts

The EIR will also document why other impacts are not considered significant.

Because the facility was operating under an existing Conditional Use Permit, and was the subject of previous environmental review in 1999, there are several ways to consider the baseline with reference to environmental impacts. The LEA and EAD have agreed that the EIR will be prepared using two baselines: (1) assuming a throughput of 400 tons per day (tpd) characterizing current actual operations at the site and (2) a throughput of 1,500 tpd of C&D materials as permitted in the current CUP ZA 98-0427 (CUZ)

Public Scoping Meeting Date and Location:

Date:	Wednesday, April 4, 2007
Time:	6:30 PM
Location:	Stone Building at the Stonehurst Recreation Center 9901 Dronfield Street, Sun Valley, CA 91352

The purpose of this meeting is to obtain comments from the community and other interested parties regarding what issues should be analyzed in an Environmental Impact Report (EIR) now being prepared for this project. Oral and written comments may be submitted at this scoping meeting. Since the time may be limited for speakers, written comments summarizing oral testimonies are highly recommended. No decisions will be made at the scoping meeting. A separate public hearing notice will be given at a later date prior to taking discretionary actions required for this project.

City of Los Angeles
Public Scoping Meeting - April 4, 2007
Athens Sun Valley Materials Recovery Facility (MRF)

Meeting Sign-In Sheet

Name	Organization	Address	Phone	E-Mail
JOHN RICHARDSON	CRRR	9189 DELARMO AVE SUN VALLEY CA	767-6000	
HAROLD BRANO		11039 Fenway SUN CA	7681069	
ELEKTRA KRUGER	SHPOA / KTMC	10544 MAMMOTH DR SHADOW HILLS	352-6220	earthlink. net ELEKTRAKRUGER2
WAYNE TOWRY		11069 FENWAY ST. S.V. CA	768-7556	
MIKE DENERINO		11127 WICKS ST SUN VALLEY	818 395 7348	MDARTIST53@AOL.COM
Mary Benson	SV neighborhood Council	BOX 457 SV	818 767-5996	e-marybe msn.com
Bill Eick	Shadow Hills Prop Owners Assoc	9647 Stonehurst Ave Sun Valley, Calif 91352	818-248-0050	WEEICK@ PacBell. Net
Ray Seamons	CIWMS		916 341-6728	rseamons@ciwms.ca.gov
Dave DeFinto	SHPOA	10435 Mary Bell Shadow Hills	818-352-7618	ddepinto@depintomorales.com
Cynthia Despres	East Valley Coalition	10340 Valley Glow SH	818) 653-5538	TMdespa@ca.rr.com
Karl Kumalc	EVC	8198 Dronfield Ave NH, 91605	(818) 768-4935	
Dean Keefer		9501 Clybourn Ave	818-353-3403	studio1435@earthlink.net

1.

City of Los Angeles
Public Scoping Meeting - April 4, 2007
Athens Sun Valley Materials Recovery Facility (MRF)

Meeting Sign-In Sheet

Name	Organization	Address	Phone	E-Mail
Don Nesmith		10978 Elinda Pl SV.	818 767-6614	
Mark Tuttle		10646 Art St.	818 352-6081	
Kathleen Pierson		11124 Wicks St	504-2177	katpiejno@aol.com
Fred Gaines	Gaines & Stacey	16633 Ventura Blvd #1220 Encino, CA 91436	818 933-0200	fgaines@gaineslaw.com
Carolyn Lin	LEA			CAROLYN.LIN@LACITY.ORG
David Pang	L.A. County Dept. of Public Wk	900 S. Fremont Ave. Alhambra, CA 91803	(626)- 458-3563	dpang@ladpw.org
Torrey Geer	Homeowner	10989 Elinda Pl Sun Valley	818-767-4603	
Wanda Keefer		9503 Clyborn Ave	818-252-3403	Studio14350@earthlink.net
Pam Zipfel	Homeowner	9600 Clyborn	818 3522778	This is a pro/con issue/less

(2)

City of Los Angeles
Public Scoping Meeting - April 4, 2007
Athens Sun Valley Materials Recovery Facility (MRF)

Meeting Sign-In Sheet

Name	Organization	Address	Phone	E-Mail
Janine Austin	homeowner	9580 Clybourn	818 951-4699	JACROW91352@yahoo
Kathy Oliver	CIWMP	1	916-341-6312	
Don Bright	—	9503		

3

WT

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

March 27, 2007

Mr. Wayne Tsuda
Environmental Affairs Dept.
City of Los Angeles
200 N. Spring Street, 19th Floor
Los Angeles, CA 90012

Dear Mr. Tsuda:

Notice of Preparation of a Draft Environmental Impact Report for
Sun Valley Solid Waste Facility

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the Draft Environmental Impact Report (EIR). Please send the SCAQMD a copy of the Draft EIR upon its completion. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality analysis and electronic versions of all air quality modeling and health risk assessment files. Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. Alternatively, the lead agency may wish to consider using the California Air Resources Board (CARB) approved URBEMIS 2002 Model. This model is available on the SCAQMD Website at: www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

It is recommended that lead agencies for projects generating or attracting vehicular trips, especially heavy-duty diesel-fueled vehicles, perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA webpages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA webpages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

The operations at 11121 Pendleton Street in Sun Valley by American Waste Industries have been, over the last eight years, the subject of over 300 public complaints and eleven (11) Notices of Violation by the SCAQMD, principally for wood waste grinding and storage operations producing emissions that were visible across the property line or the cause of public nuisance. The SCAQMD, therefore ,recommends that the lead agency address the potential for particulate emissions from, and sufficient mitigations for,

any wood, or construction and demolition (C&D) grinding operations and any particulate material storage operations for the proposed facility operation.

Data Sources
SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. Please call Charles Blankson, Ph.D., Air Quality Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development and Area Sources

SS:CB:li
LAC070320-09LI
Control Number

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-3747
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

WT

IGR/CEQA No. 070337AL, NOP
Sun Valley Solid Waste Facility EIR
Vic. LA-05 / PM 34.65
SCH # 2007031090

April 2, 2007

Mr. Wayne Tsuda
City of Los Angeles
200 N. Spring Sreet, 19th Floor
Los Angeles, CA 90012

FILE COPY

Dear Mr. Tsuda:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed project is to modify the design and operation of its existing construction and demolition material diversion facility to include municipal solid waste and to obtain a Solid Waste Facilities Permit (SWFP) for the facility.

Per the NOP, the project will accept up to 1,500 tons of construction and demolition material including municipal solid waste. Because this project may generate a significant increase in truck trips on our state facilities, we request that a traffic study be conducted which would include a study of existing and projected truck volumes, with and without the project.

To assist us in our efforts to evaluate the impacts of this project on State transportation facilities, a traffic study in advance of the DEIR should be prepared. We wish to refer the project's traffic consultant to our traffic study guideline Website:

http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

and we list here some elements of what we generally are expecting in the traffic study:

1. Presentations of assumptions and methods used to develop trip generation, trip distribution, choice of travel mode, and assignments of trips to State Route 05.

2. Consistency of project travel modeling with other regional and local modeling forecasts and with travel data. The IGR/CEQA office may use indices to check results. Differences or inconsistencies must be thoroughly explained.

3. Analysis of ADT, AM and PM peak-hour volumes for both the existing and future conditions in the affected area. This should include freeways, interchanges, and intersections, and all HOV facilities. Interchange Level of Service should be specified (HCM2000 method requested). Utilization of transit lines and vehicles, and of all facilities, should be realistically estimated. Future conditions would include build-out of all projects (see next item) and any plan-horizon years.

4. Inclusion of all appropriate traffic volumes. Analysis should include traffic from the project, cumulative traffic generated from all specific approved developments in the area, and traffic growth other than from the project and developments. That is, include: existing + project + other projects + other growth.

5. Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts. These mitigation discussions should include, but not be limited to, the following:

    - Description of Transportation Infrastructure Improvements
    - **Financial Costs, Funding Sources and Financing**
    - Sequence and Scheduling Considerations
    - Implementation Responsibilities, Controls, and Monitoring

    Any mitigation involving transit, HOV, or TDM must be rigorously justified and its effects conservatively estimated. Improvements involving dedication of land or physical construction may be favorably considered.

6. Specification of developer's percent share of the cost, as well as a plan of realistic mitigation measures under the control of the developer. The following ratio should be estimated: additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guidelines). That ratio would be the project equitable share responsibility.

    We note for purposes of determining project share of costs, the number of trips from the project on each traveling segment or element is estimated in the context of forecasted traffic volumes which include build-out of all approved and not yet approved projects, and other sources of growth. Analytical methods such as select-zone travel forecast modeling might be used.

    The Department as commenting agency under CEQA has jurisdiction superceding that of MTA in identifying the freeway analysis needed for this project. Caltrans is responsible for obtaining measures that will off-set project vehicle trip generation that worsens Caltrans facilities and hence, it does not adhere to the CMP guide of 150 or more vehicle trips added before freeway analysis is needed. MTA's Congestion Management Program in acknowledging the Department's role, stipulates that Caltrans must be consulted to identify specific locations to be analyzed on the State Highway System. Therefore State Route(s) mentioned in item #1 and its facilities must be analyzed per the Department's Traffic Impact Study Guidelines.

We look forward to reviewing the traffic study. We expect to receive a copy from the State Clearinghouse when the DEIR is completed. However, to expedite the review

process, and clarify any misunderstandings, you may send a copy in advance to the undersigned.

If you have any questions, please feel free to contact me at (213) 897-3747 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 070337AL.

Sincerely,

CHERYL J. POWELL
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

WT

STATE OF CALIFORNIA — ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

April 3, 2007

Wayne Tsuda
City of Los Angles
200 N. Spring Street, 19th Floor
Los Angeles, CA 90012

Dear Mr. Tsuda:

Re: SCH# 2007031090; Sun Valley Solid Waste Facility EIR

As the state agency responsible for rail safety within California, we recommend that the development project planned near Metrolink's Ventura County Line and Union Pacific Railroad Company right-of-way be planned with the safety of the rail corridor in mind. The new development at 11121 Pendleton Street (lat=34.238734, long=-118.373716) may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way. Commission staff is particularly concerned with increased congestion at the nearby grade crossing:

1. Sheldon Street (DOT 746057N, lat=34.238717, long=-118.396204)
2. Penrose Street (DOT 746061D, lat=34.224471, long=-118.379102)
3. Sunland Boulevard (DOT 746064Y, lat=34.218474, long=-118.3676)
4. Branford Street (DOT 746055A, lat=34.247816, long=-118.403735)

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

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

Please advise us on the status of the project. If you have any questions in this matter, please contact me at (213) 576-7078 or at rxm@cpuc.ca.gov.

Sincerely,

Rosa Muñoz, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: Dan Miller, UPRR
Rob Harris, Metrolink

Alpers, Mark/LAC

From: Wayne Tsuda [Wayne.Tsuda@lacity.org]
Sent: Wednesday, February 21, 2007 8:52 AM
To: Alpers, Mark/LAC
Cc: EHerbert@athensservices.com; David Thompson
Subject: RE: Re: Athens Waste/American Waste

Mark:
See copy below.

February 20, 2007

Wayne Tsuda
LEA Program Director
200 N. Spring Street. Room 2005, MS 177
Los Angeles, CA 90012

Re: American Waste/Athens Waste

Mr. Tsuda,

In addition to issues raised at the public hearing regarding transportation and things of that nature, the following should be addressed in any EIR:

1. I believe Athens/ American Waste needs a new conditional use-permit from the City of Los Angeles. The justification for the existing conditional use permit was based on no mixed waste. Having 1100 tons of mixed waste violates the CUP.

2. There needs to be a discussion of what part of the garbage comes from outside the City of Los Angeles and why should the City of Los Angeles take on someone else's garbage?

3. When discussing traffic and air pollution, it is my understanding that current trucks have "roll-off" dumpsters whereas mixed-waste garbage is compressed, compacted, weighs more and uses bigger trucks that produce more air pollution. We need a comparison between the types of trucks being used.

4. Athen's Waste's trucks are relatively old trucks acquired from Foothill Waste and any increased tonage from 400-1500 tons per day should require all increased tonage in excess of a total of 400 tons to use LNG powered trucks or new low emission diesel trucks.

5. Where is the garbage transferred to and how will it get there?

Very truly yours,

William E. Eick

>>> <Mark.Alpers@CH2M.com> 2/21/2007 6:50 AM >>>
Wayne or David:

Please resend. I cannot open Mr Eick's email.

Mark

-----Original Message-----
From: Wayne Tsuda [mailto:Wayne.Tsuda@lacity.org]
Sent: Tuesday, February 20, 2007 4:42 PM
To: Eric Herbert; Alpers, Mark/LAC
Cc: David Thompson
Subject: Fwd: Re: Athens Waste/American Waste

Eric, Mark:
Received today from Mr. Eick.

LINDA S. ADAMS
SECRETARY FOR
ENVIRONMENTAL PROTECTION

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

ARNOLD SCHWARZENEGGER
GOVERNOR

1001 I STREET, SACRAMENTO, CALIFORNIA 95814• P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812-4025
(916) 341-6000 • WWW.CIWMB.CA.GOV

WT
DT.

April 13, 2007

Mr. Wayne Tsuda
City of Los Angeles
200 North Spring Street, 19th Floor
Los Angeles, CA 90012

Subject: SCH No. 2007031090: Notice of Preparation for a Draft Environmental Impact Report for the Sun Valley Solid Waste Facility (aka American Waste Industries) Solid Waste Information System (SWIS) No 19-AR-5581, in Sun Valley, County of Los Angeles

Dear Mr. Tsuda:

Thank you for allowing the California Integrated Waste Management Board's (CIWMB or Board) staff to review and provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

The Board's staff has reviewed the environmental document cited above and offers the following project description, analysis and our recommendations for the proposed project based on Board staff's understanding of the project. If the Board's project description varies substantially from the project as understood by the Lead Agency, the Board staff requests that the Lead Agency clarify any significant differences in the project description in the Draft Environmental Impact Report.

Project Description

The City of Los Angeles, Environmental Affairs Department, acting as Lead Agency, has prepared and circulated a Notice of Preparation for Arakelian Enterprises, Inc. dba American Waste to modify the design and operation of its existing construction and demolition material diversion facility to include municipal solid waste and obtain a Solid Waste Facilities Permit.

The facility is located at 11121 Pendleton Street in Sun Valley (City of Los Angeles) on a 4.9 acre parcel. The proposed project will include the following:

- The facility will accept up to 1500 tons per day; approximately 500 tons of construction and demolition material and 1000 tons of municipal solid waste.
- Recovery operations for construction and demolition and municipal solid waste will take place in covered buildings with misting and ventilation systems.
- The proposed buildings include a transfer station building/materials recovery facility building, administrative offices, processing buildings and landscaping.
- Proposed hours of operation will remain 7:00 am through 8:00 pm.

Environmental controls are proposed to limit dust, odor, vectors and litter. It is also proposed to include a load check program to control household hazardous wastes from entering the facility.

CIWMB COMMENTS AND QUESTIONS

Due to the brevity of this Notice of Preparation Board staff has no comments at this time. Please refer to http://www.ciwmb.ca.gov/LEACentral/CEQA/transfer.htm for additional information to be included in the Draft Environmental Impact Report.

Board staff suggests that a discussion of Rule 410 and pertinent parts of AB 32 – Global Warming Solutions Act be included in the Draft Environmental Impact Report, as you find appropriate.

Summary

The Board staff thanks the Lead Agency for the opportunity to review this Notice of Preparation. The Board staff requests copies of any subsequent environmental documents including; the Draft Environmental Impact Report, the Final Environmental Impact Report, any Statement of Overriding Considerations and Notices of Determination for this project.

Please refer to 14 CCR, § 15094(d) that states: "If the project requires discretionary approval from any state agency, the local lead agency shall also, within five working days of this approval, file a copy of the notice of determination with OPR [State Clearinghouse]."

If you have any questions regarding this letter, please contact me at 916.341.6728 or email me at rseamans@ciwmb.ca.gov.

Sincerely,

Raymond M. Seamans
Permitting and Inspection Branch
Environmental Review
Permitting and Enforcement Division
California Integrated Waste Management Board

cc: Cathleen Oliver
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Zane Poulson, Supervisor
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

City of Los Angeles
Public Scoping Meeting – April 4, 2007

Athens Sun Valley Materials Recovery Facility (MRF)

The purpose of written and oral comments is to provide public input into the preparation of the Environmental Impact Report (EIR). Please provide comments on what issues you feel should be covered in the environmental analysis for the Athens Sun Valley MRF project.

Name: Bill Eick

Address: 9647 Stonehurst Ave Sun Valley, Calif

Telephone Number: 818-248-0050 **E-mail Address:** WEEICK@Pac Bell.Net

Comments:

1. The ~~exis~~ justification for existing CUP does not allow for mixed garbage only construction demolition and green waste. Need new CUP application
2. All trucks need new trucks w/ low pollution not the old Foothill Trucks
3. hours of operation M – F 7:00 to 6:00 p.m only
4. Mix trash should only be on site 48 hours not 15 days
5. Base line 400 not 1500 tons / day
6. Where is the truck storage – must be on site
7. No entrance or exit on Peoria
8. ~~To whom~~ What elected officials will hear this application
9. Where is trash coming from
10. What are environmental effects of transferring trash – i.e. where is it going

Written comments may be submitted at the public scoping meeting, mailed to the address below or e-mailed to the link below. **Written comments must be submitted by April 13, 2007.**

David Thompson, LEA Program Supervisor
Environmental Affairs Department, City of Los Angeles
200 North Spring Street, Room 1905
Los Angeles, CA 90012
David. Thompson@lacity.org

City of Los Angeles
Public Scoping Meeting – April 4, 2007

Athens Sun Valley Materials Recovery Facility (MRF)

The purpose of written and oral comments is to provide public input into the preparation of the Environmental Impact Report (EIR). Please provide comments on what issues you feel should be covered in the environmental analysis for the Athens Sun Valley MRF project.

Name: David DePinto

Address: 10435 Mary Bell Avenue, Shadow Hills 91040

Telephone Number: 818-352-7618 **E-mail Address:** ddepinto@depintomorales.com

Comments:

(1) Notice – given widespread interest throughout Sun Valley, Sunland, Pacoima, etc., why wasn't this meeting noticed more extensively to Sun Valley; Pacoima, churches, Neighborhood Councils, schools, Chambers of Commerce

(2) Closure of Facility – are all the buildings "FULLY ENCLOSED" with no open sides or roof areas?

(3) Hours of Operation – given proximity to residential, compared to other waste facilities, the hours of operation should be curtailed to no waste after 5 pm, and cease operations by 6 pm when families are home for dinner, homework, etc.

(4) Cumulative Impacts/Need for Project – is there a city policy in effect that requires geographically dispersed wastesheds to build their "own" transfer facilities so that each watershed builds facilities – If these are built, then is there a need for this project given other projects in Sun Valley? Can this project even be considered when you consider the cumulative impacts of current + proposed projects

Written comments may be submitted at the public scoping meeting, mailed to the address below or e-mailed to the link below. **Written comments must be submitted by April 13, 2007.**

David Thompson, LEA Program Supervisor
Environmental Affairs Department, City of Los Angeles
200 North Spring Street, Room 1905
Los Angeles, CA 90012
David. Thompson@lacity.org

City of Los Angeles
Public Scoping Meeting – April 4, 2007

Athens Sun Valley Materials Recovery Facility (MRF)

The purpose of written and oral comments is to provide public input into the preparation of the Environmental Impact Report (EIR). Please provide comments on what issues you feel should be covered in the environmental analysis for the Athens Sun Valley MRF project.

Name: MARY BENSON - LANDUSE - SUN VALLEY AREA NC

Address: 11070 Sheldon St Sun Valley Ca 91352

Telephone Number: _____ **E-mail Address:** e-marybe msn.com

Comments:

ASSESSOR PARCEL NUMBER- 2538-011-010

Concerned w/ corporate "shell game"

5 active corporations - per Secretary of State

3/87 C-1403138 AMERICAN WASTE

2 DBA'S

LADBS HAS 14 POSTAL addresses - ASSOCIATED with this site

WANT TO See a requirement for Applicant to disclose ALL ASSOCIATED, SUCCESSOR, OWNERSHIP, PARTNERS Tenant USES AND BUSINESSES OWNED OR OPERATED BY MEGO GOOJAMANIAN - RON ARAKELIAN - MICHAEL ARAKELIAN United Waste Transfer or American Waste Industries

WANT ALL PILES AND PROCESSING TO BE FULLY ENCLOSED - INCLUDING C&D Waste PARTICULARLY GRINDING OPERATIONS to sheild noise & vectors

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David Thompson, LEA Program Supervisor
Environmental Affairs Department, City of Los Angeles
200 North Spring Street, Room 1905
Los Angeles, CA 90012
David. Thompson@lacity.org

City of Los Angeles
Public Scoping Meeting – April 4, 2007

Athens Sun Valley Materials Recovery Facility (MRF)

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Name: Cynthia Despres

Address: 10340 Valley Glow Dr.

Telephone Number: 818)653-5538 **E-mail Address:** tmdespa@ca.rr.com

Comments:

Please include me in all correspondance re: this project.

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Name: WAYNE TOWRY

Address: 11069 FENWAY ST. SUN VALLEY, CA 91352

Telephone Number: 818-768-7556 **E-mail Address:** NONE

Comments:

LITTER, NOISE, HOURS, SMELL, SOUND
TRAFFIC CONGESTION,
RODENT CONTROL
PERMIT VALUE + KEEPING WITHIN GUIDELINES

IF THE PROJECT IN S.V. IS APPROVED CAN I HAVE THE PRESIDENT COME TO MY HOME AT 3AM AND ASSURE RESIDENTS THAT ALL CONDITIONS HAVE BEEN MET. WHAT HAPPENS TO THE STREETS THAT ARE WORN DOWN DUE TO HEAVY TRUCKS? WHO MAINTAINS THESE STREETS, WHEN DOES THIS HAPPEN. WHAT ONE PERSON CAN BE HELD RESPONSIBLE FOR ANY/ALL VIOLATIONS

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Name: ELEKTRA KRUGER

Address: 10544 MAHONEY DR

Telephone Number: 818 - 352-6220 **E-mail Address:** KALKRUGERS @ earthlink.net

Comments:

IS HAND-OUT OF CITY OF INDUSTRY ATHENS SERVICES FACILITY REFLECTIVE OF STRUCTURE TO BE CONSTRUCTED IN SUN VALLEY? THE HAND-OUT DOES NOT PICTURE A "DOOR OPEN – DOOR CLOSED" FUNCTION FOLLOWING ENTRANCE OF EACH TRUCK. IF THIS DOES NOT HAPPEN THEN THE FACILITY BLDG WOULD NOT BE CLASSIFIED AS "ENCLOSED". THIS IS UNACCEPTABLE.

CUMULATIVE EFFECTS OF MSW FACILITY IN PROXIMITY TO RESIDENTIAL AREA.

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4/5/07

City of Los Angeles
Public Scoping Meeting – April 4, 2007

Athens Sun Valley Materials Recovery Facility (MRF)

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Name: MICHAEL DENERING

Address: 11127 WICKS ST, SUN VALLEY

Telephone Number: 818-395 7348 **E-mail Address:** MDARTIST53@AOL.COM

Comments:

1. VIBRATION, WINDOW SHAKING
2. BACK UP - BEEPER NOISE
3. OPERATING HOURS DURING CONSTRUCTION OF FACILITY
4. OPERATING HOURS DAILY - HOW MANY DAYS OPEN
5. NOISE
6. SMELL
7. TRAFFIC CONGESTION
8. FILTER SYSTEM
9. ACCOUNTABILITY FOR OPERATING AFTER HOURS.
10. AIR QUALITY CONTROL

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Carolyn Lin 4/5/07

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Name: Karl Kunak

Address: 8148 Irvine Ave

Telephone Number: 818-768-4835 **E-mail Address:** kekunak69004@yahoo

Comments:

? Vector Control
? Headcase smell?
? How many Co Names and why?

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Carolyn Lim

April 17TH for Crown Trash

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Name: TORREY GEER

Address: 10989 ELINDA PLACE SV

Telephone Number: 818-767-4603 **E-mail Address:** TORREY_91352@YAHOO.COM

Comments:

GARBAGE-VS BUILDING CONSTRUCTION WASTE
AMOUNT OF INCOMING WASTE CAN THEY HANDLE IT
SOURCE OF TRASH
HOURS OF OPERATION
HEALTH PROBLEM
RATS
IN THERE OVERNIGHT WASTE ONSITE
IS THERE GOING TO BE STIFFER FINES
NOISE POLUTION
WHERE ARE TRASH TRUCK PARKED
ARE THEY PROTECTING THE SOIL WHEN FIXING TRUCKS
WILL THERE BE WATER RECLAMATION
EYE. IRRITATION PROBLEM - BURNING EYES

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Name: Kathleen Pierson

Address: 11124 Wicks Street

Telephone Number: 504-2177 **E-mail Address:** katpiejno@aol.com

Comments:

Traffic flow for transfer stations
time-line of bldg structures
noise/ambient levels
energy conversion/green waste
expansion of existing facility

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Name: DON NESMITH

Address: 10978 ELINDA PL. SUN VALLEY CA. 91352

Telephone Number: 818-767-6614 **E-mail Address:**

Comments:

NO FOOD WASTE!
MINIMAL TRUCK TRAFFIC
SUN VALLEY ALREDY HAS TOO MANY DUMPS

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Name: P. Zipfel

Address: 9600 Clybourn SV

Telephone Number: 818-3522778 **E-mail Address:**

Comments:

Go pick on somebody's elses neighborhood ==>
We have had enough
The air is foul – it is noisy and the appearence presented by these businesses invites an element that makes us look like a ghetto –

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Solar Power
from Roofs to
Power Equipment

R.R. Shipping to Long Beach
and Landfills

KARL KRAMARIK

FILE COPY

City of Los Angeles
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Athens Sun Valley Materials Recovery Facility (MRF)

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Name: Mark Tuttle

Address: 10646 Art Street, Shadow Hills, CA 91040

Telephone Number: 818 352 6081 **E-mail Address:** p3ts@ca.rr.com

Comments: For some reason, a zone change that reflects the site of Athens Transfer depot being less than a half mile from a large residential area of upper middle class and middle class homes has never been considered. Therefore, the best the unfortunate citizens who must endure close proximity to such a facilty can only campaign for mitigations to an intolerable situation. I hope this will put the proper urgency on their enactment.

1. Control of odors.
2. Control of odors. The stench of the Bradley is an outgrageous example of how not to protect the citizenry from a nearby dump.
3. The exhaust air from the air conditioning of the enclosed transfer station must be free of all odors, noxious gases an other affronts to a residential area.
4. Operating hours. The current hours of Athens' operation in the City of Industry are 6AM to 2AM in the morning, seven days. This must not be allowed in the new site. 8AM to 5PM is appropriate for this area.
5. If all the proposed transfer stations currently on the path to approval are approved, there will be an overage of waste capacity in the city. Even anticipating that the wealthier west side sites will escape these blights, study needs to done to eliminate approving sites just because the resistance to them is not as strong as in wealthier neighborhoods.
6. Traffic. Even the most optimistic projections of increases in truck traffic that will come about due to the transfer station promise this area to become a traffic nightmare. The operators should share in the expense of building new roads, widening others and installing sufficient signage and signals to make access to the neighborhood by the residents convenient and easy. The quick fixes proposed by the operators will NOT be sufficient, as the neighborhood approach streets are already impacted by the truck, cement truck and semi-truck traffic on them now.

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Appendix B

Sun Valley Solid Waste Facility EIR
Emission Summary

	Emissions (lb/day)					
Construction Scenario	**VOC**	**CO**	**NOX**	**SOX**	**PM10**	**PM2.5**
Proposed Project Construction	17	39	81	0	37	11
SCAQMD Construction Significance Threshold	**75**	**550**	**100**	**150**	**150**	**55**
	Emissions (lb/day)					
Operation Scenario	**VOC**	**CO**	**NOX**	**SOX**	**PM10**	**PM2.5**
Existing: 400 tpd Baseline Current Operation						
On-Site	10	32	68	0	6	6
Off-Site	27	109	337	0	35	15
Total	37	141	405	0	41	21
Existing: 1500 tpd Baseline Permitted						
On-Site	16	52	112	0	15	12
Off-Site	102	403	1,268	1	130	57
Total	117	454	1,380	1	145	69
Proposed Project: 1500 tpd Proposed						
On-Site	13	45	93	0	8	7
Off-Site	91	493	960	1	117	39
Total	104	538	1,053	1	125	46
Scenario 1: Incremental Increase (1500 tpd Proposed minus 400 tpd Baseline)						
On-Site	3	13	25	0.03	1.7	1.5
Off-Site	64	384	623	0.7	82	24
Total	**67**	396	**648**	0.7	83	25
Scenario 2: Incremental Increase (1500 tpd Proposed minus 1500 tpd Baseline)						
On-Site	-3	-6	-19	-0.003	-6.5	-4.8
Off-Site	-10	90	-308	-0.07	-14	-18
Total	-14	84	-327	-0.07	-20	-23
SCAQMD Operational Significance Threshold	**55**	**550**	**55**	**150**	**150**	**55**

Bolded values indicate exceedance of the SCAQMD thresholds.

Summary of On-Site Diesel PM Emissions

	Emissions (lb/day)	
Operation Scenario	**Diesel PM10**	**Diesel PM2.5**
Existing: 400 tpd Baseline Current Operation	4.2	4.1
Existing: 1500 tpd Baseline Permitted	6.0	5.9
Proposed Project: 1500 tpd Proposed	5.3	5.2
Scenario 1: Incremental Increase (1500 tpd Proposed minus 400 tpd Baseline)	1.09	1.08
Scenario 2: Incremental Increase (1500 tpd Proposed minus 1500 tpd Baseline)	-0.78	-0.75

Proposed Project: Construction
1500 TPD C&D and MSW Facility

Maximum Daily Emissions Summary

	VOC	CO	NOX	SOX	PM10	PM2.5
Construction Emissions (lb/day)	17	39	81	0.08	37	11
Significance Thresholds (lbs/day)	**75**	**550**	**100**	**150**	**150**	**55**

1. General Inputs

Worker Commute (miles RT)	20
Peak # of Employees	15
Construction/Grading Area (acres)	4.93
Construction/Grading Area (sq ft)	214,680
Building (Sq Ft)	122,500
Area paved (acres)	2
Area to be paved	90,000

Structure	Size (sq ft)
Transfer Station	25000
MRF	25000
Office	2500
C&D Processing Buildir	70000
Circulation/Parking	90000
Landscaping	2180

2. Assumptions

Months of Construction	Construction Equipment Hours of Operation	Maximum Acreage Disturbed by Grading [1]	Number of Days for Site Grading
(months)	(hrs/day)	(acres/day)	(days)
12	8	3.2	2

A. Calculations assume that all construction equipment is used at the same time.
B. Paving will be completed within two months

3. Construction Equipment Emissions

Equipment Type	# / Day	# months	EF (assume Y2008) [2] (lb/hr) ROG	CO	NOx	SOx	PM	Phase Used 6
Air Compressors Composite	1	3	0.1232	0.3782	0.7980	0.0007	0.0563	3
Generator Sets Composite	1	2	0.1075	0.3461	0.6980	0.0007	0.0430	3
Cement and Mortar Mixers Composite	1	1	0.0113	0.0447	0.0658	0.0001	0.0044	3
Concrete/Industrial Saws Composite	1	1	0.1460	0.4411	0.7263	0.0007	0.0610	3
Tractors/Loaders/Backhoes Composite	2	3	0.1204	0.4063	0.7746	0.0008	0.0599	2
Graders Composite	1	1	0.1936	0.6561	1.6191	0.0015	0.0840	3P
Off-Highway Trucks Composite	1	3	0.2730	0.8499	2.7256	0.0027	0.0989	3P
Rollers Composite	1	1	0.1328	0.4341	0.8607	0.0008	0.0601	3P
Pavers Composite	1	1	0.1963	0.5874	1.0796	0.0009	0.0769	3P
Forklifts Composite	1	12	0.0799	0.2422	0.5982	0.0006	0.0324	2 AND 3
Sweepers/Scrubbers Composite	1	12	0.1830	0.5575	0.9678	0.0009	0.0778	2 AND 3

Table 6. Phase II Construction Equipment Emissions (no demolition)

Phase II (Site Grading) Construction Equipment Emissions (lb/day)						
ROG	**CO**	**NOX**	**SOX**	**PM10**	**PM2.5**	
1.93	6.50	12.39	0.01	0.96	0.95	
0.64	1.94	4.79	0.00	0.26	0.26	
1.46	4.46	7.74	0.01	0.62	0.62	
Total 4.0	12.9	24.9	0.0	1.8	1.8	

Table 7. Phase III Construction Equipment Emissions (no demolition)

Phase III (Building) Construction Equipment Emissions (lb/day)					
ROG	**CO**	**NOX**	**SOX**	**PM10**	**PM2.5**
0.99	3.03	6.38	0.01	0.45	0.45
0.86	2.77	5.58	0.01	0.34	0.34
0.09	0.36	0.53	0.00	0.04	0.04
1.17	3.53	5.81	0.01	0.49	0.48
1.55	5.25	12.95	0.01	0.67	0.67
2.18	6.80	21.81	0.02	0.79	0.78
1.06	3.47	6.89	0.01	0.48	0.48
1.57	4.70	8.64	0.01	0.62	0.61
0.64	1.94	4.79	0.00	0.26	0.26
1.46	4.46	7.74	0.01	0.62	0.62
11.6	36.3	81.1	0.08	4.8	4.7

4. Construction Activity Emissions [1]

Emission Factors	PM fugitive (lb/acre-day)	ROG (lb/acre)
Site Grading	10	-
Asphalt Paving	-	2.62

Construction Activity Emissions (lb/day)							
ROG	**CO**	**NOX**	**SOX**	**PM10**	**PM2.5**	**PM10 fugitive**	**PM2.5 Fugitive [5]**
0	0	0	0	0	0	32	6.7
5.41	0	0	0	0	0	0	0

5. Construction Worker Emissions
Inputs

Vehicle Type	Emission Factors (lb/VMT) [3,9] CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive) [4]	$PM_{2.5}$ (Fugitive) [5]
Passenger	1.05E-02	1.10E-03	8.51E-05	5.29E-05	1.07E-05	1.08E-03	0.0003	0.0001

Construction Worker Emissions (lb/day) (max)							
CO	**NOx**	**PM_{10}**	**$PM_{2.5}$**	**SOx**	**ROG**	**PM10 fugitive**	**$PM_{2.5}$ (Fugitive) [5]**
3.16	0.33	0.03	0.02	0.003	0.32	0.09	0.02

0.12
0.04

NOTES:
1 Default value from URBEMIS (EF and daily use factor)
2 Construction equipment emission eactors are from the SCAQMD OFFROAD model, fleet average for the year 2008, (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html)
3 On-road emission factors are from the SCAQMD highest (most conservative) EMFAC2007 v 2.3 summary table (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), for calendar year 2008. The emission factors account for emissions from start, running, and idling exhaust. In addition, the ROG emission factor takes into account diurnal, hot soak, running and resting emissions, and PM10 emission factor takes into account the tire and brake wear.
4 AP42 Chapter 13.2 Equation 1, using ADT >10,000 and the average weight of passenger vehicles as provided by SCAQMD EMFAC weight specifications (http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf), average rainfall was determined from the Burbank station from 1932-2000 (http://ggweather.com/climate/rain_days.htm)
5 SCAQMD Final Methodology to Calculate PM 2.5 and PM2.5 Sig thresholds
6 Phase breakdown from URBEMIS Handbook, 2005

Proposed Project: Operational Emissions Year 2009

500C&D/1000MSW

500 C&D
1000 MSW

	VOC	CO	NOX	SOX	PM10	PM2.5
On-Site	13	45	93	0.09	5.3	5.2
Off-Site	91	493	960	1	117	39
Total Operation Emissions (lb/day)	104	538	1,053	1	122	44

Inputs

	ADT	Distance In (miles/trip)	Distance Out (miles/trip)	Distance traveled (miles/day)	Idle Time per Trip (minutes)	Idle Time per Trip (hours)
C&D Incoming (Truck Type: Heavy-Duty)	100	50	20	7,000	14	0.233
MSW Incoming (Truck Type: Medium-Duty)	100	120	20	14,000	14	0.233
C&D Outgoing (Truck Type: Heavy-Duty)	22	20	70	1,980	18	0.300
MSW Outgoing (Truck Type: Heavy-Duty)	43	20	130	6,450	18	0.300
Employee (Passenger Vehicle)	65	10	10	1,300		
Total Outgoing trips	**65**					
LandFill(outgoing)			150			
Recycle(outgoing)			50			
ADT Heavy Duty Trucks (miles/day)		15,430				
ADT Medium Duty Trucks (miles/day)		14,000				
ADT Passenger (miles/day)		1,300				
MSW vehicles Payload (tons/vehicle)	10					
C&D Vehicles Payload (tons/vehicle)	5					

Assumptions

A. No processes will be outside of the contained building
B. Emissions from processes that are located inside the building (ie. conveyors, grinders) would be negligible.
C. Building control equipment consists of misters, forced air, and filtration are operated using electricty.
D. Site Operates from 7am to 8pm
E. MSW trucks are medium duty, C&D trucks are heavy duty, all outoging trucks are Heavy Duty
F. C&D: 20% outgoing to trips to a landfill, 80% outgoing to trips to a recycling facility
G. MSW: 20% Outgoing to trips to a recycling facility and 80% outgoing trips to a landfill
H. 500 tons of C&D and 1,000 tons of MSW = 1/3 of waste is C&D, 2/3 Waste is MSW (correspond to outgoing trips)
I. Incoming trucks idle 4 minutes at the scale and 10 minutes unloading. Outgoing trucks idle 15 minutes while loading and 2 minutes at the scale.

	Number of Pieces	# hrs operated per day
Mobile Equipment - # Loaders (#/day)	4	8
Mobile Equipment - # Excavators (#/day)	4	8
Mobile Equipment - # Forklifts (#/day)	2	8
Mobile Equipment - # Sweepers (#/day)	1	8

Mobile Emissions

Emission Factors for Vehicles

	Emission Factors (lb/VMT)							
Vehicle Type	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive) [3]	$PM_{2.5}$ (Fugitive) [3]
Passenger [1]	9.69E-03	1.01E-03	8.60E-05	5.38E-05	1.07E-05	9.92E-04	0.0024	0.0001
Medium Duty Trucks [1]	2.02E-02	2.24E-02	8.05E-04	6.92E-04	2.68E-05	2.79E-03	0.0024	0.0001
Heavy Duty Trucks [2]	1.28E-02	4.18E-02	2.00E-03	1.75E-03	4.01E-05	3.29E-03	0.0024	0.0001
	Idle Emission Factors (lb/hr)[4]							
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG		
Medium Duty Trucks	5.80E-02	1.65E-01	1.75E-03	1.60E-03	8.60E-05	7.00E-03		
Heavy Duty Trucks	1.08E-01	2.39E-01	4.35E-03	4.01E-03	1.39E-04	2.90E-02		

Emission Factors for Equipment

	Emission Factors (lb/hr)					
Equipment [5]	CO	NOx	PM10	PM2.5	SOx	ROG
Tractors/Loaders/Backhoes Composite	0.3993	0.7227	0.0559	0.0553	0.0008	0.1109
Excavators Composite	0.5697	1.2340	0.0681	0.0674	0.0013	0.1584
Forklifts Composite	0.2366	0.5560	0.0302	0.0299	0.0006	0.0741
Sweepers/Scrubbers Composite	0.5475	0.9059	0.0733	0.0726	0.0009	0.1689

NOTES:

1 EMFAC2007 On-Road EF for YR 2009 (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), Passenger vehicles were used for worker commute, Delivery Trucks were used for Medium Duty Trucks
2 Heavy Duty on-road Vehicles scenario yr 2009 (model yrs 1965-2009) (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)
3 AP42 Chapter 13.2 Equation 1, using ADT >10,000 and the average weight of passenger, heavy-duty, and medium-duty trucks as provided by SCAQMD EMFAC weight specifications (http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf), average rainfall was determined from the Burbank station from 1932-2000 (http://ggweather.com/climate/rain_days.htm)
4 Idle emission factors from EMFAC2007 v 2.3 for Los Angeles County for the year 2009.
5 SCAQMD OFFROAD Emission Factors, http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

	Mobile On-road Emissions (lb/day)							
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Passenger	12.59	1.31	0.11	0.07	0.01	1.29	3.15	0.10
Medium Duty Trucks	282.25	313.13	11.28	9.69	0.38	39.05	33.89	1.13
Heavy Duty Trucks	197.85	645.68	30.79	27.04	0.62	50.81	37.35	1.13
Total	493	960	42	37	1	91	74	2
Idle Emissions								
Medium Duty Trucks	1.35	3.86	0.04	0.04	0.00	0.16	0	0
Heavy Duty Trucks	4.64	10.24	0.19	0.17	0.01	1.24	0	0
Total	6.00	14.10	0.23	0.21	0.01	1.40	0	0

	Mobile Onsite Emissions (lb/day)							
Equipment	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Tractors/Loaders/Backhoes Composite	12.78	23.12	1.79	1.77	0.02	3.55	0	0
Excavators Composite	18.23	39.49	2.18	2.16	0.04	5.07	0	0
Forklifts Composite	3.79	8.90	0.48	0.48	0.01	1.19	0	0
Sweepers/Scrubbers Composite	4.38	7.25	0.59	0.58	0.01	1.35	0	0
Total	39.17	78.75	5.04	4.99	0.08	11.15	0	0

Particulate Matter Emissions from Tub Grinders

Assumptions:
40% of the permitted daily mass of C&D material received would be wood processed through the tub grinders.
The tub grinders are powered by electricity.

Tub Grinder Emission Calculations
PM_{10} Emissions (lb/day) = Daily Throughput (ton/day) * Emission Factor (lb TSP/ton throughput) * (0.6 lb PM_{10}/lb TSP)
$PM_{2.5}$ Emissions (lb/day) = PM_{10} Emissions (lb/day) *(0.708 lb $PM_{2.5}$/lb PM_{10})

Alternative	Mass of Material Processed in Tub Grinders (tons per day)	Emission Factor (lb TSP/ton material)*	Fraction of TSP that is PM_{10} (lb PM_{10}/ lb TSP)[1]	PM_{10} Emissions (lb/day)	$PM_{2.5}$ Emissions (lb/day)[2]
400 tpd Baseline	160	0.024	0.6	2.30	1.63
1,500 tpd Baseline	600	0.024	0.6	8.64	6.12
Proposed Project (500 tpd C&D)	200	0.024	0.6	2.88	2.04

TSP = Total suspended particulate

[1] Source: Bay Area Air Quality Management District, Permit Handbook (http://www.baaqmd.gov/pmt/handbook/rev02/permit_handbook.htm), Section 11.13 (July 18, 2006) and AP-42 Fourth Edition, Table 10.3-1 for "log debarking".

[2] $PM_{2.5}$ emissions were calculated following the SCAQMD Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology, October 2006. For woodworking products (sawing), 70.8% of the PM_{10} would be $PM_{2.5}$.

400 tpd Baseline: Operational Emissions Year 2007

400C&D

400 C&D
0 MSW

	VOC	CO	NOX	SOX	PM10	PM2.5
On-Site	9.62	32.47	67.70	0.07	4.17	4.12
Off-Site	27	109	337	0.29	35	15
Total Operation Emissions (lb/day)	37	141	405	0.35	39	19

Inputs

	ADT	Distance In (miles/trip)	Distance Out (miles/trip)	Distance traveled (miles/day)	Idle Time per Trip (minutes)	Idle Time per Trip (hours)
C&D Incoming (Truck Type: Heavy-Duty)	80	50	20	5,600	13	0.217
C&D Outgoing (Truck Type: Heavy-Duty)	17	20	70	1,530	12	0.200
Employee (Passenger Vehicle)	25	10	10	500		
LandFill(outgoing)			150			
Recycle(outgoing)			50			
ADT Heavy Duty Trucks (miles/day)		7,130				
ADT Medium Duty Trucks (miles/day)		0				
ADT Passenger (miles/day)		500				
MSW vehicles Payload (tons/vehicle)	10					
C&D Vehicles Payload (tons/vehicle)	5					

Assumptions

A. Site Operates from 7am to 8pm
B. C&D incoming trucks are heavy duty diesel and all outoging trucks are heavy duty diesel
C. C&D: 20% outgoing to trips to a landfill, 80% outgoing to trips to a recycling facility
D. Incoming trucks idle 3 minutes at the scale and 10 minutes unloading. Outgoing trucks idle 10 minutes while loading and 2 minutes at the scale.

	Number of Pieces	# hrs operated per day
Mobile Equipment - # Loaders (#/day)	3	8
Mobile Equipment - # Excavators (#/day)	3	8
Mobile Equipment - # Forklifts (#/day)	1	8
Mobile Equipment - # Sweepers (#/day)	1	8

Mobile Emissions

Emission Factors for Vehicles

	Emission Factors (lb/VMT)							
Vehicle Type	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)[3]	$PM_{2.5}$ (Fugitive)[3]
Passenger [1]	1.16E-02	1.21E-03	8.45E-05	5.24E-05	1.08E-05	1.18E-03	0.0024	0.0001
Medium Duty Trucks [1]	2.41E-02	2.51E-02	9.10E-04	7.89E-04	2.63E-05	3.23E-03	0.0024	0.0001
Heavy Duty Trucks [2]	1.45E-02	4.72E-02	2.31E-03	2.04E-03	3.96E-05	3.73E-03	0.0024	0.0001

	Idle Emission Factors (lb/hr)[4]					
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG
Medium Duty Trucks	5.80E-02	1.65E-01	2.30E-03	2.12E-03	8.60E-05	7.00E-03
Heavy Duty Trucks	1.12E-01	2.31E-01	5.20E-03	4.78E-03	1.39E-04	3.21E-02

Emission Factors for Equipment

	Emission Factors (lb/hr)					
Equipment [5]	CO	NOx	PM10	PM2.5	SOx	ROG
Tractors/Loaders/Backhoes Composite	0.4063	0.7746	0.0599	0.059277662	0.0008	0.1204
Excavators Composite	0.5828	1.3249	0.0727	0.072003755	0.0013	0.1695
Forklifts Composite	0.2422	0.5982	0.0324	0.032047386	0.0006	0.0799
Sweepers/Scrubbers Composite	0.5575	0.9678	0.0778	0.07706549	0.0009	0.1830

NOTES:

1 EMFAC2007 On-Road EF for YR 2007 (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), Passenger vehicles were used for worker commute, Delivery Trucks were used for Medium Duty Trucks
2 Heavy Duty on-road Vehicles scenario yr 2007 (model yrs 1968-2007) (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)

3 AP42 Chapter 13 Equation 1, using ADT >10,000 and the average weight of passenger, heavy-duty, and medium-duty trucks as provided by SCAQMD EMFAC weight specifications (http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf), average rainfall was det

4 Idle emission factors from EMFAC2007 v 2.3 for Los Angeles County for the year 2007.
5 SCAQMD OFFROAD Emission Factors, http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

	Mobile On-road Emissions (lb/day)							
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Passenger	5.78	0.61	0.04	0.03	0.01	0.59	1.21	0.04
Medium Duty Trucks	0	0	0	0	0	0	0	0
Heavy Duty Trucks	103.12	336.41	16.46	14.55	0.28	26.59	17.26	0.58
Total	109	337	17	15	0	27	18	1
Idle Emissions								
Medium Duty Trucks	0	0	0	0	0	0	0	0
Heavy Duty Trucks	2.33	4.78	0.11	0.10	0.00	0.56	0	0
Total	2.33	4.78	0.11	0.10	0.00	0.56	0.00	0.00

	Mobile Onsite Emissions (lb/day)							
Equipment	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Tractors/Loaders/Backhoes Composite	9.75	18.59	1.44	1.42	0.02	2.89	0	0
Excavators Composite	13.99	31.80	1.75	1.73	0.03	4.07	0	0
Forklifts Composite	1.94	4.79	0.26	0.26	0.00	0.64	0	0
Sweepers/Scrubbers Composite	4.46	7.74	0.62	0.62	0.01	1.46	0	0
Total	30.14	62.91	4.06	4.02	0.06	9.06	0	0

1500 tpd Baseline: Operational Emissions Year 2007

1500C&D

1500 C&D
0 MSW

	VOC	CO	NOX	SOX	PM10	PM2.5
On-Site	16	52	112	0.09	6.0	5.9
Off-Site	102	403	1,268	1	130	57
Total Operation Emissions (lb/day)	117	454	1,380	1	136	63

Inputs

	ADT	Distance In (miles/trip)	Distance Out (miles/trip)	Distance traveled (miles/day)	Idle Time per Trip (minutes)	Idle Time per Trip (hours)
C&D Incoming (Truck Type: Heavy-Duty)	300	50	20	21,000	20	0.333
C&D Outgoing (Truck Type: Heavy-Duty)	65	20	70	5,850	12	0.200
Employee (Passenger Vehicle)	62	10	10	1,240		
LandFill(outgoing)			150			
Recycle(outgoing)			50			
ADT Heavy Duty Trucks (miles/day)		26,850				
ADT Medium Duty Trucks (miles/day)		0				
ADT Passenger (miles/day)		1,240				
MSW vehicles Payload (tons/vehicle)	10					
C&D Vehicles Payload (tons/vehicle)	5					

Assumptions

A. Site Operates from 7am to 8pm
B. C&D incoming trucks are heavy duty diesel and all outoging trucks are heavy duty diesel
C. C&D: 20% outgoing to trips to a landfill, 80% outgoing to trips to a recycling facility
D. Incoming trucks idle 5 minutes at the scale and 15 minutes unloading. Outgoing trucks idle 10 minutes while loading and 2 minutes at the scale.

	Number of Pieces	# hrs operated per day
Mobile Equipment - # Loaders (#/day)	4	8
Mobile Equipment - # Excavators (#/day)	4	8
Mobile Equipment - # Forklifts (#/day)	1	8
Mobile Equipment - # Sweepers (#/day)	1	8

Mobile Emissions

Emission Factors for Vehicles

	Emission Factors (lb/VMT)							
Vehicle Type	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)[3]	$PM_{2.5}$ (Fugitive)[3]
Passenger[1]	1.16E-02	1.21E-03	8.45E-05	5.24E-05	1.08E-05	1.18E-03	0.0024	0.0001
Medium Duty Trucks[1]	2.41E-02	2.51E-02	9.10E-04	7.89E-04	2.63E-05	3.23E-03	0.0024	0.0001
Heavy Duty Trucks[2]	1.45E-02	4.72E-02	2.31E-03	2.04E-03	3.96E-05	3.73E-03	0.0024	0.0001

	Idle Emission Factors (lb/hr)[4]					
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG
Medium Duty Trucks	5.80E-02	1.65E-01	2.30E-03	2.12E-03	8.60E-05	7.00E-03
Heavy Duty Trucks	1.12E-01	2.31E-01	5.20E-03	4.78E-03	1.39E-04	3.21E-02

Emission Factors for Equipment

	Emission Factors (lb/hr)					
Equipment[5]	CO	NOx	PM10	PM2.5	SOx	ROG
Tractors/Loaders/Backhoes Composite	0.4142	0.8303	0.0639	0.0633	0.0008	0.1307
Excavators Composite	0.5977	1.4225	0.0776	0.0768	0.0013	0.1816
Forklifts Composite	0.2495	0.6430	0.0346	0.0342	0.0006	0.0861
Sweepers/Scrubbers Composite	0.5672	1.0277	0.0819	0.0811	0.0009	0.1963

NOTES:

1 EMFAC2007 On-Road EF for YR 2007 (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), Passenger vehicles were used for worker commute, Delivery Trucks were used for Medium Duty Trucks
2 Heavy Duty on-road Vehicles scenario yr 2007 (model yrs 1968-2007) (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)

3 AP42 Chapter 13 Equation 1, using ADT >10,000 and the average weight of passenger, heavy-duty, and medium-duty trucks as provided by SCAQMD EMFAC weight specifications (http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf), average rainfall was det

4 Idle emission factors from EMFAC2007 v 2.3 for Los Angeles County for the year 2007.
5 SCAQMD OFFROAD Emission Factors, http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

	Mobile On-road Emissions (lb/day)							
	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Passenger	14.32	1.50	0.10	0.07	0.01	1.47	3.00	0.10
Medium Duty Trucks	0	0	0	0	0	0	0	0
Heavy Duty Trucks	388.31	1266.83	62.00	54.78	1.06	100.14	65.00	2.17
Total	403	1,268	62	55	1	102	68	2
Idle Emissions								
Medium Duty Trucks	0	0	0	0	0	0	0	0
Heavy Duty Trucks	12.71	26.06	0.59	0.54	0.02	3.63	0	0
Total	12.71	26.06	0.59	0.54	0.02	3.63	0.00	0.00

	Mobile Onsite Emissions (lb/day)							
Equipment	CO	NOx	PM_{10}	$PM_{2.5}$	SOx	ROG	PM_{10} (Fugitive)	$PM_{2.5}$ (Fugitive)
Tractors/Loaders/Backhoes Composite	13.25	26.57	2.05	2.03	0.02	4.18	0	0
Excavators Composite	19.12	45.52	2.48	2.46	0.04	5.81	0	0
Forklifts Composite	2.00	5.14	0.28	0.27	0.00	0.69	0	0
Sweepers/Scrubbers Composite	4.54	8.22	0.66	0.65	0.01	1.57	0	0
Total	38.91	85.46	5.46	5.40	0.08	12.25	0	0

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model and extracting the **Heavy-Heavy-Duty Diesel Truck (HHDT)** Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The **HHDT-DSL** vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks, including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The **HHDT-DSL, Exh** vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions from heavy-heavy-duty diesel trucks.

Scenario Year: **2007**

All model years in the range 1965 to 2007

(pounds/mile)	
CO	0.01446237
NOx	0.04718166
ROG	0.00372949
SOx	0.00003962
PM10	0.00230900
PM2.5	0.00204018
CO2	4.22184493

(pounds/mile)	
PM10	0.00216752
PM2.5	0.00199491

Scenario Year: **2008**

All model years in the range 1965 to 2008

(pounds/mile)	
CO	0.01361368
NOx	0.04458017
ROG	0.00351579
SOx	0.00004136
PM10	0.00215635
PM2.5	0.00189990
CO2	4.21067145
CH4	0.00016269

(pounds/mile)	
PM10	0.00201296
PM2.5	0.00185303

Scenario Year: **2009**

All model years in the range 1965 to 2009

(pounds/mile)	
CO	0.01282236
NOx	0.04184591
ROG	0.00329320
SOx	0.00004013
PM10	0.00199572
PM2.5	0.00175227
CO2	4.21080792
CH4	0.00015249

(pounds/mile)	
PM10	0.00185393
PM2.5	0.00170680

Scenario Year: **2010**

All model years in the range 1966 to 2010

(pounds/mile)	
CO	0.01195456
NOx	0.03822102
ROG	0.00304157
SOx	0.00004131
PM10	0.00183062
PM2.5	0.00160083
CO2	4.21120578
CH4	0.00014201

(pounds/mile)	
PM10	0.00168861
PM2.5	0.00155435

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Passenger Vehicles & Delivery Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Passenger Vehicles (<8500 pounds) & Delivery Trucks (>8500 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:
Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

Scenario Year: **2007**

All model years in the range 1965 to 2007

Passenger Vehicles (pounds/mile)	
CO	**0.01155158**
NOx	**0.00121328**
ROG	**0.00118234**
SOx	**0.00001078**
PM10	**0.00008447**
PM2.5	**0.00005243**
CO2	**1.10672236**
CH4	**0.00010306**

Delivery Trucks (pounds/mile)	
CO	**0.02407553**
NOx	**0.02508445**
ROG	**0.00323145**
SOx	**0.00002626**
PM10	**0.00091020**
PM2.5	**0.00078884**
CO2	**2.72245619**
CH4	**0.00016030**

Scenario Year: **2008**

All model years in the range 1965 to 2008

Passenger Vehicles (pounds/mile)	
CO	**0.01054844**
NOx	**0.00110288**
ROG	**0.00107919**
SOx	**0.00001075**
PM10	**0.00008505**
PM2.5	**0.00005293**
CO2	**1.09953226**
CH4	**0.00009465**

Delivery Trucks (pounds/mile)	
CO	**0.02194915**
NOx	**0.02371258**
ROG	**0.00299270**
SOx	**0.00002565**
PM10	**0.00085607**
PM2.5	**0.00073933**
CO2	**2.71943400**
CH4	**0.00014769**

Scenario Year: **2009**

All model years in the range 1965 to 2009

Passenger Vehicles (pounds/mile)	
CO	**0.00968562**
NOx	**0.00100518**
ROG	**0.00099245**
SOx	**0.00001066**
PM10	**0.00008601**
PM2.5	**0.00005384**
CO2	**1.09755398**
CH4	**0.00008767**

Delivery Trucks (pounds/mile)	
CO	**0.02016075**
NOx	**0.02236636**
ROG	**0.00278899**
SOx	**0.00002679**
PM10	**0.00080550**
PM2.5	**0.00069228**
CO2	**2.72330496**
CH4	**0.00013655**

Scenario Year: **2010**

All model years in the range 1966 to 2010

Passenger Vehicles (pounds/mile)	
CO	**0.00826276**
NOx	**0.00091814**
ROG	**0.00091399**
SOx	**0.00001077**
PM10	**0.00008698**
PM2.5	**0.00005478**
CO2	**1.09568235**
CH4	**0.00008146**

Delivery Trucks (pounds/mile)	
CO	**0.01843765**
NOx	**0.02062460**
ROG	**0.00258958**
SOx	**0.00002701**
PM10	**0.00075121**
PM2.5	**0.00064233**
CO2	**2.73222199**
CH4	**0.00012576**

SCAB Fleet Average Emission Factors (Diesel)

2007

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0120	0.0539	0.0784	0.0001	0.0055	8.7	0.0011
	25	0.0268	0.0678	0.1103	0.0001	0.0083	11.0	0.0024
	50	0.0867	0.2042	0.2062	0.0003	0.0210	19.6	0.0078
	120	0.0819	0.2563	0.5110	0.0004	0.0398	38.1	0.0074
	500	0.1827	0.7381	2.2160	0.0021	0.0703	213	0.0165
	750	0.3397	1.3341	4.1001	0.0039	0.1287	385	0.0306
Aerial Lifts Total		0.0781	0.2253	0.4026	0.0004	0.0279	34.7	0.0070
Air Compressors	15	0.0163	0.0539	0.0928	0.0001	0.0071	7.2	0.0015
	25	0.0376	0.0934	0.1473	0.0002	0.0113	14.4	0.0034
	50	0.1306	0.2933	0.2468	0.0003	0.0290	22.3	0.0118
	120	0.1158	0.3415	0.6762	0.0006	0.0591	47.0	0.0105
	175	0.1434	0.5150	1.1478	0.0010	0.0615	88.5	0.0129
	250	0.1459	0.4071	1.6003	0.0015	0.0557	131	0.0132
	500	0.2288	0.8865	2.5465	0.0023	0.0889	232	0.0206
	750	0.3607	1.3701	4.0281	0.0036	0.1390	358	0.0325
	1000	0.6027	2.3256	6.5406	0.0049	0.2054	486	0.0544
Air Compressors Total		0.1285	0.3872	0.8302	0.0007	0.0579	63.6	0.0116
Bore/Drill Rigs	15	0.0124	0.0632	0.0788	0.0002	0.0057	10.3	0.0011
	25	0.0222	0.0689	0.1397	0.0002	0.0089	16.0	0.0020
	50	0.0980	0.2886	0.2959	0.0004	0.0288	31.0	0.0088
	120	0.1208	0.5011	0.8412	0.0009	0.0680	77.1	0.0109
	175	0.1383	0.7539	1.2916	0.0016	0.0650	141	0.0125
	250	0.1125	0.3532	1.6315	0.0021	0.0426	188	0.0102
	500	0.1628	0.5678	2.2334	0.0031	0.0659	311	0.0147
	750	0.3368	1.1219	4.6545	0.0062	0.1342	615	0.0304
	1000	0.7011	1.9338	9.8820	0.0093	0.2471	928	0.0633
Bore/Drill Rigs Total		0.1457	0.5388	1.4734	0.0017	0.0648	165	0.0131
Cement and Morta	15	0.0092	0.0399	0.0596	0.0001	0.0042	6.3	0.0008
	25	0.0428	0.1084	0.1763	0.0002	0.0133	17.6	0.0039
Cement and Mortar Mixers Total		0.0120	0.0455	0.0693	0.0001	0.0050	7.2	0.0011
Concrete/Industrial	25	0.0215	0.0689	0.1402	0.0002	0.0089	16.5	0.0019
	50	0.1513	0.3517	0.3238	0.0004	0.0352	30.2	0.0136
	120	0.1654	0.5152	1.0187	0.0009	0.0830	74.1	0.0149
	175	0.2336	0.8939	1.9684	0.0018	0.0987	160	0.0211
Concrete/Industrial Saws Total		0.1561	0.4487	0.7639	0.0007	0.0640	58.5	0.0141
Cranes	50	0.1555	0.3455	0.2666	0.0003	0.0334	23.2	0.0140
	120	0.1338	0.3855	0.7667	0.0006	0.0693	50.1	0.0121
	175	0.1417	0.4975	1.1009	0.0009	0.0615	80.3	0.0128
	250	0.1478	0.4119	1.4665	0.0013	0.0571	112	0.0133
	500	0.2121	0.8483	2.1049	0.0018	0.0819	180	0.0191
	750	0.3600	1.4213	3.6197	0.0030	0.1389	303	0.0325
	9999	1.2786	5.2275	13.5665	0.0098	0.4345	971	0.1154
Cranes Total		0.1882	0.6365	1.6948	0.0014	0.0755	129	0.0170
Crawler Tractors	50	0.1727	0.3812	0.2897	0.0003	0.0368	24.9	0.0156
	120	0.1844	0.5217	1.0539	0.0008	0.0941	65.8	0.0166
	175	0.2256	0.7814	1.7367	0.0014	0.0979	121	0.0204
	250	0.2386	0.6707	2.2824	0.0019	0.0932	166	0.0215
	500	0.3324	1.5264	3.1976	0.0025	0.1289	259	0.0300
	750	0.5988	2.7193	5.8408	0.0047	0.2324	465	0.0540
	1000	0.9273	4.2839	9.5523	0.0066	0.3239	658	0.0837
Crawler Tractors Total		0.2180	0.7090	1.6218	0.0013	0.0988	114	0.0197

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Crushing/Proc. Equ	50	0.2623	0.5917	0.4879	0.0006	0.0582	44.0	0.0237
	120	0.2051	0.6092	1.1923	0.0010	0.1061	83.1	0.0185
	175	0.2709	0.9819	2.1527	0.0019	0.1174	167	0.0244
	250	0.2682	0.7429	2.9565	0.0028	0.1022	245	0.0242
	500	0.3634	1.3803	4.0348	0.0037	0.1413	374	0.0328
	750	0.5796	2.0915	6.5366	0.0059	0.2229	589	0.0523
	9999	1.6038	5.9800	17.5501	0.0131	0.5443	1,308	0.1447
Crushing/Proc. Equipment Total		0.2499	0.7817	1.6553	0.0015	0.1048	132	0.0225
Dumpers/Tenders	25	0.0137	0.0383	0.0709	0.0001	0.0049	7.6	0.0012
Dumpers/Tenders Total		0.0137	0.0383	0.0709	0.0001	0.0049	7.6	0.0012
Excavators	25	0.0206	0.0677	0.1353	0.0002	0.0088	16.4	0.0019
	50	0.1510	0.3526	0.2778	0.0003	0.0341	25.0	0.0136
	120	0.1786	0.5504	1.0305	0.0009	0.0963	73.6	0.0161
	175	0.1792	0.6758	1.3897	0.0013	0.0794	112	0.0162
	250	0.1726	0.4642	1.8559	0.0018	0.0641	159	0.0156
	500	0.2295	0.7653	2.3809	0.0023	0.0858	234	0.0207
	750	0.3841	1.2645	4.0758	0.0039	0.1444	387	0.0347
Excavators Total		0.1816	0.5977	1.4225	0.0013	0.0776	120	0.0164
Forklifts	50	0.0932	0.2119	0.1643	0.0002	0.0206	14.7	0.0084
	120	0.0786	0.2337	0.4359	0.0004	0.0428	31.2	0.0071
	175	0.0934	0.3343	0.7024	0.0006	0.0416	56.1	0.0084
	250	0.0762	0.1920	0.8930	0.0009	0.0273	77.1	0.0069
	500	0.0988	0.2777	1.1190	0.0011	0.0364	111	0.0089
Forklifts Total		0.0861	0.2495	0.6430	0.0006	0.0346	54.4	0.0078
Generator Sets	15	0.0198	0.0761	0.1277	0.0002	0.0081	10.2	0.0018
	25	0.0349	0.1140	0.1798	0.0002	0.0123	17.6	0.0032
	50	0.1294	0.3076	0.3197	0.0004	0.0318	30.6	0.0117
	120	0.1638	0.5185	1.0338	0.0009	0.0791	77.9	0.0148
	175	0.1944	0.7569	1.6938	0.0016	0.0795	142	0.0175
	250	0.1982	0.5974	2.3843	0.0024	0.0737	213	0.0179
	500	0.2824	1.1211	3.4731	0.0033	0.1084	337	0.0255
	750	0.4695	1.8098	5.7390	0.0055	0.1771	544	0.0424
	9999	1.1949	4.4076	13.2584	0.0105	0.4151	1,049	0.1078
Generator Sets Total		0.1130	0.3549	0.7249	0.0007	0.0446	61.0	0.0102
Graders	50	0.1733	0.3929	0.3101	0.0004	0.0381	27.5	0.0156
	120	0.1902	0.5657	1.1025	0.0009	0.0996	75.0	0.0172
	175	0.2073	0.7540	1.6258	0.0014	0.0907	124	0.0187
	250	0.2088	0.5808	2.1482	0.0019	0.0803	172	0.0188
	500	0.2487	0.9672	2.5414	0.0023	0.0960	229	0.0224
	750	0.5320	2.0374	5.5148	0.0049	0.2053	486	0.0480
Graders Total		0.2055	0.6712	1.7198	0.0015	0.0886	133	0.0185
Off-Highway Tracto	120	0.2830	0.7723	1.6142	0.0011	0.1402	93.7	0.0255
	175	0.2641	0.8840	2.0209	0.0015	0.1135	130	0.0238
	250	0.2149	0.6125	1.9515	0.0015	0.0852	130	0.0194
	750	0.8341	4.3552	7.8223	0.0057	0.3265	568	0.0753
	1000	1.2771	6.7362	12.5734	0.0082	0.4551	814	0.1152
Off-Highway Tractors Total		0.2692	0.9270	2.2742	0.0017	0.1107	151	0.0243
Off-Highway Truck	175	0.2093	0.7697	1.5881	0.0014	0.0920	125	0.0189
	250	0.1933	0.5096	1.9993	0.0019	0.0709	167	0.0174
	500	0.2870	0.9451	2.8530	0.0027	0.1051	272	0.0259
	750	0.4689	1.5279	4.7727	0.0044	0.1730	442	0.0423
	1000	0.7528	2.6058	8.3284	0.0063	0.2569	625	0.0679
Off-Highway Trucks Total		0.2881	0.9133	2.9144	0.0027	0.1056	260	0.0260

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Other Construction	15	0.0121	0.0617	0.0770	0.0002	0.0056	10.1	0.0011
	25	0.0183	0.0570	0.1155	0.0002	0.0074	13.2	0.0017
	50	0.1356	0.3262	0.2942	0.0004	0.0324	28.0	0.0122
	120	0.1711	0.5607	1.0579	0.0009	0.0896	80.9	0.0154
	175	0.1464	0.5955	1.2309	0.0012	0.0641	107	0.0132
	500	0.2095	0.7692	2.4473	0.0025	0.0825	254	0.0189
Other Construction Equipment To		0.1311	0.4749	1.2411	0.0013	0.0539	123	0.0118
Other General Indu	15	0.0067	0.0391	0.0470	0.0001	0.0034	6.4	0.0006
	25	0.0192	0.0632	0.1266	0.0002	0.0082	15.3	0.0017
	50	0.1476	0.3260	0.2499	0.0003	0.0317	21.7	0.0133
	120	0.1671	0.4756	0.9336	0.0007	0.0877	62.0	0.0151
	175	0.1706	0.5880	1.3014	0.0011	0.0746	95.9	0.0154
	250	0.1630	0.4366	1.7266	0.0015	0.0614	136	0.0147
	500	0.2851	1.0467	3.0123	0.0026	0.1087	265	0.0257
	750	0.4755	1.7251	5.0871	0.0044	0.1816	437	0.0429
	1000	0.7280	2.7744	7.7949	0.0056	0.2473	560	0.0657
Other General Industrial Equipme		0.2111	0.6987	1.9012	0.0016	0.0850	152	0.0190
Other Material Han	50	0.2034	0.4495	0.3473	0.0004	0.0437	30.3	0.0184
	120	0.1620	0.4626	0.9094	0.0007	0.0848	60.7	0.0146
	175	0.2152	0.7444	1.6495	0.0014	0.0939	122	0.0194
	250	0.1729	0.4654	1.8395	0.0016	0.0653	145	0.0156
	500	0.2038	0.7541	2.1690	0.0019	0.0781	192	0.0184
	9999	0.9597	3.6689	10.2941	0.0073	0.3256	741	0.0866
Other Material Handling Equipme		0.2038	0.6298	1.8362	0.0015	0.0819	141	0.0184
Pavers	25	0.0368	0.0997	0.1770	0.0002	0.0125	18.7	0.0033
	50	0.1881	0.4131	0.3234	0.0004	0.0401	28.0	0.0170
	120	0.1921	0.5429	1.1172	0.0008	0.0958	69.2	0.0173
	175	0.2363	0.8214	1.8559	0.0014	0.1015	128	0.0213
	250	0.2844	0.8186	2.7050	0.0022	0.1128	194	0.0257
	500	0.3028	1.4943	2.9397	0.0023	0.1194	233	0.0273
Pavers Total		0.2062	0.6000	1.1291	0.0009	0.0799	77.9	0.0186
Paving Equipment	25	0.0175	0.0544	0.1103	0.0002	0.0070	12.6	0.0016
	50	0.1593	0.3498	0.2759	0.0003	0.0340	23.9	0.0144
	120	0.1501	0.4247	0.8753	0.0006	0.0748	54.5	0.0135
	175	0.1842	0.6413	1.4542	0.0011	0.0789	101	0.0166
	250	0.1774	0.5124	1.6935	0.0014	0.0704	122	0.0160
Paving Equipment Total		0.1556	0.4693	1.0333	0.0008	0.0708	69.0	0.0140
Plate Compactors	15	0.0054	0.0263	0.0351	0.0001	0.0025	4.3	0.0005
Plate Compactors Total		0.0054	0.0263	0.0351	0.0001	0.0025	4.3	0.0005
Pressure Washers	15	0.0095	0.0365	0.0612	0.0001	0.0039	4.9	0.0009
	25	0.0142	0.0462	0.0729	0.0001	0.0050	7.1	0.0013
	50	0.0491	0.1223	0.1449	0.0002	0.0131	14.3	0.0044
	120	0.0463	0.1529	0.3055	0.0003	0.0216	24.1	0.0042
Pressure Washers Total		0.0235	0.0705	0.1079	0.0001	0.0081	9.4	0.0021
Pumps	15	0.0168	0.0554	0.0954	0.0001	0.0073	7.4	0.0015
	25	0.0507	0.1260	0.1987	0.0002	0.0153	19.5	0.0046
	50	0.1541	0.3621	0.3619	0.0004	0.0371	34.3	0.0139
	120	0.1685	0.5265	1.0488	0.0009	0.0822	77.9	0.0152
	175	0.1977	0.7584	1.6961	0.0016	0.0816	140	0.0178
	250	0.1941	0.5771	2.2926	0.0023	0.0727	201	0.0175
	500	0.2982	1.2024	3.5991	0.0034	0.1149	345	0.0269
	750	0.5068	1.9878	6.0902	0.0057	0.1923	571	0.0457
	9999	1.5682	5.9197	17.3104	0.0136	0.5441	1,355	0.1415
Pumps Total		0.1090	0.3243	0.6224	0.0006	0.0439	49.6	0.0098

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Rollers	15	0.0076	0.0386	0.0482	0.0001	0.0035	6.3	0.0007
	25	0.0185	0.0575	0.1165	0.0002	0.0074	13.3	0.0017
	50	0.1520	0.3436	0.2884	0.0003	0.0338	26.0	0.0137
	120	0.1450	0.4326	0.8650	0.0007	0.0734	59.0	0.0131
	175	0.1748	0.6399	1.4195	0.0012	0.0748	108	0.0158
	250	0.1867	0.5391	1.9194	0.0017	0.0729	153	0.0168
	500	0.2375	1.0016	2.4749	0.0022	0.0933	219	0.0214
Rollers Total		0.1410	0.4419	0.9073	0.0008	0.0629	67.1	0.0127
Rough Terrain Fort	50	0.2019	0.4635	0.3746	0.0004	0.0452	33.9	0.0182
	120	0.1508	0.4598	0.8819	0.0007	0.0798	62.4	0.0136
	175	0.1981	0.7390	1.5699	0.0014	0.0871	125	0.0179
	250	0.1880	0.5203	2.0303	0.0019	0.0716	171	0.0170
	500	0.2518	0.8995	2.6920	0.0025	0.0973	257	0.0227
Rough Terrain Forklifts Total		0.1576	0.4928	0.9631	0.0008	0.0800	70.3	0.0142
Rubber Tired Doze	175	0.2712	0.8964	2.0450	0.0015	0.1164	129	0.0245
	250	0.3139	0.8843	2.8004	0.0021	0.1236	183	0.0283
	500	0.4045	2.1197	3.6630	0.0026	0.1563	265	0.0365
	750	0.6094	3.1710	5.5926	0.0040	0.2361	399	0.0550
	1000	0.9543	5.0610	9.2959	0.0060	0.3417	592	0.0861
Rubber Tired Dozers Total		0.3789	1.6950	3.4143	0.0025	0.1474	239	0.0342
Rubber Tired Load	25	0.0221	0.0708	0.1440	0.0002	0.0092	16.9	0.0020
	50	0.1938	0.4399	0.3495	0.0004	0.0427	31.1	0.0175
	120	0.1480	0.4419	0.8601	0.0007	0.0775	58.9	0.0134
	175	0.1759	0.6425	1.3849	0.0012	0.0769	106	0.0159
	250	0.1781	0.4959	1.8452	0.0017	0.0684	149	0.0161
	500	0.2528	0.9705	2.6039	0.0023	0.0977	237	0.0228
	750	0.5240	1.9793	5.4711	0.0049	0.2022	486	0.0473
	1000	0.7317	2.8295	8.0073	0.0060	0.2487	594	0.0660
Rubber Tired Loaders Total		0.1730	0.5552	1.3821	0.0012	0.0768	109	0.0156
Scrapers	120	0.2643	0.7453	1.5133	0.0011	0.1342	93.9	0.0238
	175	0.2768	0.9565	2.1368	0.0017	0.1199	148	0.0250
	250	0.3046	0.8606	2.9011	0.0024	0.1195	209	0.0275
	500	0.4168	1.9484	4.0046	0.0032	0.1622	321	0.0376
	750	0.7239	3.3467	7.0442	0.0056	0.2818	555	0.0653
Scrapers Total		0.3677	1.5249	3.3991	0.0027	0.1465	263	0.0332
Signal Boards	15	0.0072	0.0377	0.0453	0.0001	0.0033	6.2	0.0007
	50	0.1740	0.4062	0.3843	0.0005	0.0411	36.2	0.0157
	120	0.1772	0.5523	1.0878	0.0009	0.0884	80.2	0.0160
	175	0.2227	0.8540	1.8787	0.0017	0.0939	155	0.0201
	250	0.2504	0.7317	2.9189	0.0029	0.0951	255	0.0226
Signal Boards Total		0.0254	0.0972	0.1806	0.0002	0.0115	16.7	0.0023
Skid Steer Loaders	25	0.0315	0.0814	0.1358	0.0002	0.0100	13.8	0.0028
	50	0.1126	0.2842	0.2606	0.0003	0.0282	25.5	0.0102
	120	0.0840	0.2923	0.5256	0.0005	0.0455	42.8	0.0076
Skid Steer Loaders Total		0.0981	0.2735	0.3375	0.0004	0.0326	30.3	0.0089
Surfacing Equipme	50	0.0708	0.1644	0.1519	0.0002	0.0165	14.1	0.0064
	120	0.1455	0.4496	0.9017	0.0007	0.0718	63.8	0.0131
	175	0.1281	0.4896	1.0832	0.0010	0.0539	85.8	0.0116
	250	0.1521	0.4563	1.6282	0.0015	0.0589	135	0.0137
	500	0.2227	0.9888	2.4265	0.0022	0.0873	221	0.0201
	750	0.3558	1.5437	3.8879	0.0035	0.1379	347	0.0321
Surfacing Equipment Total		0.1864	0.7654	1.8498	0.0017	0.0712	166	0.0168

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Sweepers/Scrubbe	15	0.0125	0.0729	0.0878	0.0002	0.0064	11.9	0.0011
	25	0.0251	0.0821	0.1673	0.0002	0.0106	19.6	0.0023
	50	0.1973	0.4427	0.3522	0.0004	0.0434	31.6	0.0178
	120	0.1885	0.5540	1.0600	0.0009	0.1003	75.0	0.0170
	175	0.2297	0.8158	1.7675	0.0016	0.1010	139	0.0207
	250	0.1660	0.4343	1.9127	0.0018	0.0611	162	0.0150
Sweepers/Scrubbers Total		0.1963	0.5672	1.0277	0.0009	0.0819	78.5	0.0177
Tractors/Loaders/B	25	0.0254	0.0741	0.1443	0.0002	0.0095	15.9	0.0023
	50	0.1684	0.3985	0.3286	0.0004	0.0389	30.3	0.0152
	120	0.1179	0.3748	0.6979	0.0006	0.0635	51.7	0.0106
	175	0.1513	0.5918	1.2085	0.0011	0.0672	101	0.0137
	250	0.1714	0.4715	1.9310	0.0019	0.0643	172	0.0155
	500	0.3074	1.0278	3.3772	0.0039	0.1177	345	0.0277
	750	0.4689	1.5370	5.2373	0.0058	0.1793	517	0.0423
Tractors/Loaders/Backhoes Total		0.1307	0.4142	0.8303	0.0008	0.0639	66.8	0.0118
Trenchers	15	0.0099	0.0517	0.0622	0.0001	0.0046	8.5	0.0009
	25	0.0429	0.1377	0.2800	0.0004	0.0179	32.9	0.0039
	50	0.2110	0.4651	0.3764	0.0004	0.0454	32.9	0.0190
	120	0.1767	0.5030	1.0427	0.0008	0.0868	64.9	0.0159
	175	0.2602	0.9129	2.0726	0.0016	0.1109	144	0.0235
	250	0.3246	0.9471	3.0938	0.0025	0.1293	223	0.0293
	500	0.4018	2.0679	3.9323	0.0031	0.1591	311	0.0363
	750	0.7640	3.8743	7.5254	0.0059	0.3008	587	0.0689
Trenchers Total		0.1942	0.5171	0.8578	0.0007	0.0714	58.7	0.0175
Welders	15	0.0140	0.0463	0.0798	0.0001	0.0061	6.2	0.0013
	25	0.0294	0.0730	0.1151	0.0001	0.0088	11.3	0.0026
	50	0.1392	0.3169	0.2825	0.0003	0.0317	26.0	0.0126
	120	0.0931	0.2798	0.5556	0.0005	0.0468	39.5	0.0084
	175	0.1516	0.5570	1.2432	0.0011	0.0642	98.2	0.0137
	250	0.1264	0.3603	1.4180	0.0013	0.0481	119	0.0114
	500	0.1582	0.6316	1.8085	0.0016	0.0615	168	0.0143
Welders Total		0.0917	0.2336	0.3191	0.0003	0.0297	25.6	0.0083

SCAB Fleet Average Emission Factors (Diesel)

2008

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0113	0.0534	0.0736	0.0001	0.0048	8.7	0.0010
	25	0.0249	0.0644	0.1073	0.0001	0.0077	11.0	0.0022
	50	0.0833	0.2011	0.2037	0.0003	0.0203	19.6	0.0075
	120	0.0781	0.2542	0.4910	0.0004	0.0386	38.1	0.0070
	500	0.1719	0.6822	2.1178	0.0021	0.0668	213	0.0155
	750	0.3198	1.2331	3.9213	0.0039	0.1223	385	0.0289
Aerial Lifts Total		0.0746	0.2200	0.3885	0.0004	0.0269	34.7	0.0067
Air Compressors	15	0.0157	0.0530	0.0899	0.0001	0.0068	7.2	0.0014
	25	0.0359	0.0905	0.1448	0.0002	0.0108	14.4	0.0032
	50	0.1265	0.2903	0.2442	0.0003	0.0283	22.3	0.0114
	120	0.1112	0.3395	0.6505	0.0006	0.0578	47.0	0.0100
	175	0.1383	0.5136	1.1024	0.0010	0.0600	88.5	0.0125
	250	0.1381	0.3847	1.5340	0.0015	0.0525	131	0.0125
	500	0.2172	0.8107	2.4338	0.0023	0.0844	232	0.0196
	750	0.3420	1.2529	3.8533	0.0036	0.1321	358	0.0309
	1000	0.5751	2.1596	6.3733	0.0049	0.1969	486	0.0519
Air Compressors Total		0.1232	0.3782	0.7980	0.0007	0.0563	63.6	0.0111
Bore/Drill Rigs	15	0.0122	0.0632	0.0767	0.0002	0.0047	10.3	0.0011
	25	0.0210	0.0674	0.1343	0.0002	0.0080	16.0	0.0019
	50	0.0813	0.2734	0.2898	0.0004	0.0253	31.0	0.0073
	120	0.1021	0.4934	0.7562	0.0009	0.0597	77.1	0.0092
	175	0.1203	0.7541	1.1469	0.0016	0.0585	141	0.0109
	250	0.1055	0.3502	1.4604	0.0021	0.0409	188	0.0095
	500	0.1566	0.5631	2.0226	0.0031	0.0640	311	0.0141
	750	0.3207	1.1127	4.1945	0.0062	0.1297	615	0.0289
	1000	0.6291	1.8100	9.2766	0.0093	0.2299	928	0.0568
Bore/Drill Rigs Total		0.1295	0.5281	1.3416	0.0017	0.0591	165	0.0117
Cement and Morta	15	0.0087	0.0394	0.0562	0.0001	0.0037	6.3	0.0008
	25	0.0402	0.1038	0.1722	0.0002	0.0125	17.6	0.0036
Cement and Mortar Mixers Total		0.0113	0.0447	0.0658	0.0001	0.0044	7.2	0.0010
Concrete/Industrial	25	0.0206	0.0681	0.1344	0.0002	0.0079	16.5	0.0019
	50	0.1418	0.3412	0.3179	0.0004	0.0335	30.2	0.0128
	120	0.1545	0.5088	0.9632	0.0009	0.0792	74.1	0.0139
	175	0.2192	0.8877	1.8557	0.0018	0.0944	160	0.0198
Concrete/Industrial Saws Total		0.1460	0.4411	0.7263	0.0007	0.0610	58.5	0.0132
Cranes	50	0.1466	0.3359	0.2624	0.0003	0.0320	23.2	0.0132
	120	0.1261	0.3807	0.7275	0.0006	0.0664	50.1	0.0114
	175	0.1345	0.4936	1.0417	0.0009	0.0589	80.3	0.0121
	250	0.1392	0.3881	1.3867	0.0013	0.0535	112	0.0126
	500	0.2012	0.7762	1.9878	0.0018	0.0771	180	0.0182
	750	0.3409	1.3011	3.4224	0.0030	0.1310	303	0.0308
	9999	1.2096	4.8072	13.0905	0.0098	0.4143	971	0.1091
Cranes Total		0.1778	0.6011	1.6100	0.0014	0.0715	129	0.0160
Crawler Tractors	50	0.1635	0.3714	0.2856	0.0003	0.0352	24.9	0.0148
	120	0.1743	0.5147	1.0019	0.0008	0.0901	65.8	0.0157
	175	0.2146	0.7734	1.6473	0.0014	0.0937	121	0.0194
	250	0.2263	0.6360	2.1648	0.0019	0.0880	166	0.0204
	500	0.3175	1.4050	3.0311	0.0025	0.1222	259	0.0286
	750	0.5713	2.5044	5.5421	0.0047	0.2205	465	0.0516
	1000	0.8802	3.9537	9.2252	0.0066	0.3088	658	0.0794
Crawler Tractors Total		0.2068	0.6843	1.5395	0.0013	0.0943	114	0.0187

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Crushing/Proc. Equ	50	0.2519	0.5828	0.4821	0.0006	0.0563	44.0	0.0227
	120	0.1955	0.6048	1.1410	0.0010	0.1031	83.1	0.0176
	175	0.2596	0.9790	2.0557	0.0019	0.1141	167	0.0234
	250	0.2529	0.7004	2.8190	0.0028	0.0959	245	0.0228
	500	0.3442	1.2591	3.8371	0.0037	0.1336	374	0.0311
	750	0.5502	1.9179	6.2394	0.0059	0.2117	589	0.0496
	9999	1.5285	5.5592	17.0748	0.0131	0.5223	1,308	0.1379
Crushing/Proc. Equipment Total		0.2385	0.7620	1.5831	0.0015	0.1012	132	0.0215
Dumpers/Tenders	25	0.0121	0.0356	0.0681	0.0001	0.0043	7.6	0.0011
Dumpers/Tenders Total		0.0121	0.0356	0.0681	0.0001	0.0043	7.6	0.0011
Excavators	25	0.0201	0.0677	0.1291	0.0002	0.0077	16.4	0.0018
	50	0.1381	0.3393	0.2727	0.0003	0.0319	25.0	0.0125
	120	0.1649	0.5437	0.9632	0.0009	0.0902	73.6	0.0149
	175	0.1674	0.6735	1.2913	0.0013	0.0748	112	0.0151
	250	0.1620	0.4374	1.7260	0.0018	0.0596	159	0.0146
	500	0.2175	0.7092	2.2162	0.0023	0.0803	234	0.0196
	750	0.3637	1.1724	3.7953	0.0039	0.1352	387	0.0328
Excavators Total		0.1695	0.5828	1.3249	0.0013	0.0727	120	0.0153
Forklifts	50	0.0846	0.2020	0.1603	0.0002	0.0192	14.7	0.0076
	120	0.0724	0.2304	0.4055	0.0004	0.0402	31.2	0.0065
	175	0.0867	0.3326	0.6493	0.0006	0.0391	56.1	0.0078
	250	0.0716	0.1822	0.8315	0.0009	0.0254	77.1	0.0065
	500	0.0937	0.2573	1.0380	0.0011	0.0340	111	0.0085
Forklifts Total		0.0799	0.2422	0.5982	0.0006	0.0324	54.4	0.0072
Generator Sets	15	0.0189	0.0749	0.1237	0.0002	0.0077	10.2	0.0017
	25	0.0332	0.1105	0.1767	0.0002	0.0118	17.6	0.0030
	50	0.1238	0.3024	0.3155	0.0004	0.0307	30.6	0.0112
	120	0.1558	0.5141	0.9918	0.0009	0.0767	77.9	0.0141
	175	0.1854	0.7531	1.6223	0.0016	0.0771	142	0.0167
	250	0.1859	0.5644	2.2800	0.0024	0.0697	213	0.0168
	500	0.2648	1.0375	3.3136	0.0033	0.1028	337	0.0239
	750	0.4404	1.6748	5.4793	0.0055	0.1680	544	0.0397
	9999	1.1329	4.1271	12.8919	0.0105	0.3964	1,049	0.1022
Generator Sets Total		0.1075	0.3461	0.6980	0.0007	0.0430	61.0	0.0097
Graders	50	0.1622	0.3813	0.3051	0.0004	0.0362	27.5	0.0146
	120	0.1780	0.5585	1.0405	0.0009	0.0948	75.0	0.0161
	175	0.1956	0.7486	1.5300	0.0014	0.0864	124	0.0176
	250	0.1966	0.5482	2.0220	0.0019	0.0751	172	0.0177
	500	0.2360	0.8828	2.3908	0.0023	0.0904	229	0.0213
	750	0.5040	1.8609	5.1931	0.0049	0.1935	486	0.0455
Graders Total		0.1936	0.6561	1.6191	0.0015	0.0840	133	0.0175
Off-Highway Tracto	120	0.2703	0.7625	1.5479	0.0011	0.1355	93.7	0.0244
	175	0.2532	0.8741	1.9339	0.0015	0.1094	130	0.0228
	250	0.2053	0.5852	1.8670	0.0015	0.0812	130	0.0185
	750	0.8003	4.0720	7.4850	0.0057	0.3122	568	0.0722
	1000	1.2211	6.3076	12.1964	0.0082	0.4364	814	0.1102
Off-Highway Tractors Total		0.2578	0.8959	2.1767	0.0017	0.1061	151	0.0233
Off-Highway Truck	175	0.1962	0.7669	1.4779	0.0014	0.0867	125	0.0177
	250	0.1822	0.4799	1.8617	0.0019	0.0659	167	0.0164
	500	0.2727	0.8739	2.6600	0.0027	0.0984	272	0.0246
	750	0.4454	1.4136	4.4516	0.0044	0.1621	442	0.0402
	1000	0.7106	2.4058	7.9819	0.0063	0.2445	625	0.0641
Off-Highway Trucks Total		0.2730	0.8499	2.7256	0.0027	0.0989	260	0.0246

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Other Construction	15	0.0119	0.0617	0.0750	0.0002	0.0046	10.1	0.0011
	25	0.0174	0.0557	0.1110	0.0002	0.0066	13.2	0.0016
	50	0.1244	0.3144	0.2884	0.0004	0.0303	28.0	0.0112
	120	0.1570	0.5538	0.9885	0.0009	0.0842	80.9	0.0142
	175	0.1356	0.5932	1.1451	0.0012	0.0606	107	0.0122
	500	0.1944	0.7066	2.2771	0.0025	0.0770	254	0.0175
Other Construction Equipment To		0.1215	0.4504	1.1575	0.0013	0.0503	123	0.0110
Other General Indu	15	0.0066	0.0391	0.0466	0.0001	0.0026	6.4	0.0006
	25	0.0188	0.0632	0.1207	0.0002	0.0072	15.3	0.0017
	50	0.1421	0.3211	0.2473	0.0003	0.0308	21.7	0.0128
	120	0.1605	0.4723	0.8979	0.0007	0.0854	62.0	0.0145
	175	0.1647	0.5860	1.2490	0.0011	0.0726	95.9	0.0149
	250	0.1553	0.4131	1.6545	0.0015	0.0579	136	0.0140
	500	0.2735	0.9583	2.8780	0.0026	0.1032	265	0.0247
	750	0.4552	1.5794	4.8663	0.0044	0.1724	437	0.0411
	1000	0.6979	2.5724	7.5922	0.0056	0.2387	560	0.0630
Other General Industrial Equipme		0.2025	0.6617	1.8248	0.0016	0.0815	152	0.0183
Other Material Han	50	0.1961	0.4431	0.3438	0.0004	0.0426	30.3	0.0177
	120	0.1558	0.4596	0.8749	0.0007	0.0827	60.7	0.0141
	175	0.2078	0.7420	1.5840	0.0014	0.0915	122	0.0188
	250	0.1646	0.4403	1.7636	0.0016	0.0616	145	0.0149
	500	0.1952	0.6904	2.0733	0.0019	0.0741	192	0.0176
	9999	0.9197	3.4021	10.0283	0.0073	0.3143	741	0.0830
Other Material Handling Equipme		0.1952	0.6041	1.7655	0.0015	0.0786	141	0.0176
Pavers	25	0.0329	0.0930	0.1706	0.0002	0.0112	18.7	0.0030
	50	0.1797	0.4041	0.3191	0.0004	0.0386	28.0	0.0162
	120	0.1823	0.5356	1.0659	0.0008	0.0924	69.2	0.0164
	175	0.2253	0.8121	1.7679	0.0014	0.0977	128	0.0203
	250	0.2693	0.7767	2.5756	0.0022	0.1066	194	0.0243
	500	0.2880	1.3755	2.7966	0.0023	0.1134	233	0.0260
Pavers Total		0.1963	0.5874	1.0796	0.0009	0.0769	77.9	0.0177
Paving Equipment	25	0.0166	0.0532	0.1061	0.0002	0.0063	12.6	0.0015
	50	0.1525	0.3426	0.2722	0.0003	0.0328	23.9	0.0138
	120	0.1425	0.4189	0.8352	0.0006	0.0721	54.5	0.0129
	175	0.1757	0.6336	1.3860	0.0011	0.0760	101	0.0159
	250	0.1678	0.4852	1.6129	0.0014	0.0665	122	0.0151
Paving Equipment Total		0.1479	0.4616	0.9857	0.0008	0.0681	69.0	0.0133
Plate Compactors	15	0.0052	0.0263	0.0328	0.0001	0.0021	4.3	0.0005
Plate Compactors Total		0.0052	0.0263	0.0328	0.0001	0.0021	4.3	0.0005
Pressure Washers	15	0.0091	0.0359	0.0592	0.0001	0.0037	4.9	0.0008
	25	0.0135	0.0448	0.0717	0.0001	0.0048	7.1	0.0012
	50	0.0466	0.1197	0.1429	0.0002	0.0126	14.3	0.0042
	120	0.0438	0.1514	0.2928	0.0003	0.0209	24.1	0.0040
Pressure Washers Total		0.0223	0.0692	0.1049	0.0001	0.0077	9.4	0.0020
Pumps	15	0.0161	0.0545	0.0924	0.0001	0.0070	7.4	0.0015
	25	0.0485	0.1221	0.1954	0.0002	0.0146	19.5	0.0044
	50	0.1479	0.3563	0.3574	0.0004	0.0359	34.3	0.0133
	120	0.1605	0.5221	1.0065	0.0009	0.0798	77.9	0.0145
	175	0.1888	0.7547	1.6251	0.0016	0.0792	140	0.0170
	250	0.1823	0.5452	2.1931	0.0023	0.0688	201	0.0165
	500	0.2801	1.1093	3.4347	0.0034	0.1090	345	0.0253
	750	0.4762	1.8340	5.8162	0.0057	0.1825	571	0.0430
	9999	1.4880	5.5294	16.8363	0.0136	0.5197	1,355	0.1343
Pumps Total		0.1040	0.3194	0.5999	0.0006	0.0424	49.6	0.0094

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Rollers	15	0.0074	0.0386	0.0469	0.0001	0.0029	6.3	0.0007
	25	0.0175	0.0562	0.1121	0.0002	0.0067	13.3	0.0016
	50	0.1438	0.3348	0.2839	0.0003	0.0323	26.0	0.0130
	120	0.1363	0.4271	0.8203	0.0007	0.0703	59.0	0.0123
	175	0.1653	0.6345	1.3433	0.0012	0.0717	108	0.0149
	250	0.1750	0.5083	1.8153	0.0017	0.0684	153	0.0158
	500	0.2235	0.9142	2.3380	0.0022	0.0880	219	0.0202
Rollers Total		0.1328	0.4341	0.8607	0.0008	0.0601	67.1	0.0120
Rough Terrain Fork	50	0.1873	0.4479	0.3678	0.0004	0.0427	33.9	0.0169
	120	0.1404	0.4543	0.8292	0.0007	0.0757	62.4	0.0127
	175	0.1859	0.7353	1.4705	0.0014	0.0829	125	0.0168
	250	0.1745	0.4855	1.9002	0.0019	0.0661	171	0.0157
	500	0.2357	0.8189	2.5155	0.0025	0.0905	257	0.0213
Rough Terrain Forklifts Total		0.1469	0.4869	0.9051	0.0008	0.0759	70.3	0.0133
Rubber Tired Doze	175	0.2603	0.8866	1.9566	0.0015	0.1120	129	0.0235
	250	0.3011	0.8463	2.6790	0.0021	0.1179	183	0.0272
	500	0.3895	1.9869	3.5050	0.0026	0.1495	265	0.0351
	750	0.5869	2.9735	5.3537	0.0040	0.2260	399	0.0530
	1000	0.9153	4.7521	9.0204	0.0060	0.3279	592	0.0826
Rubber Tired Dozers Total		0.3644	1.5961	3.2672	0.0025	0.1409	239	0.0329
Rubber Tired Load	25	0.0212	0.0699	0.1381	0.0002	0.0082	16.9	0.0019
	50	0.1812	0.4267	0.3437	0.0004	0.0406	31.1	0.0163
	120	0.1384	0.4364	0.8116	0.0007	0.0737	58.9	0.0125
	175	0.1659	0.6383	1.3029	0.0012	0.0733	106	0.0150
	250	0.1674	0.4680	1.7361	0.0017	0.0640	149	0.0151
	500	0.2394	0.8884	2.4484	0.0023	0.0919	237	0.0216
	750	0.4955	1.8129	5.1493	0.0049	0.1905	486	0.0447
	1000	0.6887	2.5959	7.7048	0.0060	0.2364	594	0.0621
Rubber Tired Loaders Total		0.1626	0.5369	1.3014	0.0012	0.0728	109	0.0147
Scrapers	120	0.2502	0.7352	1.4405	0.0011	0.1289	93.9	0.0226
	175	0.2636	0.9463	2.0299	0.0017	0.1150	148	0.0238
	250	0.2889	0.8161	2.7553	0.0024	0.1128	209	0.0261
	500	0.3979	1.7915	3.8004	0.0032	0.1538	321	0.0359
	750	0.6903	3.0787	6.6917	0.0056	0.2675	555	0.0623
Scrapers Total		0.3505	1.4219	3.2269	0.0027	0.1391	263	0.0316
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0025	6.2	0.0006
	50	0.1661	0.3989	0.3791	0.0005	0.0396	36.2	0.0150
	120	0.1679	0.5473	1.0392	0.0009	0.0854	80.2	0.0151
	175	0.2118	0.8499	1.7913	0.0017	0.0908	155	0.0191
	250	0.2346	0.6902	2.7794	0.0029	0.0895	255	0.0212
Signal Boards Total		0.0244	0.0965	0.1739	0.0002	0.0104	16.7	0.0022
Skid Steer Loaders	25	0.0292	0.0774	0.1321	0.0002	0.0093	13.8	0.0026
	50	0.1007	0.2724	0.2552	0.0003	0.0259	25.5	0.0091
	120	0.0756	0.2886	0.4848	0.0005	0.0421	42.8	0.0068
Skid Steer Loaders Total		0.0879	0.2647	0.3209	0.0004	0.0300	30.3	0.0079
Surfacing Equipme	50	0.0668	0.1602	0.1495	0.0002	0.0157	14.1	0.0060
	120	0.1362	0.4436	0.8544	0.0007	0.0686	63.8	0.0123
	175	0.1206	0.4852	1.0245	0.0010	0.0516	85.8	0.0109
	250	0.1424	0.4314	1.5397	0.0015	0.0555	135	0.0129
	500	0.2091	0.9084	2.2929	0.0022	0.0826	221	0.0189
	750	0.3341	1.4188	3.6763	0.0035	0.1305	347	0.0301
Surfacing Equipment Total		0.1751	0.7086	1.7497	0.0017	0.0674	166	0.0158
Sweepers/Scrubbe	15	0.0124	0.0729	0.0870	0.0002	0.0049	11.9	0.0011
	25	0.0245	0.0811	0.1604	0.0002	0.0095	19.6	0.0022
	50	0.1831	0.4265	0.3449	0.0004	0.0410	31.6	0.0165
	120	0.1758	0.5472	0.9960	0.0009	0.0956	75.0	0.0159
	175	0.2154	0.8121	1.6539	0.0016	0.0964	139	0.0194
	250	0.1512	0.3965	1.7857	0.0018	0.0552	162	0.0136
Sweepers/Scrubbers Total		0.1830	0.5575	0.9678	0.0009	0.0778	78.5	0.0165

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Tractors/Loaders/B	25	0.0237	0.0716	0.1396	0.0002	0.0086	15.9	0.0021
	50	0.1537	0.3831	0.3222	0.0004	0.0362	30.3	0.0139
	120	0.1083	0.3703	0.6510	0.0006	0.0595	51.7	0.0098
	175	0.1405	0.5903	1.1212	0.0011	0.0634	101	0.0127
	250	0.1598	0.4453	1.7937	0.0019	0.0598	172	0.0144
	500	0.2897	0.9591	3.1387	0.0039	0.1102	345	0.0261
	750	0.4409	1.4353	4.8706	0.0058	0.1681	517	0.0398
Tractors/Loaders/Backhoes Total		0.1204	0.4063	0.7746	0.0008	0.0599	66.8	0.0109
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0034	8.5	0.0009
	25	0.0412	0.1360	0.2685	0.0004	0.0159	32.9	0.0037
	50	0.2019	0.4556	0.3714	0.0004	0.0438	32.9	0.0182
	120	0.1678	0.4963	0.9961	0.0008	0.0837	64.9	0.0151
	175	0.2480	0.9026	1.9770	0.0016	0.1068	144	0.0224
	250	0.3077	0.9009	2.9500	0.0025	0.1227	223	0.0278
	500	0.3821	1.9131	3.7465	0.0031	0.1515	311	0.0345
	750	0.7263	3.5858	7.1748	0.0059	0.2867	587	0.0655
Trenchers Total		0.1851	0.5080	0.8237	0.0007	0.0688	58.7	0.0167
Welders	15	0.0135	0.0456	0.0772	0.0001	0.0058	6.2	0.0012
	25	0.0281	0.0707	0.1131	0.0001	0.0085	11.3	0.0025
	50	0.1344	0.3128	0.2792	0.0003	0.0308	26.0	0.0121
	120	0.0891	0.2778	0.5338	0.0005	0.0456	39.5	0.0080
	175	0.1456	0.5548	1.1927	0.0011	0.0625	98.2	0.0131
	250	0.1192	0.3403	1.3579	0.0013	0.0454	119	0.0108
	500	0.1495	0.5771	1.7272	0.0016	0.0583	168	0.0135
Welders Total		0.0882	0.2309	0.3102	0.0003	0.0288	25.6	0.0080

SCAB Fleet Average Emission Factors (Diesel)

2009

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0108	0.0530	0.0695	0.0001	0.0042	8.7	0.0010
	25	0.0229	0.0610	0.1043	0.0001	0.0071	11.0	0.0021
	50	0.0798	0.1979	0.2013	0.0003	0.0197	19.6	0.0072
	120	0.0743	0.2523	0.4715	0.0004	0.0375	38.1	0.0067
	500	0.1617	0.6308	2.0224	0.0021	0.0634	213	0.0146
	750	0.3008	1.1402	3.7474	0.0039	0.1162	385	0.0271
Aerial Lifts Total		0.0710	0.2149	0.3748	0.0004	0.0259	34.7	0.0064
Air Compressors	15	0.0151	0.0522	0.0870	0.0001	0.0064	7.2	0.0014
	25	0.0343	0.0877	0.1423	0.0002	0.0104	14.4	0.0031
	50	0.1220	0.2867	0.2416	0.0003	0.0275	22.3	0.0110
	120	0.1066	0.3375	0.6253	0.0006	0.0563	47.0	0.0096
	175	0.1331	0.5126	1.0574	0.0010	0.0586	88.5	0.0120
	250	0.1305	0.3633	1.4688	0.0015	0.0495	131	0.0118
	500	0.2061	0.7427	2.3237	0.0023	0.0800	232	0.0186
	750	0.3242	1.1478	3.6824	0.0036	0.1253	358	0.0293
	1000	0.5489	2.0084	6.2090	0.0049	0.1891	486	0.0495
Air Compressors Total		0.1180	0.3699	0.7664	0.0007	0.0547	63.6	0.0106
Bore/Drill Rigs	15	0.0121	0.0632	0.0757	0.0002	0.0038	10.3	0.0011
	25	0.0202	0.0664	0.1296	0.0002	0.0072	16.0	0.0018
	50	0.0670	0.2612	0.2855	0.0004	0.0222	31.0	0.0060
	120	0.0859	0.4868	0.6810	0.0009	0.0522	77.1	0.0078
	175	0.1052	0.7542	1.0211	0.0016	0.0528	141	0.0095
	250	0.0999	0.3479	1.3113	0.0021	0.0395	188	0.0090
	500	0.1520	0.5595	1.8467	0.0031	0.0625	311	0.0137
	750	0.3086	1.1055	3.8040	0.0062	0.1260	615	0.0278
	1000	0.5756	1.7291	8.7661	0.0093	0.2164	928	0.0519
Bore/Drill Rigs Total		0.1162	0.5200	1.2287	0.0017	0.0541	165	0.0105
Cement and Morta	15	0.0082	0.0391	0.0532	0.0001	0.0033	6.3	0.0007
	25	0.0374	0.0991	0.1678	0.0002	0.0116	17.6	0.0034
Cement and Mortar Mixers Total		0.0107	0.0440	0.0626	0.0001	0.0040	7.2	0.0010
Concrete/Industrial	25	0.0202	0.0678	0.1295	0.0002	0.0071	16.5	0.0018
	50	0.1324	0.3310	0.3123	0.0004	0.0318	30.2	0.0119
	120	0.1441	0.5029	0.9105	0.0009	0.0755	74.1	0.0130
	175	0.2056	0.8827	1.7484	0.0018	0.0903	160	0.0185
Concrete/Industrial Saws Total		0.1363	0.4340	0.6906	0.0007	0.0581	58.5	0.0123
Cranes	50	0.1375	0.3262	0.2584	0.0003	0.0304	23.2	0.0124
	120	0.1187	0.3763	0.6901	0.0006	0.0633	50.1	0.0107
	175	0.1276	0.4905	0.9849	0.0009	0.0564	80.3	0.0115
	250	0.1314	0.3664	1.3105	0.0013	0.0501	112	0.0119
	500	0.1913	0.7157	1.8770	0.0018	0.0726	180	0.0173
	750	0.3237	1.2002	3.2349	0.0030	0.1235	303	0.0292
	9999	1.1477	4.4498	12.6411	0.0098	0.3962	971	0.1036
Cranes Total		0.1683	0.5705	1.5293	0.0014	0.0678	129	0.0152

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Crawler Tractors	50	0.1541	0.3617	0.2817	0.0003	0.0337	24.9	0.0139
	120	0.1645	0.5080	0.9519	0.0008	0.0860	65.8	0.0148
	175	0.2041	0.7662	1.5613	0.0014	0.0896	121	0.0184
	250	0.2152	0.6039	2.0519	0.0019	0.0830	166	0.0194
	500	0.3038	1.2939	2.8737	0.0025	0.1159	259	0.0274
	750	0.5465	2.3076	5.2572	0.0047	0.2093	465	0.0493
	1000	0.8377	3.6498	8.9128	0.0066	0.2944	658	0.0756
Crawler Tractors Total		0.1961	0.6616	1.4607	0.0013	0.0898	114	0.0177
Crushing/Proc. Equ	50	0.2406	0.5726	0.4764	0.0006	0.0543	44.0	0.0217
	120	0.1861	0.6005	1.0910	0.0010	0.0998	83.1	0.0168
	175	0.2486	0.9765	1.9608	0.0019	0.1107	167	0.0224
	250	0.2387	0.6612	2.6857	0.0028	0.0900	245	0.0215
	500	0.3267	1.1528	3.6473	0.0037	0.1263	374	0.0295
	750	0.5231	1.7650	5.9509	0.0059	0.2011	589	0.0472
	9999	1.4578	5.1762	16.6062	0.0131	0.5019	1,308	0.1315
Crushing/Proc. Equipment Total		0.2274	0.7440	1.5130	0.0015	0.0976	132	0.0205
Dumpers/Tenders	25	0.0114	0.0345	0.0662	0.0001	0.0039	7.6	0.0010
Dumpers/Tenders Total		0.0114	0.0345	0.0662	0.0001	0.0039	7.6	0.0010
Excavators	25	0.0200	0.0677	0.1272	0.0002	0.0066	16.4	0.0018
	50	0.1254	0.3265	0.2680	0.0003	0.0297	25.0	0.0113
	120	0.1519	0.5375	0.8996	0.0009	0.0841	73.6	0.0137
	175	0.1564	0.6716	1.1993	0.0013	0.0704	112	0.0141
	250	0.1529	0.4138	1.6049	0.0018	0.0555	159	0.0138
	500	0.2072	0.6595	2.0656	0.0023	0.0754	234	0.0187
	750	0.3462	1.0908	3.5375	0.0039	0.1270	387	0.0312
Excavators Total		0.1584	0.5697	1.2340	0.0013	0.0681	120	0.0143
Forklifts	50	0.0756	0.1921	0.1566	0.0002	0.0178	14.7	0.0068
	120	0.0662	0.2272	0.3757	0.0004	0.0373	31.2	0.0060
	175	0.0802	0.3314	0.6006	0.0006	0.0364	56.1	0.0072
	250	0.0681	0.1759	0.7730	0.0009	0.0240	77.1	0.0061
	500	0.0900	0.2438	0.9629	0.0011	0.0323	111	0.0081
Forklifts Total		0.0741	0.2366	0.5560	0.0006	0.0302	54.4	0.0067
Generator Sets	15	0.0181	0.0738	0.1197	0.0002	0.0073	10.2	0.0016
	25	0.0316	0.1070	0.1737	0.0002	0.0113	17.6	0.0029
	50	0.1182	0.2970	0.3115	0.0004	0.0296	30.6	0.0107
	120	0.1479	0.5099	0.9509	0.0009	0.0742	77.9	0.0133
	175	0.1767	0.7500	1.5523	0.0016	0.0747	142	0.0159
	250	0.1741	0.5333	2.1787	0.0024	0.0658	213	0.0157
	500	0.2480	0.9606	3.1592	0.0033	0.0974	337	0.0224
	750	0.4126	1.5508	5.2278	0.0055	0.1593	544	0.0372
	9999	1.0732	3.8648	12.5361	0.0105	0.3786	1,049	0.0968
Generator Sets Total		0.1020	0.3378	0.6718	0.0007	0.0414	61.0	0.0092
Graders	50	0.1511	0.3698	0.3004	0.0004	0.0343	27.5	0.0136
	120	0.1663	0.5519	0.9819	0.0009	0.0898	75.0	0.0150
	175	0.1846	0.7443	1.4391	0.0014	0.0823	124	0.0167
	250	0.1857	0.5191	1.9027	0.0019	0.0705	172	0.0168
	500	0.2248	0.8113	2.2502	0.0023	0.0853	229	0.0203
	750	0.4795	1.7113	4.8918	0.0049	0.1828	486	0.0433
Graders Total		0.1825	0.6428	1.5237	0.0015	0.0796	133	0.0165
Off-Highway Tracto	120	0.2579	0.7530	1.4831	0.0011	0.1306	93.7	0.0233
	175	0.2427	0.8648	1.8490	0.0015	0.1054	130	0.0219
	250	0.1964	0.5593	1.7848	0.0015	0.0773	130	0.0177
	750	0.7691	3.8033	7.1583	0.0057	0.2985	568	0.0694
	1000	1.1692	5.9006	11.8314	0.0082	0.4183	814	0.1055
Off-Highway Tractors Total		0.2470	0.8664	2.0818	0.0017	0.1017	151	0.0223

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Off-Highway Trucks	175	0.1842	0.7645	1.3750	0.0014	0.0817	125	0.0166
	250	0.1725	0.4534	1.7336	0.0019	0.0614	167	0.0156
	500	0.2602	0.8103	2.4818	0.0027	0.0925	272	0.0235
	750	0.4248	1.3113	4.1542	0.0044	0.1523	442	0.0383
	1000	0.6754	2.2246	7.6544	0.0063	0.2328	625	0.0609
Off-Highway Trucks Total		0.2597	0.7931	2.5505	0.0027	0.0929	260	0.0234
Other Construction	15	0.0118	0.0617	0.0739	0.0002	0.0037	10.1	0.0011
	25	0.0167	0.0549	0.1072	0.0002	0.0059	13.2	0.0015
	50	0.1136	0.3034	0.2833	0.0004	0.0283	28.0	0.0103
	120	0.1440	0.5475	0.9243	0.0009	0.0790	80.9	0.0130
	175	0.1258	0.5915	1.0659	0.0012	0.0573	107	0.0113
	500	0.1815	0.6528	2.1223	0.0025	0.0721	254	0.0164
Other Construction Equipment To		0.1130	0.4291	1.0812	0.0013	0.0471	123	0.0102
Other General Indu	15	0.0066	0.0391	0.0466	0.0001	0.0019	6.4	0.0006
	25	0.0187	0.0632	0.1189	0.0002	0.0062	15.3	0.0017
	50	0.1359	0.3152	0.2446	0.0003	0.0298	21.7	0.0123
	120	0.1537	0.4690	0.8620	0.0007	0.0828	62.0	0.0139
	175	0.1587	0.5841	1.1959	0.0011	0.0704	95.9	0.0143
	250	0.1479	0.3908	1.5819	0.0015	0.0546	136	0.0133
	500	0.2624	0.8792	2.7454	0.0026	0.0977	265	0.0237
	750	0.4361	1.4490	4.6469	0.0044	0.1635	437	0.0394
	1000	0.6693	2.3885	7.3897	0.0056	0.2304	560	0.0604
Other General Industrial Equipme		0.1941	0.6281	1.7488	0.0016	0.0779	152	0.0175
Other Material Han	50	0.1877	0.4353	0.3400	0.0004	0.0412	30.3	0.0169
	120	0.1493	0.4564	0.8402	0.0007	0.0803	60.7	0.0135
	175	0.2002	0.7397	1.5174	0.0014	0.0888	122	0.0181
	250	0.1567	0.4165	1.6870	0.0016	0.0580	145	0.0141
	500	0.1872	0.6333	1.9782	0.0019	0.0702	192	0.0169
	9999	0.8816	3.1586	9.7621	0.0073	0.3033	741	0.0795
Other Material Handling Equipme		0.1867	0.5801	1.6943	0.0015	0.0753	141	0.0168
Pavers	25	0.0294	0.0870	0.1646	0.0002	0.0100	18.7	0.0026
	50	0.1711	0.3951	0.3150	0.0004	0.0371	28.0	0.0154
	120	0.1728	0.5287	1.0165	0.0008	0.0889	69.2	0.0156
	175	0.2148	0.8036	1.6835	0.0014	0.0940	128	0.0194
	250	0.2554	0.7375	2.4518	0.0022	0.1008	194	0.0230
	500	0.2745	1.2660	2.6607	0.0023	0.1077	233	0.0248
Pavers Total		0.1867	0.5756	1.0321	0.0009	0.0739	77.9	0.0168
Paving Equipment	25	0.0159	0.0525	0.1024	0.0002	0.0057	12.6	0.0014
	50	0.1455	0.3352	0.2687	0.0003	0.0316	23.9	0.0131
	120	0.1352	0.4135	0.7968	0.0006	0.0695	54.5	0.0122
	175	0.1676	0.6268	1.3205	0.0011	0.0732	101	0.0151
	250	0.1589	0.4598	1.5357	0.0014	0.0627	122	0.0143
Paving Equipment Total		0.1405	0.4544	0.9400	0.0008	0.0655	68.9	0.0127
Plate Compactors	15	0.0051	0.0263	0.0321	0.0001	0.0018	4.3	0.0005
Plate Compactors Total		0.0051	0.0263	0.0321	0.0001	0.0018	4.3	0.0005
Pressure Washers	15	0.0087	0.0354	0.0573	0.0001	0.0035	4.9	0.0008
	25	0.0128	0.0434	0.0704	0.0001	0.0046	7.1	0.0012
	50	0.0441	0.1172	0.1409	0.0002	0.0120	14.3	0.0040
	120	0.0414	0.1501	0.2804	0.0003	0.0201	24.1	0.0037
Pressure Washers Total		0.0212	0.0680	0.1020	0.0001	0.0074	9.4	0.0019

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Pumps	15	0.0155	0.0537	0.0894	0.0001	0.0066	7.4	0.0014
	25	0.0462	0.1183	0.1920	0.0002	0.0140	19.5	0.0042
	50	0.1414	0.3503	0.3528	0.0004	0.0347	34.3	0.0128
	120	0.1526	0.5180	0.9654	0.0009	0.0773	77.9	0.0138
	175	0.1802	0.7518	1.5556	0.0016	0.0768	140	0.0163
	250	0.1710	0.5151	2.0962	0.0023	0.0649	201	0.0154
	500	0.2629	1.0240	3.2753	0.0034	0.1033	345	0.0237
	750	0.4471	1.6929	5.5506	0.0057	0.1730	571	0.0403
	9999	1.4110	5.1656	16.3756	0.0136	0.4965	1,355	0.1273
Pumps Total		0.0991	0.3147	0.5779	0.0006	0.0410	49.6	0.0089
Rollers	15	0.0074	0.0386	0.0462	0.0001	0.0023	6.3	0.0007
	25	0.0168	0.0554	0.1082	0.0002	0.0060	13.3	0.0015
	50	0.1354	0.3258	0.2795	0.0003	0.0307	26.0	0.0122
	120	0.1280	0.4221	0.7782	0.0007	0.0672	59.0	0.0115
	175	0.1563	0.6303	1.2709	0.0012	0.0687	108	0.0141
	250	0.1642	0.4800	1.7167	0.0017	0.0642	153	0.0148
	500	0.2105	0.8408	2.2093	0.0022	0.0830	219	0.0190
Rollers Total		0.1250	0.4272	0.8166	0.0008	0.0574	67.1	0.0113
Rough Terrain Fork	50	0.1730	0.4329	0.3615	0.0004	0.0402	33.9	0.0156
	120	0.1306	0.4493	0.7797	0.0007	0.0716	62.4	0.0118
	175	0.1746	0.7325	1.3765	0.0014	0.0788	125	0.0158
	250	0.1626	0.4544	1.7779	0.0019	0.0611	171	0.0147
	500	0.2217	0.7485	2.3512	0.0025	0.0843	257	0.0200
Rough Terrain Forklifts Total		0.1368	0.4815	0.8505	0.0008	0.0719	70.3	0.0123
Rubber Tired Doze	175	0.2498	0.8774	1.8708	0.0015	0.1077	129	0.0225
	250	0.2890	0.8102	2.5615	0.0021	0.1124	183	0.0261
	500	0.3754	1.8608	3.3530	0.0026	0.1431	265	0.0339
	750	0.5657	2.7857	5.1236	0.0040	0.2163	399	0.0510
	1000	0.8798	4.4579	8.7526	0.0060	0.3146	592	0.0794
Rubber Tired Dozers Total		0.3508	1.5020	3.1254	0.0025	0.1347	239	0.0316
Rubber Tired Load	25	0.0207	0.0697	0.1331	0.0002	0.0073	16.9	0.0019
	50	0.1686	0.4135	0.3383	0.0004	0.0384	31.1	0.0152
	120	0.1293	0.4314	0.7660	0.0007	0.0699	58.9	0.0117
	175	0.1564	0.6351	1.2251	0.0012	0.0698	106	0.0141
	250	0.1578	0.4432	1.6331	0.0017	0.0600	149	0.0142
	500	0.2277	0.8216	2.3036	0.0023	0.0867	237	0.0205
	750	0.4704	1.6776	4.8485	0.0049	0.1798	486	0.0424
	1000	0.6508	2.4004	7.4214	0.0060	0.2256	594	0.0587
Rubber Tired Loaders Total		0.1530	0.5214	1.2255	0.0012	0.0688	109	0.0138
Scrapers	120	0.2366	0.7257	1.3704	0.0011	0.1233	93.9	0.0213
	175	0.2510	0.9371	1.9270	0.0017	0.1101	148	0.0226
	250	0.2747	0.7749	2.6155	0.0024	0.1065	209	0.0248
	500	0.3807	1.6480	3.6071	0.0032	0.1459	321	0.0344
	750	0.6602	2.8335	6.3557	0.0056	0.2539	555	0.0596
Scrapers Total		0.3347	1.3277	3.0630	0.0027	0.1321	263	0.0302
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006
	50	0.1582	0.3915	0.3741	0.0005	0.0381	36.2	0.0143
	120	0.1589	0.5428	0.9927	0.0009	0.0824	80.2	0.0143
	175	0.2015	0.8467	1.7073	0.0017	0.0878	155	0.0182
	250	0.2198	0.6518	2.6462	0.0029	0.0843	255	0.0198
Signal Boards Total		0.0234	0.0959	0.1678	0.0002	0.0096	16.7	0.0021
Skid Steer Loaders	25	0.0270	0.0736	0.1286	0.0002	0.0086	13.8	0.0024
	50	0.0893	0.2612	0.2505	0.0003	0.0238	25.5	0.0081
	120	0.0678	0.2852	0.4473	0.0005	0.0388	42.8	0.0061
Skid Steer Loaders Total		0.0783	0.2565	0.3057	0.0004	0.0276	30.3	0.0071

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Surfacing Equipme	50	0.0629	0.1561	0.1472	0.0002	0.0149	14.1	0.0057
	120	0.1275	0.4382	0.8099	0.0007	0.0655	63.8	0.0115
	175	0.1136	0.4816	0.9690	0.0010	0.0493	85.8	0.0103
	250	0.1336	0.4088	1.4564	0.0015	0.0524	135	0.0121
	500	0.1968	0.8383	2.1681	0.0022	0.0782	221	0.0178
	750	0.3142	1.3099	3.4781	0.0035	0.1237	347	0.0283
Surfacing Equipment Total		0.1647	0.6589	1.6559	0.0017	0.0639	166	0.0149
Sweepers/Scrubbe	15	0.0124	0.0729	0.0870	0.0002	0.0036	11.9	0.0011
	25	0.0240	0.0808	0.1544	0.0002	0.0084	19.6	0.0022
	50	0.1672	0.4080	0.3372	0.0004	0.0383	31.6	0.0151
	120	0.1624	0.5400	0.9294	0.0009	0.0901	75.0	0.0147
	175	0.2004	0.8081	1.5355	0.0016	0.0911	139	0.0181
	250	0.1417	0.3771	1.6698	0.0018	0.0516	162	0.0128
Sweepers/Scrubbers Total		0.1689	0.5475	0.9059	0.0009	0.0733	78.5	0.0152
Tractors/Loaders/B	25	0.0224	0.0697	0.1355	0.0002	0.0079	15.9	0.0020
	50	0.1394	0.3685	0.3165	0.0004	0.0337	30.3	0.0126
	120	0.0993	0.3661	0.6071	0.0006	0.0554	51.7	0.0090
	175	0.1307	0.5891	1.0398	0.0011	0.0597	101	0.0118
	250	0.1500	0.4228	1.6664	0.0019	0.0558	172	0.0135
	500	0.2751	0.9002	2.9209	0.0039	0.1036	345	0.0248
	750	0.4176	1.3479	4.5341	0.0058	0.1582	517	0.0377
Tractors/Loaders/Backhoes Tota		0.1109	0.3993	0.7227	0.0008	0.0559	66.8	0.0100
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0025	8.5	0.0009
	25	0.0403	0.1355	0.2587	0.0004	0.0141	32.9	0.0036
	50	0.1929	0.4460	0.3666	0.0004	0.0421	32.9	0.0174
	120	0.1591	0.4900	0.9512	0.0008	0.0807	64.9	0.0144
	175	0.2364	0.8930	1.8852	0.0016	0.1029	144	0.0213
	250	0.2918	0.8572	2.8121	0.0025	0.1163	223	0.0263
	500	0.3638	1.7688	3.5695	0.0031	0.1443	311	0.0328
	750	0.6912	3.3168	6.8402	0.0059	0.2731	587	0.0624
Trenchers Total		0.1762	0.4992	0.7910	0.0007	0.0663	58.7	0.0159
Welders	15	0.0130	0.0449	0.0747	0.0001	0.0055	6.2	0.0012
	25	0.0268	0.0685	0.1112	0.0001	0.0081	11.3	0.0024
	50	0.1292	0.3084	0.2760	0.0003	0.0299	26.0	0.0117
	120	0.0851	0.2759	0.5126	0.0005	0.0443	39.5	0.0077
	175	0.1397	0.5532	1.1430	0.0011	0.0609	98.2	0.0126
	250	0.1124	0.3214	1.2992	0.0013	0.0428	119	0.0101
	500	0.1413	0.5285	1.6482	0.0016	0.0553	168	0.0128
Welders Total		0.0847	0.2281	0.3015	0.0003	0.0280	25.6	0.0076

Appendix C

Athens EIR
Existing and Permitted Operational Noise Calculations

	Number of Units		Ref. Level @ 50
Equipment	**Existing**	**Permitted**	**Feet**
Loaders	3	4	80
Excavators	3	4	75
Forklifts	1	1	75
Sweeper	1	1	75
Material Feed/Incline Conveyor	1	1	74
Trommel and transfer conveyor	1	1	74
C&D sorting conveyor	1	0	74
Tub Grinders	2	2	89
Dirt Screen	1	1	74
Trucks	7	28	70

	7 am to 7 pm	7 to 10 pm	10 pm to 7 am	Overall
24-hr Weighted Hours	12	3	9	111
Operational Hours	12	1		15
CNEL Adjustment	**-8.7**			

			CNEL	
Location	**Distance**	**Attenuation***	**Existing**	**Permitted**
Site 1	1900	-31.6	53.2	53.7
Site 2	2800	-35.0	49.8	50.4
Site 3	2800	-35.0	49.8	50.4
Site 4	1800	-31.1	53.6	54.2

* A distance attenuation of 6 dB per doubling of distance is assumed.

Athens EIR
Future Operational Noise Calculations

	Number of Units	Ref. Level @ 50 Feet	Shielding Factor	Ref. Level
Loaders	4	80	0	80
Excavators	4	75	0	75
Forklifts	2	75	0	75
Sweeper	1	75	0	75
Material Feed/Incline Conveyor	1	74	15	59
Trommel and transfer conveyor	1	74	15	59
C&D sorting conveyor	0	74	15	59
Tub Grinders	2	89	0	89
Dirt Screen	1	74	15	59
Idling Trucks	21	70	0	70
Infeed and Infeed Conveyor	1	74	15	59
Material infeed & incline conveyor	1	74	15	59
Presort Conveyor	1	74	15	59
Sorting Conveyors	2	74	15	59
Baler Infeed conveyor	1	74	15	59
Baler	1	75	15	60
Screens	3	74	15	59
Transfer Conveyors	4	74	15	59

	7 am to 7 pr	7 to 10 pm	10 pm to 7 am	Overall
24-hr Weighted Hours	12	3	9	111
Operational Hours	12	1		15
CNEL Adjustment	**-8.7**			

Location	Distance	Attenuation*	CNEL
Site 1	1900	-31.6	53.6
Site 2	2800	-35.0	50.2
Site 3	2800	-35.0	50.2
Site 4	1800	-31.1	54.0

* A distance attenuation of 6 dB per doubling of distance is assumed.

Athens EIR
Construction Noise Calculations

Equipment Type	# / Day	Ref. Level @ 50 Feet
Air Compressors Composite	1	82
Generator Sets Composite	1	76
Cement and Mortar Mixers Composite	1	80
Concrete/Industrial Saws Composite	1	85
Tractors/Loaders/Backhoes Composite	2	80
Graders Composite	1	83
Off-Highway Trucks Composite	1	84
Rollers Composite	1	80
Pavers Composite	1	89
Forklifts Composite	1	75
Sweepers/Scrubbers Composite	1	85

	7 am to 7 pm	7 to 10 pm	10 pm to 7 am	Overall
24-hr Weighted Hours	12	3	9	111
Construction Hours	8	0	0	8
CNEL Adjustment	**-11.4**			

Location	Distance	Attenuation*	CNEL
Site 1	1900	-31.6	51.0
Site 2	2800	-35.0	47.6
Site 3	2800	-35.0	47.6
Site 4	1800	-31.1	51.4

* A distance attenuation of 6 dB per doubling of distance is assumed.

Athens EIR
Combined Construction and Operations Noise Calcs

	Site 1	Site 2	Site 3	Site 4
Construction	51.7	48.3	48.3	52.1
Operation				
Existing	53.2	49.8	49.8	53.6
Permitted	53.7	50.4	50.4	54.2
Future	53.6	50.2	50.2	54.0
Combined				
	55.5	52.1	52.1	55.9
	55.8	52.5	52.5	56.3
	55.7	52.4	52.4	56.2

146733.4	67564.74	67564.74	163489.9892
208929.61	95499.259	95499.259	229086.7653
234422.88	109647.82	109647.82	263026.7992
229086.77	104712.85	104712.85	251188.6432

Appendix D

ATTACHMENT "C"

SCOPING FOR TRAFFIC STUDY

This Memorandum of Understanding (MOU) acknowledges Los Angeles Department of Transportation (LADOT) requirements of traffic impact analysis for the following project:

Project Name: Athens Solid Waste Facility Project
Address: 11121 Pendleton Street, Sun Valley, California
Description: Solid Waste Facility Permit (SWFP) application

Geographic Distribution: N 35 % S 47 % E 3 % W 15 %
(Attach graphic illustrating project trip distribution percentages at the studied intersections)

Trip Generation Rates(s): ITE 7th Edition/ Other Existing site counts/tonnage data

Land Use Solid Waste Facility Land Use _____ Land Use _____

	In	Out	In	Out	In	Out
AM Trips	11	5				
PM Trips	1	3				

Project Buildout Year: 2008 Ambient or CMP Growth Rate: 2 % Per Yr.

Related Projects: (To be researched by the consultant and approval by LADOT)

1. 11051 Pendleton St – Pendleton Street Open Air Market
2. 9000 Sunland Blvd – Sun Valley Care Ministries
3. 8652 Sunland Blvd – Sunland Commercial
4. 9171 Telfair Ave – LAUSD Byrd High School
5. 9227 Tujunga Ave -Bradley Landfill and Recycling Center Transition Plan Phase II

Study Intersections

(Subject to revision after CMP requirement, related projects, trip generation and distribution are determined)

1. San Fernando & Sheldon
2. San Fernando & Tuxford
3. Glenoaks & Peoria
4. Glenboaks & Tuxford
5. Bradley & Tuxford
6. Bradley & Penrose
7. I-5 NB-off/SB-on & Tuxford
8. I-5 NB-on & Tuxford
9. I-5 SN-on/off & Penrose
10. _____

Trip Credits: (Exact amount of credit subject to approval by LADOT)

	Yes	No
Transportation Demand Management	☐	☒
Existing Active Land Use	☒	☐
Previous Land Use	☐	☒
Internal Trip	☐	☒
Pass-By Trip	☐	☒

This analysis must follow latest LADOT Traffic Study guidelines

	Consultant	Developer
Name	Meyer, Mohaddes Associates	Athens Services
Address	400 Oceangate, ste 480, Long Beach	14048 Valley Blvd, City of Industry
Phone No.	(562) 432-8484	(626) 336-3636

Approved By: Patrick M. Kelley 3/19/07
Consultant's Representative Date

_____
LADOT Representative Date

S:\letters\scope

DRAFT REPORT

CITY OF LOS ANGELES
ATHENS SUN VALLEY MATERIAL RECOVERY FACILITY
TRAFFIC IMPACT STUDY

Prepared for:

Gibson, Dunn & Crutcher
333 South Grand Avenue
Los Angeles, CA 90071

Prepared by:

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January 2008

J07- 1611

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INTRODUCTION

This traffic impact study is for the proposed development by Athens Services to modify the design and operation of its existing construction and demolition (C&D) material diversion facility, located in Sun Valley in the northeast San Fernando Valley portion of the City of Los Angeles. The project site is located on a 4.9 acre site at 11121 Pendleton Avenue, east of Glenoaks Boulevard. This study was prepared in accordance with the Traffic Study Policies and Procedures of the City of Los Angeles Department of Transportation (LADOT) and with a Memorandum of Understanding (MOU) prepared by Meyer-Mohaddes (traffic consultant) for this TIS, which was approved by LADOT. Meyer-Mohaddes received verbal approval of the MOU on April 4, 2007. A copy of the MOU is included with this Appendix.

The existing facility currently operates under a Conditional Use Permit (CUP) ZA 98-0427 (CUZ), approved by the City of Los Angeles in 1999. The CUP permits the facility to accept up to 1,500 tons per day (tpd), and authorizes the establishment and maintenance of a Recycling Materials Process and Sorting Facility (Recycling Center) for mixed and C&D waste for the purpose of depositing, sorting, processing and transferring sorted waste. All materials are separated and stored in separate containers at C&D sites, and transported to the Athens Solid Waste (ASW) facility in roll-off trucks and debris boxes.

Pursuant to the CUP, all operations currently occur outdoors. After incoming loads are received at the scale-house, they are unloaded in a tipping area where they separate out large pieces of wood and metal. Materials are then routed through a trammel screen that further separates the materials by size. The larger materials are routed to an elevated sorting platform where wood and other recoverable materials are removed. Recovered material is stored in several concrete bunkers located on the north side of the site. Currently, the ASW facility receives approximately 400 tpd and operates between the hours of 7 AM and 8 PM, daily. Vehicular access to the project site will be provided via an entrance located on Pendleton Street.

As part of the study, the project-related trip generation rates were developed based on data provided by Athens Services. Existing vehicle counts were conducted at ten intersections surrounding the project site. The estimated project-generated traffic was assigned to the existing intersections using the trip distribution utilized in the Bradley Landfill Expansion EIR. The resulting traffic volumes were used to determine the weekday AM and PM peak-hour operating conditions for the following project baselines, scenarios and alternatives:

Baseline Scenarios:

- 400 tpd C&D: This scenario depicts existing conditions at the project site with the facility accepting 400 tpd of C&D materials, and was derived based on actual trip counts and information/ documentation regarding the total tonnage accepted on the day of the traffic counts. Rates derived under this baseline were compared against rates from other traffic studies for similar projects.

- 1,500 tpd C&D Allowed Under Entitlement: This scenario B assumes the facility accepts 1,500 tpd of C&D materials, as allowed under the 1999 CUP and as evaluated in the Mitigated Negative Declaration approved in conjunction with the CUP.

Future Without Project Scenario:

- Future No Project – 400 tpd C&D + Related Projects: This scenario assumes the facility accepts 400 tpd of C&D materials plus traffic generated by related projects. This scenario includes two separate analyses, as follows:
    1) Analysis with the Bradley development included as a related project

2) Analysis without the Bradley development included as a related project

- Future No Project – 1,500 tpd (Per Entitlement) + Related Projects: This scenario assumes the facility accepts 1,500 tpd of materials plus traffic generated by related projects. This scenario includes two separate analyses, as follows:
  1) Analysis of Alternative 2 with the Bradley development included as a related project
  2) Analysis of Alternative 2 without the Bradley development included as a related project

Future With Project Scenario: Future with Project scenarios are derived using a mix of the type of waste to be accepted based on either tonnage or number of trips.

Tonnage-Based Alternatives

- Proposed Project – 500 tpd C&D + 1,000 tpd MSW: This scenario assumes the facility will accept 500 tpd of C&D and 1,000 tpd of municipal solid waste (MSW). The estimated project-generated traffic for this scenario will be superimposed onto the existing street network. The estimated project-generated traffic will be added to total traffic volumes derived in the "Future With Project" traffic volumes. These cumulative traffic volumes will be used to determine the weekday AM and PM peak-hour intersection operating conditions and levels of service for the 500 tpd C&D + 1,000 MSW alternative.

- Future With Project Alternative – 1,500 tpd MSW – This scenario is used in the Alternatives Section of the EIR and assumes that the permit allows the entire 1,500 tpd to be all municipal solid waste (MSW), such that there would be zero C&D materials accepted. The estimated project-generated traffic as MSW will be added to the traffic volumes derived in Alternative 1 (with an adjustment by removing the trips associated with the existing 400 tpd of C&D) to forecast "Future With Project" traffic volumes. These cumulative traffic volumes will be used to determine AM and PM peak hour intersection operating conditions and levels of service for the 1,500 tpd MSW alternative.

Trip-Based Scenarios

These scenarios were developed for planning purposes:

- Future With Project-440 Trips and 400 tpd C&D Constant – This scenario holds constant the 440 inbound trips and 440 outbound trips per day approved per the 1999 Mitigated Negative Declaration (MND) and CUP, and also assumes that the 400 tpd of C&D materials remains constant. This alternative analyzes how much MSW the facility can handle while maintaining 440 inbound trips and 440 outbound trips per day.

- Future With Project – 400 tpd C&D + X tpd MSW and No Unavoidable Adverse Impacts – This scenario determines how much MSW the facility can accept, assuming the C&D intake remains 400 tpd, and the project traffic is restricted such that no adverse impacts result from the addition of project traffic.

Figure 1 shows the location of the proposed project site in relation to the surrounding street network, and **Figure 2** shows the proposed site plan.

Project Scope

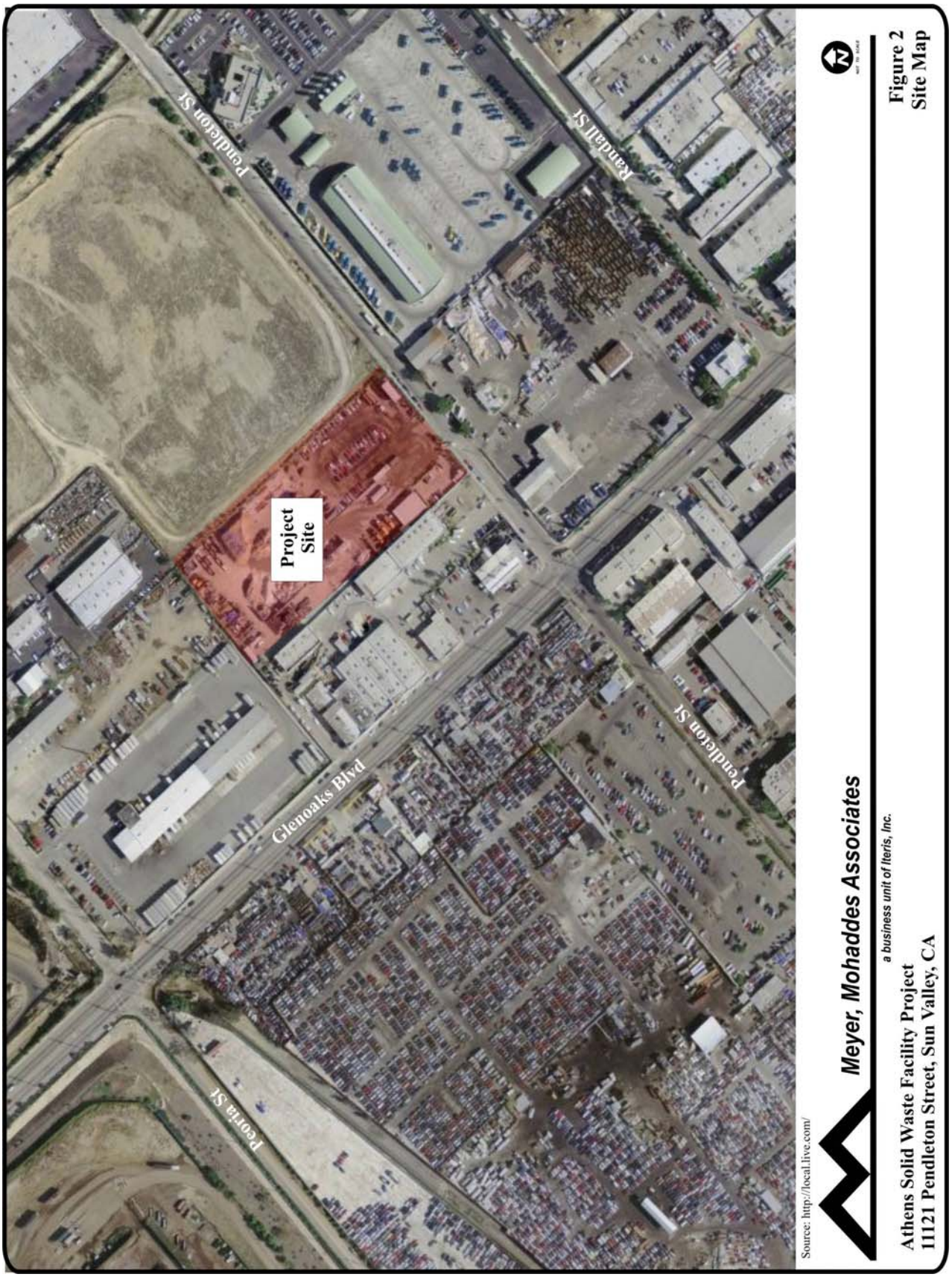
This Traffic Impact Study evaluates the operation of seven local intersections and two freeway on/off ramps during the AM and PM peak period (7-9 AM and 4-6 PM), agreed to by City of Los Angeles Department of Transportation (LADOT). Traffic counts from one freeway on-ramp, I-5 at Tuxford Street, were included in the turning movement graphics, but were omitted from the LOS analyses because it does not have any conflicting movements (it is not controlled by a stop sign and/or a traffic signal). These study intersections were chosen to represent those intersections deemed most likely to experience increases in traffic due to the proposed project. The following report provides key traffic information regarding existing traffic volumes, an analysis of impacts at study intersections, and a determination of levels of service (LOS) using the Circular 212 "Critical Movement Analysis" (CMA) method. Mitigation measures are recommended where appropriate.

The locations of the study intersections assessed in the traffic analysis are listed below:

1. San Fernando Road and Sheldon Street
2. Glenoaks Boulevard and Peoria Street
3. Interstate 5 Northbound off-ramp/Southbound on-ramp and Tuxford Street
4. San Fernando Road and Tuxford Street
5. Bradley Avenue and Tuxford Street
6. Glenoaks Boulevard and Tuxford Street
7. Interstate 5 Southbound on/off-ramp at Penrose Street
8. Bradley Avenue and Penrose Street
9. Glenoaks Boulevard and Pendleton Street
10. Interstate 5 Northbound on-ramp and Tuxford Street (Turning Movements Only)

Traffic counts were conducted at the above ten locations on Tuesday, April 24, 2007 during the AM and PM peak periods. The traffic impact analysis is based on the highest single hour of traffic during each peak period at the above locations.


City of
Los Angeles
Sun Valley
Branford St.
Sheldon St
Glenoaks Blvd
Peoria St
Project
Site
Pendleton St
Sunland Blvd
San Fernando Rd
Bradley Ave
Tuxford St
La Tuna Canyon Rd
Penrose St
Laurel Canyon Blvd
Roscoe Blvd
Strathern St
Stagg St
Saticoy St
Vineland Ave
Clybourn Ave
Lankershim Blvd
Laurel Canyon Blvd
1
2
3
4
5
6
7
8
9
10
Legend
Study Intersection
Meyer, Mohaddes Associates
a business unit of Iteris, Inc.
Athens Solid Waste Facility Project
11121 Pendleton Street, Sun Valley, CA
Figure 1
Study Area


Pendleton St
Randall St
Project Site
Glenoaks Blvd
Pendleton St
Peoria St
Source: http://local.live.com/
Meyer, Mohaddes Associates
a business unit of Iteris, Inc.
Athens Solid Waste Facility Project
11121 Pendleton Street, Sun Valley, CA
Figure 2
Site Map

ENVIRONMENTAL SETTING

A field inventory was conducted at the nine study intersection locations. The inventory included review of intersection geometric layout, traffic control, lane configuration, posted speed limits, transit service, land use and parking. **Figure 3** illustrates the existing lane configurations. This information is required for the subsequent traffic impact analysis.

Existing Roadway Conditions

Regional access to the project site is provided by the Golden State Freeway (I-5) and the Foothill Freeway (I-210). Interstate 5 is located approximately one mile south of the project site and provides north-south regional access to the site, and Interstate 210 is located approximately three miles north-west of the project site and provides east-west regional access to the site. Within the project study area, on/off ramps that connect to the I-5 are located at Tuxford Street, Penrose Street, and Lankershim Boulevard.

There are also local roadways which provide access to the project site. The following provides a brief description of these roadways within the study area.

San Fernando Road – San Fernando Road is a major roadway which travels in a northwest-southeast direction located west of the project site. Within the study area, San Fernando Road provides two travel lanes in each direction, with left-turn lanes at several of the larger intersections. San Fernando Road borders the Southern Pacific Railroad currently utilized by the Antelope Valley Metrolink line.

Glenoaks Boulevard – Glenoaks Boulevard is a major roadway which travels in a northwest-southeast direction located immediately west of the project site. The western portion of the project site is bordered by Glenoaks Boulevard, but there will be no direct project access to this roadway. Within the study area, Glenoaks Boulevard provides two travel lanes in each direction, with left-turn lanes at larger intersections.

Sheldon Street – Sheldon Street is a secondary roadway that travels in a northeast-southwest direction located northwest to the project site. It provides two travel lanes in each direction divided by an intermittent two-way left-turn lane.

Tuxford Street – Tuxford Street is a major roadway that travels in a northeast-southwest direction located south of the project site. Within the study area, Tuxford Street provides two travel lanes in each direction, with access to the I-5, west of San Fernando Road.

Penrose Street – Penrose Street is a secondary roadway that travels in a northeast-southwest direction located south of the project site. Penrose Street provides two travel lanes in each direction west of Bradley Avenue, and one travel lane in each direction east of Bradley Avenue. Penrose Street provides access to the I-5, between San Fernando Road and Bradley Avenue.

Peoria Street – Peoria Street is classified as a secondary roadway west of Glenoaks Boulevard, and a collector street east of Glenoaks Boulevard. It travels in a northeast-southwest direction and is located north of the project site. Peoria Street provides one travel lane in each direction.

Pendleton Street – Pendleton Street is classified as a collector street that travels in a northeast-southwest direction immediately south of the project site. Pendleton Street abuts the southern portion of the project site, and will serve as the project's main access point. Pendleton Street has one travel lane in each direction.

Bradley Avenue –Bradley Avenue is a secondary roadway that travels in a northwest-southeast direction located southwest of the project site. Within the study area, Bradley Avenue provides one travel lane in each direction.

Existing Transit Service

The Metropolitan Transit Authority (Metro) operates four fixed bus routes within the vicinity of the project site. In addition, Metrolink has a transit station along its Antelope Valley Line in Sun Valley, approximately one mile south of the project site. **Figure 4** illustrates each transit line in relation to the proposed project site. A description of transit service is provided below:

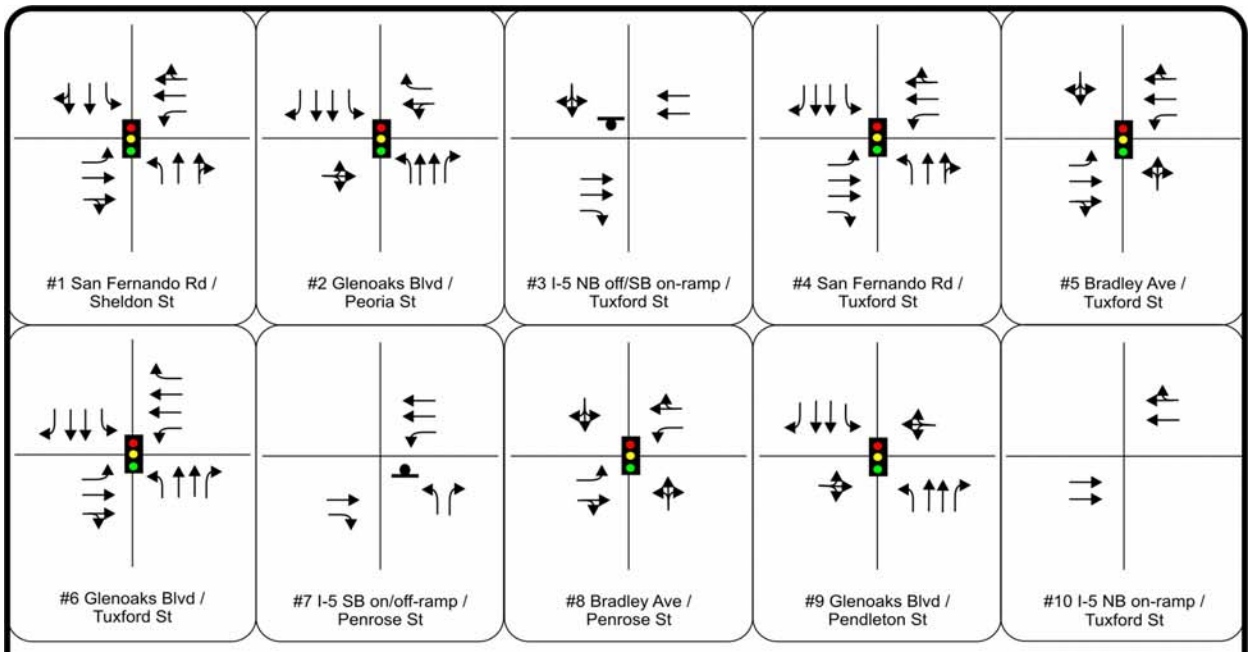
Metro Line 92 (Sylmar – Downtown Los Angeles via Glenoaks Blvd, Brand Blvd, Glendale Blvd, Temple St, Spring St and Main St) – Metro Line 92 runs northwest-southeast near the project site via Glenoaks Boulevard. It starts at Main Street and 11th Street in downtown Los Angeles and ends at the Sylmar/San Fernando Metrolink Station in Sylmar. Days of operation are Monday through Sunday, including all major holidays. Weekday peak period headway near the project site ranges between 15-24 minutes during the AM peak period, and 27-37 minutes during the PM peak period. Weekend mid-day peak period headway ranges between 30-40 minutes.

Metro Lines 94 and 394 (Sylmar – Downtown L.A. via San Fernando Rd & Spring St) – Metro Line 94/394 runs northwest-southeast near the project site via San Fernando Road. It starts at Hill Street and Venice Boulevard in downtown Los Angeles and ends at the Sylmar/San Fernando Metrolink Station in Sylmar. Days of operation are Monday through Sunday, including all major holidays. Line 394 is a limited stop route providing service only during the weekday morning and evening peak periods. Line 94 provides service everyday. Weekday peak period headway near the project site ranges between 10-14 minutes during the AM peak period, and 14-17 minutes during the PM peak period. Weekend mid-day peak period headway ranges between 17-33 minutes.

*Metro Line 152 and 153 (*Woodland Hills – North Hollywood via Roscoe Blvd. & Vineland Av.) – Metro Line 152/153 runs north-south near the project site via Sunland Boulevard. It starts at the North Hollywood Red Line Station and ends at Fallbrook Avenue and Ventura Boulevard in Woodland Hills. Days of operation for Line 152 are Monday through Sunday, including all major holidays. Line 153 only operates Monday through Friday. Weekday peak period headway near the project site ranges between 15-35 minutes during the AM peak period, and 30 minutes during the PM peak period. Weekend mid-day peak period headway ranges between 25-30 minutes.

Metro Line 169 (East-West Local Service) – Metro Line 169 runs north-south near the project site via Sunland Boulevard. It starts at West Hills Medical Center in West Hills and ends at Summitrose Street and Tinker Avenue in Sunland. Days of operation are Monday through Sunday, including all major holidays. Weekday peak period headway near the project site is approximately one hour during the AM peak period, and 53 minutes to one hour during the PM peak period. Weekend mid-day peak period headway is approximately one hour.

Metrolink – Metrolink is a commuter rail service operating on the Union Pacific Railroad (UPRR) right of way located southwest of the project site, paralleling San Fernando Road. The Metrolink station is located along the Antelope Valley Line in Sun Valley on San Fernando Road, between Penrose Street and Sunland Boulevard. Days of operation are Monday though Saturday only. Weekday peak period headway at the Sun Valley station is approximately 30 minutes during the AM peak period, and one hour and 50 minutes during the PM peak period. Weekend mid-day peak period headway is approximately one hour and 30 minutes.



Legend

- Traffic Signal
- Through Lane
- Turn Lane
- Shared Lane
- Stop Sign

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Figure 3
Existing Lane Configurations

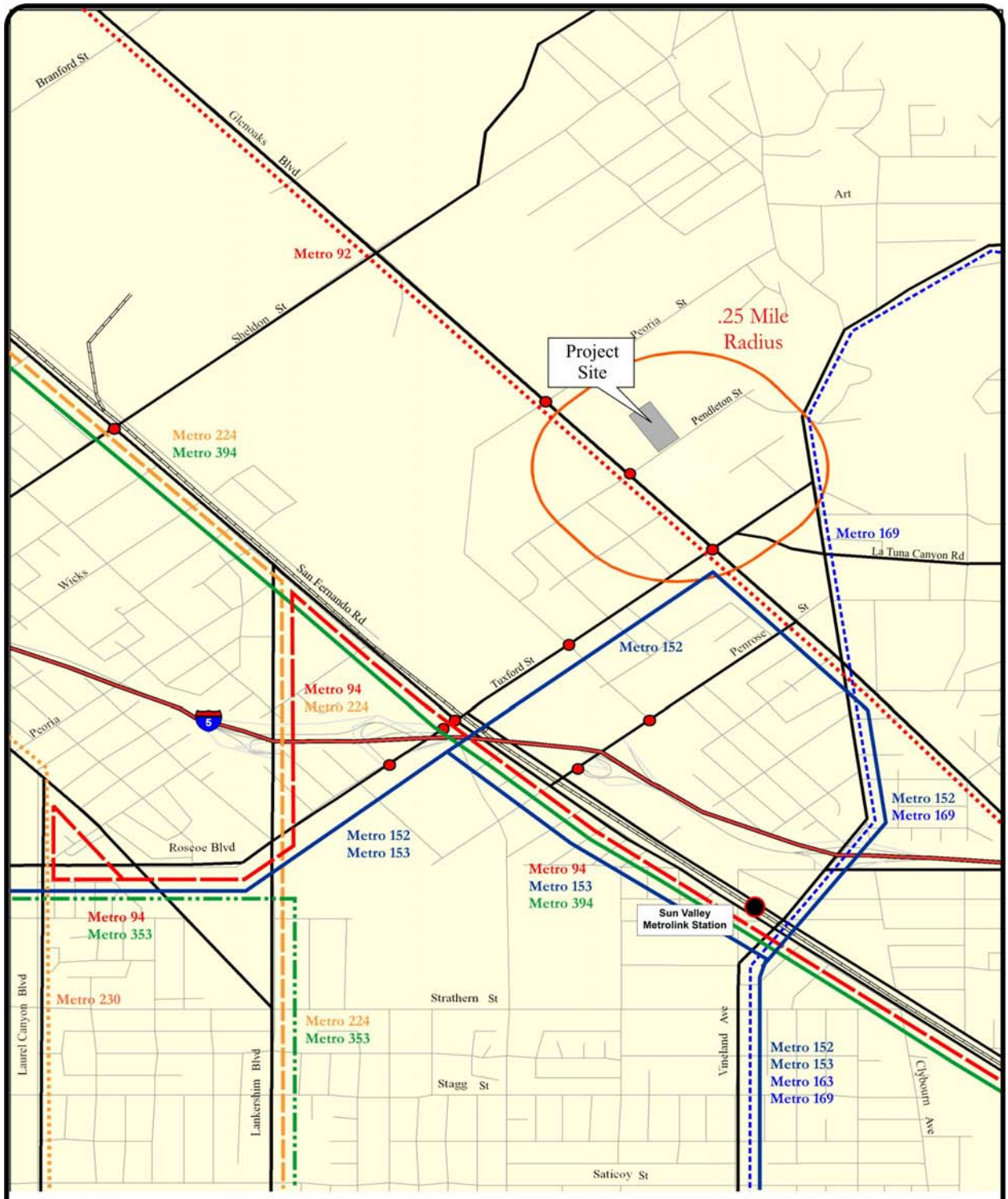
Branford St
Glenoaks Blvd
Art
Metro 92
Sheldon St
Peoria St
.25 Mile Radius
Project Site
Pendleton St
Metro 224
Metro 394
Metro 169
La Tuna Canyon Rd
Wicks
San Fernando Rd
Tuxford St
Metro 152
Penrose St
Metro 94
Metro 224
Peoria
5
Metro 152
Metro 169
Roscoe Blvd
Metro 152
Metro 153
Metro 94
Metro 153
Metro 394
Sun Valley Metrolink Station
Metro 94
Metro 353
Metro 230
Strathern St
Laurel Canyon Blvd
Metro 224
Metro 353
Lankershim Blvd
Stagg St
Vineland Ave
Metro 152
Metro 153
Metro 163
Metro 169
Clybourn Ave
Saticoy St
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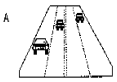
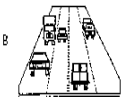
Figure 4
Existing Transit

TRAFFIC OPERATIONS ANALYSIS METHODOLOGY

Traffic operating conditions in the vicinity of the project were analyzed using the intersection capacity-based methodology known as the Circular 212 "Critical Movement Analysis" (CMA) method for signalized locations. At the stop-controlled intersection, the Highway Capacity Manual (HCM) methodology for unsignalized locations was utilized to calculate the average delay and corresponding level of service.

The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS). Level of service is a description of traffic performance at intersections. The level of service concept is a measure of average operating conditions at intersections during an hour. It is based on a volume-to-capacity (V/C) ratio for signalized locations and vehicle delay (in seconds) for stop-controlled intersections. Levels range from A to F with A representing excellent (free-flow) conditions and F representing extreme congestion. The CMA methodology compares the amount of traffic an intersection is able to process (the capacity) to the level of traffic during the peak hours (volume). A volume-to-capacity (V/C) ratio is calculated to determine the LOS. The HCM method for stop-controlled intersections calculates the average delay, in seconds, per vehicle for each approach and for the intersection as a whole. The delay for the intersection corresponds to a LOS value which describes the intersection operations. Intersections with vehicular volumes that are at or near capacity experience greater congestion and longer vehicle delays. **Table 1** describes the LOS concept and the operating conditions for signalized and stop-controlled intersections.

TABLE 1: INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service		Definition	Volume to Capacity Ratio (Signalized)	Delay per Vehicle (Unsignalized)
A		EXCELLENT. Primarily free-flow conditions at about 90 percent of free-flow speed. Vehicles are completely free to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.	0.000 - 0.600	< 10
B		VERY GOOD. Reasonably unimpeded flow at about 70 percent of free-flow speed. Ability is only slightly restricted and dealy at intersections is not bothersome.	0.601 - 0.700	>10 and ≤ 15
C		GOOD. Stable operations at about 50 percent of free-flow speed. Ability to maneuver and change lanes may be restricted at mid-block locations. Motorists will begin to experience appreciable tension while driving.	0.701 - 0.800	>15 and ≤ 25
D		FAIR. Small increases in flow begin to cause substantial increases in intersection approach delay. Ability to maneuver becomes more difficult, with speeds about 40 percent of free-flow speed.	0.801 - 0.900	>25 and ≤ 35
E		POOR. Characterized by significant delays at intersection approaches and travel speeds about one-third of free-flow speed or less. Ability to maneuver is severely restricted and driver tension is high.	0.901 - 1.000	>35 and ≤ 50
F		FAILURE. Extremely low travel speeds and unstable traffic flow. Characterized by long delays at intersection approaches, severe difficult in maneuvering between lanes, and extremely high driver tension.	> 1.000	> 50

Source: Adopted from Transportation Research Board (TRB), Highway Capacity Manual, Special Report 209, Third Edition, 1994.

Threshold of Significance

Per CEQA, any significant project related impacts are required to be identified in the environmental document. Significant traffic impacts are determined based on a threshold of significance set by the lead agency for each project. The Los Angeles Department of Transportation (LADOT) has established threshold criteria to determine if a project has a significant traffic impact. Using the LADOT standard, a project impact would be considered significant if the following conditions are met:

Intersections		
Final V/C Ratio		Project V/C Increase
LOS	V/C	
C	0.700 – 0.800	0.040 or more
D	0.800 – 0.900	0.020 or more
E/F	0.9000 or more	0.010 or more
Source: City of Los Angeles Department of Transportation, Traffic Policies and Procedures, 2003		

Using these criteria, for example, the project would not have a significant impact on an intersection if it is operating at LOS C after the addition of project traffic and the incremental change in the V/C ratio is less than 0.040. However, if the intersection is operating at a LOS F after the addition of project traffic and the incremental change in the V/C ratio is 0.010 or greater the project would be considered to have a significant impact at this location. These criteria were applied to all of the analyzed intersections within the study area.

To evaluate if an unsignalized intersection would have a significant traffic impact, the intersection was analyzed as if it were signalized, and the project related increase in the V/C ratio was evaluated using the same thresholds as shown above.

BASELINE SCENARIOS

For analysis of "with project" scenarios and alternatives, two baselines will be used:

- 400 tpd C&D: This scenario assumes the facility is accepting 400 tpd of C&D materials, and was derived based on actual trip counts and information/documentation regarding the total tonnage accepted on the day of the traffic counts. Rates derived under this scenario were compared against rates from other traffic studies for similar projects.

- 1,500 tpd C&D Allowed Under Entitlement: This scenario assumes the facility accepts 1,500 tpd of C&D materials, as allowed under the 1999 CUP and the Mitigated Negative Declaration prepared in conjunction with this CUP.

All traffic analyses in this report are based on the highest single hour of traffic during the AM and PM peak period at the nine study intersections. New traffic counts were conducted between 7 – 9 AM and 4 – 6 PM on Tuesday, April 24, 2007. Due to the large volume of existing trucks in the vicinity of the project, the existing traffic volumes were converted to Passenger Car Equivalent (PCE) using a factor of 2.0. This means that the impact of each truck is measured as the equivalent of two autos. The truck percentage of total vehicles was obtained from the *2005 Annual Average Daily Truck Traffic on the California State Highway System,* published by the State of California Department of Transportation. The truck percentage for the study area was estimated to be 7.8 percent of total vehicles, and was calculated by averaging the truck percentage at the two closest post miles to the project site, Sun Valley, JCT. RTE. 170 and the Hollywood Freeway A and B.

Project Trip Generation

The first step in analyzing traffic conditions is to estimate the number of new trips expected to be generated by the Project. Trip generation rates for the 400-tpd baseline condition and 1,500-tpd baseline were derived based on existing traffic counts and information provided by Athens. Athens provided information regarding the number of existing trips per day, peak hour trips and the average weight of C&D and MSW trips. This data was confirmed by the traffic consultant conducting hourly traffic counts at the entrance to the facility. These counts noted the number and types of vehicles entering the facility during each hourly bandwidth. This data was used to develop peak period trip generation rates for both baselines and were compared to similar rates from other traffic studies for similar Projects (Simi Valley Landfill Traffic Impact Analysis [TIA], Puente Hills Landfill DEIR). The results for both baselines are shown in **Table 2.**

TABLE 2: RAW TRIP GENERATION RATES AND ESTIMATES FOR BASELINE SCENARIOS

Scenario	Trips Ends Generated					
	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
400 tpd C&D Baseline	8	4	**12**	4	4	**8**
1,500 tpd C&D Baseline	29	15	**44**	15	15	**30**

Source: Athens Services; Simi Valley Landfill TIA; Puente Hills Landfill DEIR
Note: The trip generation rates used for the LOS analysis are different from the raw trip generation numbers shown above. Trip generation rates used in the LOS analysis reflect the difference between the proposed scenario and existing conditions (400 tpd C&D). All trip generation rates used in the TRAFFIX analysis were converted to PCE using a conversion factor of 2.0. For existing conditions, zero trip generation rates were applied in the LOS analysis because existing project-related traffic was already accounted for in the existing traffic counts.

The negative declaration that supported the 1999 CUP, which the existing facility currently operates under, was prepared pursuant to certain traffic assumptions. According to the traffic analysis that was prepared as part of the negative declaration, 440 daily trips would be generated as project site processed 1,500 tpd of

waste materials, which is more than the 237 trips assumed by the 1,500-tpd baseline, as shown in **2**. In the interest of being conservative, the lower baseline amount of 237 daily trips is chosen as the 1,500-tpd baseline amount for the analysis below.

Project Trip Distribution

The next step in the forecast of project traffic is the distribution of the trip estimates. The trip distribution assumptions are used to determine the origin and destination of the vehicle trips associated with the proposed project. The geographic distribution of the project trips was developed based on data provided by Athens Services regarding likely directions of approach for project traffic and the trip distribution used in the Bradley Landfill Expansion EIR. Based on the data provided, a distribution pattern was developed for the project and is shown in **Figure 5**. The same trip distribution pattern was used in all of the project scenarios/alternatives.

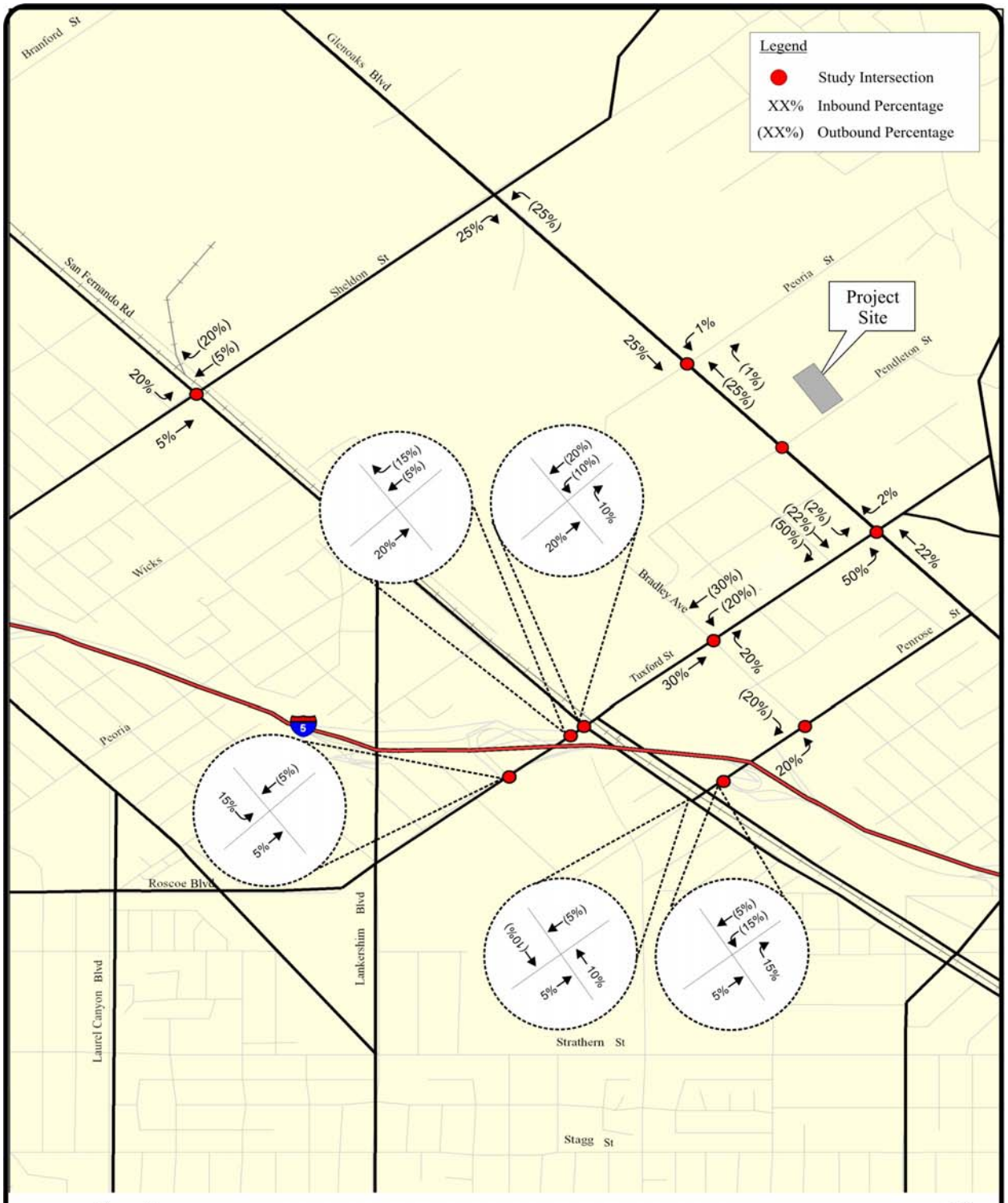

Legend
Study Intersection
XX% Inbound Percentage
(XX%) Outbound Percentage
Project Site
Branford St
Glenoaks Blvd
San Fernando Rd
Sheldon St
Peoria St
Pendleton St
Wicks
Bradley Ave
Tuxford St
Penrose St
Peoria
Roscoe Blvd
Laurel Canyon Blvd
Lankershim Blvd
Strathern St
Stagg St
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Figure 5
Project Trip Distribution
Solid Waste Trucks

400 tpd C&D Baseline

Presently, the facility accepts approximately 400 tpd of construction and demolition (C&D) waste. This baseline includes all traffic currently generated by the existing project site, or 400 tpd of C&D materials. The existing weekday AM and PM peak hour intersection counts include the existing trips representing 400 tpd of C&D at the site.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine existing study intersections based on the existing traffic volume counts and the methodologies described previously. The level of service analysis was performed using TRAFFIX software, version 7.8.

Level of service D is generally considered to be the lowest acceptable LOS in an urban or suburban area. Level of service E and F are considered to be unacceptable operating conditions which warrant mitigation. **Table 3** summarizes the level of service calculations for the study intersections under the 400 tpd C&D baseline conditions during the AM and PM peak hours. The results indicate that all nine study intersections operate at an acceptable level of service (LOS 'C' or better) during the existing AM and PM peak hour. Turning movement volumes and level of service at the study intersections for Baseline Scenario A, and the existing average daily traffic (ADT) volumes near the project site are shown in **Figures 6 and 7**, respectively. Traffic count sheets are provided in **Appendix A**, and level of service analysis worksheets for this scenario is provided in **Appendix B.**

TABLE 3: 400 TPD C&D BASELINE – PEAK HOUR LOS SUMMARY

	Intersection	400 tpd C&D Baseline			
		AM Peak Hour		PM Peak Hour	
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh
1	San Fernando Road and Sheldon Street	C	0.712	C	0.752
2	Glenoaks Boulevard and Peoria Street	A	0.442	A	0.433
3	Interstate 5 NB off / SB on-ramp and Tuxford St [Unsig]	C	16.5 sec	C	22.5 sec
4	San Fernando Road and Tuxford Street	B	0.611	C	0.719
5	Bradley Avenue and Tuxford Street	A	0.484	A	0.536
6	Glenoaks Boulevard and Tuxford Street	B	0.614	B	0.612
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	12.5 sec	B	12.6 sec
8	Bradley Avenue and Penrose Street	A	0.518	A	0.420
9	Glenoaks Boulevard and Pendleton Street	A	0.469	A	0.496

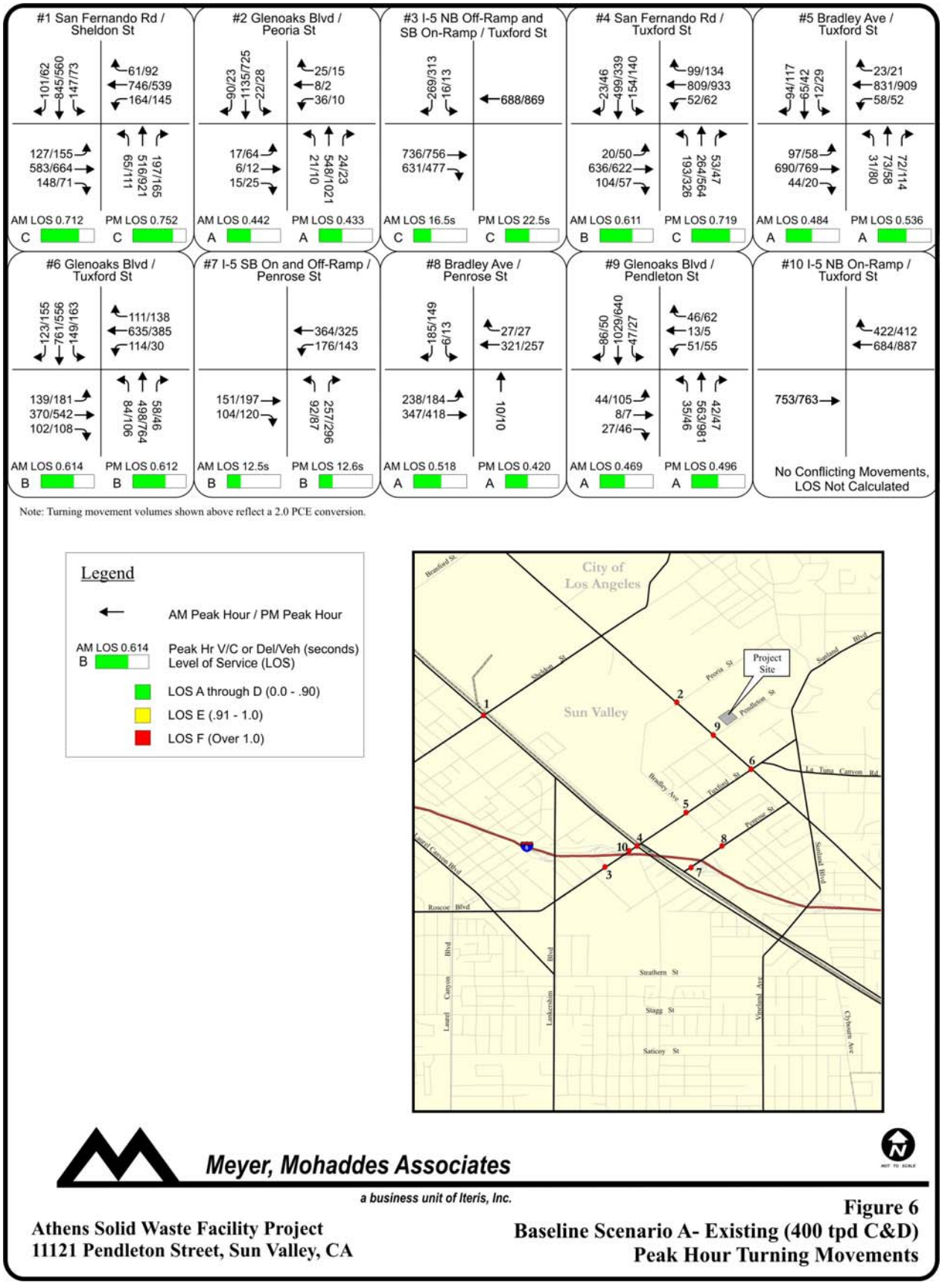
#1 San Fernando Rd / Sheldon St
101/62
845/560
147/73
61/92
746/539
164/145
127/155
583/664
148/71
65/111
516/921
197/165
AM LOS 0.712
PM LOS 0.752
C
C
#2 Glenoaks Blvd / Peoria St
90/23
1135/725
22/28
25/15
8/2
36/10
17/64
6/12
15/25
21/10
548/1021
24/23
AM LOS 0.442
PM LOS 0.433
A
A
#3 I-5 NB Off-Ramp and SB On-Ramp / Tuxford St
269/313
16/13
688/869
736/756
631/477
AM LOS 16.5s
PM LOS 22.5s
C
C
#4 San Fernando Rd / Tuxford St
23/46
499/339
154/140
99/134
809/933
52/62
20/50
636/622
104/57
193/326
264/564
53/47
AM LOS 0.611
PM LOS 0.719
B
C
#5 Bradley Ave / Tuxford St
94/117
65/42
12/29
23/21
831/909
58/52
97/58
690/769
44/20
31/80
73/58
72/114
AM LOS 0.484
PM LOS 0.536
A
A
#6 Glenoaks Blvd / Tuxford St
123/155
761/556
149/163
111/138
635/385
114/30
139/181
370/542
102/108
84/106
498/764
58/46
AM LOS 0.614
PM LOS 0.612
B
B
#7 I-5 SB On and Off-Ramp / Penrose St
364/325
176/143
151/197
104/120
92/87
257/296
AM LOS 12.5s
PM LOS 12.6s
B
B
#8 Bradley Ave / Penrose St
185/149
6/13
27/27
321/257
238/184
347/418
10/10
AM LOS 0.518
PM LOS 0.420
A
A
#9 Glenoaks Blvd / Pendleton St
86/50
1029/640
47/27
46/62
13/5
51/55
44/105
8/7
27/46
35/46
563/981
42/47
AM LOS 0.469
PM LOS 0.496
A
A
#10 I-5 NB On-Ramp / Tuxford St
422/412
684/887
753/763
No Conflicting Movements, LOS Not Calculated
Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.
Legend
AM Peak Hour / PM Peak Hour
AM LOS 0.614
B
Peak Hr V/C or Del/Veh (seconds)
Level of Service (LOS)
LOS A through D (0.0 - .90)
LOS E (.91 - 1.0)
LOS F (Over 1.0)
City of Los Angeles
Sun Valley
Project Site
Sheldon St
Peoria St
Pendleton St
Tuxford St
Bradley Ave
Penrose St
Sunland Blvd
La Tuna Canyon Rd
Roscoe Blvd
Strathern St
Stagg St
Saticoy St
Vineland Ave
Clybourn Ave
Lankershim Blvd
Laurel Canyon Blvd
Glenoaks Blvd
Branford St
1
2
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Figure 6
Baseline Scenario A- Existing (400 tpd C&D)
Peak Hour Turning Movements

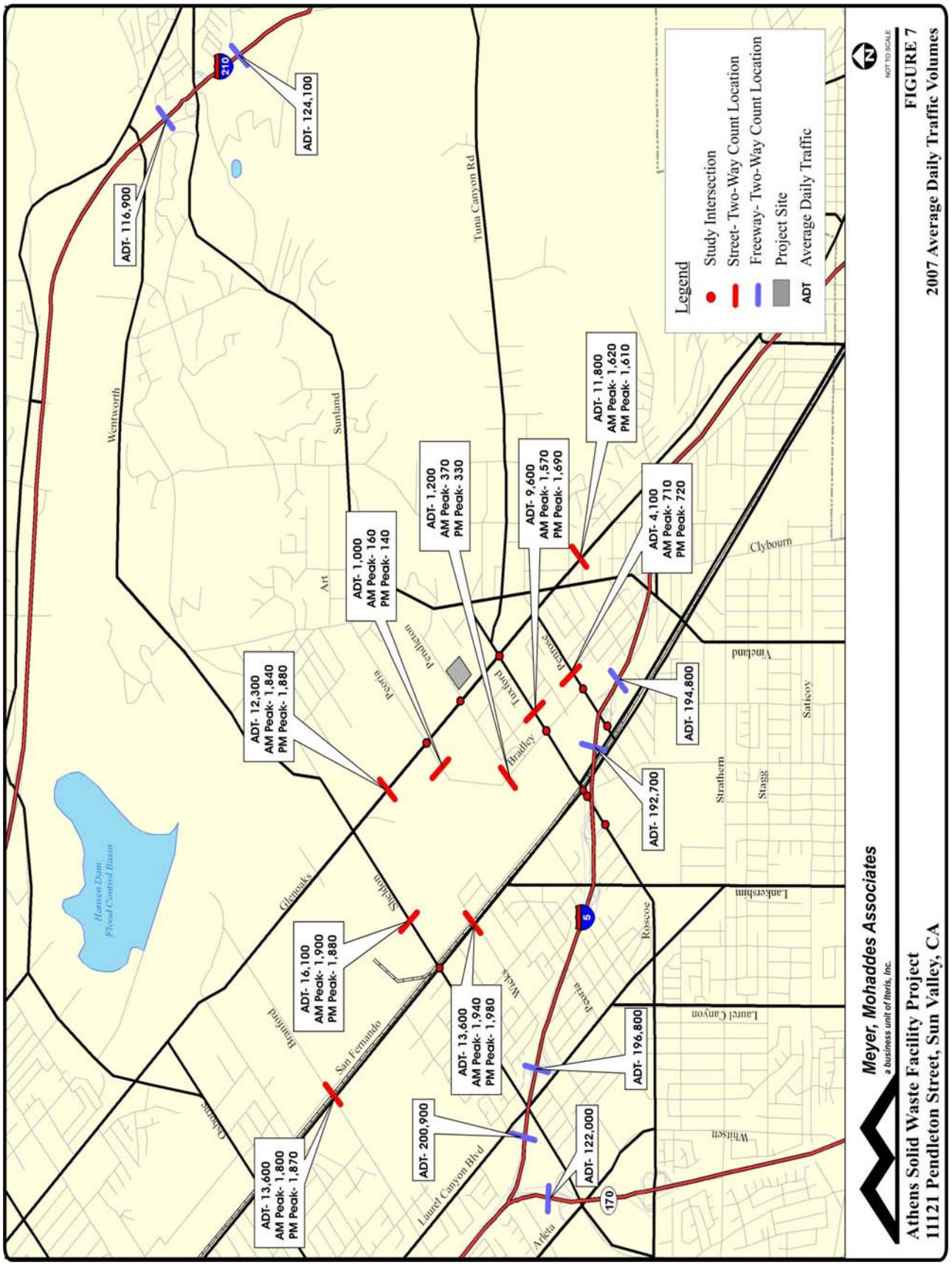
Legend
Study Intersection
Street- Two-Way Count Location
Freeway- Two-Way Count Location
Project Site
ADT Average Daily Traffic
ADT- 124,100
ADT- 116,900
ADT- 11,800
AM Peak- 1,620
PM Peak- 1,610
ADT- 9,600
AM Peak- 1,570
PM Peak- 1,690
ADT- 1,200
AM Peak- 370
PM Peak- 330
ADT- 1,000
AM Peak- 160
PM Peak- 140
ADT- 4,100
AM Peak- 710
PM Peak- 720
ADT- 12,300
AM Peak- 1,840
PM Peak- 1,880
ADT- 194,800
ADT- 192,700
ADT- 16,100
AM Peak- 1,900
PM Peak- 1,880
ADT- 13,600
AM Peak- 1,940
PM Peak- 1,980
ADT- 196,800
ADT- 200,900
ADT- 122,000
ADT- 13,600
AM Peak- 1,800
PM Peak- 1,870
Tuna Canyon Rd
Wentworth
Sunland
Art
Pendleton
Roscoe
Tunford
Bradley
Penrose
Clybourn
Vineland
Saticoy
Strathern
Stagg
Lankershim
Laurel Canyon
Whitsett
Arleta
Glenoaks
Sheldon
San Fernando
Branford
Osborne
Laurel Canyon Blvd
Hansen Dam
Flood Control Basin
210
5
170
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FIGURE 7
2007 Average Daily Traffic Volumes

1,500 tpd C&D Baseline

The existing facility currently operates under a Conditional Use Permit (CUP) ZA-98-0427 (CUZ), approved by the City of Los Angeles in 1999. The CUP authorizes the facility to accept up to 1,500 tpd. While the existing facility currently receives approximately 400 tpd, This baseline scenario assumes the maximum of 1,500 tpd of C&D materials.

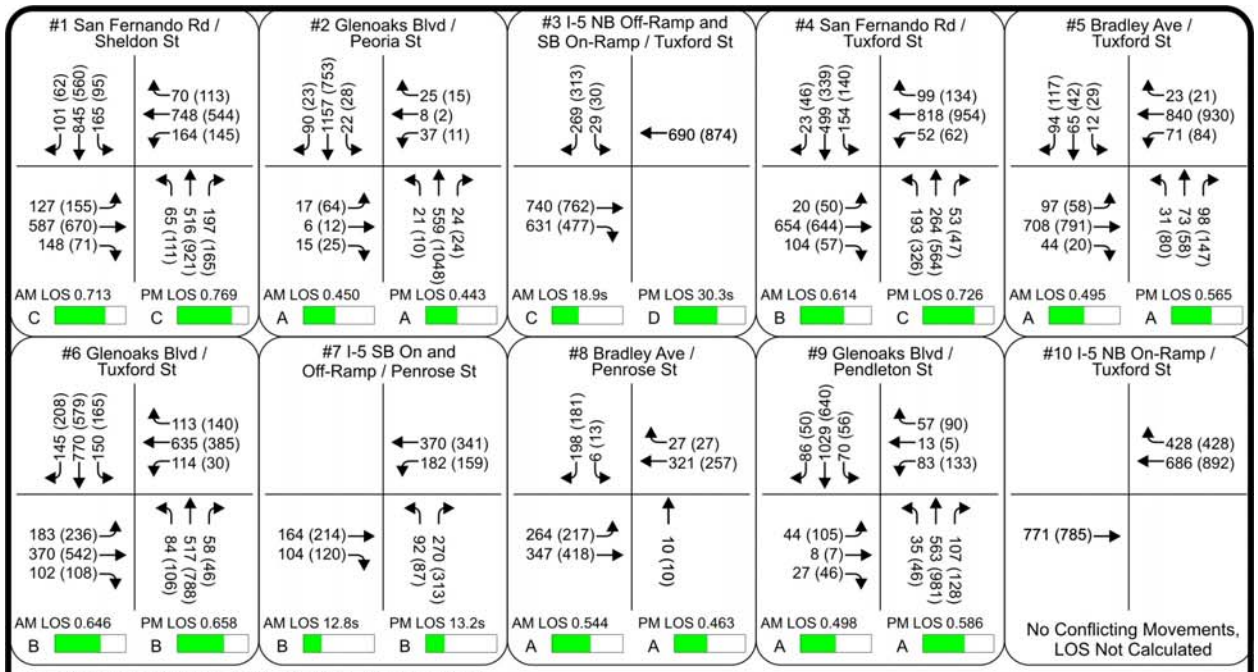
Utilizing the project trip generation and the trip distribution pattern, the project-only traffic volumes generated by 1,500 tpd of C&D (1,100 tpd beyond the trips for the existing 400 tpd of C&D) were assigned to the street network, and the resulting LOS and V/C ratios were calculated. Turning movement volumes at the nine study intersections for Baseline Scenario B are shown in **Figure 8**.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 4** summarizes the level of service calculations for the study intersections under Baseline Scenario B conditions during the AM and PM peak hours. The results indicate that all nine study intersections operate at an acceptable level of service (LOS 'C' or better) during the AM and PM peak hour. Level of service analysis worksheets for this scenario is provided in **Appendix B.**

TABLE 4: 1,500 TPD C&D BASELINE PEAK HOUR LOS SUMMARY

Intersection		1,500 tpd C&D Baseline			
		AM Peak Hour		PM Peak Hour	
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh
1	San Fernando Road and Sheldon Street	C	0.714	C	0.755
2	Glenoaks Boulevard and Peoria Street	A	0.445	A	0.435
3	Interstate 5 NB off / SB on-ramp and Tuxford St [Unsig]	C	17.6 sec	C	23.6 sec
4	San Fernando Road and Tuxford Street	B	0.612	C	0.721
5	Bradley Avenue and Tuxford Street	A	0.485	A	0.541
6	Glenoaks Boulevard and Tuxford Street	B	0.630	B	0.621
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	12.6 sec	B	12.7 sec
8	Bradley Avenue and Penrose Street	A	0.531	A	0.428
9	Glenoaks Boulevard and Pendleton Street	A	0.483	A	0.514



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

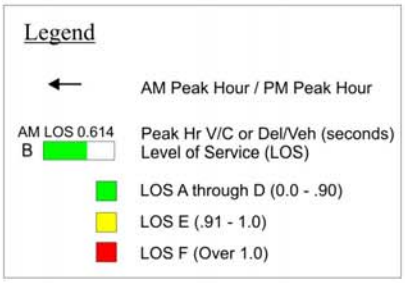


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Figure 8
Baseline Scenario B- 1,500 tpd Under Entitlement
Peak Hour Turning Movements

FUTURE WITHOUT PROJECT SCENARIOS

Under the Future Without Project scenario, there are two possible alternatives:

- Alternative 1 – Future No Project – 400 tpd C&D + Related Projects: Alternative 1 assumes the facility accepts 400 tpd of C&D materials, or Baseline Scenario A, plus traffic generated by related projects. At the time of this analysis, the EIR prepared for the Bradley Landfill and Recycling Center had not yet been approved. Therefore, this alternative is evaluated with and without the Bradley development as a related project. The without Bradley development scenario does not include the associated Bradley mitigation measures.

- Alternative 2 – Future No Project – 1,500 tpd (Per Entitlement) + Related Projects: Alternative 2 assumes the facility accepts 1,500 tpd of materials, or Baseline Scenario B, plus traffic generated by related projects. At the time of this analysis, the EIR prepared for the Bradley Landfill and Recycling Center had not yet been approved. Therefore, this alternative is evaluated with and without the Bradley development as a related project. The without Bradley development scenario does not include the associated Bradley mitigation measures.

To evaluate the potential impact of the proposed project on local traffic conditions, it is first necessary to develop a forecast of future traffic volumes in the study area under future conditions without the proposed project. This provides a basis against which to measure the potential significant impacts of the proposed project. To determine future background traffic volumes on the study area roadways and intersections, two primary variables were considered: 1) ambient traffic growth rate, and 2) traffic due to other known or related future development projects. The background (pre-project) traffic forecasts include a determination of the annual ambient traffic growth rate combined with specific related development projects in the area, which may affect increases in local traffic. An ambient background traffic growth rate of 1.24 percent per year is applied in this study, consistent with the Los Angeles County Congestion Management Program guidelines for traffic impact analyses. For this analysis, the future study year is assumed to be 2008. Future traffic volumes with ambient growth only are provided in **Figure 9**.

To account for the Advanced Traffic Control System (ATCS) mitigation measure identified in the Bradley Landfill and Recycling Center Traffic Analysis [1] conducted for the Bradley Landfill EIR, a seven percent reduction to the final V/C ratio was applied at four study intersections in all future scenarios/alternatives where the Bradley development is included as a related project. The four intersections include:

- San Fernando Road and Sheldon Street
- San Fernando Road and Tuxford Street
- Bradley Avenue and Tuxford Street
- Glenoaks Boulevard and Tuxford Street

A more detailed description of ATCS is provided on page 26, and in **Appendix C**.

Related Project Growth

Related project traffic growth is a result of specific known development projects in the study area. Based on information obtained from the City of Los Angeles and previous studies conducted in the area, a total of six related projects were identified which may affect traffic circulation within the study area. **Table 5**

[1] *Traffic Analysis for the Proposed Bradley Landfill and Recycling Center Transition Master Plan*, Crain and Associates, August 2005.

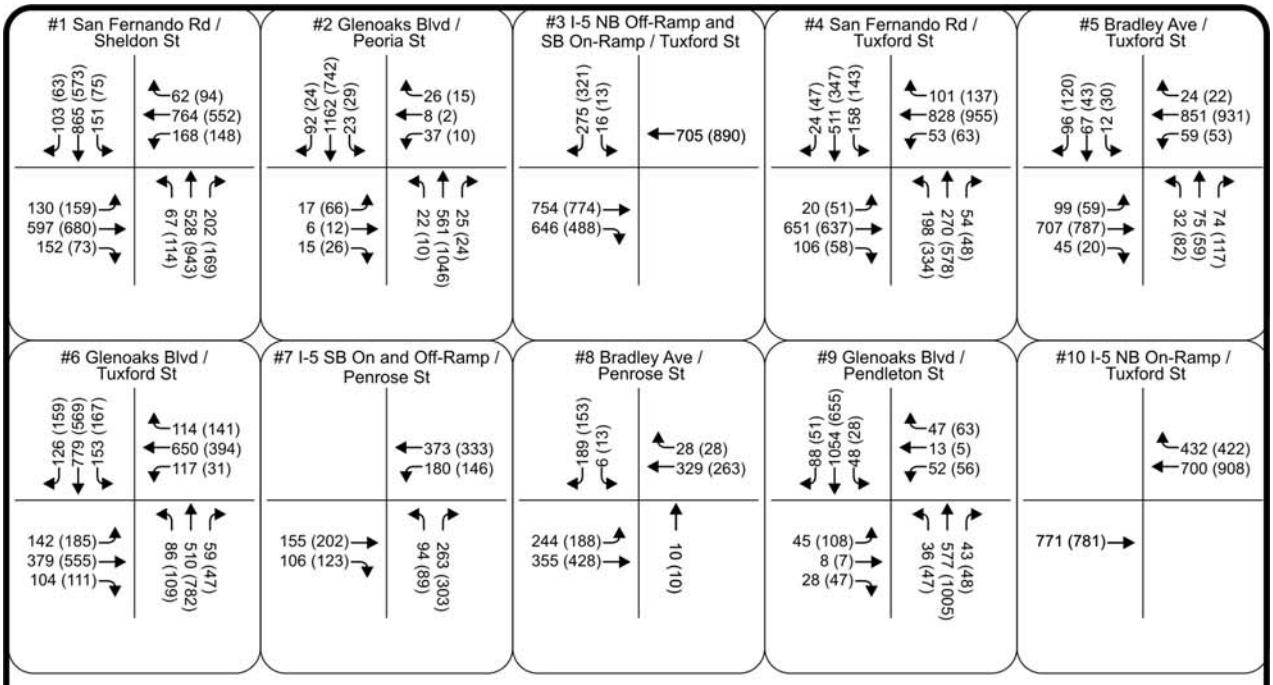
summarizes the location, size and type of land uses for the related projects. **Figures 10 and 11** illustrate the general location of the related projects and the related project trip generation.

TABLE 5: RELATED PROJECTS TRIP GENERATION ESTIMATES – AM AND PM PEAK HOUR

Project Number	Description/ Land Use	Variable		WEEKDAY					
				AM peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
1	Pendleton Street Open Air Market – 11051 Pendleton Street	285.705	KSF	302	193	**495**	194	210	**404**
2	Sun Valley Care Ministries – 9000 Sunland Boulevard	[a]		89	49	**138**	74	103	**177**
3	Sunland Commercial – 8652 Sunland Boulevard	17	KSF	32	11	**43**	48	108	**156**
4	LAUSD Byrd High School – 9171 Telfair Avenue	1620	Seats	421	357	**778**	107	120	**227**
5	Community Recycling and Recovery – 9143 to 9189 DeGarmo Avenue and 11300 W. Pendleton Street	[b]		135	130	**265**	162	147	**309**
6	Bradley Landfill Recycling Center (BLRC) – Phase II Construction	[c]		236	223	**459**	277	242	**519**
		TOTAL		**1,215**	**963**	**2,178**	**862**	**930**	**1,792**

[a] Proposed uses include Institutional (Summer Camp-140 students, College 50 Students), Commercial (Retail-15,040 sf, office – 17,040 sf), Residential (SFR – 2 du)
[b] Proposed permit increases the transfer station/MRF to 2,500 tpd, 2,000 tpd of C&D, 1,500 tpd of organics, 500 tpd of food materials, and 200 tpd of wood materials. Trip generation rates were obtained from Community Recycling.
[c] Construction trips calculated using the Ph 2 Construction trips in the Bradley Traffic Impact Analysis, Table 7. Employee trips were not included b/c they fall outside the AM and PM peak periods.

Traffic generated due to these projects has been estimated based on information from the LADOT, previous studies in the area, and supplemented with standard trip generation data from the Institute of Transportation Engineers' (ITE) *Trip Generation, 7th Edition.* Trip generation for the Community Recycling and Recovery project was provided by Community Recycling. As shown, the six related projects are forecast to generate a total of approximately 2,178 trips during the AM peak hour (1,215 trips in and 963 trips out), and 1,792 trips during the PM peak hour (862 trips in and 930 trips out). These related project trips were assigned to the roadway system by the traffic model as part of the development of the future conditions without the project.



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

Legend

← AM Peak Hour / PM Peak Hour

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Figure 9
Future With Ambient Growth Only
Peak Hour Turning Movements


Bradley Landfill and Recycling Center
Project Site
11051 Pendleton Street Pendleton St Open Air Market
9171 Telfair Ave LAUSD Byrd High School
9143 to 9189 DeGarmo Ave and 11300 W. Pendleton St Community Recycling and Recovery
9000 Sunland Blvd. Sun Valley Care Ministries
8652 Sunland Blvd. Sunland Commercial
Wentworth St
Glenoaks Blvd
Brainford St
San Fernando Rd
Sheldon St
Peoria St
Pendleton St
Art
Sunland Blvd
Tuxford St
Penrose St
Wicks
Telfair
Peoria
Roscoe Blvd
Laurel Canyon Blvd
Lankershim Blvd
Strathern St
Stagg St
Saticoy St
Vineland Ave
Clybourn Ave
Legend
Related Project
Study Intersection
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Figure 10
Related Project Locations

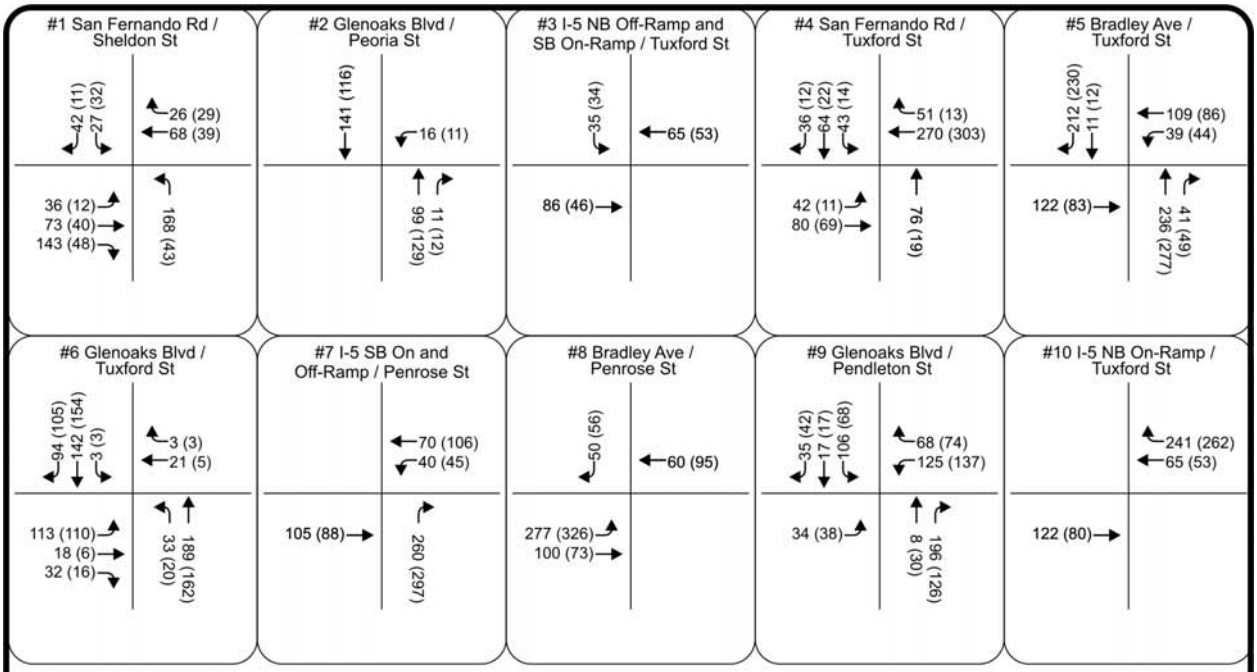

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Figure 11
Related Project Trip Generation

Future No Project-400 tpd Construction & Demolition + Ambient Growth + Related Projects

Future No Project-400 tpd C&D assumes that the ASVMRF maintains its existing throughput of 400 tpd of C&D materials. Future No Project conditions under Alternative 1 includes all existing traffic generated by the facility, plus traffic generated by ambient growth and related projects.

Operations Analysis – With Bradley Development/Mitigation

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. To determine if an unsignalized intersection (stop controlled) had a significant impact as a result of related projects under Alternative 1, unsignalized intersections were analyzed as signalized intersections using the CMA method for signalized intersections. The same aforementioned threshold of significance criteria was applied.

As shown in **Table 6**, a seven percent reduction for the Bradley Landfill and Recycling Center mitigation measure for an Advanced Traffic Control System (ATCS) has already been applied at four of the nine study intersections under Alternative 1, "With" related projects. The seven percent credit value has been applied by various jurisdictions throughout southern California for many years in environmental studies, including in the City of Los Angeles. In fact, the City of Los Angeles is now applying a ten percent credit for adaptive traffic control systems, however, to be conservative for this EIR analysis, only five and seven percent benefit/credit is applied to ensure that mitigation credits conservatively represent expected benefits. The four intersections with the ATCS reduction include:

- San Fernando Road and Sheldon Street
- San Fernando Road and Tuxford Street
- Bradley Avenue and Tuxford Street
- Glenoaks Boulevard and Tuxford Street

The ATCS includes interconnect via new conduit and fiber optic cables, traffic signal detection systems, surveillance cameras, message signs and other means that connect the arterial traffic signal system with the City Hall Traffic Management Center and other potential connections with adjacent jurisdictions. Circulation improvements related to ATCS are listed below. Additional information on ATCS is provided in **Appendix C**.

- Improve traffic signal coordination throughout the system; allow communication between signals, thereby making each intersection part of a system rather than operating in isolation
- Reduce motorist delay and stops at intersections
- Improve overall travel speeds
- Reduce "lost" time at intersections due to inefficient signal timing patterns
- Allow for "real time" monitoring of intersections and roadways to identify and respond to incidents, congestion and malfunctions
- Improve system maintenance
- Allow city staff to adjust signal timing in response to congestion and incidents much faster than today

Tables 6 and 7 summarize the level of service calculations for the study intersections under this scenario, with all the related projects, including the Bradley development. This scenario also includes the seven percent ACTS Bradley mitigation measure. This comparison was conducted to reveal significant impacts that are projected to occur as a result of the addition of traffic from all related projects if the ASVMRF processes

its existing throughput of 400 tpd of C&D materials without an increase to project throughput (No-project). The results indicate that eight of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. Impacts considered significant are expected to occur at seven locations as a result of the addition of traffic from related projects during the AM and PM peak hour. These intersections include:

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Bradley Avenue and Tuxford Street – PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM Peak Hour
- Interstate 5 SB on/off-ramp and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Level of service analysis worksheets for this alternative are provided in **Appendix B.** Intersection turning movement volumes and level of service for this alternative is provided in **Figure 12**.

TABLE 6: ALT 1 – 400 TPD C&D (NO PROJECT) + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – PEAK HOUR LOS SUMMARY

Intersection		400 tpd C&D With Ambient Growth Only (No Related Projects)				400 tpd C&D With Ambient Growth and WITH Related Projects with Bradley Development				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	C	0.729	C	0.770	D	0.857	C	0.751	0.128	-0.019	YES	NO
2	Glenoaks Boulevard and Peoria Street	A	0.452	A	0.443	A	0.510	A	0.494	0.058	0.051	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	C	17.2 sec	C	24.0 sec	D	31.3 sec	F	59.3 sec	14.1 sec	35.3 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	B	0.626	C	0.737	C	0.712	C	0.787	0.086	0.050	YES	YES
5	Bradley Avenue and Tuxford Street [1]	A	0.496	A	0.549	B	0.637	C	0.725	0.141	0.176	NO	YES
6	Glenoaks Boulevard and Tuxford Street [1]	B	0.629	B	0.627	C	0.710	B	0.688	0.081	0.061	YES	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	12.7 sec	B	12.8 sec	C	19.6 sec	D	25.4 sec	6.9 sec	12.6 sec	YES	YES
8	Bradley Avenue and Penrose Street	A	0.530	A	0.430	C	0.788	C	0.748	0.258	0.318	YES	YES
9	Glenoaks Boulevard and Pendleton Street	A	0.480	A	0.508	B	0.637	C	0.730	0.157	0.222	NO	YES

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

TABLE 7: 400 TPD C&D (NO PROJECT) + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – LOS ANALYSIS OF UNSIGNALIZED INTERSECTIONS

	Intersection	400 tpd C&D With Ambient Growth Only (No Related Projects)				400 tpd C&D With Ambient Growth and WITH Related Projects with Bradley Development				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	AM Peak	PM Peak	AM Peak	PM Peak
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [If Signalized]	A	0.469	A	0.546	A	0.524	A	0.589	0.055	0.043	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [If Signalized]	A	0.420	A	0.457	C	0.704	C	0.759	0.284	0.302	YES	YES

In addition to the ATCS mitigation measure, the Bradley Landfill and Recycling Center TIA also indicates that two physical mitigation measures are required at the intersections of Bradley Avenue and Tuxford Street and Bradley Avenue and Penrose Street. At Bradley Avenue and Tuxford Street, the mitigation required is to convert the existing east and westbound lane configurations from one left-turn lane, one through lane, and one shared through/right-turn lane to a dedicated left-turn lane, two through lanes, and a dedicated right-turn lane. In addition, the north and southbound configurations would also be converted from a left/through/right-turn lane to one shared through/left-turn lane and one dedicated right-turn lane. At Bradley Avenue and Penrose Street, the existing southbound configuration would be converted from one shared left/through/right-turn lane to one shared through/left-turn lane and one dedicated right-turn lane. If these two physical mitigation measures are implemented per the Bradley Landfill and Recycling Center TIA, a significant impact at Bradley Avenue and Penrose Street would still remain during the AM and PM peak hour. The resulting mitigated LOS and corresponding V/C ratios are provided below in **Table 8**.

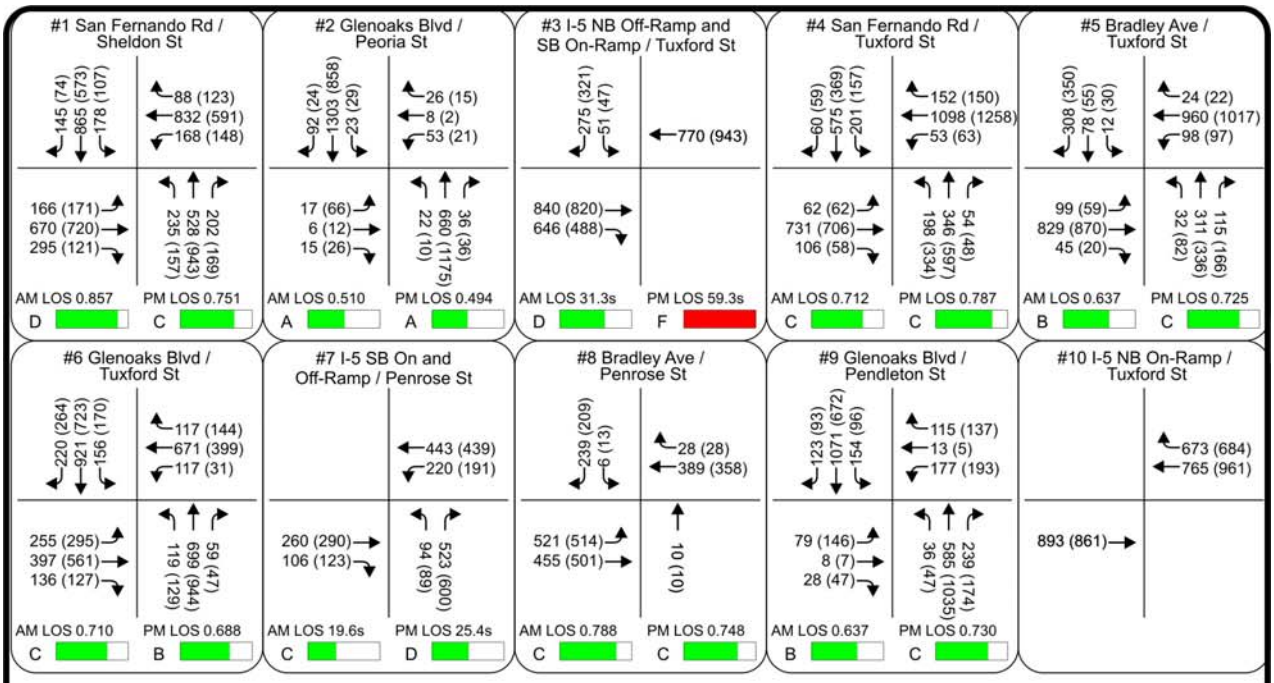
TABLE 8: 400 TPD C&D + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – LOS ANALYSIS WITH BRADLEY MITIGATIONS

	Intersection	400 tpd C&D With Ambient Growth Only (No Related Projects)				Future 400 tpd C&D – WITH Related Projects and Bradley Development With Bradley Mitigations				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour					
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	AM Peak	PM Peak	AM Peak	PM Peak
5	Bradley Avenue and Tuxford Street [1]	A	0.496	A	0.549	A	0.553	B	0.607	0.057	0.058	NO	NO
8	Bradley Avenue and Penrose Street	A	0.530	A	0.430	C	0.784	C	0.739	0.254	0.309	YES	YES

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

With the 400 tpd C&D baseline, the addition of traffic from related projects (including the Bradley Development) would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts are located at the following study intersections:

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM Peak Hour
- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

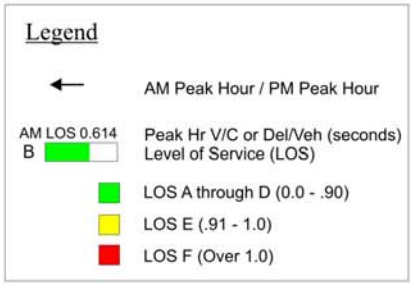


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Figure 12
Alternative 1-Future No Project
400 tpd C&D + Ambient Growth + Related Projects (With Bradley)
Peak Hour Turning Movements

Operations Analysis – Without Bradley Development/Mitigation

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 9** summarizes the level of service calculations for the study intersections under this scenario, with all related projects except the Bradley development. It assumes the exiting roadway network is in place in 2008, and excludes all Bradley-related mitigation measures, including the seven percent ATCS mitigation measure and the physical mitigation measures at Bradley Avenue and Tuxford Street and Bradley Avenue and Penrose Street. This comparison was conducted to reveal significant impacts that are projected to occur as a result of the addition of traffic from related projects, if the ASVMRF processes its existing throughput of 400 tpd of C&D materials without an increase to project throughput (No-project).

To determine if an unsignalized intersection (stop controlled) had a significant impact as a result of related projects under Alternative 1, unsignalized intersections were analyzed as signalized intersections using the CMA method for signalized intersections. The same aforementioned threshold of significance criteria was applied, and the results are shown below in **Table 10**.

The results indicate that seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. Impacts considered significant are expected to occur at four locations as a result of the addition of traffic from related projects during both the AM and PM peak hour. These intersections include:

- San Fernando Road and Sheldon Street – AM and PM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Level of service analysis worksheets for this analysis are provided in **Appendix B.** Intersection turning movement volumes and level of service for this analysis is provided in **Figure 13**.

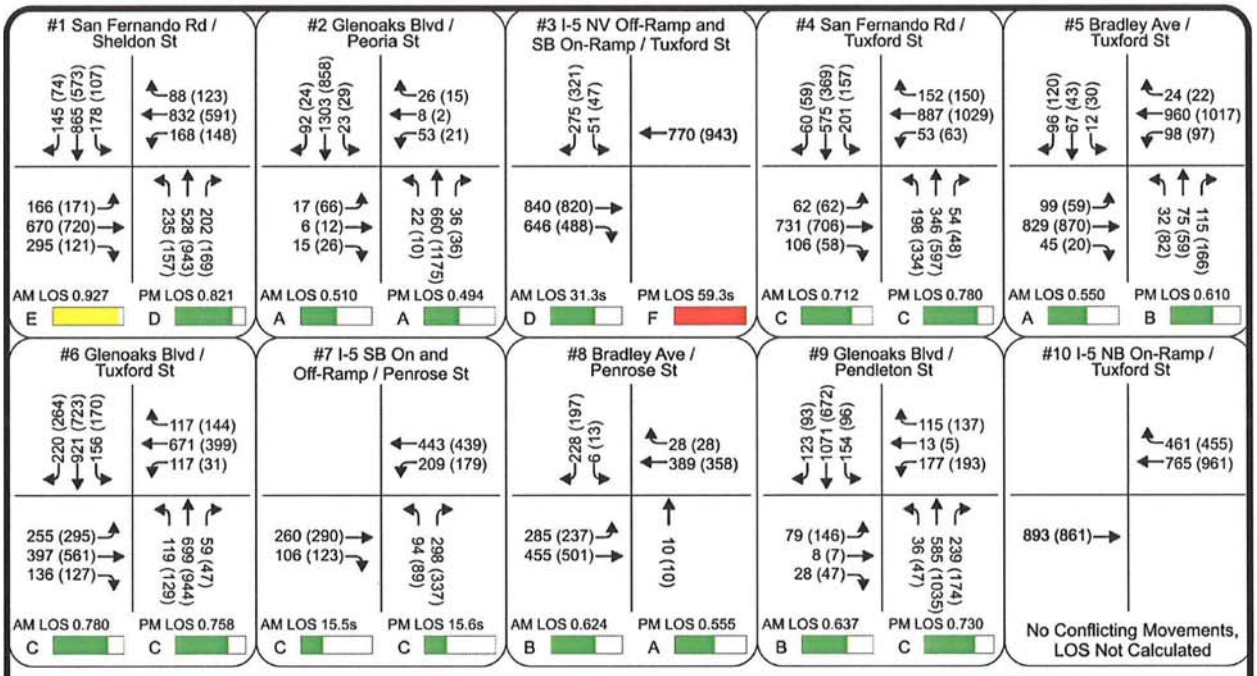
TABLE 9: 400 TPD C&D (NO PROJECT) + AMBIENT GROWTH + OTHER RELATED PROJECTS (NO BRADLEY DEVELOPMENT) – PEAK HOUR LOS SUMMARY

Intersection		400 tpd C&D With Ambient Growth Only (No Related Projects)				400 tpd C&D With Ambient Growth and WITH Related Projects without Bradley Development and Mitigations				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	C	0.729	C	0.770	E	0.927	D	0.821	0.198	0.051	YES	YES
2	Glenoaks Boulevard and Peoria Street	A	0.452	A	0.443	A	0.510	A	0.494	0.058	0.051	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	C	17.2 sec	C	24.0 sec	D	31.3 sec	F	59.3 sec	14.1 sec	35.3 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	B	0.626	C	0.737	C	0.712	C	0.780	0.086	0.043	YES	YES
5	Bradley Avenue and Tuxford Street [1]	A	0.496	A	0.549	A	0.550	B	0.610	0.054	0.061	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	B	0.629	B	0.627	C	0.780	C	0.758	0.151	0.131	YES	YES
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	12.7 sec	B	12.8 sec	C	15.5 sec	C	15.6 sec	2.8 sec	2.8 sec	NO	NO
8	Bradley Avenue and Penrose Street	A	0.530	A	0.430	B	0.624	A	0.555	0.094	0.125	NO	NO
9	Glenoaks Boulevard and Pendleton Street	A	0.480	A	0.508	B	0.637	C	0.730	0.157	0.222	NO	YES

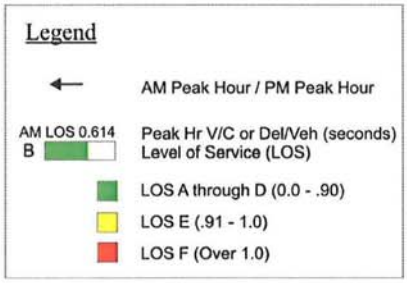
[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

TABLE 10: 400 TPD C&D (NO PROJECT) + AMBIENT GROWTH + OTHER RELATED PROJECTS (NO BRADLEY DEVELOPMENT) – LOS ANALYSIS OF UNSIGNALIZED INTERSECTIONS

Intersection		400 tpd C&D With Ambient Growth Only (No Related Projects)				400 tpd C&D With Ambient Growth and WITH Related Projects without Bradley Development and Mitigations				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [If Signalized]	A	0.469	A	0.546	A	0.524	A	0.589	0.055	0.043	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [If Signalized]	A	0.420	A	0.457	A	0.538	A	0.566	0.118	0.109	NO	NO



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.



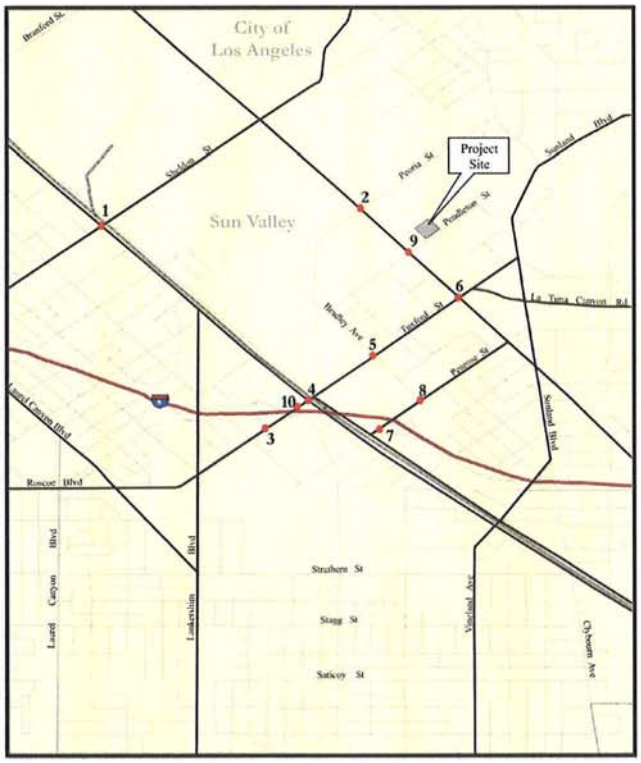


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Figure 13
Future No Project
400 tpd C&D + Ambient Growth + Related Projects (Without Bradley)
Peak Hour Turning Movements

Summary Future No Project (400 tpd C&D) Baseline

Under Future No Project (400 tpd C&D) conditions *with* the Bradley development and mitigations, eight of the nine study intersections are projected to operate at an acceptable level of service during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour.

The addition of traffic from related projects (including the Bradley development) would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts as a result of the related projects are located at the study intersections below.

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM Peak Hour
- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Under Future No Project (400 tpd C&D) conditions 1 *without* the Bradley development and mitigations, seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS F during the PM peak hour.

The addition of traffic from related projects (excluding the Bradley development) would result in four significant impacts without the Bradley Landfill and Recycling Center mitigation measures. The remaining significant impacts as a result of the related projects are located at the study intersections below.

- San Fernando Road and Sheldon Street – AM and PM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Future No Project – 1,500 tpd C&D Baseline + Ambient Growth + Related Projects

Future 1,500 tpd (as Baseline Per Entitlement) assumes that the ASVMRF will process the maximum throughput allowed under the 1999 CUP of 1,500 tpd of materials. This alternative includes all traffic generated by 1,500 tpd of waste, then adds traffic generated by ambient growth and related projects.

Operations Analysis – With Bradley Development/Mitigation

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. To determine if an unsignalized intersection (stop controlled) had a significant impact as a result of related projects under this scenario, unsignalized intersections were analyzed as signalized intersections using the CMA method for signalized intersections. The same aforementioned threshold of significance criteria was applied.

The same seven percent ATCS mitigation measure was applied to this scenario (Future No Project – 1,500 tpd Per Entitlement) as in the scenario above showing the analysis of the previous scenario (Future No Project – 400 tpd C&D + Ambient Growth + Related Projects), and the results are shown below in **Tables 11 and 12**. This comparison was conducted to reveal significant impacts that are projected to occur as a result of the addition of traffic from related projects (including the Bradley development) if the ASVMRF processes a throughput of 1,500 tpd of materials, as allowed under their Entitlement. The results indicate that with the seven percent ATCS mitigation, eight of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. Impacts considered significant are expected to occur at seven locations as a result of the addition of traffic from related projects with the inclusion of mitigation measures from the Bradley development during the AM and PM peak hour. These intersections include:

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Bradley Avenue and Tuxford Street – PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Interstate 5 SB on/off-ramp and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

TABLE 11: 1,500 TPD C&D BASELINE + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – PEAK HOUR LOS SUMMARY

Intersection		1,500 tpd C&D Baseline Ambient Growth Only (No Related Projects)				1,500 tpd C&D Baseline WITH Related Projects and Bradley Development				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	C	0.733	C	0.787	D	0.858	C	0.767	0.125	-0.020	YES	NO
2	Glenoaks Boulevard and Peoria Street	A	0.460	A	0.453	A	0.518	A	0.503	0.058	0.050	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	C	19.8 sec	D	33.4 sec	E	40.2 sec	F	93.1 sec	20.4 sec	59.7 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	B	0.629	C	0.744	C	0.715	C	0.794	0.086	0.050	YES	YES
5	Bradley Avenue and Tuxford Street [1]	A	0.506	A	0.578	B	0.657	C	0.752	0.151	0.174	NO	YES
6	Glenoaks Boulevard and Tuxford Street [1]	B	0.661	B	0.673	C	0.743	C	0.734	0.082	0.061	YES	YES
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	13.0 sec	B	13.4 sec	C	20.9 sec	D	29.1 sec	7.9 sec	15.7 sec	YES	YES
8	Bradley Avenue and Penrose Street	A	0.556	A	0.473	D	0.814	C	0.791	0.258	0.318	YES	YES
9	Glenoaks Boulevard and Pendleton Street	A	0.509	A	0.598	B	0.666	D	0.819	0.157	0.221	NO	YES

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

TABLE 12: 1,500 TPD C&D BASELINE + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – LOS ANALYSIS OF UNSIGNALIZED INTERSECTIONS

Intersection		1,500 tpd C&D Baseline Ambient Growth Only (No Related Projects)				1,500 tpd C&D Baseline WITH Related Projects and Bradley Development				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [If Signalized]	A	0.480	A	0.560	A	0.536	B	0.603	0.056	0.043	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [If Signalized]	A	0.442	A	0.492	C	0.727	C	0.793	0.285	0.301	YES	YES

In addition to the ATCS mitigation measure, the Bradley Landfill and Recycling Center TIA also indicates that two physical mitigation measures are required at the intersections of Bradley Avenue and Tuxford Street and Bradley Avenue and Penrose Street. At Bradley Avenue and Tuxford Street, the mitigation required is to convert the existing east and westbound lane configurations from one left-turn lane, one through lane, and one shared through/right-turn lane to a dedicated left-turn lane, two through lanes, and a dedicated right-turn lane. In addition, the north and southbound configurations would also be converted from a left/through/right-turn lane to one shared through/left-turn lane and one dedicated right-turn lane. At Bradley Avenue and Penrose Street, the existing southbound configuration would be converted from one shared left/through/right-turn lane to one shared through/left-turn lane and one dedicated right-turn lane. If these two physical mitigation measures are implemented per the Bradley Landfill and Recycling Center TIA, a significant impact at Bradley Avenue and Penrose Street would still remain during the AM peak hour. The resulting mitigated LOS and corresponding V/C ratios are provided below in **Table 13**.

TABLE 13: 1,500 TPD C&D BASELINE + AMBIENT GROWTH + BRADLEY DEVELOPMENT + OTHER RELATED PROJECTS – LOS ANALYSIS WITH BRADLEY MITIGATIONS

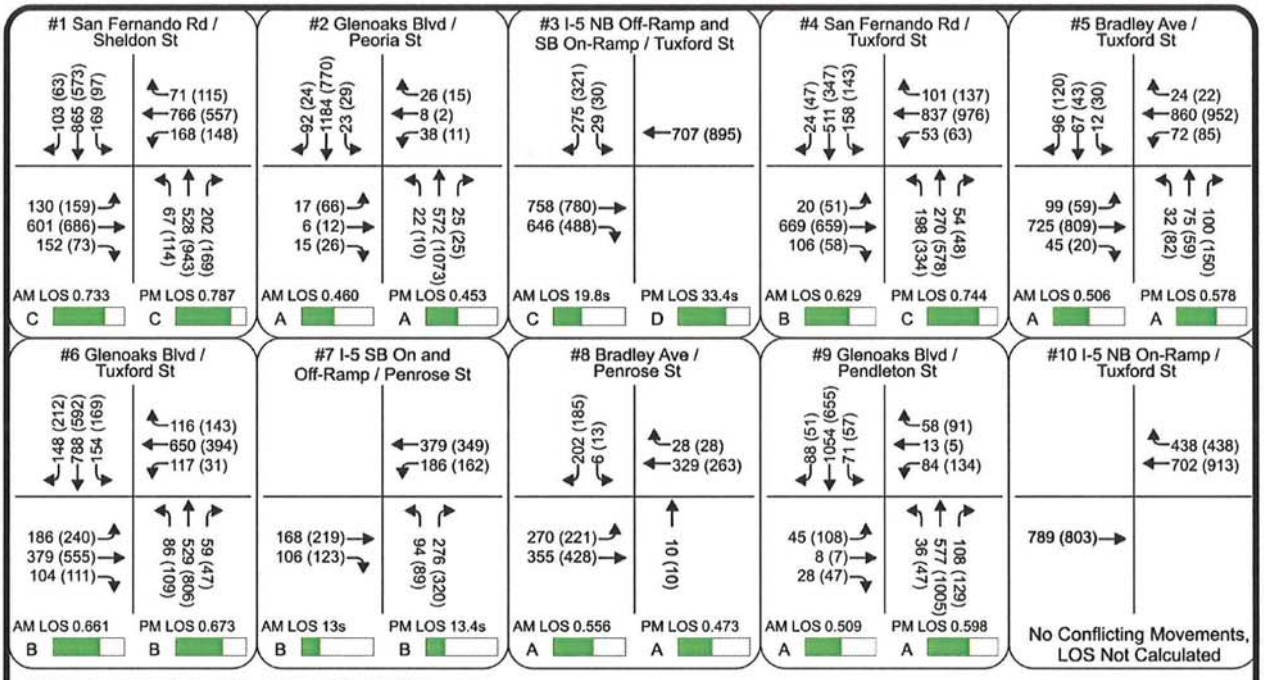
	Intersection	1,500 tpd C&D Baseline Ambient Growth Only (No Related Projects)				1,500 tpd C&D Baseline WITH Related Projects and Bradley Development With Bradley Mitigations				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
5	Bradley Avenue and Tuxford Street [1]	A	0.506	A	0.578	A	0.556	B	0.612	0.05	0.034	NO	NO
8	Bradley Avenue and Penrose Street	A	0.556	A	0.473	D	0.810	C	0.783	0.254	0.310	YES	NO

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

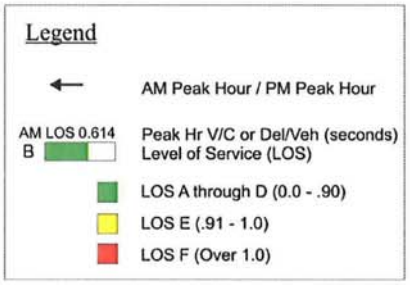
With the 1,500 tpd baseline, the addition of traffic from related projects would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts are located at the following study intersections:

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Level of service analysis worksheets for this scenario are provided in **Appendix B.** Intersection turning movement volumes and level of service at the nine study intersections for this alternative are shown in **Figure 14** with ambient growth only, and **Figure 15** with ambient growth and related projects (With Bradley).



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.



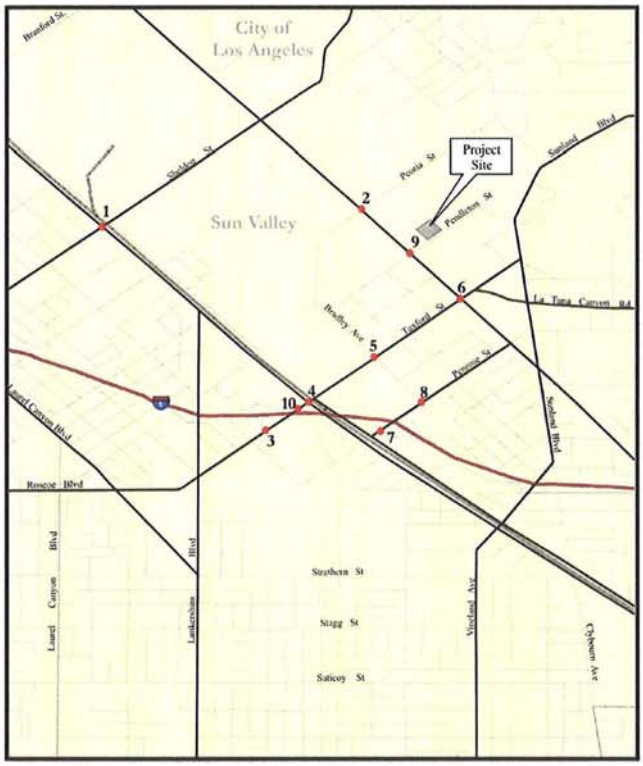


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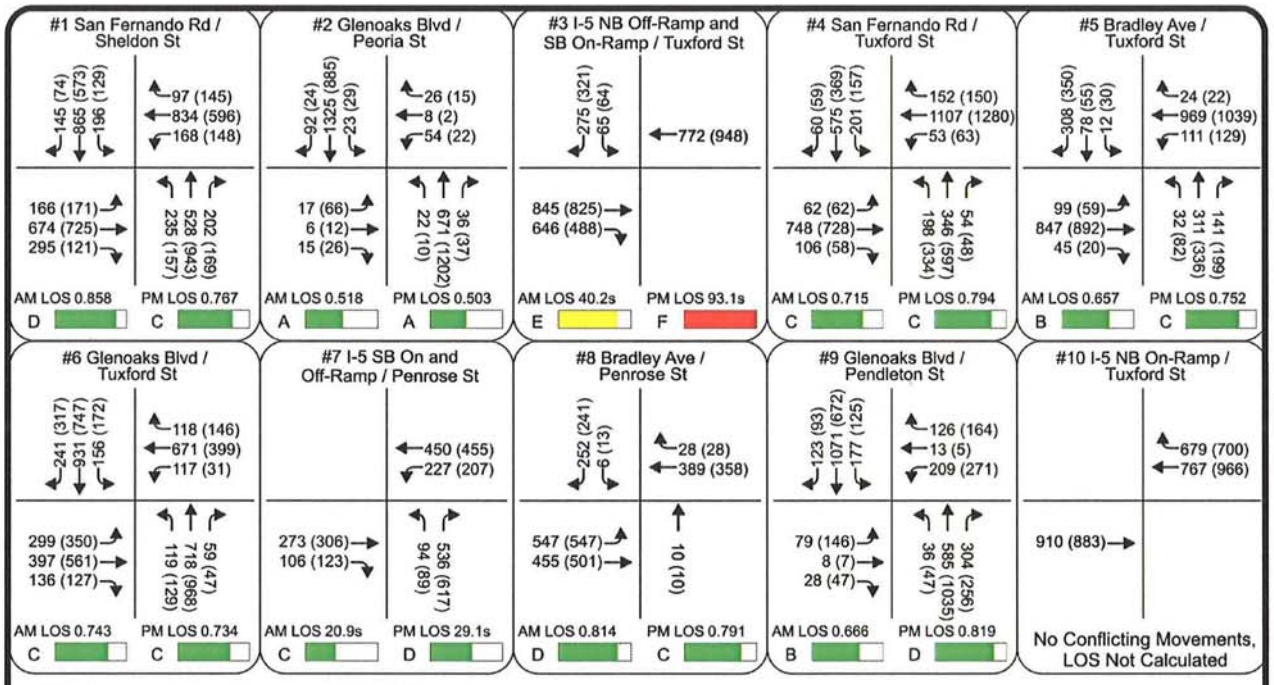
Figure 14
Future No Project
1,500 tpd + Ambient Growth (No Related Project)
Peak Hour Turning Movements



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

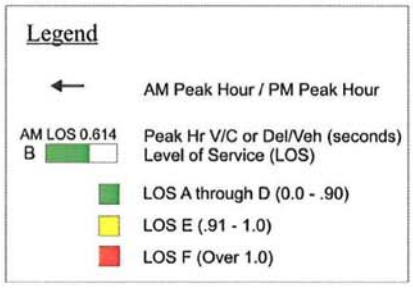


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Figure 15
Future No Project
1,500 tpd + Ambient Growth + Related Projects (With Bradley)
Peak Hour Turning Movements

Operations Analysis – Without Bradley Development/Mitigation

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 14** summarizes the level of service calculations for the study intersections under Alternative 2, with all related projects except the Bradley development. This scenario does not include the associated Bradley mitigation measures. This comparison was conducted to reveal significant impacts that are projected to occur as a result of the addition of traffic from related projects (without the Bradley development), if the ASVMRF processes its existing throughput of 1,500 tpd of materials, as allowed under their Entitlement.

To determine if an unsignalized intersection (stop controlled) had a significant impact as a result of related projects under Alternative 2, unsignalized intersections were analyzed as signalized intersections using the CMA method for signalized intersections. The same aforementioned threshold of significance criteria was applied, and the results are shown below in **Table 15**.

The results indicate that seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. Impacts considered significant are expected to occur at four locations as a result of the addition of traffic from related projects (without the Bradley development) without the inclusion of Bradley mitigation measures during both the AM and PM peak hour. These intersections include:

- San Fernando Road and Sheldon Street – AM and PM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Level of service analysis worksheets for this alternative are provided in **Appendix B.** Intersection turning movement volumes and level of service for this alternative is provided in **Figure 16**.

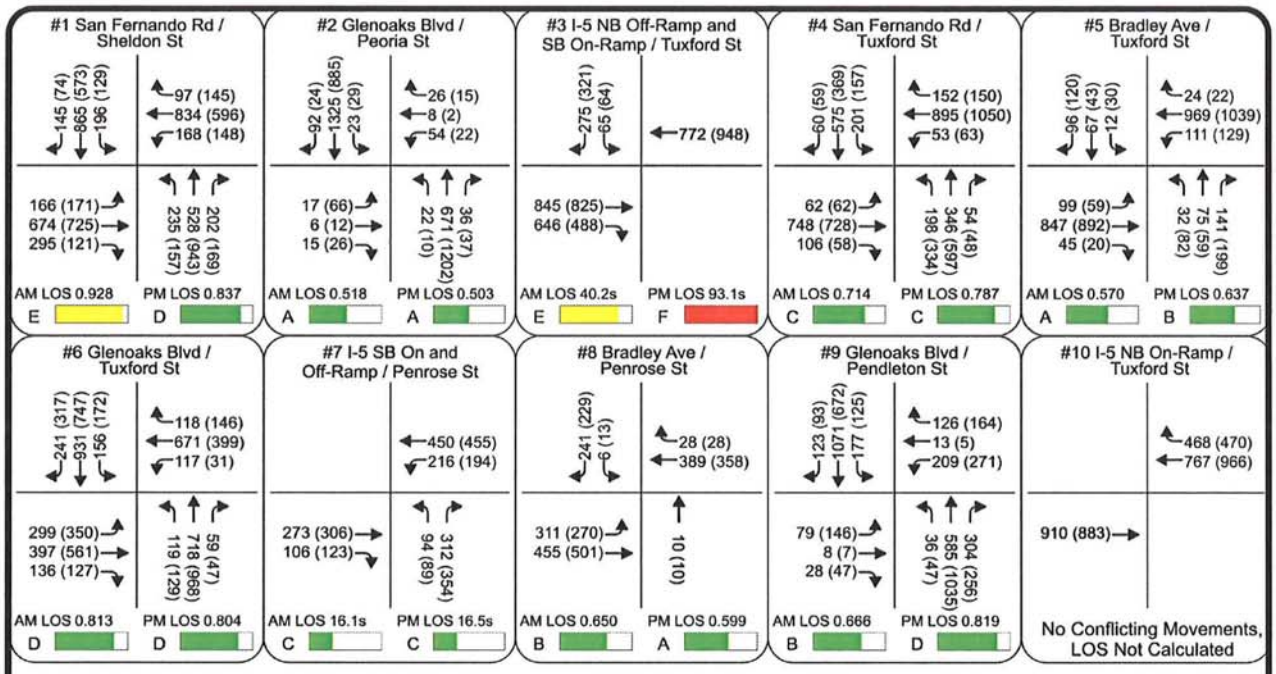
TABLE 14: 1,500 TPD C&D BASELINE + AMBIENT GROWTH + OTHER RELATED PROJECTS (NO BRADLEY DEVELOPMENT) – PEAK HOUR LOS SUMMARY

	Intersection	1,500 tpd C&D Baseline Ambient Growth Only (No Related Projects)				1,500 tpd C&D Baseline WITH Related Projects (No Bradley Development)				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	C	0.733	C	0.787	E	0.928	D	0.837	0.195	0.050	YES	YES
2	Glenoaks Boulevard and Peoria Street	A	0.460	A	0.453	A	0.518	A	0.503	0.058	0.050	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	C	19.8 sec	D	33.4 sec	E	40.2 sec	F	93.1 sec	20.4 sec	59.7 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	B	0.629	C	0.744	C	0.714	C	0.787	0.085	0.043	YES	YES
5	Bradley Avenue and Tuxford Street [1]	A	0.506	A	0.578	A	0.570	B	0.637	0.064	0.059	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	B	0.661	B	0.673	D	0.813	D	0.804	0.152	0.131	YES	YES
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	B	13.0 sec	B	13.4 sec	C	16.1 sec	C	16.5 sec	3.1 sec	3.1 sec	NO	NO
8	Bradley Avenue and Penrose Street	A	0.556	A	0.473	B	0.650	A	0.599	0.094	0.126	NO	NO
9	Glenoaks Boulevard and Pendleton Street	A	0.509	A	0.598	B	0.666	D	0.819	0.157	0.221	NO	YES

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis

TABLE 15: 1,500 TPD C&D BASELINE + AMBIENT GROWTH + OTHER RELATED PROJECTS (NO BRADLEY DEVELOPMENT) – LOS ANALYSIS OF UNSIGNALIZED INTERSECTIONS

	Intersection	1,500 tpd C&D Baseline Ambient Growth Only (No Related Projects)				1,500 tpd C&D Baseline WITH Related Projects (No Bradley Development)				Related Project Increase in V/C or Del/Veh		Significant Impact Due to Related Projects	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [If Signalized]	A	0.480	A	0.560	A	0.536	B	0.603	0.056	0.043	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [If Signalized]	A	0.442	A	0.492	A	0.562	A	0.599	0.120	0.107	NO	NO



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

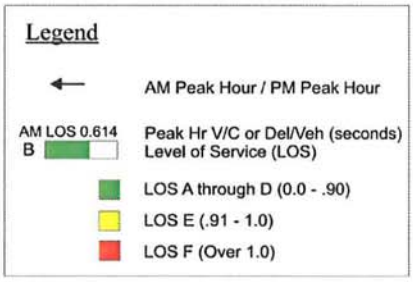


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Figure 16
Future No Project
1,500 tpd + Ambient Growth + Related Projects (Without Bradley)
Peak Hour Turning Movements

Summary 1,500 tpd C&D Baseline Analysis

Under Future No Project (1,500 tpd) conditions *with* the Bradley development and mitigations, eight of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

Under this scenario (including the Bradley development), the addition of traffic from related projects would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts as a result of the related projects are located at the study intersections below. This is a Future No Project alternative based on 1,500 tpd per the 1999 CUP, therefore there are no significant impacts created by the proposed project.

- San Fernando Road and Sheldon Street – AM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

Under Future No Project (1,500 tpd) conditions *without* the Bradley development and mitigations, seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

Under Alternative 2 (excluding the Bradley development), the addition of traffic from related projects would result in four significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts as a result of the related projects are located at the study intersections below. This is a Future No Project alternative based on 1,500 tpd per the 1999 CUP, therefore there are no significant impacts created by the proposed project.

- San Fernando Road and Sheldon Street – AM and PM Peak Hour
- San Fernando Road and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

FUTURE WITH PROJECT SCENARIO

The Future with Project scenario consists of the estimated project traffic generated by the ASVMRF. There are a total of four analyses in the Future With Project scenario based on two categories; tonnage-based alternatives and trip-based alternatives. All Future With Project scenarios include traffic generated by the alternative, ambient growth, and related projects. The Bradley development is included in all of the Future with Project scenarios as a related project.

Tonnage-Based Alternatives

- Future With Project – 500 tpd C&D + 1,000 tpd MSW: This analysis assumes the facility will accept 500 tpd of C&D and 1,000 tpd of municipal solid waste (MSW). The estimated project-generated traffic for this analysis will be superimposed onto the existing street network. The estimated project-generated traffic will be added to total traffic volumes derived in Alternative 1 to forecast the "Future With Project" traffic volumes. These cumulative traffic volumes will be used to determine the weekday AM and PM peak-hour intersection operating conditions and levels of service for the 500 tpd C&D + 1,000 MSW alternative.

- Future Alternative – 1,500 tpd MSW – This analysis assumes that the permit allows the whole 1,500 tpd to be all municipal solid waste (MSW), such that there would be zero C&D materials accepted. The estimated project-generated traffic as MSW will be added to the traffic volumes derived in Alternative 1 (with an adjustment by removing the trips associated with the existing 400 tpd of C&D) to forecast "Future With Project" traffic volumes. These cumulative traffic volumes will be used to determine AM and PM peak hour intersection operating conditions and levels of service for the 1,500 tpd MSW alternative.

Trip-Based Alternatives

- Future With Project-440 Trips and 400 tpd C&D Constant – Alternative 5 holds constant the 440 inbound trips and 440 outbound trips per day approved per the 1999 Mitigated Negative Declaration (MND) and CUP, and also assumes that the 400 tpd of C&D materials remains constant. This alternative analyzes how much MSW the facility can handle while maintaining 440 inbound trips and 440 outbound trips per day.

- Future With Project – 400 tpd C&D + X tpd MSW and No Unavoidable Adverse Impacts – Alternative 6 determines how much MSW the facility can accept, assuming the C&D intake remains 400 tpd, and the project traffic is restricted such that no adverse traffic impacts result from the addition of project traffic.

Project Trip Generation

Trip generation rates for the future with project scenarios were derived from data provided by Athens Services and compared with rates from other traffic studies for similar projects. All trip generation rates were converted to PCE using the methodology previously described. The results are shown in **Table 16**.

TABLE 16: RAW TRIP GENERATION RATES FOR TONNAGE-BASED ALTERNATIVES

Alternative	Trips Ends Generated					
	Weekday AM			Weekday PM		
	In	Out	Total	In	Out	Total
Future With Project 500 tpd C&D + 1,000 tpd MSW	37	21	**58**	28	27	**55**
Future Alternative – 1,500 tpd MSW	26	17	**43**	4	4	**8**
Future With Project – 440 Trips and 400 tpd C&D Constant	49	30	**79**	26	25	**51**
Future With Project – 400 tpd C&D + 2,750 MSW	44	26	**70**	25	24	**49**

Source: Athens Services
Note: The trip generation rates used for the LOS analysis are different from the raw trip generation numbers shown above. Trip generation rates used in the LOS analysis reflect the difference between the proposed scenario and existing conditions (400 tpd C&D). Final trip generation rates entered into TRAFFIX were converted to PCE using a conversion factor of 2.0.

Tonnage-Based Alternatives

Future With Project – 500 tpd Construction & Demolition + 1,000 tpd Municipal Solid Waste

Future With Project-500 tpd C&D and 1,000 tpd MSW assumes that the ASVMRF will accept the maximum tonnage allowed under the 1999 CUP of 1,500 tpd. Rather than 1,500 tpd of C&D materials, it will process 500 tpd of C&D materials and 1,000 tpd of MSW. Future With Project conditions under this alternative includes all traffic generated by 500 tpd of C&D materials and 1,000 tpd of MSW, plus traffic generated by ambient growth and all related projects (including the Bradley development). Intersection turning movement volumes and level of service for Alternative 3 are shown in **Figure 17**.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 17** summarizes the level of service calculations for the study intersections under Alternative 3, compared to Future No Project (400 tpd C&D), during the AM and PM peak hours. The results indicate that eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. There are no projected significant project-related traffic impacts in this alternative (which includes the Bradley project) based on LADOT thresholds of significant impacts.

In considering project impacts without the Bradley project, project trip generation (500 tpd C&D + 1,000 tpd MSW) would be more than under baseline conditions, yet there would not be a significant impact at any of the study intersections. Traffic from related projects (except Bradley) would occur under this scenario. Based on the traffic analysis in the Bradley Draft EIR, traffic from the Bradley project is substantial and has significant impacts on surrounding intersections requiring mitigation. Without traffic from the Bradley project there are fewer trips on the surrounding roadways and no significant impacts from the Athens project when compared to the 400 tpd baseline without Bradley.

TABLE 17: PROJECT IMPACTS: 500 TPD C&D + 1,000 TPD MSW VS. – 400 TPD C&D BASELINE – PEAK HOUR LOS SUMMARY

	Intersection	400 tpd C&D + Related Projects				Future With Project 500 tpd C&D + 1,000 tpd MSW				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr					
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	AM Peak	PM Peak	AM Peak	PM Peak
1	San Fernando Road and Sheldon Street [1]	D	0.857	C	0.751	D	0.857	C	0.754	0.000	0.003	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.510	A	0.494	A	0.514	A	0.495	0.004	0.001	NO	NO
3	I-5 NB off / SB on-ramp and Tuxford St [Unsig]	D	31.3 sec	F	59.3 sec	E	35.3 sec	F	62.6 sec	4.0 sec	3.3 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.712	C	0.787	C	0.714	C	0.788	0.002	0.001	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.637	C	0.725	B	0.647	C	0.729	0.010	0.004	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.710	B	0.688	C	0.726	B	0.695	0.016	0.007	NO	NO
7	I-5 SB on/off-ramp and Penrose St [Unsig]	C	19.6 sec	D	25.4 sec	C	20.2 sec	D	25.9 sec	0.6 sec	0.5 sec	NO	NO
8	Bradley Avenue and Penrose Street	C	0.788	C	0.748	D	0.801	C	0.753	0.013	0.005	NO	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.637	C	0.730	B	0.653	C	0.741	0.016	0.011	NO	NO
[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis													
Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold													
3	I-5 NB off / SB on-ramp and Tuxford St [Sig]	A	0.524	A	0.589	A	0.530	A	0.591	0.006	0.002	NO	NO
7	I-5 SB on/off-ramp and Penrose St [Sig]	C	0.704	C	0.759	C	0.715	C	0.764	0.011	0.005	NO	NO

Table 18 summarizes the level of service calculations comparing the project to the 1,500 C&D baseline. The results indicate that when compared to this baseline, there are no projected significant project-related traffic impacts based on LADOT thresholds of significant impacts. Level of service analysis worksheets for this alternative are provided in **Appendix B.** The results shown in Table 18 assume that the Bradley project will be built. Since the project generates 40-60% less project trips than the 1500 tpd C&D baseline, this alternative will also not result in significant impact without the Bradley Project

TABLE 18: 500 TPD C&D + 1,000 TPD MSW VS. 1,500 TPD C&D BASELINE – PEAK HOUR LOS SUMMARY

	Intersection	1,500 tpd C&D + Related Projects				Future With Project 500 tpd C&D + 1,000 tpd MSW				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	D	0.858	C	0.767	D	0.857	C	0.754	N/C	N/C	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.518	A	0.503	A	0.514	A	0.495	N/C	N/C	NO	NO
3	I-5 NB off / SB on-ramp and Tuxford St [Unsig]	E	40.2 sec	F	93.1 sec	E	35.3 sec	F	62.6 sec	N/C	N/C	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.715	C	0.794	C	0.714	C	0.788	N/C	N/C	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.657	C	0.752	B	0.647	C	0.729	N/C	N/C	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.743	C	0.734	C	0.726	B	0.695	N/C	N/C	NO	NO
7	I-5 SB on/off-ramp and Penrose St [Unsig]	C	20.9 sec	D	29.1 sec	C	20.2 sec	D	25.9 sec	N/C	N/C	NO	NO
8	Bradley Avenue and Penrose Street	D	0.814	C	0.791	D	0.801	C	0.753	N/C	N/C	NO	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.666	D	0.819	B	0.653	C	0.741	N/C	N/C	NO	NO

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure identified in the Bradley Landfill and Recycling Center Traffic Impact Analysis
Note: N/C = No Change

Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold

3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Sig]	A	0.536	B	0.603	A	0.530	A	0.591	N/C	N/C	NO	NO
7	I-5 SB on/off-ramp and Penrose St [Sig]	C	0.727	C	0.793	C	0.715	C	0.764	N/C	N/C	NO	NO

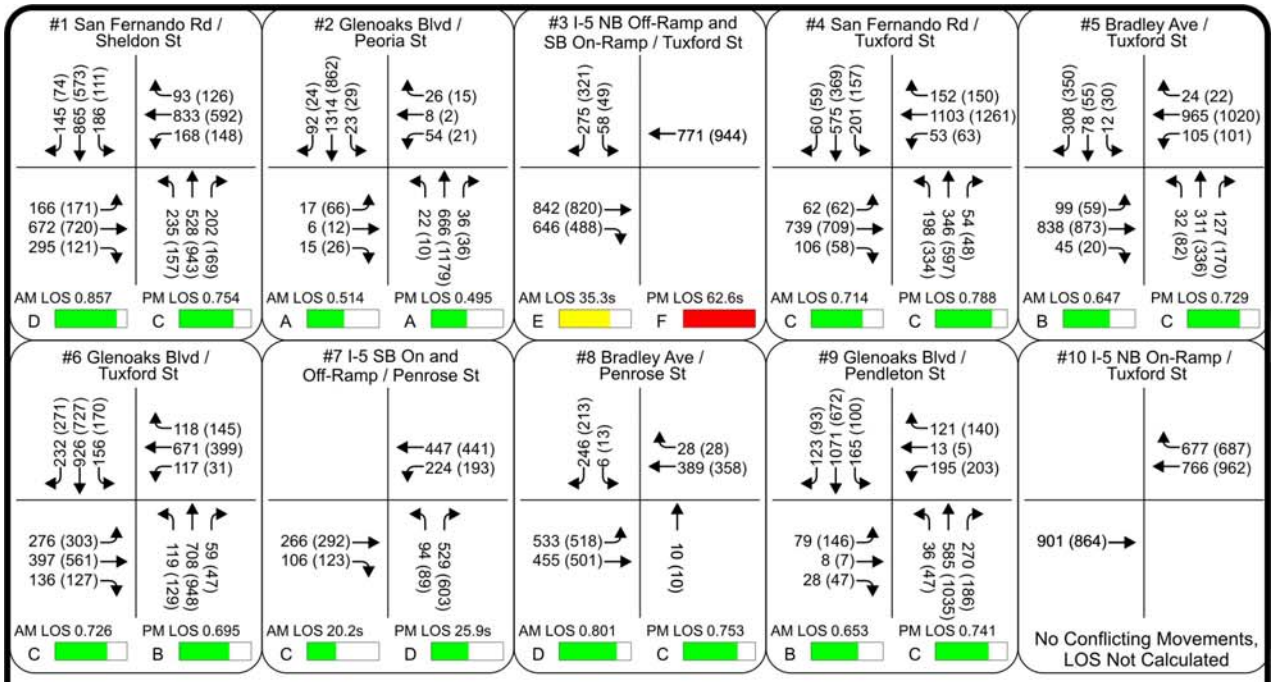
Operations Analysis – Without Bradley Development/Mitigation

The Future with Project – 500 tpd Construction & Demolition + 1,000 tpd Municipal Solid Waste conditions *without* the Bradley development and mitigations, is a Future with Project alternative based on processing 1,500 tpd per the 1999 CUP Entitlement. The number of project trips, attributed to the project, are less than the number of project trips forecast under the 1500 tpd C&D baseline, but are higher than the number of project trips under the 400 tpd C&D baseline. Under this analysis, the project will generate approximately 40-60% less trips when compared to the 1,500 tpd C&D baseline. The same impacts from the addition of traffic from related projects identified under the 1,500 tpd C&D baseline will still occur, but with fewer project trips as background traffic on the surrounding roadways. With the project (500 tpd C&D + 1,000 tpd MSW excluding the Bradley development), the addition of traffic from related projects would result in the same four significant impacts identified with the 1500 tpd C&D baseline as a result of related projects after the Bradley Landfill and Recycling Center mitigation measures are in place. This scenario is a Future with Project alternative based on processing 1,500 tpd per the 1999 CUP entitlement, therefore there are no significant impacts created by the proposed project.

Summary Project (500 tpd C&D + 1,000 tpd MSW) Impacts

Under Future With Project (500 tpd C&D + 1,000 tpd MSW) conditions *with* the Bradley development, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

There are no projected significant project-related traffic impacts in this alternative when the project is compared to Future No Project (400 tpd C&D) or Future No Project (1,500 tpd), during the AM and PM peak hours based on LADOT thresholds of significant impacts.



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

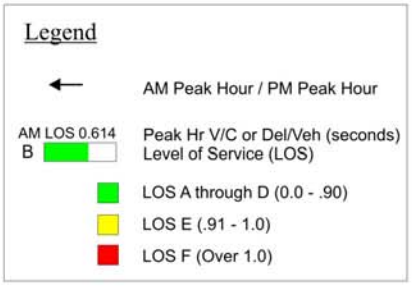


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Figure 17
Alternative 3-Future With Project
500 tpd C&D + 1,000 tpd MSW + Ambient Growth + Related Projects
Peak Hour Turning Movements

Future Alternative – 1,500 tpd Municipal Solid Waste

Future with Project-1,500 tpd MSW assumes that the ASVMRF will accept the maximum tonnage allowed under the 1999 CUP of 1,500 tpd. Rather than 1,500 tpd of C&D materials, it will process 1,500 tpd of MSW. The Future with Project conditions under Alternative 4 includes all traffic generated by a throughput of 1,500 tpd of MSW, plus traffic generated by ambient growth and all related projects (including the Bradley development). Intersection turning movement volumes and level of service for this alternative are shown in **Figure 18**.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 19** summarizes the level of service calculations for the study intersections under Alternative 4 during the AM and PM peak hours. The results indicate that eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. There are no projected significant project-related traffic impacts in this alternative based on LADOT thresholds of significant impacts. Level of service analysis worksheets for this alternative are provided in **Appendix B.**

TABLE 19: ALT 4 – 1,500 TPD MSW VS. 400 TPD C&D BASELINE PEAK HOUR LOS SUMMARY

	Intersection	400 tpd C&D + Related Projects				1,500 tpd MSW				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr					
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	AM Peak	PM Peak	AM Peak	PM Peak
1	San Fernando Road and Sheldon Street [1]	D	0.857	C	0.751	D	0.857	C	0.751	N/C	N/C	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.510	A	0.494	A	0.512	A	0.494	0.002	N/C	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	D	31.3 sec	F	59.3 sec	D	33.0 sec	F	59.3 sec	1.7 sec	N/C	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.712	C	0.787	C	0.714	C	0.787	0.002	N/C	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.637	C	0.725	B	0.643	C	0.725	0.006	N/C	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.710	B	0.688	C	0.719	B	0.688	0.009	N/C	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	C	19.6 sec	D	25.4 sec	C	19.9 sec	D	25.4 sec	0.3 sec	N/C	NO	NO
8	Bradley Avenue and Penrose Street	C	0.788	C	0.748	C	0.798	C	0.748	0.010	N/C	NO	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.637	C	0.730	B	0.655	C	0.730	0.018	N/C	NO	NO

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure in the Bradley Landfill and Recycling Center Traffic Impact Analysis
Note: N/C = No Change

Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold

3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Signalized]	A	0.524	A	0.589	A	0.526	A	0.589	0.002	N/C	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Signalized]	C	0.704	C	0.759	C	0.711	C	0.759	0.007	N/C	NO	NO

1500 tpd MSW Analysis Summary

Under Future With Project (1,500 tpd MSW) conditions *with* the Bradley development, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour.

There are no projected significant project-related traffic impacts in this alternative based on LADOT thresholds of significant impacts.

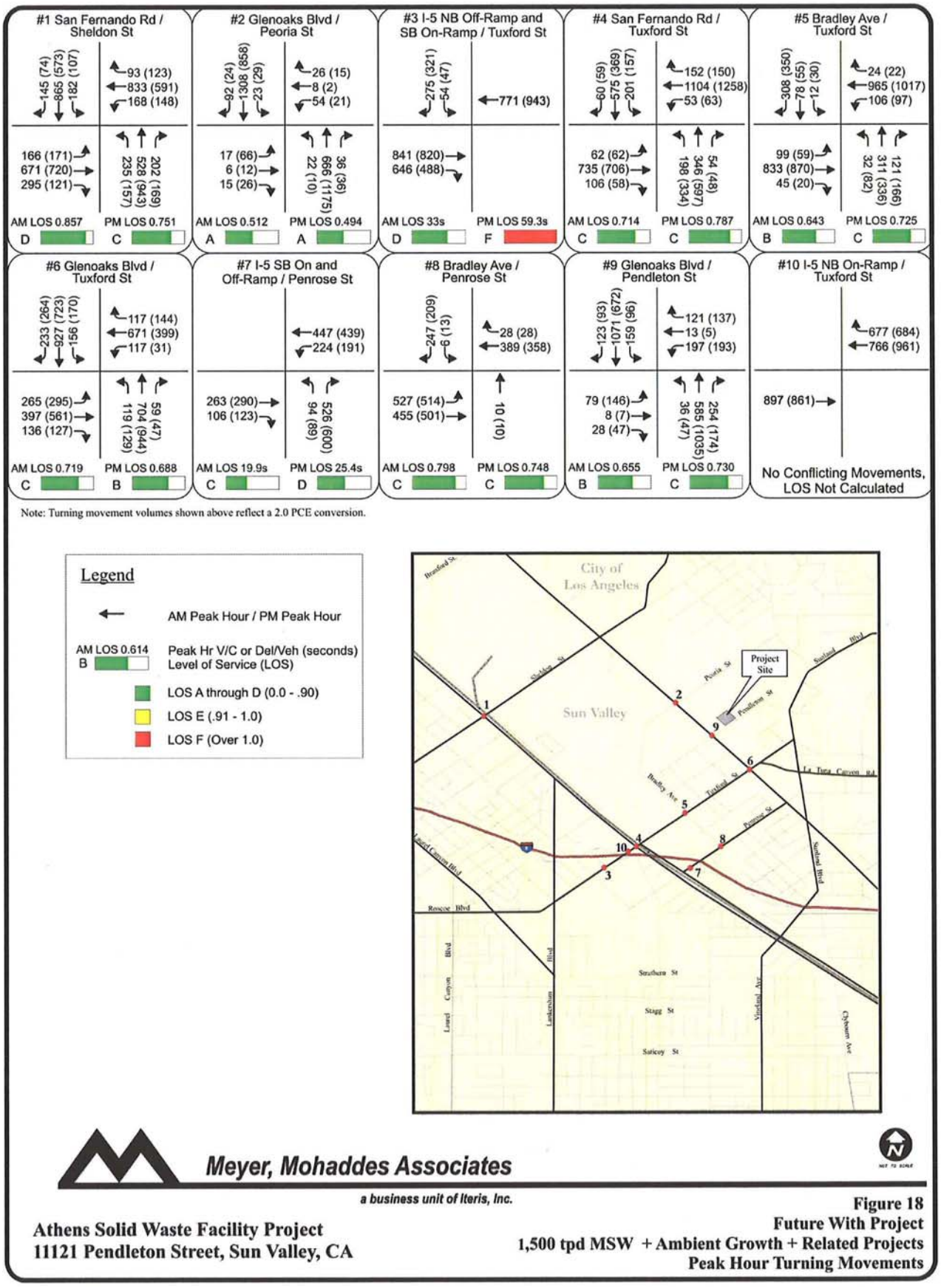
#1 San Fernando Rd / Sheldon St
145 (74)
865 (573)
182 (107)
93 (123)
833 (591)
168 (148)
166 (171)
671 (720)
295 (121)
235 (157)
528 (943)
202 (169)
AM LOS 0.857
PM LOS 0.751
D
C
#2 Glenoaks Blvd / Peoria St
92 (24)
1308 (858)
23 (29)
26 (15)
8 (2)
54 (21)
17 (66)
6 (12)
15 (26)
22 (10)
666 (1175)
36 (36)
AM LOS 0.512
PM LOS 0.494
A
A
#3 I-5 NB Off-Ramp and SB On-Ramp / Tuxford St
275 (321)
54 (47)
771 (943)
841 (820)
646 (488)
AM LOS 33s
PM LOS 59.3s
D
F
#4 San Fernando Rd / Tuxford St
60 (59)
575 (369)
201 (157)
152 (150)
1104 (1258)
53 (63)
62 (62)
735 (706)
106 (58)
198 (334)
346 (597)
54 (48)
AM LOS 0.714
PM LOS 0.787
C
C
#5 Bradley Ave / Tuxford St
308 (350)
78 (55)
12 (30)
24 (22)
965 (1017)
106 (97)
99 (59)
833 (870)
45 (20)
32 (82)
311 (336)
121 (166)
AM LOS 0.643
PM LOS 0.725
B
C
#6 Glenoaks Blvd / Tuxford St
233 (264)
927 (723)
156 (170)
117 (144)
671 (399)
117 (31)
265 (295)
397 (561)
136 (127)
119 (129)
704 (944)
59 (47)
AM LOS 0.719
PM LOS 0.688
C
B
#7 I-5 SB On and Off-Ramp / Penrose St
447 (439)
224 (191)
263 (290)
106 (123)
94 (89)
526 (600)
AM LOS 19.9s
PM LOS 25.4s
C
D
#8 Bradley Ave / Penrose St
247 (209)
6 (13)
28 (28)
389 (358)
527 (514)
455 (501)
10 (10)
AM LOS 0.798
PM LOS 0.748
C
C
#9 Glenoaks Blvd / Pendleton St
123 (93)
1071 (672)
159 (96)
121 (137)
13 (5)
197 (193)
79 (146)
8 (7)
28 (47)
36 (47)
585 (1035)
254 (174)
AM LOS 0.655
PM LOS 0.730
B
C
#10 I-5 NB On-Ramp / Tuxford St
677 (684)
766 (961)
897 (861)
No Conflicting Movements, LOS Not Calculated
Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.
Legend
AM Peak Hour / PM Peak Hour
AM LOS 0.614
B
Peak Hr V/C or Del/Veh (seconds)
Level of Service (LOS)
LOS A through D (0.0 - .90)
LOS E (.91 - 1.0)
LOS F (Over 1.0)
City of Los Angeles
Sun Valley
Project Site
Peoria St
Pendleton St
Sheldon St
Bradley Ave
Tuxford St
Penrose St
Sunland Blvd
La Tuna Canyon Rd
Laurel Canyon Blvd
Roscoe Blvd
Strathern St
Stagg St
Saticoy St
Vineland Ave
Lankershim Blvd
Laurel Canyon Blvd
Branford St
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Figure 18
Future With Project
1,500 tpd MSW + Ambient Growth + Related Projects
Peak Hour Turning Movements

Trip-Based Scenarios

Future With Project – 440 Trips and 400 tpd C&D Constant

Future With Project holds constant the 440 inbound trips and 440 outbound trips per day approved under the 1999 MND and CUP, and also assumes that the 400 tpd of existing C&D materials remains constant. The goal of this analysis is to analyze how much MSW tonnage per day the facility could handle while maintaining 440 inbound trips and 440 outbound trips per day. Based on data provided by Athens Services, 400 tpd of C&D generates approximately 97 inbound trips per day. If the ASVMRF accepts 400 tpd of C&D, and employee trips account for approximately 65 inbound trips per day, theoretically, 278 MSW trips (440 trips minus 97 C&D trips minus 65 employee trips) would be permitted under the 1999 MND and CUP. At a rate of 10 tons in and 23 tons out per MSW truck , under Alternative 5, the ASVMRF could accept 400 tpd of C&D and 1,925 tpd of MSW waste, and still remain at or below 440 inbound trips and 440 outbound trips per day. Intersection turning movement volumes and level of service for Alternative 5 are shown in **Figure 19**.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 20** summarizes the level of service calculations under this alternative, compared to Future No Project 400 tpd C&D baseline, and **Table 21** summarizes the level of service calculations under this alternative, compared to the 1,500 tpd C&D baseline. The results indicate that eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. There is one projected significant project-related traffic impact at Bradley Avenue and Penrose Street during the AM peak hour when this alternative is compared to 400 tpd C&D baseline, using LADOT thresholds of significant impacts. The LADOT threshold for LOS D is 0.02, and the project increase in V/C at Bradley Avenue and Penrose Street is 0.022.

There are no projected significant project-related traffic impacts when Alternative 5 is compared to (1,500 tpd C&D baseline. Level of service analysis worksheets for this alternative are provided in **Appendix B.**

TABLE 20: 440 TRIPS AND 400 TPD C&D CONSTANT VS. 400 TPD C&D BASELINE – PEAK HOUR LOS SUMMARY

	Intersection	400 tpd C&D + Related Projects				Maximum 440 Trips Per Entitlement				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr					
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	AM Peak	PM Peak	AM Peak	PM Peak
1	San Fernando Road and Sheldon Street [1]	D	0.857	C	0.751	D	0.858	C	0.753	0.001	0.002	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.510	A	0.494	A	0.516	A	0.495	0.006	0.001	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	D	31.3 sec	F	59.3 sec	E	37.4 sec	F	62.6 sec	6.1 sec	3.3 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.712	C	0.787	C	0.715	C	0.788	0.003	0.001	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.637	C	0.725	B	0.653	C	0.728	0.016	0.003	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.710	B	0.688	C	0.736	B	0.693	0.026	0.005	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	C	19.6 sec	D	25.4 sec	C	20.6 sec	D	25.7 sec	1.0 sec	0.3 sec	NO	NO
8	Bradley Avenue and Penrose Street	C	0.788	C	0.748	D	0.810	C	0.753	0.022	0.005	**YES**	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.637	C	0.730	B	0.667	C	0.739	0.030	0.009	NO	NO
[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure in the Bradley Landfill and Recycling Center Traffic Impact Analysis													

Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold

3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Signalized]	A	0.524	A	0.589	A	0.532	A	0.591	0.008	0.002	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Signalized]	C	0.704	C	0.759	C	0.722	C	0.762	0.018	0.003	NO	NO

TABLE 21: 440 TRIPS AND 400 TPD C&D CONSTANT VS. 1,500 TPD C&D BASELINE – PEAK HOUR LOS SUMMARY

	Intersection	1,500 tpd C&D Baseline WITH Related Projects				Maximum 440 Trips Per Entitlement				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	D	0.858	C	0.767	D	0.858	C	0.753	N/C	N/C	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.518	A	0.503	A	0.516	A	0.495	N/C	N/C	NO	NO
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	E	40.2 sec	F	93.1 sec	E	37.4 sec	F	62.6 sec	N/C	N/C	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.715	C	0.794	C	0.715	C	0.788	N/C	N/C	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.657	C	0.752	B	0.653	C	0.728	N/C	N/C	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.743	C	0.734	C	0.736	B	0.693	N/C	N/C	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Unsig]	C	20.9 sec	D	29.1 sec	C	20.6 sec	D	25.7 sec	N/C	N/C	NO	NO
8	Bradley Avenue and Penrose Street	D	0.814	C	0.791	D	0.81	C	0.753	N/C	N/C	NO	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.666	D	0.819	B	0.667	C	0.739	0.001	N/C	NO	NO

[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure in the Bradley Landfill and Recycling Center Traffic Impact Analysis
Note: N/C = No Change

Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold

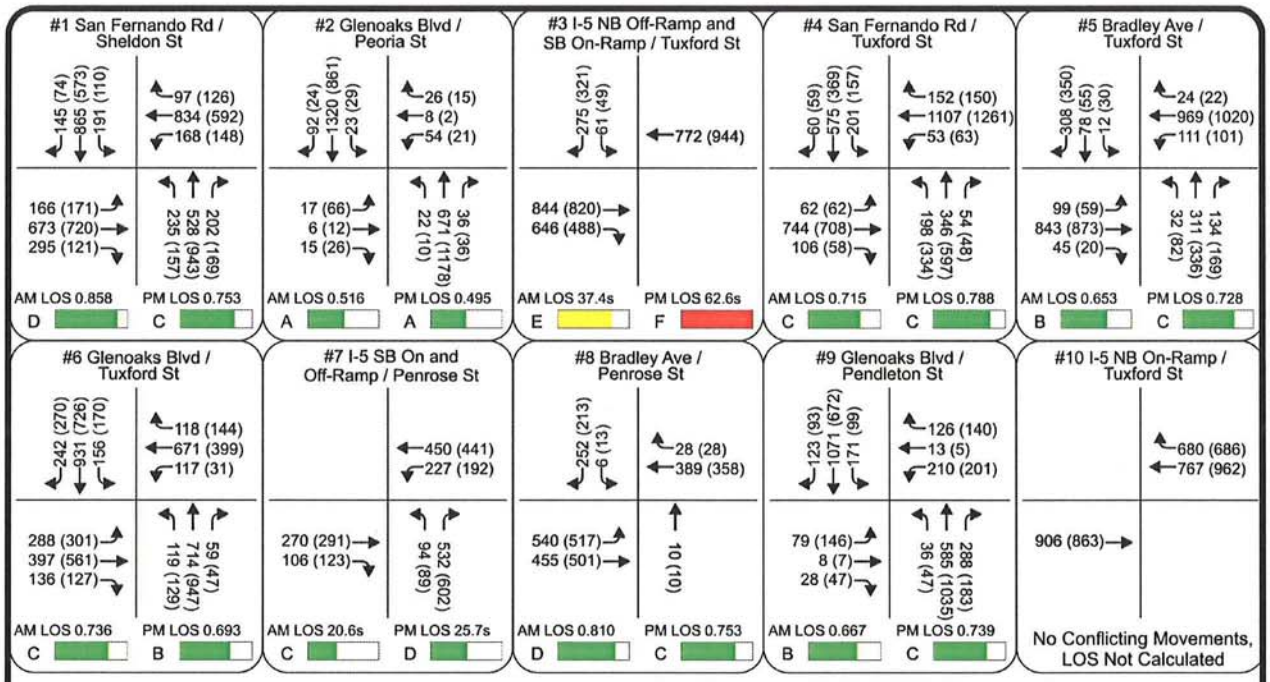
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Signalized]	A	0.536	B	0.603	A	0.532	A	0.591	N/C	N/C	NO	NO
7	Interstate 5 SB on/off-ramp and Penrose Street [Signalized]	C	0.727	C	0.793	C	0.722	C	0.762	N/C	N/C	NO	NO

Maximum 440 Trips per Entitlement Alternative

Under Future With Project (440 trips and 400 tpd C&D Constant) conditions *with* the Bradley development, the goal was to analyze how much MSW tonnage per day the facility could handle while maintaining 440 trips and 400 tpd of C&D materials. Under Alternative 5, the ASVMRF could accept 400 tpd of C&D and 1,600 tpd of MSW waste, and still remain at or below 440 inbound trips and 440 outbound trips per day. The results indicate that eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

There is one projected significant project-related traffic impact at Bradley Avenue and Penrose Street during the AM peak hour when this alternative is compared to 400 tpd C&D baseline, based on LADOT thresholds of significant impacts. The LADOT threshold for LOS D is 0.02, and the project increase in V/C at Bradley Avenue and Penrose Street is 0.022.

There are no projected significant project-related traffic impacts when this alternative is compared to 1,500 tpd C&D baseline.



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.

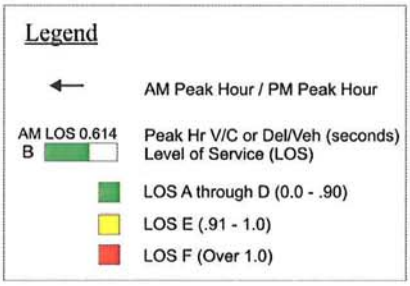


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Figure 19
Future With Project
440 Trips and 400 tpd C&D + Ambient Growth + Related Projects
Peak Hour Turning Movements

Future With Project – 400 tpd C&D Constant + X tpd MSW and No Avoidable Adverse Impacts

This alternative determines how much MSW tonnage per day the facility can accept, assuming the C&D intake remains at 400 tpd and the project traffic is restricted such that there are no adverse impacts. Intersection turning movement volumes and level of service at the study intersections for this alternative are shown in **Figure 20**.

Operations Analysis

The AM and PM peak hour level of service analyses were conducted at the nine study intersections based on the methodologies described previously. **Table 22** summarizes the level of service calculations for the study intersections under Alternative 6 during the AM and PM peak hours. After analyzing multiple MSW tonnage scenarios, it was determined that the ASVMRF can accept up to 1,600 tpd of MSW, in addition to its current load of 400 tpd of C&D, without creating an adverse impact as a result of project traffic during both the AM and PM peak hour. If the ASVMRF accepts 400 tpd of C&D and 1,600 tpd of MSW, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour, but project impacts remain below the LADOT level of significance. The unsignalized intersections of I-5 northbound off-ramp/ southbound on-ramp and Tuxford Street and I-5 southbound on/off-ramp and Penrose Street are projected to operate at an acceptable level of service when analyzed as signalized intersections. Level of service analysis worksheets for this alternative are provided in **Appendix B.**

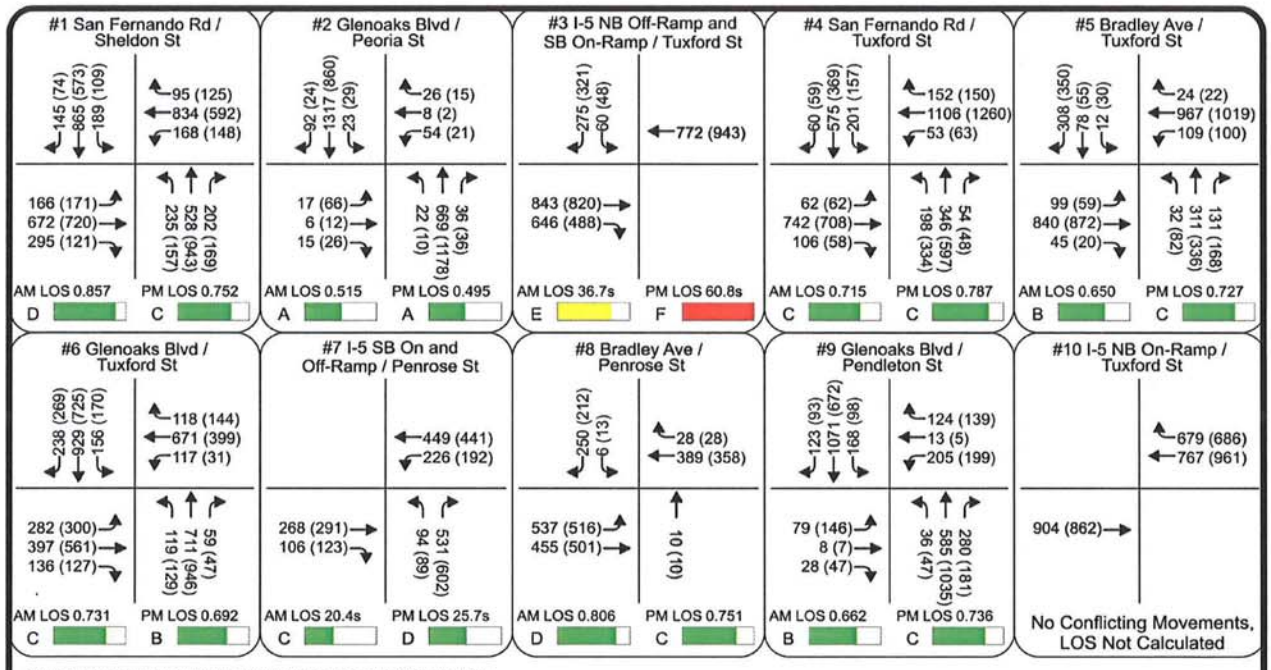
TABLE 22: 400 TPD C&D BASELINE/NO UNAVOIDABLE ADVERSE IMPACTS – PEAK HOUR LOS SUMMARY

	Intersection	400 tpd C&D + Related Projects				400 C&D + X MSW (1,600 tpd)				Project Increase in V/C		Significant Impact	
		AM Peak Hr		PM Peak Hr		AM Peak Hr		PM Peak Hr		AM Peak	PM Peak	AM Peak	PM Peak
		LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh	LOS	V/C or Del/Veh				
1	San Fernando Road and Sheldon Street [1]	D	0.857	C	0.751	D	0.857	C	0.752	N/C	0.001	NO	NO
2	Glenoaks Boulevard and Peoria Street	A	0.510	A	0.494	A	0.515	A	0.495	0.005	0.001	NO	NO
3	I-5 NB off / SB on-ramp and Tuxford St [Unsig]	D	31.3 sec	F	59.3 sec	E	36.7 sec	F	60.8 sec	5.4 sec	1.5 sec	NO	NO
4	San Fernando Road and Tuxford Street [1]	C	0.712	C	0.787	C	0.715	C	0.787	0.003	N/C	NO	NO
5	Bradley Avenue and Tuxford Street [1]	B	0.637	C	0.725	B	0.650	C	0.727	0.013	0.002	NO	NO
6	Glenoaks Boulevard and Tuxford Street [1]	C	0.710	B	0.688	C	0.731	B	0.692	0.021	0.004	NO	NO
7	I-5 SB on/off-ramp and Penrose Street [Unsig]	C	19.6 sec	D	25.4 sec	C	20.4 sec	D	25.7 sec	0.8 sec	0.3 sec	NO	NO
8	Bradley Avenue and Penrose Street	C	0.788	C	0.748	D	0.806	C	0.751	0.018	0.003	NO	NO
9	Glenoaks Boulevard and Pendleton Street	B	0.637	C	0.730	B	0.662	C	0.736	0.025	0.006	NO	NO
[1] Seven Percent Reduction Applied for Adaptive Traffic Control System (ATCS) Mitigation Measure in the Bradley Landfill and Recycling Center Traffic Impact Analysis													
Unsignalized Intersections Converted to Signalized to Calculate Significance Threshold													
3	Interstate 5 NB off / SB on-ramp and Tuxford Street [Unsig]	A	0.524	A	0.589	A	0.531	A	0.590	0.007	0.001	NO	NO
7	I-5 SB on/off-ramp and Penrose St [Unsig]	C	0.704	C	0.759	C	0.719	C	0.762	0.015	0.003	NO	NO

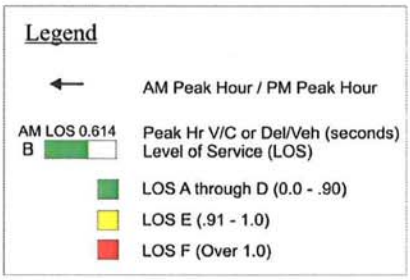
Alternative Summary

Under this alternative (400 tpd C&D + X tpd MSW), conditions *with* the Bradley development, the goal was to determine how much MSW tonnage per day the facility can accept, assuming the C&D intake remains at 400 tpd and the project traffic is restricted such that there are no adverse impacts. It was determined that the facility can accept up to 1,600 tpd of MSW, in addition to its current load of 400 tpd of C&D in 2008 without creating an adverse impact during either the AM or PM peak hour. If the ASVMRF accepts 400 tpd of C&D and 1,600 tpd of MSW, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour

There are no projected significant project-related traffic impacts in this alternative based on LADOT thresholds of significant impacts.



Note: Turning movement volumes shown above reflect a 2.0 PCE conversion.



Meyer, Mohaddes Associates
a business unit of Iteris, Inc.

Athens Solid Waste Facility Project
11121 Pendleton Street, Sun Valley, CA

Figure 20
Future With Project
400 tpd C&D + X tpd MSW (1,600 MSW) + Ambient Growth + Related Projects
Peak Hour Turning Movements

CONGESTION MANAGEMENT PROGRAM SYSTEM ANALYSIS

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system. A total of 164 intersections are identified for monitoring on the system in Los Angeles County. This section describes the analysis of project-related impacts on the CMP system. The analysis has been conducted according to the guidelines set forth in the 2004 Congestion Management Program for Los Angeles County.

According to the CMP Traffic Impact Analysis (TIA) Guidelines developed by the MTA, a traffic impact analysis is required given the following conditions:

- CMP arterial monitoring intersections, including freeway on- or off-ramps, where the proposed project would add 50 or more trips during either the AM or PM weekday peak hours.

- CMP freeway monitoring locations where the proposed project would add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

CMP Intersection Analysis

None of the proposed study area intersections are part of the 164 CMP arterial monitoring locations. The closest arterial monitoring station to the proposed project is located at Victory Boulevard and Woodman Avenue, approximately four miles from the project site. It is projected that the proposed project will not add more than 50 trips at this CMP arterial monitoring station during the AM or PM peak hour. Therefore, no CMP intersection analysis was conducted in this traffic study report.

CMP Mainline Freeway Segment Analysis

The focus of this analysis is to determine whether project-related trips would significantly impact the freeway system according to CMP guidelines and threshold of significance. For purposes of analyzing the mainline freeway impact of the project, the nearest freeway monitoring stations located at I-5 north of Route 170 (Osborne Street), I-5 at Burbank Boulevard, and Route 170 south of Sherman Way were evaluated. It is projected that the proposed project will not add 150 or more trips to any of the three CMP mainline freeway segments; therefore no further CMP analysis is required.

Project Intersection Share Calculation

Table 23 summarizes the project's percentage contribution to AM and PM peak hour intersection traffic volumes based on Baseline Scenario B – 1,500 tpd (per Entitlement).

TABLE 23: PROJECT SHARE PERCENTAGE CONTRIBUTION

AM	Northbound			Southbound			Eastbound			Westbound			Intersection Total
	L	T	R	L	T	R	L	T	R	L	T	R	
#1 San Fernando Rd / Sheldon St	0%	0%	0%	10%	0%	0%	0%	1%	0%	0%	0%	10%	**0.75%**
#2 Glenoaks Blvd / Peoria St	0%	2%	0%	0%	2%	0%	0%	0%	0%	2%	0%	0%	**1.50%**
#3 I-5 Northbound Off-Ramp and Southbound On-Ramp / Tuxford St	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	**0.74%**
#4 San Fernando Rd / Tuxford St	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	0%	**0.74%**
#5 Bradley Ave / Tuxford St	0%	0%	23%	0%	0%	0%	0%	2%	0%	13%	1%	0%	**2.27%**
#6 Glenoaks Blvd / Tuxford St	0%	3%	0%	1%	1%	10%	17%	0%	0%	0%	0%	2%	**2.51%**
#7 I-5 Southbound On and Off-Ramp / Penrose St	0%	0%	2%	0%	0%	0%	0%	5%	0%	3%	1%	0%	**2.31%**
#8 Bradley Ave / Penrose St	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	**2.37%**
#9 Glenoaks Blvd / Pendleton St	0%	0%	27%	15%	0%	0%	0%	0%	0%	18%	0%	10%	**4.98%**
#10 I-5 Northbound On-Ramp / Tuxford St	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	1%	**1.12%**

PM	Northbound			Southbound			Eastbound			Westbound			Intersection Total
	L	T	R	L	T	R	L	T	R	L	T	R	
#1 San Fernando Rd / Sheldon St	0%	0%	0%	21%	0%	0%	0%	1%	0%	0%	1%	17%	**1.39%**
#2 Glenoaks Blvd / Peoria St	0%	2%	3%	0%	3%	0%	0%	0%	0%	5%	0%	0%	**2.51%**
#3 I-5 Northbound Off-Ramp and Southbound On-Ramp / Tuxford St	0%	0%	0%	36%	0%	0%	0%	1%	0%	0%	1%	0%	**1.07%**
#4 San Fernando Rd / Tuxford St	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	2%	0%	**1.11%**
#5 Bradley Ave / Tuxford St	0%	0%	20%	0%	0%	0%	0%	3%	0%	33%	2%	0%	**3.48%**
#6 Glenoaks Blvd / Tuxford St	0%	3%	0%	1%	3%	20%	19%	0%	0%	0%	0%	1%	**4.15%**
#7 I-5 Southbound On and Off-Ramp / Penrose St	0%	0%	3%	0%	0%	0%	0%	6%	0%	8%	4%	0%	**3.81%**
#8 Bradley Ave / Penrose St	0%	0%	0%	0%	0%	15%	6%	0%	0%	0%	0%	0%	**3.98%**
#9 Glenoaks Blvd / Pendleton St	0%	0%	47%	30%	0%	0%	0%	0%	0%	40%	0%	20%	**8.14%**
#10 I-5 Northbound On-Ramp / Tuxford St	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	2%	**1.72%**

CONCLUSIONS

Meyer, Mohaddes Associates has evaluated nine intersections, located in Sun Valley in the City of Los Angeles, for potential significant impacts resulting from the design and operational modification of the ASVMRF. The proposed facility will continue to operate between 7 AM and 8 PM daily, in accordance with the existing CUP. The locations of the study intersections assessed in the traffic analysis are listed below:

1. San Fernando Road and Sheldon Street
2. Glenoaks Boulevard and Peoria Street
3. Interstate 5 Northbound off-ramp/Southbound on-ramp and Tuxford Street
4. San Fernando Road and Tuxford Street
5. Bradley Avenue and Tuxford Street
6. Glenoaks Boulevard and Tuxford Street
7. Interstate 5 Southbound on/off-ramp at Penrose Street
8. Bradley Avenue and Penrose Street
9. Glenoaks Boulevard and Pendleton Street

A detailed analysis of projected operating conditions was completed for two baseline scenarios, two "Future No Project" alternatives, two tonnage-based "Future With Project" alternatives, and two trip-based "Future With Project" alternatives. After a detailed analysis of existing and projected operating conditions, the following observations can be made regarding traffic related impacts:

- Under the 400 tpd C&D baseline, or existing conditions at the ASVMRF, all nine study intersections currently operate at acceptable levels of service (LOS D or better as a signalized intersection) during both the AM and PM peak hour.

- Under the 1,500 tpd C&D baseline, the ASVMRF accepts a total of 1,500 tpd of materials, in accordance with its existing CUP. Under these baseline conditions, all nine study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour.

- Under the Future No Project – 400 tpd C&D + Ambient Growth + Related Projects) scenario, with the Bradley development, the ASVMRF continues to accept 400 tpd of C&D materials, and includes ambient growth, all related projects (including the Bradley development), and the associated Bradley mitigation measures.

    - Under this alternative with the Bradley development, eight of the nine study intersections are projected to operate at an acceptable level of service during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour. This is a Future No Project alternative, therefore there are no significant impacts created by the proposed project.

    - The addition of traffic from related projects (including the Bradley development) would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts as a result of the related projects are located at the following study intersections:

        - San Fernando Road and Sheldon Street – AM Peak Hour
        - San Fernando Road and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Tuxford Street – AM Peak Hour

- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM and PM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

- Under the No Project – 400 tpd C&D + Ambient Growth + Related Projects scenario, without the Bradley development, the ASVMRF continues to accept 400 tpd of C&D materials, and includes ambient growth and all related projects except the Bradley development. It assumes the exiting roadway network is in place, and excludes all Bradley-related mitigation measures, including the seven percent ATCS mitigation measure and the physical mitigation measures at Bradley Avenue and Tuxford Street and Bradley Avenue and Penrose Street.

    - Under this scenario without the Bradley development, seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS F during the PM peak hour. This is a Future No Project alternative, therefore there are no significant impacts created by the proposed project.

    - The addition of traffic from related projects (excluding the Bradley development) would result in four significant impacts without the Bradley Landfill and Recycling Center mitigation measures. The remaining significant impacts as a result of the related projects are located at the following study intersections:

        - San Fernando Road and Sheldon Street – AM and PM Peak Hour
        - San Fernando Road and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Pendleton Street – PM Peak Hour

- Under the 1,500 tpd C&D baseline + Ambient Growth + Related Projects scenario, the ASVMRF will process the maximum throughput allowed under the 1999 CUP of 1,500 tpd of materials, and includes ambient growth, all related projects (including the Bradley development), and the associated Bradley mitigation measures.

    - Under this scenario with the Bradley development, eight of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. This is a Future No Project alternative based on 1,500 tpd per the 1999 CUP, therefore there are no significant impacts created by the proposed project.

    - The addition of traffic from related projects (including the Bradley development) would result in six significant impacts after the Bradley Landfill and Recycling Center mitigation measures are in place. The remaining significant impacts as a result of the related projects are located at the following study intersections:

        - San Fernando Road and Sheldon Street – AM Peak Hour
        - San Fernando Road and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour

- Interstate-5 Southbound On/Off-Ramps and Penrose Street – AM and PM Peak Hour
- Bradley Avenue and Penrose Street – AM Peak Hour
- Glenoaks Boulevard and Pendleton Street – PM Peak Hour

- Under the 1,500 tpd C&D baseline + Ambient Growth + Related Projects scenario, without the Bradley development, the ASVMRF will process the maximum throughput allowed under the 1999 CUP of 1,500 tpd of materials, and includes ambient growth and all related projects except the Bradley development. It assumes the exiting roadway network is in place in 2008, and excludes all Bradley-related mitigation measures, including the seven percent ATCS mitigation measure and the physical mitigation measures at Bradley Avenue and Tuxford Street and Bradley Avenue and Penrose Street.

    - Under this scenario, without the Bradley development, seven of the nine study intersections are projected to operate at an acceptable level of service (LOS D or better as a signalized intersection) during the AM and PM peak hour. Two study intersections are projected to operate at LOS E or F. San Fernando Road and Sheldon Street is projected to operate at LOS E during the AM peak hour and Interstate 5 NB off-ramp/SB on-ramp and Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. This is a Future No Project alternative based on 1,500 tpd per the 1999 CUP, therefore there are no significant impacts created by the proposed project.

    - The addition of traffic from related projects (excluding the Bradley development) would result in four significant impacts without the Bradley Landfill and Recycling Center mitigation measures. The remaining significant impacts as a result of the related projects are located at the following study intersections:

        - San Fernando Road and Sheldon Street – AM and PM Peak Hour
        - San Fernando Road and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Tuxford Street – AM and PM Peak Hour
        - Glenoaks Boulevard and Pendleton Street – PM Peak Hour

- With the project, the ASVMRF will accept 500 tpd of C&D and 1,000 tpd of MSW materials and includes ambient growth, all related projects (including the Bradley development), and the associated Bradley mitigation measures.

    - Under the project with the Bradley development, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

    - There are no projected significant project-related traffic impacts in this alternative when Alternative 3 is compared to Alternative 1-Future No Project (400 tpd C&D) or Alternative 2 – Future No Project (1,500 tpd), during the AM and PM peak hours based on LADOT thresholds of significant impacts.

- Under an alternative where the facility accepts 1,500 tpd of MSW**:**

    - Under this alternative, with the Bradley development, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study

intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS F during the PM peak hour.

- There are no projected significant project-related traffic impacts in this alternative based on LADOT thresholds of significant impacts.

- Under an alternative where the 440 daily trips in the original MND and 400 tpd of C&D processing is held constant, the facility could accept up to 1,600 tpd of MSW

  - Under this alternative, with the Bradley development, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

  - There is one projected significant project-related traffic impact at Bradley Avenue and Penrose Street during the AM peak hour when Alternative 5 is compared to Alternative 1-Future No Project (400 tpd C&D), based on LADOT thresholds of significant impacts. The LADOT threshold for LOS D is 0.02, and the project increase in V/C at Bradley Avenue and Penrose Street is 0.022.

  - There are no projected significant project-related traffic impacts when this alternative is compared to the 1,500 tpd C&D baseline.

- Under an alternative which determines how much MSW tonnage per day the facility can accept, assuming the C&D intake remains at 400 tpd and the project traffic is restricted such that there are no adverse impacts. It was determined that the facility can accept up to 1,600 tpd of MSW, in addition to its current load of 400 tpd of C&D in 2008 without creating an adverse impact during either the AM or PM peak hour. This alternative assumes 400 tpd of C&D materials and 1,600 tpd of MSW, and includes ambient growth, all related projects (including the Bradley development), and the associated Bradley mitigation measures.

  - Under this alternative with the Bradley development the ASVMRF accepts 400 tpd of C&D and 1,600 tpd of MSW, eight study intersections are projected to operate at acceptable levels of service during both the AM and PM peak hour. One study intersection, I-5 northbound off-ramp/southbound on-ramp at Tuxford Street is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour.

  - Compared to the 1,500 tpd C&D baseline, there are no projected significant project-related traffic impacts in this alternative based on LADOT thresholds of significant impacts.

- The project does not have any Congestion Management Program (CMP) impacts.

Appendix E

Greenhouse Gas Emissions

	Emissions of CO_2e (metric tons/year)
400 tpd Baseline	
Trucks	3,711
Off Road Construction Equipment	663
WARM model results	5,332
Total	**9,705**
Project	
Trucks	12,628
Off Road Construction Equipment	894
WARM model results	(173,093)
Total	**(159,571)**
NET REDUCTION with Project	**(149,866)**

CH4 emissions were converted to CO2e emissions using a Global Warming Potential of 21.

Input for WASTE Model

Baseline Waste Composition (#1 in WASTE model)

	Tons Generated	Tons Recycled	Tons Landfilled
	Tons per Day		
Total C&D	500		
Dimensional Lumber	200	128	72
Concrete	300	192	108
Total MSW	1000		
Mixed Recyclables	200	0	200
Mixed MSW	800	0	800

Assumes 40% C&D would be "dimensional lumber" and 60% of C&D would be concrete.
Assumes 20% of C&D would be landfilled and 80% would be recycled.
Assumes 20% of MSW would be mixed recyclables and 80% would be mixed MSW.

	Tons Generated	Tons Recycled	Tons Landfilled
	Tons per Year		
Total C&D	132,000		
Dimensional Lumber	52,800	33,792	19,008
Concrete	79,200	50,688	28,512
Total MSW	264,000		
Mixed Recyclables	52800	0	0
Mixed MSW	211,200	0	211,200

Assumes operation 22 days per month, 12 months per year.

Project Waste Composition (#2 in WASTE model)

	Tons Generated	Tons Recycled	Tons Landfilled
	Tons per Day		
Total C&D	500		
Dimensional Lumber	200	160	40
Concrete	300	240	60
Total MSW	1000		
Mixed Recyclables	200	200	0
Mixed MSW	800	0	800

Assumes all the mixed recyclables would be recycled and the MSW would be landfilled.

	Tons Generated	Tons Recycled	Tons Landfilled
	Tons per Year		
Total C&D	132,000		
Wood portion	52,800	42,240	10,560
Concrete Protion	79,200	63,360	15,840
Total MSW	264,000		
Mixed Recyclables	52,800	52,800	
Mixed MSW	211,200	0	211,200

Results from WARM model
Total GHG Emissions from Baseline MSW Generation and Management (MTCO2E): 5,332
Total GHG Emissions from Alternative MSW Generation and Management (MTCO2E): -173093.2
MTCO2E = metric tons of carbon dioxide equivalent

Project: Operational GHG Emissions Year 2009
500C&D/1000MSW

500 C&D
1000 MSW

Inputs

	ADT	Distance In (miles/trip)	Distance Out (miles/trip)	Distance traveled (miles/day)	Idle Time per Trip (minutes)	Idle Time per Trip (hours)
C&D Incoming (Truck Type: Heavy-Duty)	100	50	20	7,000	14	0.233
MSW Incoming (Truck Type: Medium-Duty)	100	120	20	14,000	14	0.233
C&D Outgoing (Truck Type: Heavy-Duty)	22	20	70	1,980	18	0.300
MSW Outgoing (Truck Type: Heavy-Duty)	43	20	130	6,450	18	0.300
Employee (Passenger Vehicle)	65	10	10	1,300		
Total Outgoing trips	**65**					
LandFill(outgoing)			150			
Recycle(outgoing)			50			
ADT Heavy Duty Trucks (miles/day)		15,430				
ADT Medium Duty Trucks (miles/day)		14,000				
ADT Passenger (miles/day)		1,300				
MSW vehicles Payload (tons/vehicle)	10					
C&D Vehicles Payload (tons/vehicle)	5					

Assumptions

A. No processes will be outside of the contained building
B. Emissions from processes that are located inside the building (ie. conveyors, grinders) would be negligible.
C. Building control equipment consists of misters, forced air, and filtration are operated using electricty.
D. Site Operates from 7am to 8pm
E. MSW trucks are medium duty, C&D trucks are heavy duty, all outoging trucks are Heavy Duty
F. C&D: 20% outgoing to trips to a landfill, 80% outgoing to trips to a recycling facility
G. MSW: 20% Outgoing to trips to a recycling facility and 80% outgoing trips to a landfill
H. 500 tons of C&D and 1,000 tons of MSW = 1/3 of waste is C&D, 2/3 Waste is MSW (correspond to outgoing trips)
I. Incoming trucks idle 4 minutes at the scale and 10 minutes unloading. Outgoing trucks idle 16 minutes while loading and 2 minutes at the scale.

	Number of Pieces	# hrs operated per day
Mobile Equipment - # Loaders (#/day)	4	8
Mobile Equipment - # Excavators (#/day)	4	8
Mobile Equipment - # Forklifts (#/day)	2	8
Mobile Equipment - # Sweepers (#/day)	1	8

Mobile Emissions

	Emission Factors (lb/VMT)		Emissions (lb/day)	
Vehicle Type	**CO_2**	**CH_4**	**CO_2**	**CH_4**
Passenger [1]	1.10	0.0001	1,427	0.11
Medium Duty Trucks [1]	2.72	0.0001	38,126	1.91
Heavy Duty Trucks [2]	4.21	0.0002	64,973	2.35
	Idle Emission Factors (lb/hr)[3]		**Emissions (lb/day)**	
	CO_2	**CH_4**	**CO_2**	**CH_4**
Medium Duty Trucks	9	0.0003	211	0.01
Heavy Duty Trucks	15	0.0013	625	0.06
		TOTAL	105,362	4.44

Emission Factors for Equipment

Equipment [4]	**CO_2 Emission Factors (lb/hr)**	**CO_2 Emissions (lb/day)**
Tractors/Loaders/Backhoes Composite	66.81	2,138
Excavators Composite	119.58	3,827
Forklifts Composite	54.40	870
Sweepers/Scrubbers Composite	78.54	628
	TOTAL	7,463

NOTES:

1 EMFAC2007 On-Road EF for YR 2007 (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), Passenger vehicles were used for worker commute, Delivery Trucks were used for Medium Duty Trucks
2 Heavy Duty on-road Vehicles scenario yr 2007 (model yrs 1965-2007) (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)
3 Idle emission factors from EMFAC2007 v 2.3 for Los Angeles County for the year 2007.
4 SCAQMD OFFROAD Emission Factors, http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

400 tpd Baseline: Operational GHG Emissions

400C&D

400 C&D
0 MSW

Inputs

	ADT	Distance In (miles/trip)	Distance Out (miles/trip)	Distance traveled (miles/day)	Idle Time per Trip (minutes)	Idle Time per Trip (hours)
C&D Incoming (Truck Type: Heavy-Duty)	80	50	20	5,600	13	0.217
C&D Outgoing (Truck Type: Heavy-Duty)	17	20	70	1,530	12	0.200
Employee (Passenger Vehicle)	25	10	10	500		
LandFill(outgoing)			150			
Recycle(outgoing)			50			
ADT Heavy Duty Trucks (miles/day)		7,130				
ADT Medium Duty Trucks (miles/day)		0				
ADT Passenger (miles/day)		500				
MSW vehicles Payload (tons/vehicle)	10					
C&D Vehicles Payload (tons/vehicle)	5					

Assumptions

A. Site Operates from 7am to 8pm

B. C&D incoming trucks are heavy duty diesel and all outoging trucks are heavy duty diesel

C. C&D: 20% outgoing to trips to a landfill, 80% outgoing to trips to a recycling facility

D. Incoming trucks idle 3 minutes at the scale and 10 minutes unloading. Outgoing trucks idle 10 minutes while loading and 2 minutes at the scale.

	Number of Pieces	# hrs operated per day
Mobile Equipment - # Loaders (#/day)	3	8
Mobile Equipment - # Excavators (#/day)	3	8
Mobile Equipment - # Forklifts (#/day)	1	8
Mobile Equipment - # Sweepers (#/day)	1	8

Mobile Emissions

Emission Factors for Vehicles

	Emission Factors (lb/VMT)		Emissions (lb/day)	
Vehicle Type	CO_2	CH_4	CO_2	CH_4
Passenger [1]	1.11	0.0001	553	0
Medium Duty Trucks [1]	2.72	0.0002	0	0
Heavy Duty Trucks [2]	4.22	0.0002	30,102	1
	Idle Emission Factors (lb/hr)[3]		Emissions (lb/day)	
	CO_2	CH_4	CO_2	CH_4
Medium Duty Trucks	4	0.0019	0	0
Heavy Duty Trucks	15	0.0015	304	0.03
		TOTAL	30,959	1.5

Emission Factors for Equipment

Equipment [4]	CO_2 Emission Factors (lb/hr)	CO_2 Emissions (lb/day)
Tractors/Loaders/Backhoes Composite	66.81	1,603
Excavators Composite	119.58	2,870
Forklifts Composite	54.40	435
Sweepers/Scrubbers Composite	78.54	628
	TOTAL	5,537

NOTES:

1 EMFAC2007 On-Road EF for YR 2009 (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html), Passenger vehicles were used for worker commute, Delivery Trucks were used for Medium Duty Trucks

2 Heavy Duty on-road Vehicles scenario yr 2009 (model yrs 1965-2009) (http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html)

3 Idle emission factors from EMFAC2007 v 2.3 for Los Angeles County for the year 2009.

4 SCAQMD OFFROAD Emission Factors, http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Passenger Vehicles & Delivery Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)

Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:

Passenger Vehicles (<8500 pounds) & Delivery Trucks (>8500 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:

Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

Scenario Year: **2007**

All model years in the range 1965 to 2007

Passenger Vehicles (pounds/mile)	
CO	**0.01155158**
NOx	**0.00121328**
ROG	**0.00118234**
SOx	**0.00001078**
PM10	**0.00008447**
PM2.5	**0.00005243**
CO2	**1.10672236**
CH4	**0.00010306**

Delivery Trucks (pounds/mile)	
CO	**0.02407553**
NOx	**0.02508445**
ROG	**0.00323145**
SOx	**0.00002626**
PM10	**0.00091020**
PM2.5	**0.00078884**
CO2	**2.72245619**
CH4	**0.00016030**

Scenario Year: **2008**

All model years in the range 1965 to 2008

Passenger Vehicles (pounds/mile)	
CO	**0.01054844**
NOx	**0.00110288**
ROG	**0.00107919**
SOx	**0.00001075**
PM10	**0.00008505**
PM2.5	**0.00005293**
CO2	**1.09953226**
CH4	**0.00009465**

Delivery Trucks (pounds/mile)	
CO	**0.02194915**
NOx	**0.02371258**
ROG	**0.00299270**
SOx	**0.00002565**
PM10	**0.00085607**
PM2.5	**0.00073933**
CO2	**2.71943400**
CH4	**0.00014769**

Scenario Year: **2009**

All model years in the range 1965 to 2009

Passenger Vehicles (pounds/mile)	
CO	**0.00968562**
NOx	**0.00100518**
ROG	**0.00099245**
SOx	**0.00001066**
PM10	**0.00008601**
PM2.5	**0.00005384**
CO2	**1.09755398**
CH4	**0.00008767**

Delivery Trucks (pounds/mile)	
CO	**0.02016075**
NOx	**0.02236636**
ROG	**0.00278899**
SOx	**0.00002679**
PM10	**0.00080550**
PM2.5	**0.00069228**
CO2	**2.72330496**
CH4	**0.00013655**

Scenario Year: **2010**

All model years in the range 1966 to 2010

Passenger Vehicles (pounds/mile)	
CO	**0.00826276**
NOx	**0.00091814**
ROG	**0.00091399**
SOx	**0.00001077**
PM10	**0.00008698**
PM2.5	**0.00005478**
CO2	**1.09568235**
CH4	**0.00008146**

Delivery Trucks (pounds/mile)	
CO	**0.01843765**
NOx	**0.02062460**
ROG	**0.00258958**
SOx	**0.00002701**
PM10	**0.00075121**
PM2.5	**0.00064233**
CO2	**2.73222199**
CH4	**0.00012576**

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)

Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:

Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model and extracting the **Heavy-Heavy-Duty Diesel Truck (HHDT)** Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The **HHDT-DSL** vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks, including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The **HHDT-DSL, Exh** vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions from heavy-heavy-duty diesel trucks.

Scenario Year: **2007**

All model years in the range 1965 to 2007

(pounds/mile)	
CO	**0.01446237**
NOx	**0.04718166**
ROG	**0.00372949**
SOx	**0.00003962**
PM10	**0.00230900**
PM2.5	**0.00204018**
CO2	**4.22184493**

(pounds/mile)	
PM10	**0.00216752**
PM2.5	**0.00199491**

Scenario Year: **2008**

All model years in the range 1965 to 2008

(pounds/mile)	
CO	**0.01361368**
NOx	**0.04458017**
ROG	**0.00351579**
SOx	**0.00004136**
PM10	**0.00215635**
PM2.5	**0.00189990**
CO2	**4.21067145**
CH4	**0.00016269**

(pounds/mile)	
PM10	**0.00201296**
PM2.5	**0.00185303**

Scenario Year: **2009**

All model years in the range 1965 to 2009

(pounds/mile)	
CO	**0.01282236**
NOx	**0.04184591**
ROG	**0.00329320**
SOx	**0.00004013**
PM10	**0.00199572**
PM2.5	**0.00175227**
CO2	**4.21080792**
CH4	**0.00015249**

(pounds/mile)	
PM10	**0.00185393**
PM2.5	**0.00170680**

Scenario Year: **2010**

All model years in the range 1966 to 2010

(pounds/mile)	
CO	**0.01195456**
NOx	**0.03822102**
ROG	**0.00304157**
SOx	**0.00004131**
PM10	**0.00183062**
PM2.5	**0.00160083**
CO2	**4.21120578**
CH4	**0.00014201**

(pounds/mile)	
PM10	**0.00168861**
PM2.5	**0.00155435**

SCAB Fleet Average Emission Factors (Diesel)

2007

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0120	0.0539	0.0784	0.0001	0.0055	8.7	0.0011
	25	0.0268	0.0678	0.1103	0.0001	0.0083	11.0	0.0024
	50	0.0867	0.2042	0.2062	0.0003	0.0210	19.6	0.0078
	120	0.0819	0.2563	0.5110	0.0004	0.0398	38.1	0.0074
	500	0.1827	0.7381	2.2160	0.0021	0.0703	213	0.0165
	750	0.3397	1.3341	4.1001	0.0039	0.1287	385	0.0306
Aerial Lifts Total		0.0781	0.2253	0.4026	0.0004	0.0279	34.7	0.0070
Air Compressors	15	0.0163	0.0539	0.0928	0.0001	0.0071	7.2	0.0015
	25	0.0376	0.0934	0.1473	0.0002	0.0113	14.4	0.0034
	50	0.1306	0.2933	0.2468	0.0003	0.0290	22.3	0.0118
	120	0.1158	0.3415	0.6762	0.0006	0.0591	47.0	0.0105
	175	0.1434	0.5150	1.1478	0.0010	0.0615	88.5	0.0129
	250	0.1459	0.4071	1.6003	0.0015	0.0557	131	0.0132
	500	0.2288	0.8865	2.5465	0.0023	0.0889	232	0.0206
	750	0.3607	1.3701	4.0281	0.0036	0.1390	358	0.0325
	1000	0.6027	2.3256	6.5406	0.0049	0.2054	486	0.0544
Air Compressors Total		0.1285	0.3872	0.8302	0.0007	0.0579	63.6	0.0116
Bore/Drill Rigs	15	0.0124	0.0632	0.0788	0.0002	0.0057	10.3	0.0011
	25	0.0222	0.0689	0.1397	0.0002	0.0089	16.0	0.0020
	50	0.0980	0.2886	0.2959	0.0004	0.0288	31.0	0.0088
	120	0.1208	0.5011	0.8412	0.0009	0.0680	77.1	0.0109
	175	0.1383	0.7539	1.2916	0.0016	0.0650	141	0.0125
	250	0.1125	0.3532	1.6315	0.0021	0.0426	188	0.0102
	500	0.1628	0.5678	2.2334	0.0031	0.0659	311	0.0147
	750	0.3368	1.1219	4.6545	0.0062	0.1342	615	0.0304
	1000	0.7011	1.9338	9.8820	0.0093	0.2471	928	0.0633
Bore/Drill Rigs Total		0.1457	0.5388	1.4734	0.0017	0.0648	165	0.0131
Cement and Morta	15	0.0092	0.0399	0.0596	0.0001	0.0042	6.3	0.0008
	25	0.0428	0.1084	0.1763	0.0002	0.0133	17.6	0.0039
Cement and Mortar Mixers Total		0.0120	0.0455	0.0693	0.0001	0.0050	7.2	0.0011
Concrete/Industrial	25	0.0215	0.0689	0.1402	0.0002	0.0089	16.5	0.0019
	50	0.1513	0.3517	0.3238	0.0004	0.0352	30.2	0.0136
	120	0.1654	0.5152	1.0187	0.0009	0.0830	74.1	0.0149
	175	0.2336	0.8939	1.9684	0.0018	0.0987	160	0.0211
Concrete/Industrial Saws Total		0.1561	0.4487	0.7639	0.0007	0.0640	58.5	0.0141
Cranes	50	0.1555	0.3455	0.2666	0.0003	0.0334	23.2	0.0140
	120	0.1338	0.3855	0.7667	0.0006	0.0693	50.1	0.0121
	175	0.1417	0.4975	1.1009	0.0009	0.0615	80.3	0.0128
	250	0.1478	0.4119	1.4665	0.0013	0.0571	112	0.0133
	500	0.2121	0.8483	2.1049	0.0018	0.0819	180	0.0191
	750	0.3600	1.4213	3.6197	0.0030	0.1389	303	0.0325
	9999	1.2786	5.2275	13.5665	0.0098	0.4345	971	0.1154
Cranes Total		0.1882	0.6365	1.6948	0.0014	0.0755	129	0.0170
Crawler Tractors	50	0.1727	0.3812	0.2897	0.0003	0.0368	24.9	0.0156
	120	0.1844	0.5217	1.0539	0.0008	0.0941	65.8	0.0166
	175	0.2256	0.7814	1.7367	0.0014	0.0979	121	0.0204
	250	0.2386	0.6707	2.2824	0.0019	0.0932	166	0.0215
	500	0.3324	1.5264	3.1976	0.0025	0.1289	259	0.0300
	750	0.5988	2.7193	5.8408	0.0047	0.2324	465	0.0540
	1000	0.9273	4.2839	9.5523	0.0066	0.3239	658	0.0837
Crawler Tractors Total		0.2180	0.7090	1.6218	0.0013	0.0988	114	0.0197

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Crushing/Proc. Equ	50	0.2623	0.5917	0.4879	0.0006	0.0582	44.0	0.0237
	120	0.2051	0.6092	1.1923	0.0010	0.1061	83.1	0.0185
	175	0.2709	0.9819	2.1527	0.0019	0.1174	167	0.0244
	250	0.2682	0.7429	2.9565	0.0028	0.1022	245	0.0242
	500	0.3634	1.3803	4.0348	0.0037	0.1413	374	0.0328
	750	0.5796	2.0915	6.5366	0.0059	0.2229	589	0.0523
	9999	1.6038	5.9800	17.5501	0.0131	0.5443	1,308	0.1447
Crushing/Proc. Equipment Total		0.2499	0.7817	1.6553	0.0015	0.1048	132	0.0225
Dumpers/Tenders	25	0.0137	0.0383	0.0709	0.0001	0.0049	7.6	0.0012
Dumpers/Tenders Total		0.0137	0.0383	0.0709	0.0001	0.0049	7.6	0.0012
Excavators	25	0.0206	0.0677	0.1353	0.0002	0.0088	16.4	0.0019
	50	0.1510	0.3526	0.2778	0.0003	0.0341	25.0	0.0136
	120	0.1786	0.5504	1.0305	0.0009	0.0963	73.6	0.0161
	175	0.1792	0.6758	1.3897	0.0013	0.0794	112	0.0162
	250	0.1726	0.4642	1.8559	0.0018	0.0641	159	0.0156
	500	0.2295	0.7653	2.3809	0.0023	0.0858	234	0.0207
	750	0.3841	1.2645	4.0758	0.0039	0.1444	387	0.0347
Excavators Total		0.1816	0.5977	1.4225	0.0013	0.0776	120	0.0164
Forklifts	50	0.0932	0.2119	0.1643	0.0002	0.0206	14.7	0.0084
	120	0.0786	0.2337	0.4359	0.0004	0.0428	31.2	0.0071
	175	0.0934	0.3343	0.7024	0.0006	0.0416	56.1	0.0084
	250	0.0762	0.1920	0.8930	0.0009	0.0273	77.1	0.0069
	500	0.0988	0.2777	1.1190	0.0011	0.0364	111	0.0089
Forklifts Total		0.0861	0.2495	0.6430	0.0006	0.0346	54.4	0.0078
Generator Sets	15	0.0198	0.0761	0.1277	0.0002	0.0081	10.2	0.0018
	25	0.0349	0.1140	0.1798	0.0002	0.0123	17.6	0.0032
	50	0.1294	0.3076	0.3197	0.0004	0.0318	30.6	0.0117
	120	0.1638	0.5185	1.0338	0.0009	0.0791	77.9	0.0148
	175	0.1944	0.7569	1.6938	0.0016	0.0795	142	0.0175
	250	0.1982	0.5974	2.3843	0.0024	0.0737	213	0.0179
	500	0.2824	1.1211	3.4731	0.0033	0.1084	337	0.0255
	750	0.4695	1.8098	5.7390	0.0055	0.1771	544	0.0424
	9999	1.1949	4.4076	13.2584	0.0105	0.4151	1,049	0.1078
Generator Sets Total		0.1130	0.3549	0.7249	0.0007	0.0446	61.0	0.0102
Graders	50	0.1733	0.3929	0.3101	0.0004	0.0381	27.5	0.0156
	120	0.1902	0.5657	1.1025	0.0009	0.0996	75.0	0.0172
	175	0.2073	0.7540	1.6258	0.0014	0.0907	124	0.0187
	250	0.2088	0.5808	2.1482	0.0019	0.0803	172	0.0188
	500	0.2487	0.9672	2.5414	0.0023	0.0960	229	0.0224
	750	0.5320	2.0374	5.5148	0.0049	0.2053	486	0.0480
Graders Total		0.2055	0.6712	1.7198	0.0015	0.0886	133	0.0185
Off-Highway Tracto	120	0.2830	0.7723	1.6142	0.0011	0.1402	93.7	0.0255
	175	0.2641	0.8840	2.0209	0.0015	0.1135	130	0.0238
	250	0.2149	0.6125	1.9515	0.0015	0.0852	130	0.0194
	750	0.8341	4.3552	7.8223	0.0057	0.3265	568	0.0753
	1000	1.2771	6.7362	12.5734	0.0082	0.4551	814	0.1152
Off-Highway Tractors Total		0.2692	0.9270	2.2742	0.0017	0.1107	151	0.0243
Off-Highway Truck	175	0.2093	0.7697	1.5881	0.0014	0.0920	125	0.0189
	250	0.1933	0.5096	1.9993	0.0019	0.0709	167	0.0174
	500	0.2870	0.9451	2.8530	0.0027	0.1051	272	0.0259
	750	0.4689	1.5279	4.7727	0.0044	0.1730	442	0.0423
	1000	0.7528	2.6058	8.3284	0.0063	0.2569	625	0.0679
Off-Highway Trucks Total		0.2881	0.9133	2.9144	0.0027	0.1056	260	0.0260

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Other Construction	15	0.0121	0.0617	0.0770	0.0002	0.0056	10.1	0.0011
	25	0.0183	0.0570	0.1155	0.0002	0.0074	13.2	0.0017
	50	0.1356	0.3262	0.2942	0.0004	0.0324	28.0	0.0122
	120	0.1711	0.5607	1.0579	0.0009	0.0896	80.9	0.0154
	175	0.1464	0.5955	1.2309	0.0012	0.0641	107	0.0132
	500	0.2095	0.7692	2.4473	0.0025	0.0825	254	0.0189
Other Construction Equipment To		0.1311	0.4749	1.2411	0.0013	0.0539	123	0.0118
Other General Indu	15	0.0067	0.0391	0.0470	0.0001	0.0034	6.4	0.0006
	25	0.0192	0.0632	0.1266	0.0002	0.0082	15.3	0.0017
	50	0.1476	0.3260	0.2499	0.0003	0.0317	21.7	0.0133
	120	0.1671	0.4756	0.9336	0.0007	0.0877	62.0	0.0151
	175	0.1706	0.5880	1.3014	0.0011	0.0746	95.9	0.0154
	250	0.1630	0.4366	1.7266	0.0015	0.0614	136	0.0147
	500	0.2851	1.0467	3.0123	0.0026	0.1087	265	0.0257
	750	0.4755	1.7251	5.0871	0.0044	0.1816	437	0.0429
	1000	0.7280	2.7744	7.7949	0.0056	0.2473	560	0.0657
Other General Industrial Equipme		0.2111	0.6987	1.9012	0.0016	0.0850	152	0.0190
Other Material Han	50	0.2034	0.4495	0.3473	0.0004	0.0437	30.3	0.0184
	120	0.1620	0.4626	0.9094	0.0007	0.0848	60.7	0.0146
	175	0.2152	0.7444	1.6495	0.0014	0.0939	122	0.0194
	250	0.1729	0.4654	1.8395	0.0016	0.0653	145	0.0156
	500	0.2038	0.7541	2.1690	0.0019	0.0781	192	0.0184
	9999	0.9597	3.6689	10.2941	0.0073	0.3256	741	0.0866
Other Material Handling Equipme		0.2038	0.6298	1.8362	0.0015	0.0819	141	0.0184
Pavers	25	0.0368	0.0997	0.1770	0.0002	0.0125	18.7	0.0033
	50	0.1881	0.4131	0.3234	0.0004	0.0401	28.0	0.0170
	120	0.1921	0.5429	1.1172	0.0008	0.0958	69.2	0.0173
	175	0.2363	0.8214	1.8559	0.0014	0.1015	128	0.0213
	250	0.2844	0.8186	2.7050	0.0022	0.1128	194	0.0257
	500	0.3028	1.4943	2.9397	0.0023	0.1194	233	0.0273
Pavers Total		0.2062	0.6000	1.1291	0.0009	0.0799	77.9	0.0186
Paving Equipment	25	0.0175	0.0544	0.1103	0.0002	0.0070	12.6	0.0016
	50	0.1593	0.3498	0.2759	0.0003	0.0340	23.9	0.0144
	120	0.1501	0.4247	0.8753	0.0006	0.0748	54.5	0.0135
	175	0.1842	0.6413	1.4542	0.0011	0.0789	101	0.0166
	250	0.1774	0.5124	1.6935	0.0014	0.0704	122	0.0160
Paving Equipment Total		0.1556	0.4693	1.0333	0.0008	0.0708	69.0	0.0140
Plate Compactors	15	0.0054	0.0263	0.0351	0.0001	0.0025	4.3	0.0005
Plate Compactors Total		0.0054	0.0263	0.0351	0.0001	0.0025	4.3	0.0005
Pressure Washers	15	0.0095	0.0365	0.0612	0.0001	0.0039	4.9	0.0009
	25	0.0142	0.0462	0.0729	0.0001	0.0050	7.1	0.0013
	50	0.0491	0.1223	0.1449	0.0002	0.0131	14.3	0.0044
	120	0.0463	0.1529	0.3055	0.0003	0.0216	24.1	0.0042
Pressure Washers Total		0.0235	0.0705	0.1079	0.0001	0.0081	9.4	0.0021
Pumps	15	0.0168	0.0554	0.0954	0.0001	0.0073	7.4	0.0015
	25	0.0507	0.1260	0.1987	0.0002	0.0153	19.5	0.0046
	50	0.1541	0.3621	0.3619	0.0004	0.0371	34.3	0.0139
	120	0.1685	0.5265	1.0488	0.0009	0.0822	77.9	0.0152
	175	0.1977	0.7584	1.6961	0.0016	0.0816	140	0.0178
	250	0.1941	0.5771	2.2926	0.0023	0.0727	201	0.0175
	500	0.2982	1.2024	3.5991	0.0034	0.1149	345	0.0269
	750	0.5068	1.9878	6.0902	0.0057	0.1923	571	0.0457
	9999	1.5682	5.9197	17.3104	0.0136	0.5441	1,355	0.1415
Pumps Total		0.1090	0.3243	0.6224	0.0006	0.0439	49.6	0.0098

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Rollers	15	0.0076	0.0386	0.0482	0.0001	0.0035	6.3	0.0007
	25	0.0185	0.0575	0.1165	0.0002	0.0074	13.3	0.0017
	50	0.1520	0.3436	0.2884	0.0003	0.0338	26.0	0.0137
	120	0.1450	0.4326	0.8650	0.0007	0.0734	59.0	0.0131
	175	0.1748	0.6399	1.4195	0.0012	0.0748	108	0.0158
	250	0.1867	0.5391	1.9194	0.0017	0.0729	153	0.0168
	500	0.2375	1.0016	2.4749	0.0022	0.0933	219	0.0214
Rollers Total		0.1410	0.4419	0.9073	0.0008	0.0629	67.1	0.0127
Rough Terrain Fork	50	0.2019	0.4635	0.3746	0.0004	0.0452	33.9	0.0182
	120	0.1508	0.4598	0.8819	0.0007	0.0798	62.4	0.0136
	175	0.1981	0.7390	1.5699	0.0014	0.0871	125	0.0179
	250	0.1880	0.5203	2.0303	0.0019	0.0716	171	0.0170
	500	0.2518	0.8995	2.6920	0.0025	0.0973	257	0.0227
Rough Terrain Forklifts Total		0.1576	0.4928	0.9631	0.0008	0.0800	70.3	0.0142
Rubber Tired Doze	175	0.2712	0.8964	2.0450	0.0015	0.1164	129	0.0245
	250	0.3139	0.8843	2.8004	0.0021	0.1236	183	0.0283
	500	0.4045	2.1197	3.6630	0.0026	0.1563	265	0.0365
	750	0.6094	3.1710	5.5926	0.0040	0.2361	399	0.0550
	1000	0.9543	5.0610	9.2959	0.0060	0.3417	592	0.0861
Rubber Tired Dozers Total		0.3789	1.6950	3.4143	0.0025	0.1474	239	0.0342
Rubber Tired Load	25	0.0221	0.0708	0.1440	0.0002	0.0092	16.9	0.0020
	50	0.1938	0.4399	0.3495	0.0004	0.0427	31.1	0.0175
	120	0.1480	0.4419	0.8601	0.0007	0.0775	58.9	0.0134
	175	0.1759	0.6425	1.3849	0.0012	0.0769	106	0.0159
	250	0.1781	0.4959	1.8452	0.0017	0.0684	149	0.0161
	500	0.2528	0.9705	2.6039	0.0023	0.0977	237	0.0228
	750	0.5240	1.9793	5.4711	0.0049	0.2022	486	0.0473
	1000	0.7317	2.8295	8.0073	0.0060	0.2487	594	0.0660
Rubber Tired Loaders Total		0.1730	0.5552	1.3821	0.0012	0.0768	109	0.0156
Scrapers	120	0.2643	0.7453	1.5133	0.0011	0.1342	93.9	0.0238
	175	0.2768	0.9565	2.1368	0.0017	0.1199	148	0.0250
	250	0.3046	0.8606	2.9011	0.0024	0.1195	209	0.0275
	500	0.4168	1.9484	4.0046	0.0032	0.1622	321	0.0376
	750	0.7239	3.3467	7.0442	0.0056	0.2818	555	0.0653
Scrapers Total		0.3677	1.5249	3.3991	0.0027	0.1465	263	0.0332
Signal Boards	15	0.0072	0.0377	0.0453	0.0001	0.0033	6.2	0.0007
	50	0.1740	0.4062	0.3843	0.0005	0.0411	36.2	0.0157
	120	0.1772	0.5523	1.0878	0.0009	0.0884	80.2	0.0160
	175	0.2227	0.8540	1.8787	0.0017	0.0939	155	0.0201
	250	0.2504	0.7317	2.9189	0.0029	0.0951	255	0.0226
Signal Boards Total		0.0254	0.0972	0.1806	0.0002	0.0115	16.7	0.0023
Skid Steer Loaders	25	0.0315	0.0814	0.1358	0.0002	0.0100	13.8	0.0028
	50	0.1126	0.2842	0.2606	0.0003	0.0282	25.5	0.0102
	120	0.0840	0.2923	0.5256	0.0005	0.0455	42.8	0.0076
Skid Steer Loaders Total		0.0981	0.2735	0.3375	0.0004	0.0326	30.3	0.0089
Surfacing Equipme	50	0.0708	0.1644	0.1519	0.0002	0.0165	14.1	0.0064
	120	0.1455	0.4496	0.9017	0.0007	0.0718	63.8	0.0131
	175	0.1281	0.4896	1.0832	0.0010	0.0539	85.8	0.0116
	250	0.1521	0.4563	1.6282	0.0015	0.0589	135	0.0137
	500	0.2227	0.9888	2.4265	0.0022	0.0873	221	0.0201
	750	0.3558	1.5437	3.8879	0.0035	0.1379	347	0.0321
Surfacing Equipment Total		0.1864	0.7654	1.8498	0.0017	0.0712	166	0.0168

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Sweepers/Scrubbe	15	0.0125	0.0729	0.0878	0.0002	0.0064	11.9	0.0011
	25	0.0251	0.0821	0.1673	0.0002	0.0106	19.6	0.0023
	50	0.1973	0.4427	0.3522	0.0004	0.0434	31.6	0.0178
	120	0.1885	0.5540	1.0600	0.0009	0.1003	75.0	0.0170
	175	0.2297	0.8158	1.7675	0.0016	0.1010	139	0.0207
	250	0.1660	0.4343	1.9127	0.0018	0.0611	162	0.0150
Sweepers/Scrubbers Total		0.1963	0.5672	1.0277	0.0009	0.0819	78.5	0.0177
Tractors/Loaders/E	25	0.0254	0.0741	0.1443	0.0002	0.0095	15.9	0.0023
	50	0.1684	0.3985	0.3286	0.0004	0.0389	30.3	0.0152
	120	0.1179	0.3748	0.6979	0.0006	0.0635	51.7	0.0106
	175	0.1513	0.5918	1.2085	0.0011	0.0672	101	0.0137
	250	0.1714	0.4715	1.9310	0.0019	0.0643	172	0.0155
	500	0.3074	1.0278	3.3772	0.0039	0.1177	345	0.0277
	750	0.4689	1.5370	5.2373	0.0058	0.1793	517	0.0423
Tractors/Loaders/Backhoes Total		0.1307	0.4142	0.8303	0.0008	0.0639	66.8	0.0118
Trenchers	15	0.0099	0.0517	0.0622	0.0001	0.0046	8.5	0.0009
	25	0.0429	0.1377	0.2800	0.0004	0.0179	32.9	0.0039
	50	0.2110	0.4651	0.3764	0.0004	0.0454	32.9	0.0190
	120	0.1767	0.5030	1.0427	0.0008	0.0868	64.9	0.0159
	175	0.2602	0.9129	2.0726	0.0016	0.1109	144	0.0235
	250	0.3246	0.9471	3.0938	0.0025	0.1293	223	0.0293
	500	0.4018	2.0679	3.9323	0.0031	0.1591	311	0.0363
	750	0.7640	3.8743	7.5254	0.0059	0.3008	587	0.0689
Trenchers Total		0.1942	0.5171	0.8578	0.0007	0.0714	58.7	0.0175
Welders	15	0.0140	0.0463	0.0798	0.0001	0.0061	6.2	0.0013
	25	0.0294	0.0730	0.1151	0.0001	0.0088	11.3	0.0026
	50	0.1392	0.3169	0.2825	0.0003	0.0317	26.0	0.0126
	120	0.0931	0.2798	0.5556	0.0005	0.0468	39.5	0.0084
	175	0.1516	0.5570	1.2432	0.0011	0.0642	98.2	0.0137
	250	0.1264	0.3603	1.4180	0.0013	0.0481	119	0.0114
	500	0.1582	0.6316	1.8085	0.0016	0.0615	168	0.0143
Welders Total		0.0917	0.2336	0.3191	0.0003	0.0297	25.6	0.0083

SCAB Fleet Average Emission Factors (Diesel)

2009

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0108	0.0530	0.0695	0.0001	0.0042	8.7	0.0010
	25	0.0229	0.0610	0.1043	0.0001	0.0071	11.0	0.0021
	50	0.0798	0.1979	0.2013	0.0003	0.0197	19.6	0.0072
	120	0.0743	0.2523	0.4715	0.0004	0.0375	38.1	0.0067
	500	0.1617	0.6308	2.0224	0.0021	0.0634	213	0.0146
	750	0.3008	1.1402	3.7474	0.0039	0.1162	385	0.0271
Aerial Lifts Total		0.0710	0.2149	0.3748	0.0004	0.0259	34.7	0.0064
Air Compressors	15	0.0151	0.0522	0.0870	0.0001	0.0064	7.2	0.0014
	25	0.0343	0.0877	0.1423	0.0002	0.0104	14.4	0.0031
	50	0.1220	0.2867	0.2416	0.0003	0.0275	22.3	0.0110
	120	0.1066	0.3375	0.6253	0.0006	0.0563	47.0	0.0096
	175	0.1331	0.5126	1.0574	0.0010	0.0586	88.5	0.0120
	250	0.1305	0.3633	1.4688	0.0015	0.0495	131	0.0118
	500	0.2061	0.7427	2.3237	0.0023	0.0800	232	0.0186
	750	0.3242	1.1478	3.6824	0.0036	0.1253	358	0.0293
	1000	0.5489	2.0084	6.2090	0.0049	0.1891	486	0.0495
Air Compressors Total		0.1180	0.3699	0.7664	0.0007	0.0547	63.6	0.0106
Bore/Drill Rigs	15	0.0121	0.0632	0.0757	0.0002	0.0038	10.3	0.0011
	25	0.0202	0.0664	0.1296	0.0002	0.0072	16.0	0.0018
	50	0.0670	0.2612	0.2855	0.0004	0.0222	31.0	0.0060
	120	0.0859	0.4868	0.6810	0.0009	0.0522	77.1	0.0078
	175	0.1052	0.7542	1.0211	0.0016	0.0528	141	0.0095
	250	0.0999	0.3479	1.3113	0.0021	0.0395	188	0.0090
	500	0.1520	0.5595	1.8467	0.0031	0.0625	311	0.0137
	750	0.3086	1.1055	3.8040	0.0062	0.1260	615	0.0278
	1000	0.5756	1.7291	8.7661	0.0093	0.2164	928	0.0519
Bore/Drill Rigs Total		0.1162	0.5200	1.2287	0.0017	0.0541	165	0.0105
Cement and	15	0.0082	0.0391	0.0532	0.0001	0.0033	6.3	0.0007
Mortar Mixers	25	0.0374	0.0991	0.1678	0.0002	0.0116	17.6	0.0034
Cement and Mortar Mixers Total		0.0107	0.0440	0.0626	0.0001	0.0040	7.2	0.0010
Concrete/Industria	25	0.0202	0.0678	0.1295	0.0002	0.0071	16.5	0.0018
l	50	0.1324	0.3310	0.3123	0.0004	0.0318	30.2	0.0119
	120	0.1441	0.5029	0.9105	0.0009	0.0755	74.1	0.0130
	175	0.2056	0.8827	1.7484	0.0018	0.0903	160	0.0185
Concrete/Industrial Saws Total		0.1363	0.4340	0.6906	0.0007	0.0581	58.5	0.0123
Cranes	50	0.1375	0.3262	0.2584	0.0003	0.0304	23.2	0.0124
	120	0.1187	0.3763	0.6901	0.0006	0.0633	50.1	0.0107
	175	0.1276	0.4905	0.9849	0.0009	0.0564	80.3	0.0115
	250	0.1314	0.3664	1.3105	0.0013	0.0501	112	0.0119
	500	0.1913	0.7157	1.8770	0.0018	0.0726	180	0.0173
	750	0.3237	1.2002	3.2349	0.0030	0.1235	303	0.0292
	9999	1.1477	4.4498	12.6411	0.0098	0.3962	971	0.1036
Cranes Total		0.1683	0.5705	1.5293	0.0014	0.0678	129	0.0152
Crawler Tractors	50	0.1541	0.3617	0.2817	0.0003	0.0337	24.9	0.0139
	120	0.1645	0.5080	0.9519	0.0008	0.0860	65.8	0.0148
	175	0.2041	0.7662	1.5613	0.0014	0.0896	121	0.0184
	250	0.2152	0.6039	2.0519	0.0019	0.0830	166	0.0194
	500	0.3038	1.2939	2.8737	0.0025	0.1159	259	0.0274
	750	0.5465	2.3076	5.2572	0.0047	0.2093	465	0.0493
	1000	0.8377	3.6498	8.9128	0.0066	0.2944	658	0.0756
Crawler Tractors Total		0.1961	0.6616	1.4607	0.0013	0.0898	114	0.0177

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Crushing/Proc. Equ	50	0.2406	0.5726	0.4764	0.0006	0.0543	44.0	0.0217
	120	0.1861	0.6005	1.0910	0.0010	0.0998	83.1	0.0168
	175	0.2486	0.9765	1.9608	0.0019	0.1107	167	0.0224
	250	0.2387	0.6612	2.6857	0.0028	0.0900	245	0.0215
	500	0.3267	1.1528	3.6473	0.0037	0.1263	374	0.0295
	750	0.5231	1.7650	5.9509	0.0059	0.2011	589	0.0472
	9999	1.4578	5.1762	16.6062	0.0131	0.5019	1,308	0.1315
Crushing/Proc. Equipment Total		0.2274	0.7440	1.5130	0.0015	0.0976	132	0.0205
Dumpers/Tenders	25	0.0114	0.0345	0.0662	0.0001	0.0039	7.6	0.0010
Dumpers/Tenders Total		0.0114	0.0345	0.0662	0.0001	0.0039	7.6	0.0010
Excavators	25	0.0200	0.0677	0.1272	0.0002	0.0066	16.4	0.0018
	50	0.1254	0.3265	0.2680	0.0003	0.0297	25.0	0.0113
	120	0.1519	0.5375	0.8996	0.0009	0.0841	73.6	0.0137
	175	0.1564	0.6716	1.1993	0.0013	0.0704	112	0.0141
	250	0.1529	0.4138	1.6049	0.0018	0.0555	159	0.0138
	500	0.2072	0.6595	2.0656	0.0023	0.0754	234	0.0187
	750	0.3462	1.0908	3.5375	0.0039	0.1270	387	0.0312
Excavators Total		0.1584	0.5697	1.2340	0.0013	0.0681	120	0.0143
Forklifts	50	0.0756	0.1921	0.1566	0.0002	0.0178	14.7	0.0068
	120	0.0662	0.2272	0.3757	0.0004	0.0373	31.2	0.0060
	175	0.0802	0.3314	0.6006	0.0006	0.0364	56.1	0.0072
	250	0.0681	0.1759	0.7730	0.0009	0.0240	77.1	0.0061
	500	0.0900	0.2438	0.9629	0.0011	0.0323	111	0.0081
Forklifts Total		0.0741	0.2366	0.5560	0.0006	0.0302	54.4	0.0067
Generator Sets	15	0.0181	0.0738	0.1197	0.0002	0.0073	10.2	0.0016
	25	0.0316	0.1070	0.1737	0.0002	0.0113	17.6	0.0029
	50	0.1182	0.2970	0.3115	0.0004	0.0296	30.6	0.0107
	120	0.1479	0.5099	0.9509	0.0009	0.0742	77.9	0.0133
	175	0.1767	0.7500	1.5523	0.0016	0.0747	142	0.0159
	250	0.1741	0.5333	2.1787	0.0024	0.0658	213	0.0157
	500	0.2480	0.9606	3.1592	0.0033	0.0974	337	0.0224
	750	0.4126	1.5508	5.2278	0.0055	0.1593	544	0.0372
	9999	1.0732	3.8648	12.5361	0.0105	0.3786	1,049	0.0968
Generator Sets Total		0.1020	0.3378	0.6718	0.0007	0.0414	61.0	0.0092
Graders	50	0.1511	0.3698	0.3004	0.0004	0.0343	27.5	0.0136
	120	0.1663	0.5519	0.9819	0.0009	0.0898	75.0	0.0150
	175	0.1846	0.7443	1.4391	0.0014	0.0823	124	0.0167
	250	0.1857	0.5191	1.9027	0.0019	0.0705	172	0.0168
	500	0.2248	0.8113	2.2502	0.0023	0.0853	229	0.0203
	750	0.4795	1.7113	4.8918	0.0049	0.1828	486	0.0433
Graders Total		0.1825	0.6428	1.5237	0.0015	0.0796	133	0.0165
Off-Highway Tracto	120	0.2579	0.7530	1.4831	0.0011	0.1306	93.7	0.0233
	175	0.2427	0.8648	1.8490	0.0015	0.1054	130	0.0219
	250	0.1964	0.5593	1.7848	0.0015	0.0773	130	0.0177
	750	0.7691	3.8033	7.1583	0.0057	0.2985	568	0.0694
	1000	1.1692	5.9006	11.8314	0.0082	0.4183	814	0.1055
Off-Highway Tractors Total		0.2470	0.8664	2.0818	0.0017	0.1017	151	0.0223
Off-Highway Truck	175	0.1842	0.7645	1.3750	0.0014	0.0817	125	0.0166
	250	0.1725	0.4534	1.7336	0.0019	0.0614	167	0.0156
	500	0.2602	0.8103	2.4818	0.0027	0.0925	272	0.0235
	750	0.4248	1.3113	4.1542	0.0044	0.1523	442	0.0383
	1000	0.6754	2.2246	7.6544	0.0063	0.2328	625	0.0609
Off-Highway Trucks Total		0.2597	0.7931	2.5505	0.0027	0.0929	260	0.0234

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Other Construction	15	0.0118	0.0617	0.0739	0.0002	0.0037	10.1	0.0011
	25	0.0167	0.0549	0.1072	0.0002	0.0059	13.2	0.0015
	50	0.1136	0.3034	0.2833	0.0004	0.0283	28.0	0.0103
	120	0.1440	0.5475	0.9243	0.0009	0.0790	80.9	0.0130
	175	0.1258	0.5915	1.0659	0.0012	0.0573	107	0.0113
	500	0.1815	0.6528	2.1223	0.0025	0.0721	254	0.0164
Other Construction Equipment Total		0.1130	0.4291	1.0812	0.0013	0.0471	123	0.0102
Other General Indu	15	0.0066	0.0391	0.0466	0.0001	0.0019	6.4	0.0006
	25	0.0187	0.0632	0.1189	0.0002	0.0062	15.3	0.0017
	50	0.1359	0.3152	0.2446	0.0003	0.0298	21.7	0.0123
	120	0.1537	0.4690	0.8620	0.0007	0.0828	62.0	0.0139
	175	0.1587	0.5841	1.1959	0.0011	0.0704	95.9	0.0143
	250	0.1479	0.3908	1.5819	0.0015	0.0546	136	0.0133
	500	0.2624	0.8792	2.7454	0.0026	0.0977	265	0.0237
	750	0.4361	1.4490	4.6469	0.0044	0.1635	437	0.0394
	1000	0.6693	2.3885	7.3897	0.0056	0.2304	560	0.0604
Other General Industrial Equipmen To		0.1941	0.6281	1.7488	0.0016	0.0779	152	0.0175
Other Material Han	50	0.1877	0.4353	0.3400	0.0004	0.0412	30.3	0.0169
	120	0.1493	0.4564	0.8402	0.0007	0.0803	60.7	0.0135
	175	0.2002	0.7397	1.5174	0.0014	0.0888	122	0.0181
	250	0.1567	0.4165	1.6870	0.0016	0.0580	145	0.0141
	500	0.1872	0.6333	1.9782	0.0019	0.0702	192	0.0169
	9999	0.8816	3.1586	9.7621	0.0073	0.3033	741	0.0795
Other Material Handling Equipment To		0.1867	0.5801	1.6943	0.0015	0.0753	141	0.0168
Pavers	25	0.0294	0.0870	0.1646	0.0002	0.0100	18.7	0.0026
	50	0.1711	0.3951	0.3150	0.0004	0.0371	28.0	0.0154
	120	0.1728	0.5287	1.0165	0.0008	0.0889	69.2	0.0156
	175	0.2148	0.8036	1.6835	0.0014	0.0940	128	0.0194
	250	0.2554	0.7375	2.4518	0.0022	0.1008	194	0.0230
	500	0.2745	1.2660	2.6607	0.0023	0.1077	233	0.0248
Pavers Total		0.1867	0.5756	1.0321	0.0009	0.0739	77.9	0.0168
Paving Equipment	25	0.0159	0.0525	0.1024	0.0002	0.0057	12.6	0.0014
	50	0.1455	0.3352	0.2687	0.0003	0.0316	23.9	0.0131
	120	0.1352	0.4135	0.7968	0.0006	0.0695	54.5	0.0122
	175	0.1676	0.6268	1.3205	0.0011	0.0732	101	0.0151
	250	0.1589	0.4598	1.5357	0.0014	0.0627	122	0.0143
Paving Equipment Total		0.1405	0.4544	0.9400	0.0008	0.0655	68.9	0.0127
Plate Compactors	15	0.0051	0.0263	0.0321	0.0001	0.0018	4.3	0.0005
Plate Compactors Total		0.0051	0.0263	0.0321	0.0001	0.0018	4.3	0.0005
Pressure Washers	15	0.0087	0.0354	0.0573	0.0001	0.0035	4.9	0.0008
	25	0.0128	0.0434	0.0704	0.0001	0.0046	7.1	0.0012
	50	0.0441	0.1172	0.1409	0.0002	0.0120	14.3	0.0040
	120	0.0414	0.1501	0.2804	0.0003	0.0201	24.1	0.0037
Pressure Washers Total		0.0212	0.0680	0.1020	0.0001	0.0074	9.4	0.0019
Pumps	15	0.0155	0.0537	0.0894	0.0001	0.0066	7.4	0.0014
	25	0.0462	0.1183	0.1920	0.0002	0.0140	19.5	0.0042
	50	0.1414	0.3503	0.3528	0.0004	0.0347	34.3	0.0128
	120	0.1526	0.5180	0.9654	0.0009	0.0773	77.9	0.0138
	175	0.1802	0.7518	1.5556	0.0016	0.0768	140	0.0163
	250	0.1710	0.5151	2.0962	0.0023	0.0649	201	0.0154
	500	0.2629	1.0240	3.2753	0.0034	0.1033	345	0.0237
	750	0.4471	1.6929	5.5506	0.0057	0.1730	571	0.0403
	9999	1.4110	5.1656	16.3756	0.0136	0.4965	1,355	0.1273
Pumps Total		0.0991	0.3147	0.5779	0.0006	0.0410	49.6	0.0089

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Rollers	15	0.0074	0.0386	0.0462	0.0001	0.0023	6.3	0.0007
	25	0.0168	0.0554	0.1082	0.0002	0.0060	13.3	0.0015
	50	0.1354	0.3258	0.2795	0.0003	0.0307	26.0	0.0122
	120	0.1280	0.4221	0.7782	0.0007	0.0672	59.0	0.0115
	175	0.1563	0.6303	1.2709	0.0012	0.0687	108	0.0141
	250	0.1642	0.4800	1.7167	0.0017	0.0642	153	0.0148
	500	0.2105	0.8408	2.2093	0.0022	0.0830	219	0.0190
Rollers Total		0.1250	0.4272	0.8166	0.0008	0.0574	67.1	0.0113
Rough Terrain Forl	50	0.1730	0.4329	0.3615	0.0004	0.0402	33.9	0.0156
	120	0.1306	0.4493	0.7797	0.0007	0.0716	62.4	0.0118
	175	0.1746	0.7325	1.3765	0.0014	0.0788	125	0.0158
	250	0.1626	0.4544	1.7779	0.0019	0.0611	171	0.0147
	500	0.2217	0.7485	2.3512	0.0025	0.0843	257	0.0200
Rough Terrain Forklifts Total		0.1368	0.4815	0.8505	0.0008	0.0719	70.3	0.0123
Rubber Tired Doze	175	0.2498	0.8774	1.8708	0.0015	0.1077	129	0.0225
	250	0.2890	0.8102	2.5615	0.0021	0.1124	183	0.0261
	500	0.3754	1.8608	3.3530	0.0026	0.1431	265	0.0339
	750	0.5657	2.7857	5.1236	0.0040	0.2163	399	0.0510
	1000	0.8798	4.4579	8.7526	0.0060	0.3146	592	0.0794
Rubber Tired Dozers Total		0.3508	1.5020	3.1254	0.0025	0.1347	239	0.0316
Rubber Tired Load	25	0.0207	0.0697	0.1331	0.0002	0.0073	16.9	0.0019
	50	0.1686	0.4135	0.3383	0.0004	0.0384	31.1	0.0152
	120	0.1293	0.4314	0.7660	0.0007	0.0699	58.9	0.0117
	175	0.1564	0.6351	1.2251	0.0012	0.0698	106	0.0141
	250	0.1578	0.4432	1.6331	0.0017	0.0600	149	0.0142
	500	0.2277	0.8216	2.3036	0.0023	0.0867	237	0.0205
	750	0.4704	1.6776	4.8485	0.0049	0.1798	486	0.0424
	1000	0.6508	2.4004	7.4214	0.0060	0.2256	594	0.0587
Rubber Tired Loaders Total		0.1530	0.5214	1.2255	0.0012	0.0688	109	0.0138
Scrapers	120	0.2366	0.7257	1.3704	0.0011	0.1233	93.9	0.0213
	175	0.2510	0.9371	1.9270	0.0017	0.1101	148	0.0226
	250	0.2747	0.7749	2.6155	0.0024	0.1065	209	0.0248
	500	0.3807	1.6480	3.6071	0.0032	0.1459	321	0.0344
	750	0.6602	2.8335	6.3557	0.0056	0.2539	555	0.0596
Scrapers Total		0.3347	1.3277	3.0630	0.0027	0.1321	263	0.0302
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006
	50	0.1582	0.3915	0.3741	0.0005	0.0381	36.2	0.0143
	120	0.1589	0.5428	0.9927	0.0009	0.0824	80.2	0.0143
	175	0.2015	0.8467	1.7073	0.0017	0.0878	155	0.0182
	250	0.2198	0.6518	2.6462	0.0029	0.0843	255	0.0198
Signal Boards Total		0.0234	0.0959	0.1678	0.0002	0.0096	16.7	0.0021
Skid Steer Loaders	25	0.0270	0.0736	0.1286	0.0002	0.0086	13.8	0.0024
	50	0.0893	0.2612	0.2505	0.0003	0.0238	25.5	0.0081
	120	0.0678	0.2852	0.4473	0.0005	0.0388	42.8	0.0061
Skid Steer Loaders Total		0.0783	0.2565	0.3057	0.0004	0.0276	30.3	0.0071
Surfacing Equipme	50	0.0629	0.1561	0.1472	0.0002	0.0149	14.1	0.0057
	120	0.1275	0.4382	0.8099	0.0007	0.0655	63.8	0.0115
	175	0.1136	0.4816	0.9690	0.0010	0.0493	85.8	0.0103
	250	0.1336	0.4088	1.4564	0.0015	0.0524	135	0.0121
	500	0.1968	0.8383	2.1681	0.0022	0.0782	221	0.0178
	750	0.3142	1.3099	3.4781	0.0035	0.1237	347	0.0283
Surfacing Equipment Total		0.1647	0.6589	1.6559	0.0017	0.0639	166	0.0149

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Sweepers/Scrubbe	15	0.0124	0.0729	0.0870	0.0002	0.0036	11.9	0.0011
	25	0.0240	0.0808	0.1544	0.0002	0.0084	19.6	0.0022
	50	0.1672	0.4080	0.3372	0.0004	0.0383	31.6	0.0151
	120	0.1624	0.5400	0.9294	0.0009	0.0901	75.0	0.0147
	175	0.2004	0.8081	1.5355	0.0016	0.0911	139	0.0181
	250	0.1417	0.3771	1.6698	0.0018	0.0516	162	0.0128
Sweepers/Scrubbers Total		0.1689	0.5475	0.9059	0.0009	0.0733	78.5	0.0152
Tractors/Loaders/B	25	0.0224	0.0697	0.1355	0.0002	0.0079	15.9	0.0020
	50	0.1394	0.3685	0.3165	0.0004	0.0337	30.3	0.0126
	120	0.0993	0.3661	0.6071	0.0006	0.0554	51.7	0.0090
	175	0.1307	0.5891	1.0398	0.0011	0.0597	101	0.0118
	250	0.1500	0.4228	1.6664	0.0019	0.0558	172	0.0135
	500	0.2751	0.9002	2.9209	0.0039	0.1036	345	0.0248
	750	0.4176	1.3479	4.5341	0.0058	0.1582	517	0.0377
Tractors/Loaders/Backhoes Total		0.1109	0.3993	0.7227	0.0008	0.0559	66.8	0.0100
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0025	8.5	0.0009
	25	0.0403	0.1355	0.2587	0.0004	0.0141	32.9	0.0036
	50	0.1929	0.4460	0.3666	0.0004	0.0421	32.9	0.0174
	120	0.1591	0.4900	0.9512	0.0008	0.0807	64.9	0.0144
	175	0.2364	0.8930	1.8852	0.0016	0.1029	144	0.0213
	250	0.2918	0.8572	2.8121	0.0025	0.1163	223	0.0263
	500	0.3638	1.7688	3.5695	0.0031	0.1443	311	0.0328
	750	0.6912	3.3168	6.8402	0.0059	0.2731	587	0.0624
Trenchers Total		0.1762	0.4992	0.7910	0.0007	0.0663	58.7	0.0159
Welders	15	0.0130	0.0449	0.0747	0.0001	0.0055	6.2	0.0012
	25	0.0268	0.0685	0.1112	0.0001	0.0081	11.3	0.0024
	50	0.1292	0.3084	0.2760	0.0003	0.0299	26.0	0.0117
	120	0.0851	0.2759	0.5126	0.0005	0.0443	39.5	0.0077
	175	0.1397	0.5532	1.1430	0.0011	0.0609	98.2	0.0126
	250	0.1124	0.3214	1.2992	0.0013	0.0428	119	0.0101
	500	0.1413	0.5285	1.6482	0.0016	0.0553	168	0.0128
Welders Total		0.0847	0.2281	0.3015	0.0003	0.0280	25.6	0.0076