APPENDIX K

Service Letters and Responses

Otay Mesa CPU: Service LetterFrom: Saunders, Mark [MXSaunders@sandiego.gov]
Sent: Monday, November 15, 2010 6:53 PM
To: Sharon Wright-Harris
Cc: Whitfield, Pam
Subject: RE: Otay Mesa CPU: Service Letter

Follow Up Flag: Follow up
Flag Status: Green

Sharon,
See the following for the information requested:

- There are currently plans to build a 15,000 sq ft facility in the Otay Mesa/East community. However, land acquisition has not been obtained and funding is currently not available.
- There are currently no plans to close either Otay Mesa or San Ysidro branch libraries.
- Standards for determining library size, location and resources are based on the 2001 Guiding Principles for Library Facilities, which included the following: Minimum 15,000 square feet, at least one larger library facility in each Council District, service area radius of approximately 2 miles, service area population of 18,000 to 20,000, a minimum of two items per capita for library materials in branch libraries, and community service centers should be constructed at the larger libraries where feasible.
- Current facilities and staffing would not be adequate for the increased population noted for the project.

Thanks, Mark

From: Sharon Wright-Harris [mailto:swright@reconenvironmental.com]
Sent: Friday, October 22, 2010 1:10 PM
To: Saunders, Mark
Subject: Otay Mesa CPU: Service Letter

Hi Mark,
RECON is working on the Otay Mesa CPU EIR for the City of San Diego and we have another service letter request for you. Please see the attached files.
Many thanks,
Sharon Wright-Harris
Writer/Editor
RECON Environmental, Inc.
525 W. Wetmore, Suite 111
Tucson, Arizona 86705
P 520.325.9977 x206
F 520.293.3051

A Company of Specialists
<<servltr_library.doc>> <<Fig1.pdf>> <<Fig2.pdf>>

Otay Mesa CPU: Service letterFrom: Paul Woods [paul.woods@sweetwaterschools.org]
Sent: Thursday, November 18, 2010 5:52 PM
To: Sharon Wright-Harris
Cc: Robert Bradley; Alina Cruz; Carolyn Scholl (Carolyn.Scholl@cvesd.org)
Subject: RE: Otay Mesa CPU: Service letter

Follow Up Flag: Follow up
Flag Status: Green

Ms. Wright-Harris,

Regarding your letter of October 22, 2010 referencing the Otay Mesa Community Plan Update EIR

I would like to note that the Otay Mesa Community Plan is served by three school districts: Sweetwater Union High School District, Chula Vista Elementary School District and San Ysidro Elementary School District. The significance is that Chula Vista ESD is a K-6 district and San Ysidro ESD is a K-8 district. Therefore there are a few 7th and 8th graders in the northwest part of the Community Plan that will attend SUHSD middle schools.

The Community Plan is served primarily by San Ysidro High School. A small portion of the Community Plan is served by Montgomery Middle School (all middle school students not within SYESD) and another small portion (between Del Sol Blvd and the 805 and 905) is temporarily served by Montgomery High School.

At this time the only long range plan for new or expanded facilities is a future high school sited within the Otay Mesa Community Plan.

Current Enrollment (2010/11):
Montgomery Middle School: 875
Montgomery High School: 1,604.
San Ysidro High School: 2,412

Student generation rates are:
Single Family:
7-8 0.1066
9-12 0.2028

Single Family Attached
7-8 0.0635
9-12 0.1229

Multi-Family Attached
7-8 0.0780
9-12 0.2204

Capacities (State loading standards):
Montgomery Middle School: 1,170 students
Montgomery High School: 2,284 students (including temporary portables)
San Ysidro High School: 2,688 students (including temporary portables)

The Sweetwater Union High School District will have sufficient staff for new students generated by the development of the Community Plan because operational staff is funded by the state on a per student basis. Because of the current economic crisis, class sizes may be larger than they are this year but each student will have a teacher.

The Sweetwater Union High School District will NOT have sufficient facilities for new high school students generated by the development of the Community Plan. Although it appears that Montgomery High School has capacity, the California Department of Education (CDE) recommends no more than 1,400 students on that campus because of site size. Also the District places a high value on local schools and even though it appears that Montgomery High School could absorb more students, this would inevitably lead to having students that are very close to San Ysidro High School or a future high school being required to attend a school that is not only farther away but is not part of the Otay Mesa community.

Although it appears that San Ysidro High School has room for about 300 more students, that excess capacity is provided by temporary portables. The San Ysidro High School campus has a CDE recommended maximum capacity of 1,800 students.

The number of high school students potentially generated by development in the Community Plan will require two comprehensive high school sites and therefore the Sweetwater Union High School District request the identification of a new 50-acre high school site in the Community Plan.

We are very willing to meet with the planning staff to identify an appropriate site.

Sincerely,

Paul D. Woods
Director of Planning and Construction
Sweetwater Union High School District
1130 Fifth Av.
Chula Vista, CA 91911
www.sweetwaterschools.org
paul.woods@sweetwaterschools.org
619-691-5553
Fax 619-420-0339

From: Sharon Wright-Harris [mailto:swright@reconenvironmental.com]
Sent: Monday, November 15, 2010 10:21 AM
To: Paul Woods
Subject: Otay Mesa CPU: Service letter

Good morning,
Just wanted to check to see if you had any questions I could answer. We're hoping to wrap this up soon so we can get the document to the City.
Thanks,

Sharon Wright-Harris
Writer/Editor

THE CITY OF SAN DIEGO

IN REPLYING
PLEASE GIVE
OUR REF. NO.

December 20, 2010

Sharon Wright-Harris
c/o RECON
525 W. Wetmore Rd., Ste 111
Tucson, AZ 85705-5094

Dear Miss Wright-Harris:

Listed below are the Police Department's updated findings for the Environmental Impact Report for proposed Otay Mesa Community Plan (RECON Number 3957E)

Area Station

Police service for the Otay Mesa Community Plan will be provided by officers from Southern Division, located at 1120 27th Street, San Diego, CA 92154. Southern Division provides police services to the following communities: Tijuana River Valley, San Ysidro, Otay Mesa, Border, Egger Highlands, Nestor, Otay Mesa West, Palm City, and Ocean Crest.

Current Staffing / Officer Availability

Southern Division is currently staffed with 111 sworn personnel and two non-sworn personnel. The current patrol strength at Southern Division is 99 uniformed patrol officers. Officers work ten-hour work shifts, four days a week. Staffing is comprised of three shifts which operate from 6:00 a.m. - 4:00 p.m. (First Watch), 2:00 p.m.- Midnight (Second Watch) and from 9:00 p.m.- 7:00 a.m. (Third Watch). Using the department's minimum staffing guidelines, Southern Division currently deploys a minimum of 10 patrol officers on First Watch, 11 officers on Second Watch and seven officers on Third Watch.

The San Diego Police Department does not staff individual stations based on ratios of sworn officers per 1,000 population ratio. The goal citywide is to maintain 1.45 officers per 1,000 population ratio.

Current Response Times

The police department currently utilizes a five level priority calls dispatch system, which includes priority E (Emergency), one, two, three and four. The calls are prioritized by the phone dispatcher and routed to the radio operator for dispatch to the field units. The priority system is designed as a guide, allowing the phone dispatcher and the radio dispatcher discretion to raise or lower the call priority as necessary based on the information received. Priority "E" and priority one calls involve serious crimes in progress or those with a potential for injury.

The Otay Mesa Community Plan is currently located in the City of San Diego, within the boundaries of police Beat 713. The 2009 average response times for Beat 713 are 8.89 minutes for emergency calls, 16.37 minutes for priority one calls, 30.40 minutes for priority two calls, 62.28 minutes for priority three calls and 54.35 minutes for priority four calls.

The department's goal response times are seven minutes for emergency calls, 12 minutes for priority one calls, 30 minutes for priority two calls, 90 minutes for priority three calls and 90 minutes for priority four calls. The citywide average response times, for the same period, were 6.11 minutes for emergency calls, 11.73 minutes for priority one calls, 23.34 minutes for priority two calls, 63.70 minutes for priority three calls and 63.02 minutes for priority four calls during that same time period. The department strives to maintain the response time goals as one of various other measures used to assess the level of service to the community.

Potential Mitigation Measures to Response Time

The current budgeted staffing ratio for police officers to population is 1.45 officers per 1,000 residents based on 2010 estimate residential population of 1,376,173 and a budgeted strength of 1,991police officers (FY2011). The department goal is to have 1.45 officers per 1,000 residents. The ratio is calculated using the department total to take into account the support and investigative positions within the department. This ratio does not include the significant population increase resulting from employees who commute to work in the community or those visiting.

Gross and Net Additional Response Time Caused by Proposal

This project will likely add additional police related calls for service to the department. Therefore, without additional police officers it is likely that police response times will increase in the projected area.

Long-Term (Community Plan Build-Out) Post-Project Response Time

There are no current plans for additional police sub-stations in the immediate area. Police response times in this community will continue to increase with the build-out of other community plans and the increase of traffic generated by new growth. A Crime Prevention through Environmental Design Review (CPTED) is recommended by the police department to address general security concerns.

Sincerely,

MANNY GUADERRAMA
Captain

MG/mc

cc: Robert Kanaski, Assistant Chief, Special Operations
Albert Guaderrama, Captain, Southern Division

CCTR: 1914131211

CHULA VISTA ELEMENTARY SCHOOL DISTRICT

84 EAST "J" STREET • CHULA VISTA, CALIFORNIA 91910 • 619 425-9600

EACH CHILD IS AN INDIVIDUAL OF GREAT WORTH

January 4, 2011

RECEIVED
JAN 05 2011
RECON

Ms. Sharon Wright-Harris
Writer/Editor
Recon
1927 Fifth Avenue
San Diego, CA 92101-2358

RE: Otay Mesa Community Plan Update Environmental Impact Report (Recon Number 3957E)

Dear Ms. Wright-Harris:

Thank you for the opportunity to review the EIR for the above referenced project. Please be advised that a portion of this project is within the Chula Vista Elementary School District, which serves children from Kindergarten through Grade 6.

As the portion of the project that lies within the District boundary will not result in generation of additional students, the District does not identify any issue and has no comment on the proposed project.

The District requests a copy of an approved (stamped/signed) tentative map when/if the project is approved, in order to comply with Office of Public School Construction eligibility audit. Your assistance in this matter would be greatly appreciated.

Thank you again for the opportunity to review the Final EIR. If additional information is needed, please give our Facilities Planning Department a call at (619) 425-9600, Extension 1374.

Sincerely,

Carolyn Scholl
Facilities Planning Manager

BOARD OF EDUCATION
DAVID BEJARANO ♦ RUSSELL Y. CORONADO ♦ LARRY CUNNINGHAM ♦ DOUGLAS E. LUFFBOROUGH, III ♦ PAMELA B. SMITH

SUPERINTENDENT
LOWELL J. BILLINGS, Ed.D.

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Mr. Mark Saunders
Senior Management Analyst
San Diego Public Library
820 E Street
San Diego, CA 921010

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Mr. Saunders:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Plans for new or expanded facilities.
- Verification that the Otay-Nestor and San Ysidro branches would continue to serve the Otay Mesa Community Plan area.
- Standard for determining library size, location, and resources.
- Will the public library have sufficient staff and facilities?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Mr. Paul Woods
Director of Planning and Construction
Sweetwater Union High School District
1130 Fifth Avenue
Chula Vista, CA 91911

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Mr Woods:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.

ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected "worst-case" population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Plans for new or expanded facilities.
- Verification that the following school (and any additional schools) would continue to serve the Otay Mesa Community Plan area. Please include current enrollment, capacity, and student generation rate.

SWEETWATER UNION HIGH SCHOOL DISTRICT
OTAY MESA COMMUNITY PLANNING AREA

School	Grades	Enrollment	Enrollment Capacity	Student Generation Rate (student/du)
San Ysidro High School	9-12			

- Will the Sweetwater Union High School District have sufficient staff and facilities?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Ms. Martha Blake
San Diego Police Department
1401 Broadway Avenue, MS 700-A
San Diego, CA 92101

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Ms. Blake:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Verification that the Southern Division would continue to serve the Otay Mesa Community Plan area.
- Number of sworn police officers and non-sworn personnel assigned to the service area.
- Number of personnel assigned to the service area that would be on duty during a normal 24-hour period.
- Standard for determining officer/resident ratio and response time goals.
- Existing number of sworn personnel per 1,000 residents.
- Existing average response times for Priority I and Priority II calls (please indicate year for statistics).
- Plans for new facilities.
- Will the San Diego Police Department have sufficient staffing and facilities to meet City standards?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Ms. Susan Fahle
Assistant Superintendent Business Services and Support
Chula Vista Elementary School District
84 East J Street
Chula Vista, CA 91910

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Ms. Fahle:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Plans for new or expanded facilities.
- Verification that the following school (and any additional schools) would continue to serve the Otay Mesa Community Plan area. Please include current enrollment, capacity, and student generation rate.

CHULA VISTA ELEMENTARY SCHOOL DISTRICT
OTAY MESA COMMUNITY PLANNING AREA

School	Grades	Enrollment	Enrollment Capacity	Student Generation Rate (student/du)
Juarez Lincoln Accelerated				

- Will the Chula Vista Elementary School District have sufficient staff and facilities?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Mr. Tom Silva
Interim Assistant Superintendent
San Ysidro School District, Business Office
4350 Otay Mesa Road
San Ysidro, CA 92173

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Mr. Silva:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Plans for new or expanded facilities.

- Verification that the following schools (and any additional schools) would continue to serve the Otay Mesa Community Plan area. Please include current enrollment, capacity, and student generation rates.

SAN YSIDRO SCHOOL DISTRICT
OTAY MESA COMMUNITY PLANNING AREA

School	Grades	Enrollment	Enrollment Capacity	Student Generation Rate (student/du)
La Mirada Elementary School	K-5			
Ocean View Hills	K-8			
Smythe Elementary School	K-5			
Sunset Elementary School	K-5			
Willow Elementary School	K-5			
San Ysidro Middle School	6-8			
Beyer Elementary School	K-5			

- Will the San Ysidro School District have sufficient staff and facilities?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Mr. Jose Lopez
Assistant Fire Marshal
San Diego Fire-Rescue Department
1010 Second Avenue, Suite 300
San Diego, CA 92101

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Mr. Lopez:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Verification that the following stations would continue to serve the Otay Mesa Community Plan area.

Station No.	Number of Firefighters	Equipment
43		
6		
30		
29		

- Plans for new Otay Mesa facility.
- Standard for determining firefighter/resident ratio and response time goals.
- Existing number of firefighters per 1,000 residents.
- Existing average response times (please indicate year for statistics).
- Will the San Diego Fire Department have sufficient staffing and facilities to meet City standards?

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
www.recon-us.com

525 W. Wetmore Rd., Suite 111
Tucson, AZ 85705
P 520.325.9977 F 520.293.3051

RECON

A Company of Specialists

October 22, 2010

Mr. Jeff Harkness
City of San Diego
Parks and Recreation Department
202 C Street, MS 5A
San Diego, CA 92101-3860

Reference: Otay Mesa Community Plan Update Environmental Impact Report (RECON Number 3957E)

Dear Mr. Harkness:

RECON is preparing a program Environmental Impact Report (EIR) for the update of the Otay Mesa Community Plan proposed by the City of San Diego. Service letters were originally sent in 2006, and we are requesting updated information based on recent changes to the plan.

The plan area covers approximately 9,300 acres in the southern portion of San Diego County. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Deigo on the east, and the U.S./Mexico border and the City of Tijuana on the south (Figure 1).

The proposed project is a comprehensive update of the Otay Mesa Community Plan that was adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the city of San Diego, as well as to make the plan reflective of the substantial land use changes (e.g., adopted alignment of State Route [SR-905]) that have occurred over the last 30 years.

The project would re-designate land uses to increa the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses.

OTAY MESA COMMUNITY PLAN UPDATE
DRAFT PROJECTED BUILDOUT COMPARISON

Land Use Categories	Adopted Community Plan	Proposed Community Plan Update
Residential	1,258 ac	745 ac
Single family detached	4,800 dus	4,273 dus
Multi-family and attached	7,600 dus	14,501 dus
Residential Areas w/Village Centers	---	716 ac
Commercial	457 ac	320 ac
Industrial	2,885 ac	2,399 ac
Institutional	1,027 ac	1,163 ac
Parks/Open Space	2,594 ac	2,888 ac

SOURCE: City of San Diego Planning and Community Investment Department. July 10, 2010.
ac = acre; du = dwelling unit

The proposed land use plan is shown in the attached Figure 2.

Overall, the anticipated residential uses in the plan area would provide a minimum of 18,774 single-family and multi-family dwelling units. Assuming an average occupancy of 2.74 persons per household, the projected “worst-case” population for the project would be 51,441.

RECON is requesting the following information to assist in the preparation of the draft EIR:

- Whether the Quimby Act applies to this project, and if so, please identify the established standard.
- Whether the parkland in the Otay Mesa Community Plan Area meets the City’s goals for usable parkland acreage per 1,000 residents.
- Based on the proposed development, how many acres of parkland is required based on the City’s goal for usable parkland acreage per 1,000 residents? If the proposed acreage is deficient, what would the required development impact fee payment be?
- Any other planning considerations that should be discussed in the EIR.

I would greatly appreciate it if you could provide me with this information by **November 12, 2010**. Please feel free to contact me should you have any questions. I can be reached via email at swright@reconenvironmental.com or by phone at 520.325.9977.

Sincerely,

Sharon Wright-Harris
Writer/Editor

APPENDIX L

Technical Infrastructure Study

Technical Infrastructure Study

Otay Mesa
Community Plan Update

May 2013

Prepared for:
City of San Diego
1222 First Street
San Diego, California 92101

Prepared by:

ATKINS

9275 Sky Park Court, Suite 200
San Diego, California 92123
Atkins Project No.: 100008335

Leanne Hammond, P.E.
Project Manager

Contents

1.0 Introduction 1

2.0 Existing Infrastructure and Planning Documents 7
2.1 Existing Water Facilities and Planning Documents 7
2.2 Existing Sewer Facilities and Planning Documents 11
2.3 Existing Recycled Water Facilities and Planning Documents 19

3.0 Description of Project Land Use Plan 25

4.0 Development of Demand Projections 26
4.1 Water Planning Criteria 26
4.2 Sewer Planning Criteria 28
4.3 Recycled Water Planning Criteria 29

5.0 Projected Water and Sewer Demands 30
5.1 Recycled Water Demands 33

6.0 Approach to Comparison of Utilities 36
6.1 Water System Analysis 36
6.2 Sewer System Analysis 39
6.3 Recycled Water System Analysis 47

7.0 Summaries and Conclusions 49
7.1 Summary of Water Improvements 49
7.2 Summary of Sewer Improvements 49
7.3 Summary of Recycled Water Improvements 52
7.4 Final Conclusions 52

Appendices

Appendix A Development Summary Tables

Tables

Table 1 Land Uses Associated with Proposed Alternatives....25
Table 2 District Criteria for Irrigation Percentages....29
Table 3 OMCP Update Projected 2030 Water Demands....31
Table 4 OMCP Update Projected 2030 Wastewater Generation....32
Table 5 Average Day Recycled Water Demand Projection Comparison....34
Table 6 Water Demand Projection Comparison with City Recycled Water Demands Deducted....35
Table 7 Potable Water Design Criteria....37
Table 8 Summary of Identified Water System Improvements....50
Table 9 Summary of Identified Sewer System Improvements....51

Figures

Figure 1 Project Location....3
Figure 2 No Project Land Use....4
Figure 3 Project Land Use....5
Figure 4 Hydraulic Profile Schematic....9
Figure 5 Regional Sewer Facilities....15
Figure 6 Recycled Water System Hydraulic Profile Schematic....21
Figure 7 Ultimate Recycled Water System....23
Figure 8 Water System Improvements....41
Figure 9 Phased OMTS System Improvements....43
Figure 10 Sewer System Improvements....45

Acronyms

City	City of San Diego
d/D	depth to diameter ratio
du/gac	dwelling units per gross acre
EIR	Environmental Impact Report
FCF	flow control facilities
gpcd	gallons per capita per day
gpd/ac	gallons per day per acre
Metro	Metropolitan Sewerage System
mgd	million gallons per day
OMCP	Otay Mesa Community Plan
OMTS	Otay Mesa Trunk Sewer
OVTS	Otay Valley Trunk Sewer
District	Otay Water District
RWCWRF	Ralph W. Chapman Water Reclamation Facility
SBWRP	South Bay Water Reclamation Plant
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
TM	technical memorandum
WRMP	Water Resources Master Plan

This page intentionally left blank.

1.0 Introduction

The Otay Mesa community is a dynamic and rapidly developing area that encompasses approximately 9,300 acres in the southeastern portion of the City of San Diego (City). The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Diego on the east and the US/Mexico border and the City of Tijuana on the south. It is envisioned that Otay Mesa will be a major employment center and home to a future population of 51,329 people. The City is currently updating the Otay Mesa Community Plan (OMCP), originally adopted in 1981, and the Otay Mesa Development District Ordinance zoning regulations. The intent of the update is to establish a framework for future development that will raise the standard of expectations for Otay Mesa and meet the housing demand projected for the City. The preferred land use proposal (Project) has been presented to the community and the City is proceeding with planning elements based the proposed Project.

The updated OMCP provides a long-range, comprehensive policy framework for growth and development in Otay Mesa over the next 20 to 30 years. Guided by citywide policy direction contained within the General Plan (adopted by the City Council on March 8, 2009), the updated community plan identifies a land use strategy with new land use designation proposals to create villages, activity centers and industrial/employment centers along major transportation corridors, while strengthening cultural and business linkages to Tijuana, Mexico via the Otay Mesa Port of Entry, as well as other enhancements to the existing planning area. The OMCP is consistent with the City's General Plan and includes the following nine elements: Land Use and Community Planning; Mobility; Urban Design; Economic Prosperity; Public Facilities, Services and Safety; Recreation; Historic Preservation; Noise; and Housing.

The purpose of this technical study is to provide a summary of wet utility (water, sewer and recycled water) requirements under the Project for the development of the OMCP Update Program Environmental Impact Report (EIR). The Project is being compared to the No Project alternative to determine what additional infrastructure may be required to support the proposed changes in land use. The No Project alternative is based on currently adopted master planning documents that conform to the 1981 OMCP. The project location shown in **Figure 1**. The OMCP Planning Area falls entirely within the municipal boundary of the City and the City is responsible for sewer service for the three drainage basins within the OMCP: Valley City, City East, and City West. However, for water and recycled water service, nearly half of the OMCP is within the purview of Otay Water District (District). The District's service area encompasses the eastern portion of the OMCP and a small notch on the north side of the OMCP. The maps showing the No Project land use plan and the Project are included as **Figures 2 and 3**, respectively.

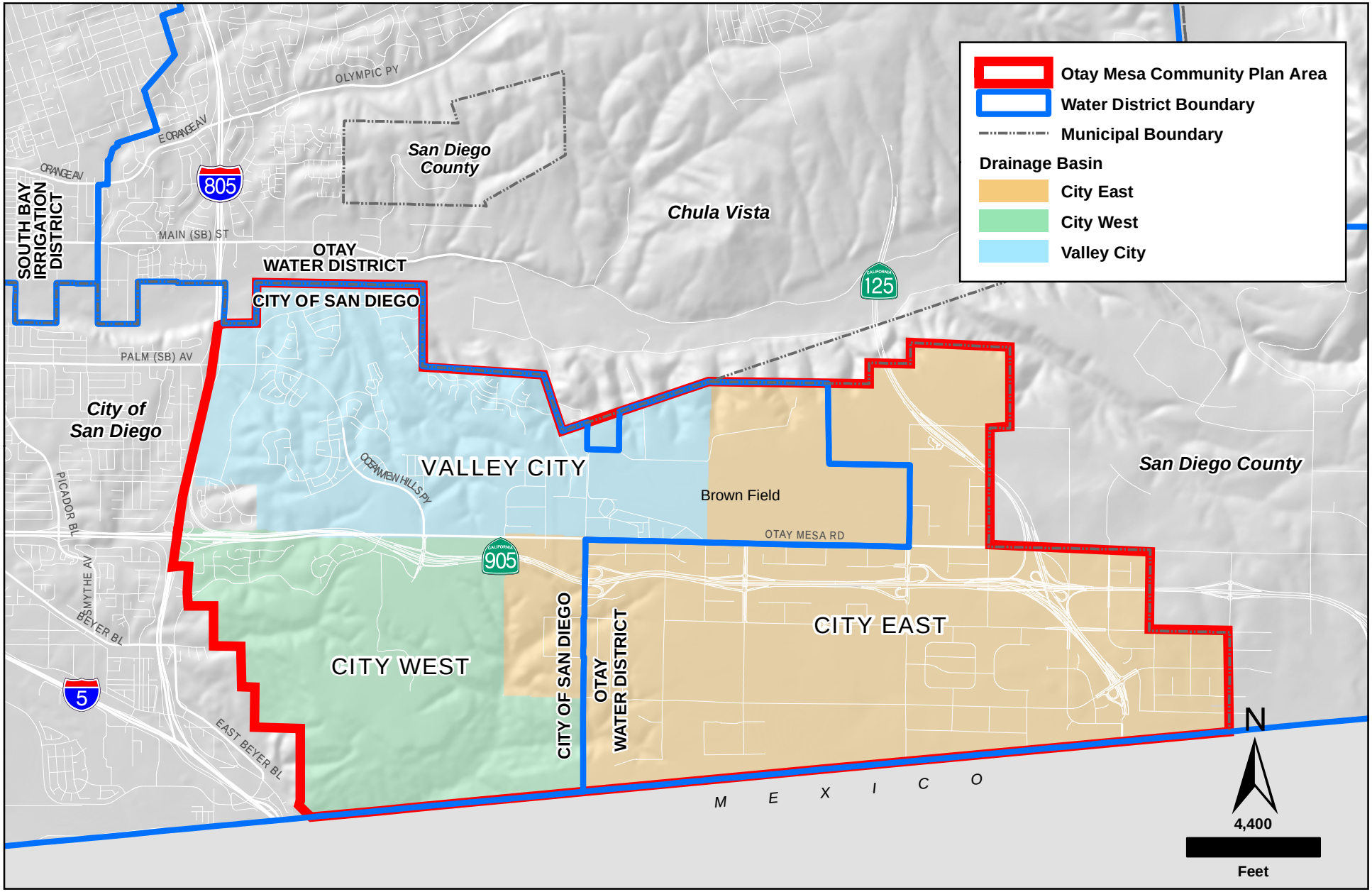
The currently adopted master planning documents for the OMCP Planning Area include:

- *1999 South San Diego-Otay Mesa Water Study*,
- *2004 Otay Mesa Trunk Sewer Master Plan and Alignment Study,*

- *2010 Otay Water District Water Resources Master Plan Update (revised 2013)*,
- *2009 Otay Mesa Trunk Sewer Refinement and Phasing Report*
- *2009 Otay Master Plan Optimization Baseline Report*

These documents and their associated certified environmental planning documents provide a benchmark for infrastructure planning in the OMCP. However, some of the design standards used in the master planning documents are out of date and the population/density assumptions have changed. So, in order to compare the Project with the No Project alternative, the infrastructure requirements for the No Project alternative had to be re-evaluated to conform to the City's current water, sewer and recycled water design guides and the current population/density assumptions, as referenced herein. Most notable, the water and sewer forecasts from the 1999 South San Diego-Otay Mesa Water Study (1999 Study) and the 2004 Otay Mesa Trunk Sewer Master Plan, respectively, were conservative and subsequently revised in more recent studies. The 2009 Otay Master Plan Optimization Baseline Report (2009 Baseline Report) revised facility improvement phasing as compared to the 1999 Study and this study recommends that as facilities are designed for future development that the City update pump station sizing capacity needs for the Princess Park and Ocean View Hills pump stations based on the revised water use noted in the 2009 Baseline Report.

This technical study identifies impacts and improvements necessary to provide potable water, recycled water, and sewer service for the OMCP Update under the No Project condition as well as the Project.



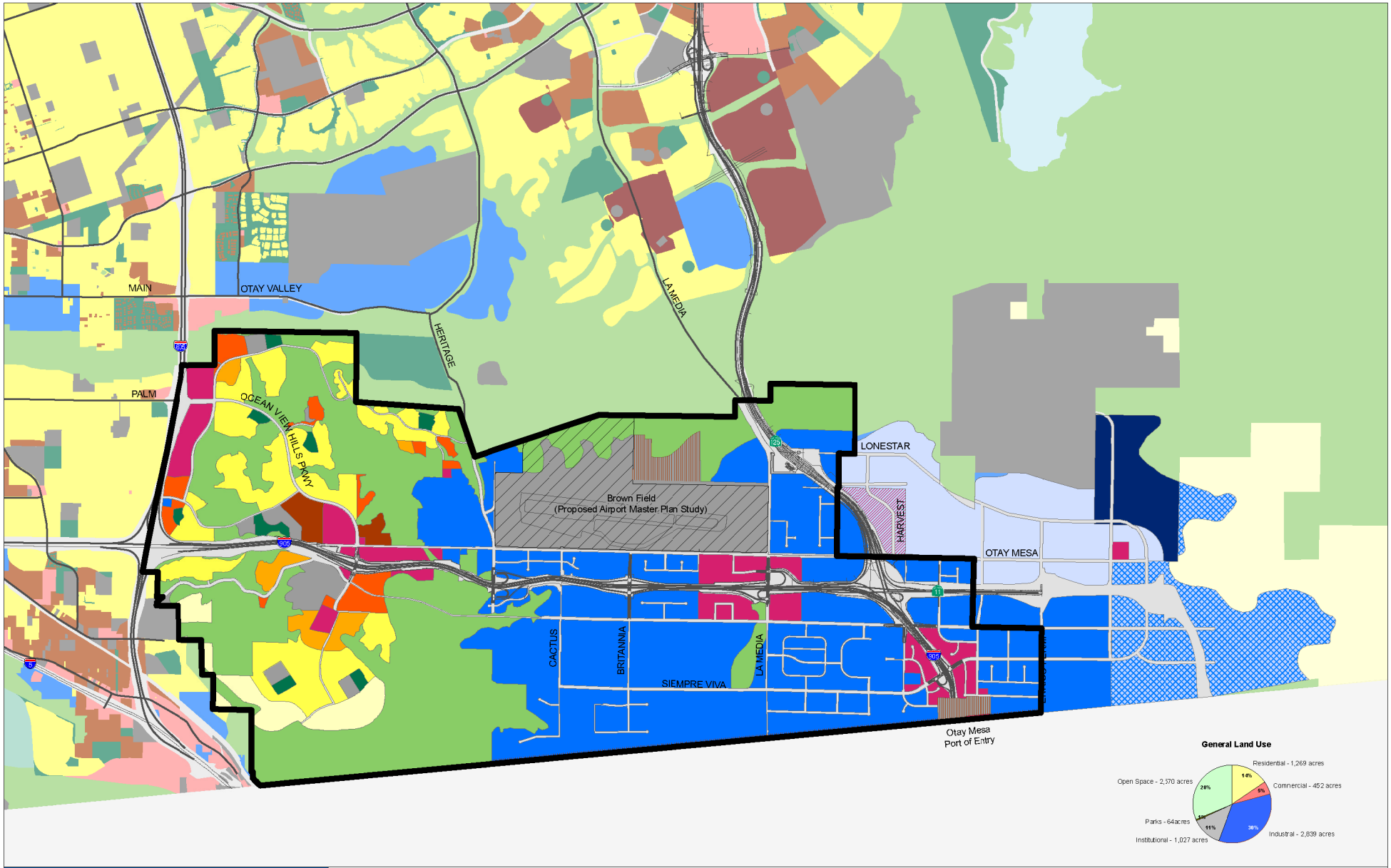
Project Location

Figure 1

5/21/13 LH SD Z:\Projects\IS\OMCPU\mxd\8335_OMCPU_ProjectLocation_F1.mxd

ATKINS

OMCPU Technical Infrastructure Study
May 2012



THE CITY OF SAN DIEGO
CITY PLANNING & COMMUNITY INVESTMENT

*This land use plan scenario is one of three that has been prepared by the City for further analysis and public input.

Portions of this product may contain geographic information copyrighted by SanGIS. All Rights Reserved.

Portions of the map contain information from the San Diego Association of Governments (SANDAG) Regional Information System. This product cannot be reproduced without the written permission of SANDAG.

Map created by:

Area Scale (In Acres)

40

10

0 500 1,000 1,500 2,000 Feet

N

Otay Mesa Community Plan Update No Project Alternative

March 11, 2009 DRAFT

General Land Use Categories

Parks, Open Space, and Institutional

- Open Space
- Parks
- Institutional

Village Centers

- Neighborhood Village 15 - 29 du/ac
- Community Village 30 - 45 du/ac

Residential

- Residential - Very Low 0-4 du/ac
- Residential - Low 5-9 du/ac
- Residential - Low Medium 10-14 du/ac
- Residential - Medium 15-29 du/ac
- Residential - Medium High 30-44 du/acre

Commercial - Residential Prohibited

- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Heavy Commercial
- Visitor Commercial
- Office Commercial - Residential Permitted

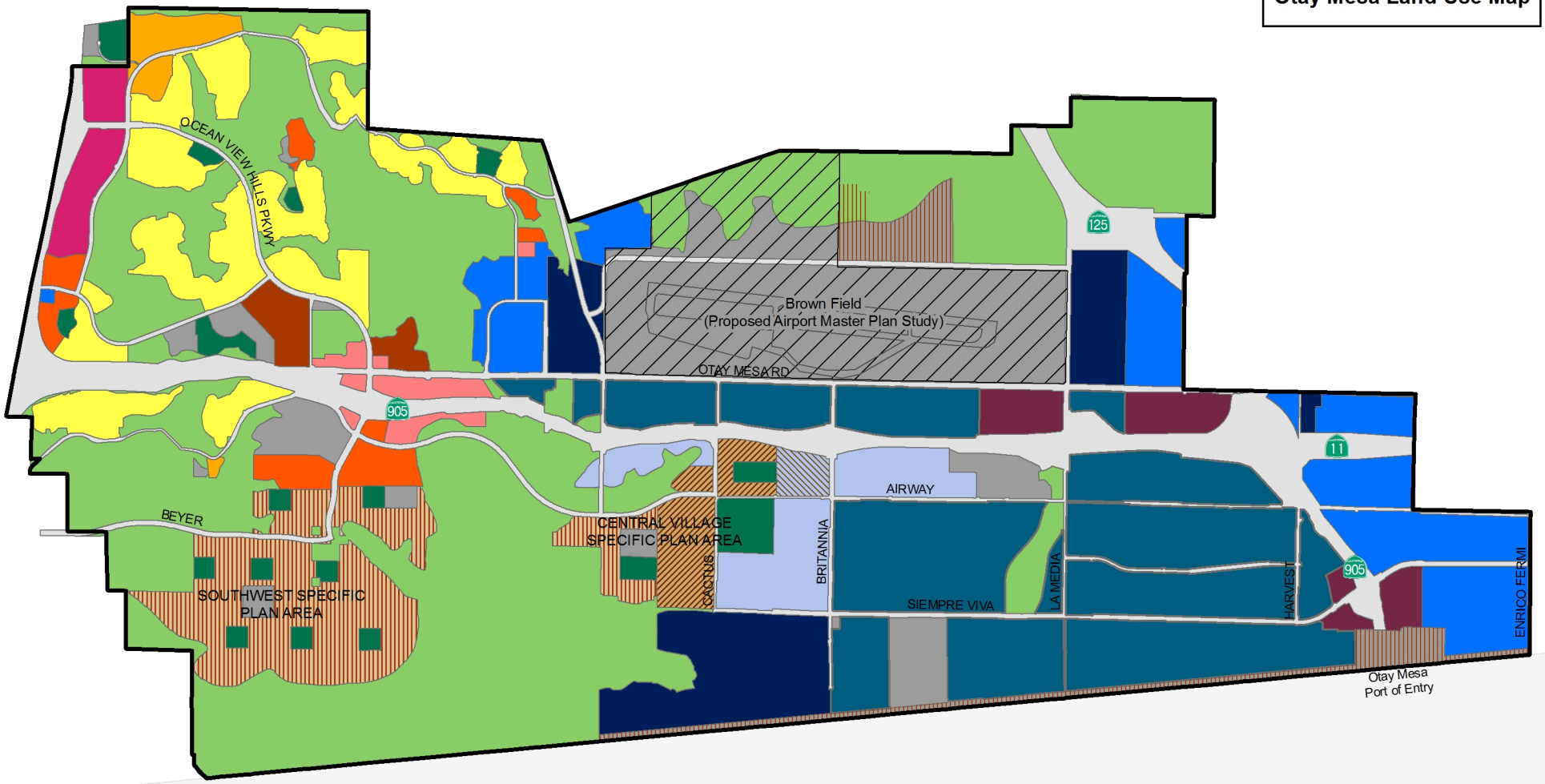
Industrial - Residential Prohibited

- Business Park - Office Permitted
- Technology Park
- Light Industrial
- International Business and Trade
- Heavy Industrial
- Business Park - Residential Permitted 15 - 60 du/ac

Overlays

- U.S. Government Facility
- Brown Field Boundary
- Community Plan Boundary

Figure 2-1
Otay Mesa Land Use Map



THE CITY OF SAN DIEGO
CITY PLANNING & COMMUNITY INVESTMENT

SanGIS

Portions of this product may contain geographic information copyrighted by SanGIS. All Rights Reserved.

Area Scale (In Acres): 40 / 10

0 750 1,500 Feet

N

General Land Use Categories

Parks, Open Space, and Institutional
- Open Space
- Parks
- Institutional

Village Centers
- Neighborhood Village 15 - 25 du/ac
- Community Village 30 - 35 du/ac

Residential
- Residential - Low 5-9 du/ac
- Residential - Low Medium 10-14 du/ac
- Residential - Medium 15-29 du/ac
- Residential - Medium High 30-44 du/ac

Commercial - Residential Prohibited
- Community Commercial
- Regional Commercial
- Heavy Commercial

Industrial - Residential Prohibited
- Business Park - Office Permitted
- Light Industrial
- International Business and Trade
- Heavy Industrial
- Business Park - Residential Permitted 15 - 44 du/ac

Overlays
- U.S. Government Facility
- Brown Field Boundary
- Community Plan Boundary

This page intentionally left blank.

2.0 Existing Infrastructure and Planning Documents

Since the adoption of the 1981 OMCP, master planning documents and improvement projects have been developed for the area. This section provides a summary of the current infrastructure within the OMCP area and the currently approved master planning documents for water, sewer, and recycled water facilities.

2.1 Existing Water Facilities and Planning Documents

Water service to the OMCP is provided by two agencies: the City serves the western portion of the planning area, and the District serves the eastern portion, generally east of Heritage Road. Both agencies are members of the San Diego County Water Authority (SDCWA), which is responsible for importing water to the San Diego region. In this southern part of the region, the SDCWA delivers both potable and raw (untreated) water via the Second San Diego County Aqueduct.

Raw water delivered via Pipeline No. 3 and locally collected water in the City's Lower Otay Reservoir are treated at the City's Otay Water Treatment Plant (WTP) and is the City's primary supply in this area.

Pipeline No. 4 delivers potable water to the District and is the District's primary supply. The District recently negotiated an agreement with Helix Water District to provide for a water supply delivery of 12 mgd on-peak, and 16 mgd off-peak. The District anticipates transitioning its use of the Helix Water District supply to more of a baseload use at delivery rates of up to its 16 mgd off-peak entitlements. The District will reduce its use of the SDCWA Pipeline No. 4 FCF connection (Otay 13 FCF), while maintaining full redundant capacity in these connections.

The following paragraphs describe both the City's and the District's existing water facilities. **Figure 4** provides a schematic of the potable water system hydraulic profile.

City Existing Water Facilities

The water treated at the 40-mgd Otay WTP is conveyed westerly via two pipelines. The 54-inch diameter Otay Third Pipeline and the 40-inch diameter Otay Second Pipeline both parallel the north side of Otay River Valley and connect to the South San Diego Reservoir. The South San Diego Reservoir is a 15 million gallon reservoir that is used as a control point for the downstream hydraulic gradeline in the South San Diego water system. This reservoir feeds the Otay Second Pipeline and the South San Diego Pipelines No. 1 and No. 2.

The South San Diego Pipelines include 6-miles of parallel 33-inch and 48-inch diameter transmission mains extending from the South San Diego Reservoir west to Interstate 805 and serves the South San Diego-Otay Mesa area. This pipeline feeds the Otay Mesa Pump Station (7,550 gpm), located off of Otay Valley Road, which pumps water to the Otay Mesa 680 Pressure Zone serving the Brown Field area of Otay Mesa. An emergency intertie with the

District is located along the south side of Otay Mesa Road, west of Heritage Road, and has a capacity of approximately 5,000 gpm.

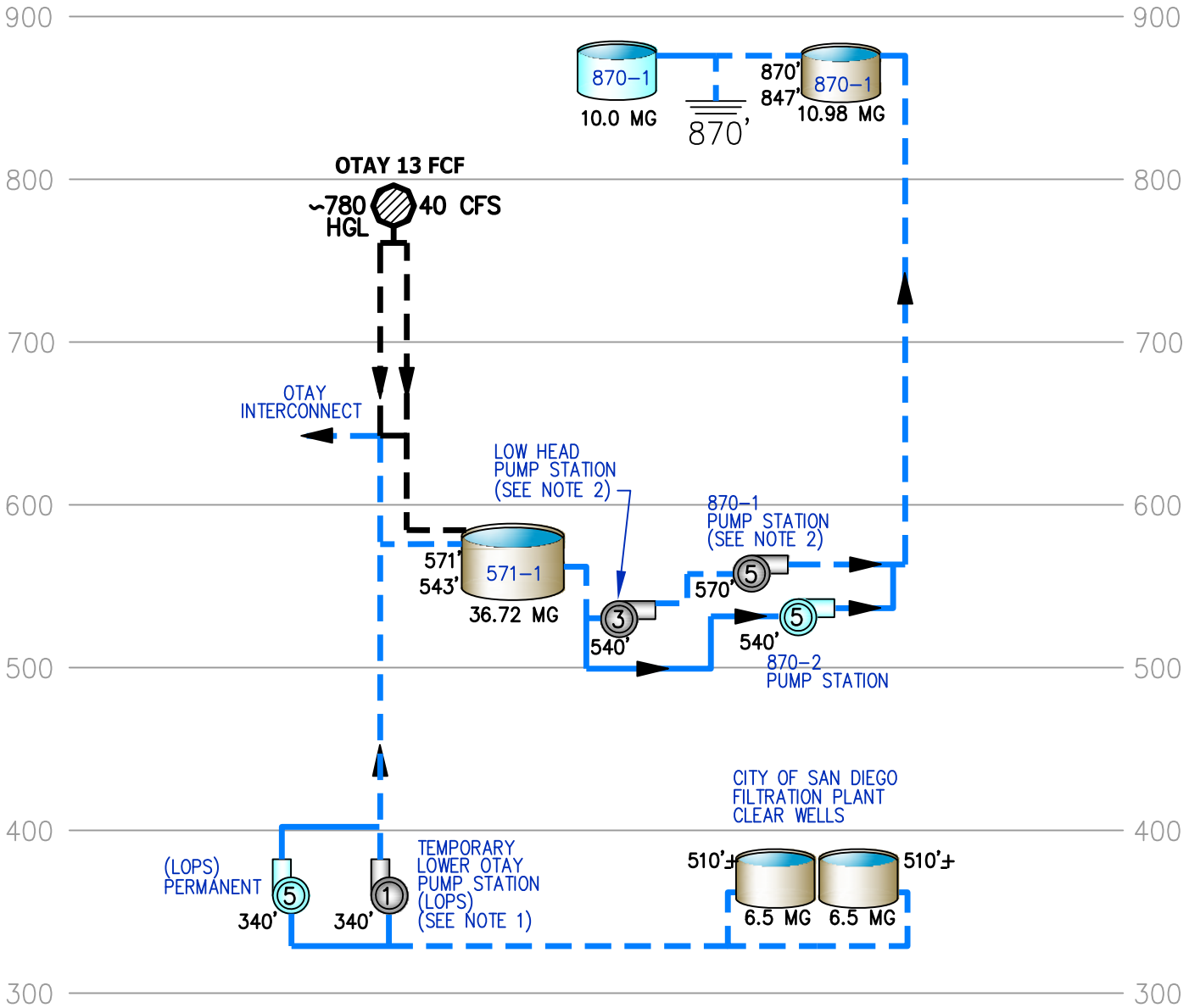
Water facilities within the 680 Zone include a 24-inch water line extending from the Otay Mesa Pump Station south in Otay Valley Road and Heritage Road to Otay Mesa Road. The 24-inch pipeline extends west in Otay Mesa Road. A 30-inch pipeline extends north from Otay Mesa Road along Ocean View Hills Parkway to the Ocean View Hills Pump Station, which, along with the Princess Park Pump Station, is also supplied by the South San Diego Pipelines. While the three pump stations all serve the Otay Mesa area, the Otay Mesa Pump Station is the primary facility because it receives water from a higher pressure zone and is more energy-efficient to operate.

In 1999, the *South San Diego-Otay Mesa Water Study* (1999 Study) was developed to provide water master planning for the region. Based on the 1994 City Water Design Guide, the study recommended two additional pump stations to serve the developing Otay Mesa area. The construction of the two pump stations has been completed: the Princess Park Pump Station provides 380 gpm of capacity to pump water from the 490 Zone west of I-805 to the Princess Park Development and the Ocean View Hills Pump Station provides 2,000 gpm of capacity to pump water from the 490 Zone along Ocean View Hills Parkway to serve the Ocean View Hills community. These pump stations were designed for future capacity upgrades as the Otay Mesa area developed. The 1999 Study also determined that no new storage would be required within the 680 Zone.

Based on projected land uses for future development, the 1999 Study estimated an ultimate average water demand of 12.68 mgd for the Otay Mesa service area and recommended a backbone piping network, ranging in size from 12-inch to 24-inch diameter pipes, within the 680 Zone.

In 2009, the City retained Optimatics to prepare the *Otay Master Plan Optimization Baseline Report (*2009 Baseline Report*)*, which reviewed the hydraulic performance of the Otay Water Treatment Plant service area in response to future (2030) demands and emergency outages. The report considered replacement of aging infrastructure in the OMCP area and recommended priority replacement or upgrade projects to address system deficiencies.

The 2009 Baseline Report used population projections from SANDAG Series 11 data to prepare potable water demand projections through 2030. For the OMCP Planning Area, the 2009 Baseline Report projected an average demand of 5.09 mgd, which is inconsistent with the 1999 Study due to changes in demand methodology and updated development projections for the area. The 2009 Baseline Report evaluated the City's facilities based on current approved land uses and the City has referred to the facility improvement recommendations when developing their CIP project list. This study will use the analysis and recommendations of the 2009 Baseline Report as the basis for the No Project condition.



HWL
LWL
EXISTING RESERVOIR

PROPOSED RESERVOIR

EXISTING PUMP STATION NUMBER OF PUMPS

PROPOSED PUMP STATION NUMBER OF PUMPS

SDCWA FLOW CONTROL FACILITY (FCF)

EXISTING PIPELINE

PROPOSED PIPELINE

OTAY MESA SYSTEM

SDCWA SYSTEM

1. LOPS TEMPORARY TO BE REPLACED BY LOPS PERMANENT.

2. THE LOW HEAD AND 870–1 PUMP STATIONS TO BE REPLACED BY THE FUTURE 870–2 PUMP STATION.

POTABLE HYDRAULIC PROFILE SCHEMATIC

FIGURE 4

H:\Waterres\011 SanD\100008335 OMCPU\Report Infrastr\
8335–PotableSystemSchematic.dwg 5/21/13

This page intentionally left blank.

District Existing Water Facilities

The District receives potable water from Pipeline No. 4 of the Second San Diego County Aqueduct (Second SD Aqueduct) that are owned and operated by SDCWA. Pipeline No. 4 delivers potable water treated at the Metropolitan Skinner WTP located in Riverside County. Pipeline No. 4 is the District's primary supply system. SDCWA has multiple flow control facilities (FCFs) or connections to Pipeline No. 4 that feed into the District's water system. During normal operations, most of the District's potable demand is currently met with water from Pipeline No. 4 at FCF 13. The District anticipates transitioning its use of the Helix Water District supply to use up to 16 mgd of off-peak entitlements

There continues to be slow absorption of industrial land on Otay Mesa in the City and County of San Diego. The transmission and distribution system is fairly robust, in that many of the pipelines were originally constructed to serve large agriculture demands.

The eastern portion of Otay Mesa that lies within the District is served by the 870 Pressure Zone. Water to this area is provided from the District's 571-1 Reservoir, which has a capacity of 36.7 million gallons. The 13,400 gpm 870-1 Roll Pump Station pumps water, via parallel 30-inch transmission mains, from the 571-1 Reservoir to the 870-1 Reservoir, which has a capacity of 11 million gallons. Water is then transported via a 30-inch pipeline south in Alta Road and connects to a network of pipelines ranging in size from 30-inch to 8-inch serving development in eastern Otay Mesa.

The District's *2010 Water Resources Master Plan Update, revised 2013* (2010 WRMP) established water demand criteria within the District based on historic water demands as well as industry standard water use criteria. Based on approved land uses, represented by the No Project scenario, the area within the OMCP was assumed to be zoned primarily for industrial uses and the District used an industrial water demand factor of 893 gallons per day per acre (gpd/ac).

The 2010 WRMP was revised in 2013 to include recently approved and adopted developments. The 2010 WRMP also incorporated increased demands for the OMCP, acknowledging that the Project was the preferred alternative for the OMCP planning documents. The 2010 WRMP estimated ultimate potable demands for the OMCP Project within the District to be 4.70 mgd and recycled water demands to be 0.68 mgd.

2.2 Existing Sewer Facilities and Planning Documents

Existing sewer facilities in the study area include the Otay Mesa collection system, the Otay Valley Trunk Sewer (OVTS) system, and Metropolitan Sewerage System (Metro) facilities. The Metro facilities include the San Ysidro Interceptor, the South Metro Interceptor, and the City's wastewater treatment facilities. The proposed Otay Mesa Trunk Sewer (OMTS) collection system is planned to provide expanded sewer service to Otay Mesa to accommodate projected growth. These facilities, shown in **Figure 5**, are discussed in detail below.

Otay Mesa Sewer Collection System

Wastewater from existing development in the eastern portion of the Otay Mesa drainage basin is collected via sewer mains ranging in size from 6-inch to 33-inch and conveyed to a 30-inch main in Siempre Viva Road that flows westerly to the Pump Station 23T on Cactus Road. Existing wet weather flows from the eastern Otay Mesa Sewer Collection System averaged approximately 1.2 mgd in 2009.

Pump Station 23T has a capacity of 3.0 mgd and pumps the wastewater north in Cactus and Heritage Roads to the Otay Valley Trunk Sewer. This pump station and force main, which were installed in 1985 and funded by the Otay International Center (OIC) development under a reimbursement agreement with the City, were constructed as temporary facilities to be used until the proposed OMTS was constructed. The proposed OMTS is planned to redirect sewage collected at an upgraded Pump Station 23T east toward I-805, south of Otay Mesa Road, relieving capacity in the Otay Valley Trunk Sewer.

In 2004, the *Otay Mesa Trunk Sewer Master Plan and Alignment Study* (2004 Sewer Master Plan) was adopted by the City Council. Subsequent to the 2004 Sewer Master Plan, the *OMTS Project Refinement and Phasing Report* was prepared by Atkins (formerly PBS&J) (2009 OMTS Refinement Report). While the unit flow generation rates used in the 2004 Sewer Master Plan differ from those assumed in the 2009 OMTS Refinement Report, the ultimate projected flows from Otay Mesa are consistent with those used in City facility planning. The 2009 OMTS Refinement Report updated criteria for the phased development of a major trunk sewer system that would serve the Otay Mesa community and divert wastewater from the OVTS, which was reaching capacity.

The 2004 Sewer Master Plan used approved sewer studies for properties that were already built or had approved final or tentative maps. For undeveloped parcels, the 2004 Sewer Master Plan used an ultimate sewer flow generation rate of 5,000 gallons per day per net acre. This rate was understood to be the City's maximum density rate for industrial development, the predominant existing land use within Otay Mesa. Accommodating future sewer flows at this rate across every undeveloped parcel in Otay Mesa, however, implied huge infrastructure commitments. A compromise was reached with the City to also evaluate 1,500 gpd/ac which was representative of flows generated by similarly zoned, existing development within Otay Mesa. Planned phasing of the OMTS (designated as Phase 2 improvements) was therefore based on the buildout sewer flow of 1,500 gpd/ac, representing development of the area, under existing zoning conditions, at an average density.

The 2009 OMTS Refinement Report used existing District meter data to identify over 1,000 acres of industrial properties in City's eastern Otay Mesa area. The lot sizes served varied from less than one acre to 40 acres and water meter sizes ranged from ¾-inch to 4-inches in size. Annual water use data for these properties indicate that the average use for these properties is 800 gpd/ac. Of the 276 water meters evaluated, two thirds used less than 1,000 gpd/ac.

To calculate a sewage generation rate from water use rates, a standard average return to sewer percentage is applied. Typical return-to-sewer rates are in the range of 60 to 75 percent,

depending on the extent of outdoor uses of water. In the District's service area, irrigation meters are typically separate and were not included in the evaluation. Therefore, the higher return to sewer rate is assumed for this area and the average sewer generation rate was estimated to be 75 percent of the water demand of 800 gpd/ac, or 600 gpd/ac of sewage generation for industrial development.

The 2009 OMTS Refinement Report projected average flow rates for each land use category. Light and General industrial categories were used to identify land used for warehousing and distribution and manufacturing and processing. A typical sewer generation rate for these land use type is 865 gpd/ac, based on analysis of approved land uses from the 2009 OMTS Refinement Report. It was determined that border crossing facilities of similar size to the one proposed in Otay Mesa generated approximately 580 gpd/ac of wastewater. The mixed industrial and business park areas were comparable to those areas surveyed, including warehousing and distribution, which typically produce higher flows. Consequently, unit generation rates of 1,000 gpd/ac and 1,500 gpd/ac were assumed, respectively.

For buildout conditions, the OMCP Update flows will be based on the compromised unit generation rate of 1,500 gpd/ac. However, when site specific developments occur, site specific sewer studies will be required. The site specific sewer flows will be compared to the 1,500 gpd/ac compromise unit generation rate and, if required, the phasing of the OMTS will be adjusted/updated.

The OMTS wastewater collection system, as defined in the 2004 Sewer Master Plan and the 2009 OMTS Refinement Report, is a multi-phased pump station and pipeline project that will split flows between the Otay Valley Trunk Sewer and the San Ysidro Interceptor. The proposed phased system improvements required to complete the OMTS Project are shown in **Figure 5**.

Portions of the OMTS have been constructed and include the 27-inch to 30-inch diameter gravity sewer in Siempre Viva Road. Flows conveyed in this sewer are pumped on an interim basis to the existing Otay Valley Trunk Sewer system located north of the Otay Mesa Specific Planning Area via Sewer Pump Station 23T (SPS 23T) located at Siempre Viva and Cactus Roads. A 42-inch gravity sewer in Old Otay Mesa Road has been constructed and temporarily connects to an existing 10-inch sewer main in Old Otay Mesa Road until future upgrades are constructed.

The 2009 OMTS Refinement Report determined that the existing pump station SPS 23T can be expanded and retrofitted to accommodate up to 8 mgd of flows. Phase 1 proposed to bring SPS 23T into compliance with the City's Design Guide for permanent pump stations. This involves adding emergency storage and a redundant force main. The 8,000 foot redundant force main will be a 24-inch pipeline that connects to the effluent piping manifold within the pump station and be routed north on Cactus Road, connecting to Otay Valley Trunk Sewer at Heritage Road. This pipeline will accommodate flows through 2030 and has the ability to serve the residential component of the Otay Mesa Community Plan Update Project. The pipeline will pass beneath the planned extension of SR-905, which is currently under construction and anticipated to be in

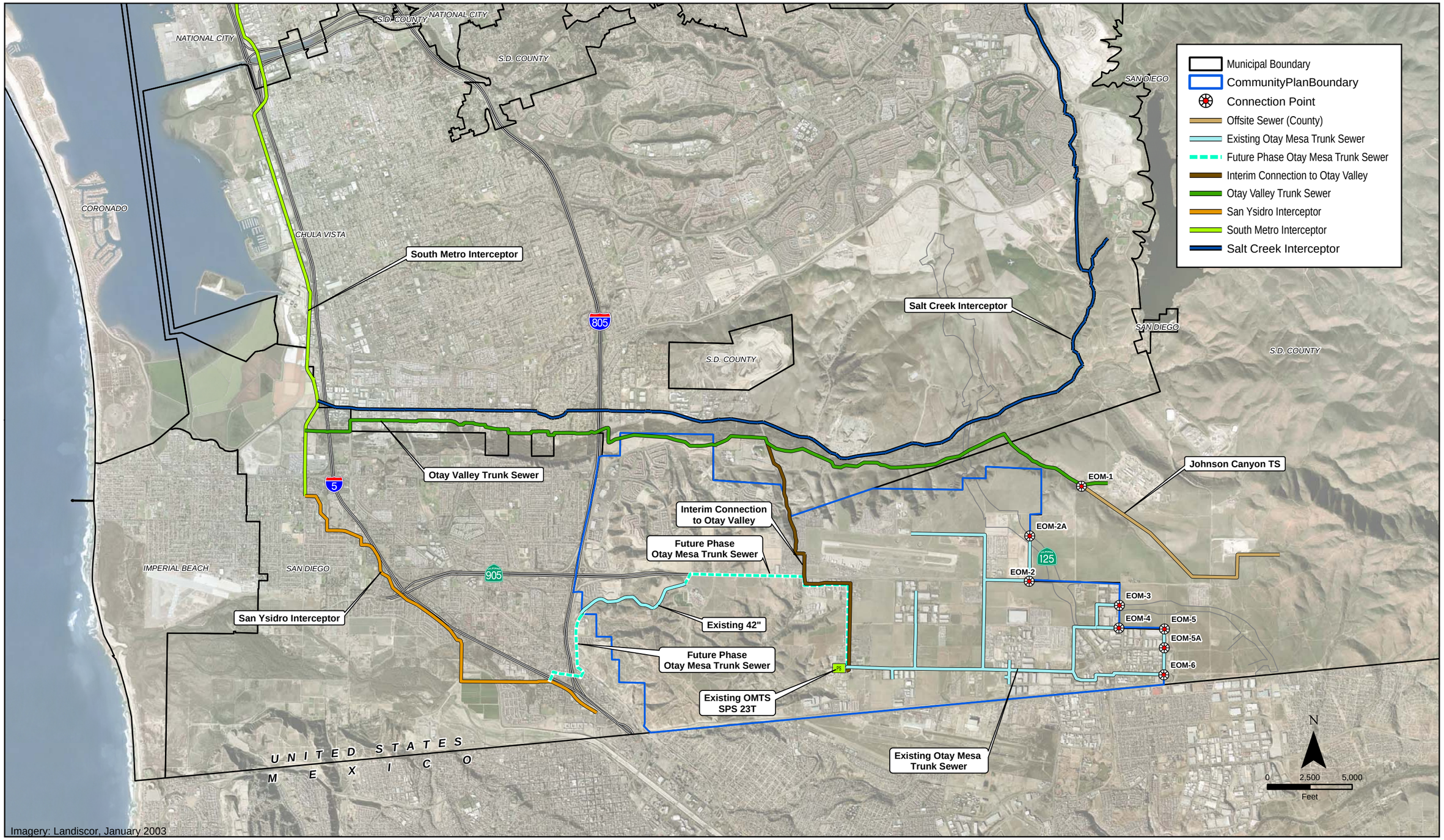
place by 2015. Caltrans' design of the SR-905 across Cactus Road includes pipeline sleeves to accommodate additional force mains from SPS 23T.

The 2009 OMTS Refinement Report noted that SPS 23T is capable of pumping up to 3 mgd. By adding a single pump to this pump station and improving the electrical and control systems, the pumping capacity would be increased to 5 mgd, however, because of the Heritage Road bottleneck, the system would be limited to 4.3 mgd of capacity.

The threshold capacity of the OVTS system in Heritage Road is 4.3 mgd. By 2025, when flows from the SPS 23T approach 4 mgd, the OMTS must be operational so that flows can be diverted from the OVTS. These facilities include the diversion structure at the intersection of Otay Mesa and Heritage Roads, dual 24-inch force mains and a 24-inch gravity main that connects to the 42-inch gravity sewer that was constructed in 2005. The force main extension conveys the wastewater from the diversion structure west in Otay Mesa Road, through a low point in the road and back up to an elevation where the flow can continue by gravity. The existing 16-inch force main will continue to convey flows to the OVTS, while the new 24-inch force main extension will convey flows to OMTS via the gravity main in Otay Mesa Road, and allow the City the flexibility to divert flows from OVTS to OMTS at the diversion structure.

In order to provide full redundancy of the existing 8,000 feet of 16-inch force main, it is necessary to replace a portion of this force main with a 24-inch force main to improve the SPS 23T hydraulics and operation. Approximately, 3,600 feet of 24-inch force main is required to increase pumping capacity to 5 mgd. This also will require the installation of the fourth pumping unit.

To accommodate residential flows, the gravity main required size is a 24-inch pipeline. The continuing gravity main is routed west and then south beneath the SR-905 freeway expansion. Caltrans' design of the SR-905 in this location includes pipeline sleeves to accommodate this pipeline. Because the design of the SR-905 required significant cuts in the existing grade in this area, the gravity main is over 40 feet deep on the north side of SR-905 to match invert elevation of the connection point.



CITY OF SAN DIEGO
REGIONAL SEWER SYSTEM
FIGURE 5

5/21/13 LA SD Z:\Projects\IS\OMCPU\mxd\OMCPU_RegSewerSystem_F5.mxd

ATKINS

OMCPU Technical Infrastructure Study
May 2013

This page intentionally left blank.

The construction of a gravity main in Old Otay Mesa Road replaces an existing 10-inch pipeline that currently connects the south end of the 42-inch gravity main to the San Ysidro Interceptor Sewer collection system and will be required when flows exceed 4 mgd. This pipeline will convey flows from SPS 23T as well as flows from the City's south Otay Mesa area. In order to convey up to 12.5 mgd, the required pipeline diameter increases to a 30-inch pipeline. The connection to the San Ysidro collection system is anticipated to occur at Center Street. The existing pipelines beneath the I-805 freeway overpass in this location were determined to be sufficient to convey up to 12.5 mgd, thus no tunneling beneath the freeway and trolley tracks is required.

Phase 4 includes the addition of a new pump at the existing pump station and replacing the remaining section of 16-inch force main with a 24-inch force main to bring the total capacity of SPS 23T to 8 mgd to accommodate residential flows.

Community Facilities District

The Otay Mesa Trunk Sewer Refinement and Phasing Report recommended several sewer system upgrades in the Otay Mesa sewer basin to mitigate for capacity constraints in the near term due to contracted capacity and to meet increased flows through the year 2030. Figure 9 of this report illustrates the proposed sewer infrastructure designed to enhance pumping and conveyance capabilities from the City's Otay Mesa Sewer Pump Station 23T to the west to a connection to the existing San Ysidro Trunk Sewer. Completion of these projects would substantially complete the Otay Mesa Trunk sewer system and relieve capacity in Otay Valley. No improvements are recommended in the Otay Valley sewer system as that trunk system was built to handle build-out gravity flows.

Since the primary benefit area is development on Otay Mesa, both the County and City developers have joined forces to develop a financing option to ensure that backbone sewer facilities are constructed in a timely manner with development. As a result a task force or finance committee has been developed to work with a financial specialist and legal counsel and the City to implement an assessment district known as a CFD to collect property assessments to fund sewer system upgrades.

A CFD is a special district formed by a sponsoring local government agency for the purpose of financing the acquisition, construction, operation and maintenance of the public infrastructure benefiting the planned community. The CFD has the legal authority to levy and collect a special tax, to use that revenue to finance specified facilities and services, and to borrow money by issuing bonds or incurring debt to assist with financing the facilities.

Based on the committee's work to date approximately $20 million in future capital upgrades have been indentified and confirmed by the City through the year 2030 to serve development in both the City and County.

Otay Valley Trunk Sewer System

The existing 27-inch OVTS conveys wastewater from the Otay Valley drainage basin from as far east as the Donovan Correctional Facility, west to the City's Metro system. This trunk sewer also temporarily conveys the wastewater generated in east Otay Mesa via SPS 23T and 48T, as described in the previous paragraph. The eastern portions of the OVTS were constructed and funded under reimbursement agreements with the City. It is operated and maintained by MWWD. The 7.3 mile long gravity main extends from Heritage Road, east along Otay Valley Road to I-805 and within existing roads north of the Otay River between I-805 and its connection to the South Metro Interceptor.

Metro Facilities

The Metro serves the Greater San Diego population of 2.3 million from 16 cities and districts generating an average of 175 million gallons per day (mgd) of wastewater. The system has region-wide treatment capacity of 255 mgd, and peak wet weather flows are currently approaching the peak system hydraulic capacity of 450 mgd. The MWWD treats the wastewater generated in the 450 square mile area, which includes the South Bay and Otay Mesa areas along the U.S.-Mexico International Border. The following sewer facilities are owned and operated by MWWD and are a part of the Metro Sewer Collection System:

- *South Metro Interceptor* – Wastewater from the South Bay area is conveyed via Metro's 72-inch South Metro Interceptor north to the Metro's regional wastewater treatment facility, the Point Loma Wastewater Treatment Plant via Metro's Pump Station No. 2. The South Metro Interceptor collects wastewater from the San Ysidro Interceptor to the south, the Otay Valley Trunk Sewer to the east and a number of trunk sewers from the City of Chula Vista.

- *San Ysidro Interceptor* – Metro's San Ysidro Interceptor collects wastewater from the South Bay area, west of I-805. The upstream end of the interceptor is located west of the I-5 and I-805 merge, just north of the border crossing. The 30 to 42-inch pipeline conveys wastewater north along the west side on I-5 to its connection with the South Metro Interceptor. The Grove Avenue Pump Station intercepts a portion of the wastewater flow from the San Ysidro Interceptor and redirects "skimmed flow" south to the newly operational South Bay Water Reclamation Plant (SBWRP) via a 30-inch force main. The gravity sewer main in Old Otay Mesa Road serves the western-most portion of the OMCP and delivers wastewater flows to the San Ysidro Interceptor.

- *Point Loma Wastewater Treatment Plant* – The Point Loma Wastewater Treatment Plant is located at the tip of Point Loma on the ocean side of the entrance to San Diego Bay. It treats up to 175 mgd of wastewater from the entire Metro service area, including the South Bay and Otay Mesa drainage basins. The plant has an average treatment capacity of 240 mgd. The wastewater is treated to an advanced primary level and discharged via a deep ocean outfall. Flow from the South Bay is pumped to Point Loma via Pump Station No. 2, located on Harbor Drive near the airport.

- *South Bay Water Reclamation Plant* – The SBWRP is located at the intersection of Dairy Mart and Monument Roads in the Tijuana River Valley, adjacent to the International Boundary and Water Commission's International Wastewater Treatment Plant. The SBWRP currently accepts approximately 8 mgd of wastewater conveyed via the Grove Avenue Pump Station for treatment and reuse. The plant has a design capacity of 15 mgd and treats the wastewater to a tertiary level for reuse. Excess secondary treated recycled water is disposed of via the South Bay Land and Ocean Outfall.

2.3 Existing Recycled Water Facilities and Planning Documents

The District currently serves recycled water to customers within its Central Area System, south of the Sweetwater Reservoir and west of the Otay Lakes Reservoirs from its 1.3 mgd Ralph W. Chapman Water Reclamation Facility (RWCWRF). The District also receives recycled water from the City's SBWRP serves customers within the City, District, and County of San Diego. Recycled water from the SBWRP is used by the D A schematic of the system's hydraulic profile is provided in **Figure 6**.

To serve the District's recycled water customers, Title 22 effluent from the RWCWRF is pumped 3.4 miles to two lined and covered reservoirs, the 12-mg 927-1 (Pond No. 1) and the 16.3-mg 927-2 (Pond No. 4). The recycled water pump station at the RWCWRF consists of 5 pumps and has a total capacity of 3,500 gpm with a firm capacity of 2,600 gpm. Firm capacity is defined as the total capacity less the capacity of the largest pump in the pump station. The largest pump is designated as a standby unit that is used as the backup pump unit in the event that any other units out of service. The 3.4-mile, 14-inch diameter force main delivers recycled water to the 927-1 and 927-2 reservoirs which have high water elevations of 944 and 927 feet, respectively, and provide forebay storage for the District's recycled water system.

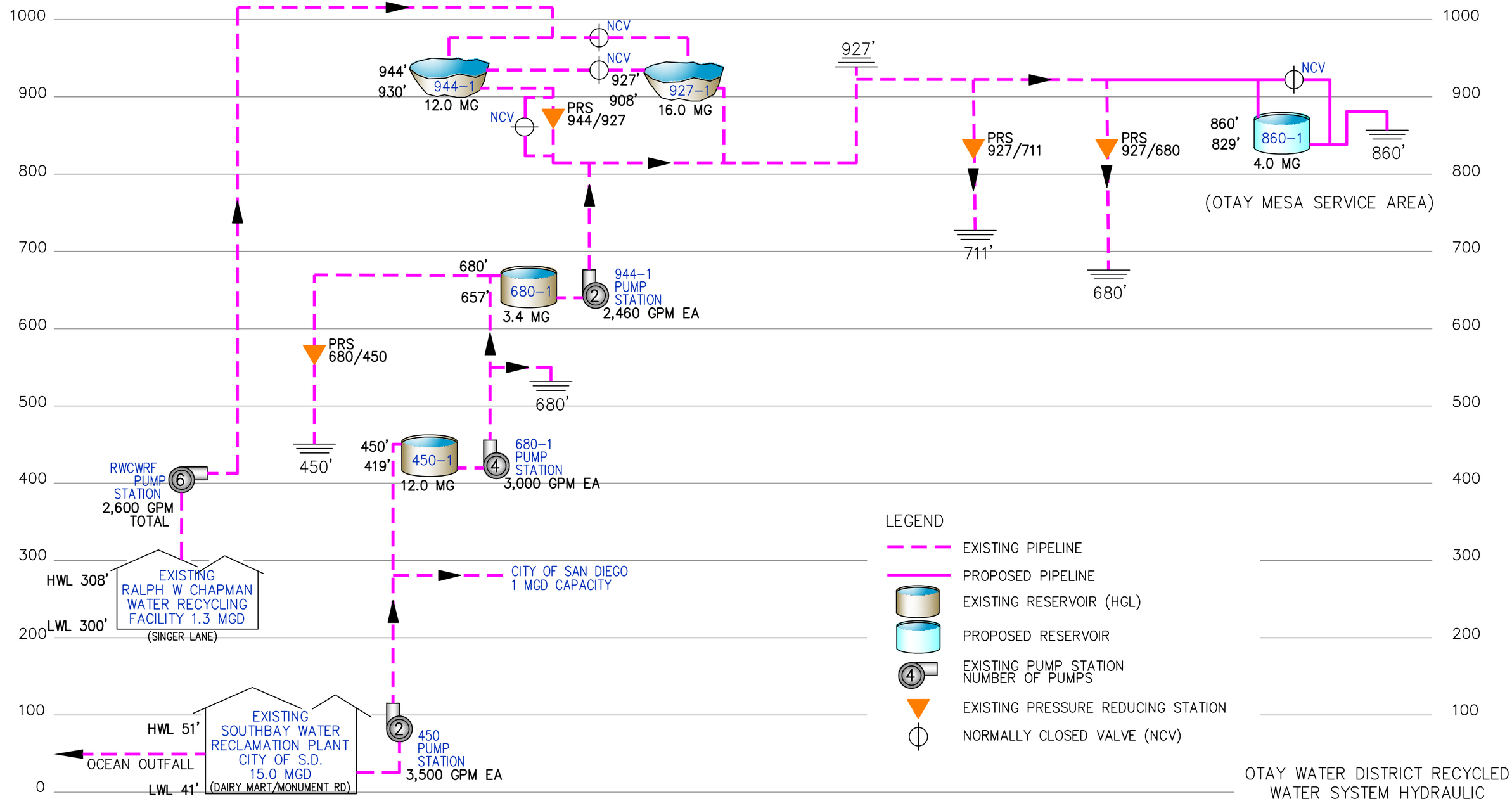
A 20-inch recycled transmission main extends south from the two reservoirs approximately 13,000 feet to Otay Lakes Road. This 20-inch main supplies the recycled water to all the existing recycled water meters connected to the recycled water system. Additional transmission mains exist in Otay Lakes Road, Telegraph Canyon Road, EastLake Parkway, Hunte Parkway, East H Street and Olympic Parkway.

In 2007, the District completed a major transmission project that allows recycled water produced at the City's SBWRP to be conveyed to and distributed within the District. The recycled water pump station at the SBWRP pumps recycled water via a 30-inch transmission main to the District's 12-mg 450-1 Reservoir. This reservoir functions primarily as a supply regulating reservoir and pump station forebay for the 680-1 Pump Station, which provides recycled water to the 680 and 927 Pressure Zones within the Central Area. The 16.5-mgd 680-1 pump station is located at the 450-1 Reservoir site and pumps recycled water via a 16-inch transmission main to the 680-1 Reservoir. The 3.4-mg 680-1 Reservoir was constructed as a dual purpose land use effort and is located beneath the basketball courts at Sunset View Park in Chula Vista. The 927-1 Pump Station, with a capacity of 10.55 mgd, conveys water from the 680 PZ to the 927

PZ, via a 16-inch transmission main. At this time, there are no plans to provide recycled water service to the OMCP Planning Area within the City.

Otay Mesa is a growing part of the District service area with significant planned industrial development, including a third Border Crossing by the Federal Government. As part of their planning, developers in Otay Mesa have anticipated that recycled water would become available and have been constructing separate recycled water distribution pipelines within the systems for over twenty years. The District's *2010 WRMP Update* plans for expansion of the recycled water into the Otay Mesa area. Based on primarily industrial land use zoning for the area and using an average annual irrigation demand factor of 2.41 acre-feet per acre per year, the District estimated a recycled water demand of 1.5 mgd. It is the intent of the District to continue to construct the system of reservoirs, pump stations, and transmission mains that will incorporate these distribution pipelines into a complete delivery system. The District anticipates a future connection to the Otay Mesa area to parallel Alta Road near the District's eastern boundary. A new 4-mg 860-1 Reservoir would be located adjacent to the County's East Mesa Detention Center. These facilities were included in the District's 2010 Capital Improvement Program. **Figure 7** shows the ultimate recycled water facilities within the District.

The City currently has no plans to expand their recycled water distribution system within Otay Mesa. The City and District have an agreement that the District will provide recycled water service in their service area, which includes a portion of San Diego. The limits of the recycled water system will be based on what is economical to construct and operate as well as recycled water production from the SBWRP.



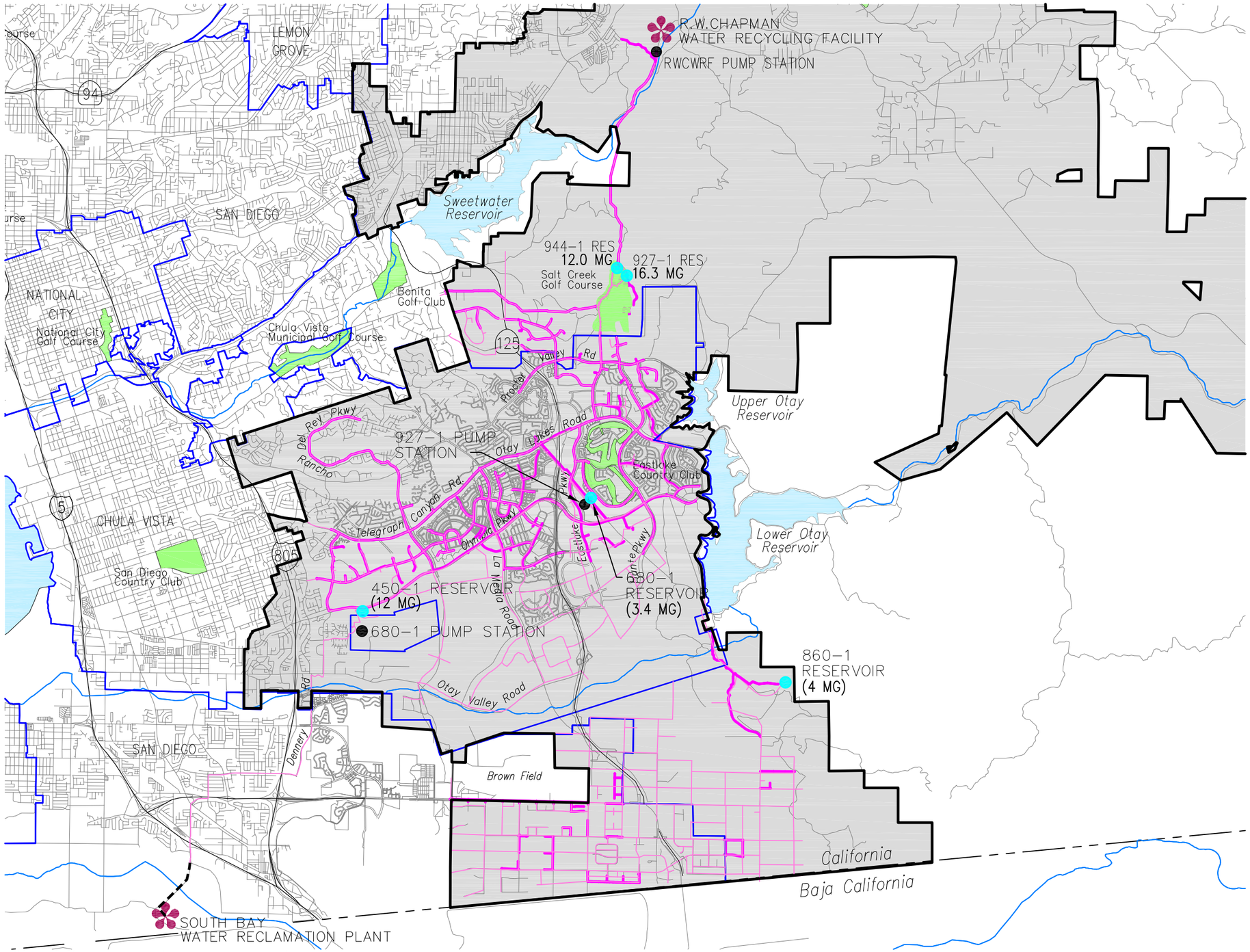
SOURCE: OTAY WATER DISTRICT

OTAY WATER DISTRICT RECYCLED WATER SYSTEM HYDRAULIC PROFILE SCHEMATIC

FIGURE 6

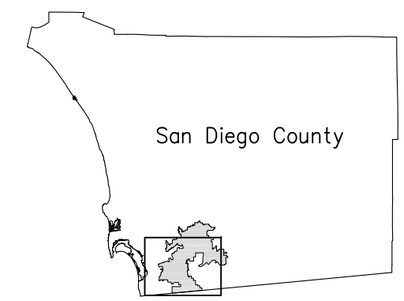
H:\Waterres\011 San Diego\100008335 OMCPU\Report-Infrastructure\0491298-MP-RW-SystemSchematic.dwg 5/21/13

This page intentionally left blank.



LEGEND

- MUNICIPAL BOUNDARY
- OTAY WATER DISTRICT
- ULTIMATE RW SYSTEM
- CITY OF SAN DIEGO PIPELINE



0 8000
SCALE IN FEET

OTAY WATER DISTRICT
ULTIMATE
RECYCLED WATER SYSTEM

FIGURE 7

H:\Waterres\011 San Diego\100008335 OMCPU\Report-Infrastructure\0491298-MP-RW-SystemUlt.dwg 5/21/13

This page intentionally left blank.

3.0 Description of the Project Land Use Plan

The OMCP Update defines land use types within six major categories: Industrial; Commercial; Residential; Parks/Open Space; Institutional; and Village Centers. As shown in **Table 1**, the currently adopted Community Plan, also known as the No Project alternative, is largely comprised of industrial and park/open space land uses. The City's proposed OMCP Update Project slightly reduces the amount of proposed industrial development and increases the amount of multi-family residential development, including the addition of a mixed use Village Center development concept.

Table 1 Land Uses Associated with Proposed Alternatives

Land Use Categories	No Project	Project
Residential	1,258 ac	757 ac
Single family detached	4,800 DU	4,273 DU
Multi-family and attached	7,600 DU	14,501 DU
Residential Areas w/ Village Centers	--	726 ac
Commercial	457 ac	317 ac
International Business and Trade (IBT)	0 ac	1,310 ac
Industrial	2,885 ac	1,116 ac
Institutional	1,027 ac	1,166 ac
Parks and Open Space	2,595 ac	2,910 ac
Right-of-Way	1,098 ac	1,019 ac
Total	**9,320 ac**	**9,320 ac**

New land use designations in the Project are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses. Modified industrial and commercial land use designations also are included that are similar to the industrial intensity found in the adopted community plan. The International Business and Trade (IBT) would be the dominant industrial land use in this scenario. Other features of the Project include:

- Increasing housing unit yield in the southwestern residential areas
- A distribution of land uses that provides sufficient capacity for a variety of uses, facilities, and services needed to serve Otay Mesa
- Distinct villages that include places to live, work and recreate
- A variety of housing types including workforce housing in close proximity to jobs
- Diversified commercial uses that serve local, community and regional needs
- Adequate institutional resources that serve the needs of the community
- A land use pattern that is compatible with existing and planned airport operations
- Border facilities that facilitate the safe and efficient movement of passengers and cargo

4.0 Development of Water Demand and Sewer Flow Projections

The OMCP falls entirely within the municipal boundary of the City and the City is responsible for sewer service to the entire area. However, for water and recycled water service, nearly half of the OMCP is within the purview of the District. This split requires the examination of planning criteria from both entities.

To project water and recycled water demands and sewer flows from new development, several types of planning criteria are typically defined: land use density criteria (dwelling units per acre); employment density criteria (employees per acre); population criteria (persons per dwelling unit); and unit flow generation criteria (gallons per person per day otherwise known as gallons per capita per day (gpcd)). In the following subsections, the City and District planning criteria are presented. Because the Project being proposed in the OMCP Update does not exactly match the land use categories defined in the City or District criteria, a methodology for applying these criteria to the OMCP is developed herein. Because the OMCP is such a large development within the City, existing adopted master planning documents are associated with it, and it lies within the boundaries of two water purveyors, standard planning criteria may not apply and local consideration is given when developing density criteria and unit water and sewer demands. These issues are examined below.

4.1 Water Planning Criteria

4.1.1 City Planning Criteria

The City Public Utilities Department has developed standard unit use factors for residential and employee designations. The unit use factors are presented in this document for the purposes of projecting water demands for the OMCP Update. The water demands for the City-served potion of the OMCP area are calculated as described below:

City Residential

Projected water demands for residential uses in the City water service portions of the OMCP will be calculated on a per person basis, using City Planning's housing projections (see below) and persons-per-household (PPH) data for Single Family Residential (SFR) and Multi-Family Residential (MFR) housing units in the OMCP area. The unit use factors represent the citywide average:

- SFR population: **150 gpd**
- MFR population: **90 gpd**

PPH data will be set using City Planning's recent survey data. As part of the OMCP plan development process, the City had Source Point conduct a survey in the existing housing stock

in Otay Mesa and the Otay Ranch area to profile household sizes for both SFR and MFR units. The resulting profiles were:

- SFR PPH: **3.98**
- MFR PPH: **3.45**

City Non-Residential

Projected water demands for non-residential uses in the City water service portions of the OMCP are calculated on a unit use per employee basis. Employee counts are per City Planning's data sets. The unit use factor represents the citywide average:

- Per employee: **60 gpd**

SANDAG determined employment densities based on a regional average of employees per acre for each land use type and applied that to existing land uses and densities. City staff then utilized the employment rates provided by SANDAG to calculate the projected 2030 employment population estimates for the Project and the No Project alternative.

The OMCP Update contains land use designations that do not have associated SANDAG employment densities. City staff established density ranges for these designations as listed below:

- International Business and Trade: The International Business and Trade (IBT) land use designation combines uses permitted in both the Business Park and Light Industrial designations. The designation allows for single- and multi-tenant office, research and development, light manufacturing, and storage and distribution uses. In the Project, IBT designated lands cover a significant portion of the community, nearly 1,300 acres. The employment yield from the allowable uses varies significantly. Because there is no rate established for IBT in the Series 12 employment data, City staff established a blended rate based on the uses modeled in the traffic analysis.
    - IBT = 30 employees per acre, per City Planning analysis
- Heavy Commercial: The Heavy Commercial land use designation allows for retail sales, commercial services, office uses, and heavier commercial uses such as wholesale, distribution, storage, and vehicular sales and services.
    - Heavy Commercial = 16 employees per acre, per City Planning analysis

4.1.2 District Planning Criteria

Water use projections for the District-served portions of the OMCP area utilize the District's standard water projection methodology and unit use factors as contained in its 2009 Water Resources Master Plan (WRMP). The WRMP established unit use factors for single and multi-

family residential units, industrial, institutional and commercial land uses, and park irrigation uses, as summarized below:

- Single Family Residential = **500 gpd per dwelling unit**
- Multi-Family Residential = **300 gpd per dwelling unit**
- Commercial/Office = **1,785 gpd per acre**
- Industrial = **893 gpd per acre**
- Institutional = **1,785 gpd per acre**
- Parks = **2,155 gpd per acr**e

The OMCP Update introduced a new land use designation, the IBT, which is made up of both industrial and commercial uses. As previously explained, the City determined that the IBT land use would have an employment density of 30 employees per acre. The District has requested that the City evaluate the IBT water demands within the District service area using the same methodology as the City, which applies a unit use factor to non-residential land uses of 60 gpd per employee:

- IBT = 1,800 gpd per acre

4.2 Sewer Planning Criteria

Average wastewater flow rates are estimated by multiplying the gross acreage of one or more parcels by a characteristic unit generation rate corresponding to the existing or planned land use of the parcels. Previous planning studies for Otay Mesa have used standard generation rates specified in either the County or City's design guidelines.

Wastewater flows are highly variable for different types of industrial or commercial developments. For example, the wastewater generation rate for a warehouse is typically 500 gpd/ac or less, which varies greatly from the generation rate for a manufacturing facility, which may be as high as 5,000 gpd/ac. The previous 2004 OTMS Master Plan used a design factor of 5,000 gpd/ac for industrial land use. The 2009 OMTS Refinement Report used water billing data for similar properties in the Otay Mesa area, including neighboring properties served by the County of San Diego (County), to determine more realistic sewer generation factors. A compromise was reached with the City to also evaluate 1,500 gpd/ac which was representative of flows generated by similarly zoned, existing development within Otay Mesa. Planned phasing of the OMTS (designated as Phase 2 improvements) was therefore based on the buildout sewer flow of 1,500 gpd/ac, representing development of the area, under existing zoning conditions, at an average density.

The OMCP Update sewer flows will be based on the compromised unit generation rate of 1,500 gpd/ac. However, when site specific developments occur, site specific sewer studies will be required. The site specific sewer flows will be compared to the 1,500 gpd/ac compromise unit generation rate and, if required, the phasing of the OMTS will be adjusted/updated.

For the purposes of this study, the IBT land use in the Project will be evaluated at the Industrial generation rate of 865 gpd/ac. Residential demands are based on 80 gpcd for sewer and household density factors developed by the City (3.98 PPH for SFR and 3.45 PPH for MFR).

4.3 Recycled Water Planning Criteria

The *City Water CIP Guidelines and Standards Book 7 Recycled Water* does not define typical recycled water demand factors, but typical irrigation demands in the San Diego County area range from 2.0 to 4.5 acre feet per acre per year. In their 2010 WRMP Update, the District compares recycled water demand factors used in various local studies, as well as actual data. Based on their recycled water use data from 1992 through 2002, the District estimates that the average recycled water demand for all irrigation land use categories is 2.41 acre feet per acre per year (2,155 gpd/ac), except for golf courses, which use 4.0 acre feet per acre per year. In addition, the District also defines the percentage of each land use category to be irrigated. This percentage is applied to the gross acreages of each land use category, except for street, roadway or freeway landscaping where the actual landscape irrigation area is used. The percentages are defined in **Table 2**, below.

Table 2 District Criteria for Irrigation Percentages

Land Use Category	% of Gross Acreage Irrigated
Multi-Family	15
Commercial	10
Industrial	5
IBT	10
Institutional	20
Park	100

Source: District 2010 WRMP Update

Because the District has considerable experience in planning for and serving recycled water in this part of the County, these criteria are considered to be applicable to all of the OMCP Planning Area and are used in estimating recycled water demands in this report.

It should be noted that in using the City's criteria for potable water demand, the potential for recycled water is not considered. Therefore, any estimate of recycled water should be subtracted from potential potable water estimates when considering water supply issues for the community. Except for SFR land use, the District unit water demand does not include outdoor water use, assuming recycled water will be used. The City's unit demands for water do include outdoor water use.

5.0 Projected Water and Sewer Demands

Water and sewer demand criteria, as discussed in Section 4.0, was used for comparing the impact of the OMCP Project land use plan to the No Project condition. As directed by City and District staff, the OMCP criteria has been applied across the OMCP Planning Area according to water agency jurisdiction. This provides consistent and across-the-board estimates of water demand, which are appropriate for this level of planning. These projections are shown in **Tables 3 and 4**, below.

From these tables, a comparison of the master planning documents and the updated No Project alternative can be made**.** In **Table 3**, the comparison of water demand projections shows that the No Project scenario projects a total of 8.56 mgd of water demand for the OMCP. The Project estimates 10.95 mgd of water demand, or an increase of 2.39 mgd from the No Project alternative.

In **Table 4,** the comparison of wastewater flow projections are shown similar to potable water demand projections. When compared to the No Project alternative (10.18 mgd), the Project projections of 11.22 mgd estimate an increase of 1.04 mgd in wastewater flows.

To evaluate the differences in infrastructure associated with the Project demand projections in Section 6.0, the use of the 2030 projections was assumed to be a reasonable yet conservative long-term planning approach consistent with the adopted planning documents.

As the City currently has no plans to install recycled water infrastructure within the OMCP Planning Area, it is necessary to assume that potable water will be used for irrigation uses when evaluating the potable water distribution system for the No Project and Project land uses within the City. It is reasonable to assume that potable water will be initially used for irrigation until the recycled water distribution system is built and sufficient sewer flows are available to produce adequate supplies to meet the recycled water demands. Potable water demands for the District have been reduced to account for the potable water reduction factor when using recycled water for irrigation.

Table 3 OMCP Update Projected 2030 Water Demands

	Count	Population	Unit Demand	Water Demand (mgd)
No Project				
City				
SFR	4,800 units	19,102	150 gpd/person	2.87
MFR	7,600 units	26,221	90 gpd/person	2.36
Commercial/Office	207 acres	11,112 employees	60 gpd/employee	0.67
Industrial	278 acres			
IBT	0 acres			
Institutional	982 acres			
Parks	64 acres			
City Total				**5.89**
District				
SFR	0 units	-	500 gpd/DU	0
MFR	0 units	-	255 gpd/DU	0
Commercial/Office	250 acres	-	1,607 gpd/acre	0.40
Industrial	2,607 acres	-	848 gpd/acre	2.21
IBT	0 acres	-	1,620 gpd/acre	0.00
Institutional	45 acres	-	1,428 gpd/acre	0.06
Parks	0 acres	-	0 gpd/acre	0.00
District Total				**2.67**
Total No Project				**8.56**
Project				
City				
SFR	4,273 units	17,007	150 gpd/person	2.55
MFR	9,255 units	31,930	90 gpd/person	2.87
Commercial/Office	175 acres	13,758 employees	60 gpd/employee	0.83
Industrial	239 acres			
IBT	24 acres			
Institutional	946 acres			
Parks	97 acres			
City Total				**6.25**
District				
SFR	0 units	-	500 gpd/DU	0
MFR	5,246 units	18,099	255 gpd/DU	1.34
Commercial/Office	142 acres	-	1,607 gpd/acre	0.23
Industrial	876 acres	-	848 gpd/acre	0.74
IBT	1,286 acres	-	1,620 gpd/acre	2.08
Institutional	220 acres	-	1,428 gpd/acre	0.31
Parks	61 acres	-	0 gpd/acre	0.00
District Total				**4.70**
Total Project				**10.95**

Table 4 OMCP Update Projected 2030 Wastewater Generation

	Count	Population	Unit Demand	Average Flow (mgd)
No Project				
City				
SFR	4,800 units	19,102	80 gpd/person	1.53
MFR	7,600 units	26,221	80 gpd/person	2.10
Commercial/Office	207 acres	11,112 employees	1,500 gpd/acre	0.31
Industrial	278 acres		1,500 gpd/acre	0.42
IBT	0 acres		1,500 gpd/acre	0.00
Institutional	982 acres		1,500 gpd/acre	1.47
Parks	64 acres		0 gpd/acre	0.00
City Total				5.83
District				
SFR	0 units	-	80 gpd/person	0
MFR	0 units	-	80 gpd/person	0
Commercial/Office	250 acres	-	1,500 gpd/acre	0.38
Industrial	2,607 acres	-	1,500 gpd/acre	3.91
IBT	0 acres	-	1,500 gpd/acre	0.00
Institutional	45 acres	-	1,500 gpd/acre	0.07
Parks	0 acres	-	0 gpd/acre	0.00
District Total				4.35
Total No Project				10.18
Project				
City				
SFR	4,273 units	17,007	80 gpd/person	1.36
MFR	9,255 units	31,930	80 gpd/person	2.55
Commercial/Office	175 acres	13,758 employees	1,500 gpd/acre	0.26
Industrial	239 acres		1,500 gpd/acre	0.36
IBT	24 acres		1,500 gpd/acre	0.04
Institutional	946 acres		1,500 gpd/acre	1.42
Parks	97 acres		0 gpd/acre	0.00
City Total				5.99
District				
SFR	0 units	-	80 gpd/person	0
MFR	5,246 units	18,099	80 gpd/person	1.45
Commercial/Office	142 acres	-	1,500 gpd/acre	0.21
Industrial	876 acres	-	1,500 gpd/acre	1.31
IBT	1,286 acres	-	1,500 gpd/acre	1.93
Institutional	220 acres	-	1,500 gpd/acre	0.33
Parks	61 acres	-	0 gpd/acre	0.00
District Total				5.23
Total Project				**11.22**

5.1 Recycled Water Demands

Both the City and District produce recycled water for use in the Southern San Diego area. Currently, the District operates a 1.2-mgd reclamation plant and has an agreement to purchase up to 6 mgd of recycled water from the City. The City has the capability of producing up to 15 mgd of recycled water at its South Bay Water Reclamation Facility. The District's 2010 WRMP projects recycled water use within Otay Mesa and lays out a grid system of pipelines for service to the area. The City currently has no specific plans for constructing facilities to convey recycled water to its Otay Mesa service area; however, developers in this area will be conditioned by the City to install onsite recycled water facilities. Based on discussions with City staff, it was assumed that recycled water will be conveyed to the City's service area within the District's water service boundaries via the District's recycled water facilities.

Table 5 provides a summary of irrigated acres and average day recycled water demands projected for the land use plans. The total estimated irrigated acres is 494 acres in the No Project alternative and 736 acres in the Project.

The District's 2010 WRMP included recycled water projections for the OMCP Update.

If recycled water use is assumed to be required by both the City and District in the OMCP area, the projected water demands for this area should be reduced accordingly. **Table 3** provided the projected potable water demands for the OMCP. The unit water demands used to project water demands included outdoor irrigation demands within the City service area; however, unit demands for areas within the District included accommodation for recycled water demands. If the projected water demands are reduced to accommodate for the projected recycled water demands, the required future potable water supply requirements for the OMCP could be reduced. **Table 6** provides a summary of potable water demands for each of the land use alternatives for the OMCP, assuming recycled water, not potable water, is used for outdoor irrigation demands.

As mentioned above, however, the potable water system for the City in this study was evaluated assuming that no recycled water supply was available.

Table 5 Average Day Recycled Water Demand Projection Comparison

	Gross Acreage	Percent Irrigated	Irrigated Acreage	Unit Demand	Recycled Water Demand (mgd)
No Project					
City					
SFR	1,027 acres	0%	0 acres	2,155 gpd/acre	0.00
MFR	231 acres	15%	35 acres	2,155 gpd/acre	0.07
Commercial/Office	207 acres	10%	21 acres	2,155 gpd/acre	0.04
Industrial	278 acres	5%	14 acres	2,155 gpd/acre	0.03
IBT	0 acres	10%	0 acres	2,155 gpd/acre	0.00
Institutional	982 acres	20%	196 acres	2,155 gpd/acre	0.42
Parks	64 acres	100%	64 acres	2,155 gpd/acre	0.14
City Total			**330 acres**		**0.71**
District					
SFR	0 acres	0%	0 acres	2,155 gpd/acre	0.00
MFR	0 acres	15%	0 acres	2,155 gpd/acre	0.00
Commercial/Office	250 acres	10%	25 acres	2,155 gpd/acre	0.05
Industrial	2,607 acres	5%	130 acres	2,155 gpd/acre	0.28
IBT	0 acres	10%	0 acres	2,155 gpd/acre	0.00
Institutional	45 acres	20%	9 acres	2,155 gpd/acre	0.02
Parks	0 acres	100%	0 acres	2,155 gpd/acre	0.00
District Total			**164 acres**		**0.35**
Total No Project			**494 acres**		**1.06**
Project					
City					
SFR	637 acres	0%	0 acres	2,155 gpd/acre	0.00
MFR	655 acres	15%	98 acres	2,155 gpd/acre	0.21
Commercial/Office	175 acres	10%	17 acres	2,155 gpd/acre	0.04
Industrial	239 acres	5%	12 acres	2,155 gpd/acre	0.03
IBT	24 acres	10%	2 acres	2,155 gpd/acre	0.00
Institutional	946 acres	20%	189 acres	2,155 gpd/acre	0.41
Parks	97 acres	100%	97 acres	2,155 gpd/acre	0.21
City Total			**415 acres**		**0.89**
District					
SFR	0 acres	0%	0 acres	2,155 gpd/acre	0.00
MFR	191 acres	15%	29 acres	2,155 gpd/acre	0.06
Commercial/Office	142 acres	10%	14 acres	2,155 gpd/acre	0.03
Industrial	876 acres	5%	44 acres	2,155 gpd/acre	0.09
IBT	1,286 acres	10%	129 acres	2,155 gpd/acre	0.28
Institutional	220 acres	20%	44 acres	2,155 gpd/acre	0.09
Parks	61 acres	100%	61 acres	2,155 gpd/acre	0.13
District Total			**321 acres**		**0.68**
Total Project			**671 acres**		**1.57**

Table 6 Water Demand Projection Comparison with City Recycled Water Demands Deducted

	Count	Population	Potable Water Demand (mgd)	Recycled Water Demand (mgd)	Reduced Potable Water Demand (mgd)
No Project					
City					
SFR	4,800 units	19,102	2.87	0.00	2.87
MFR	7,600 units	26,221	2.36	0.07	2.29
Commercial/Office	207 acres	11,112 employees	0.67	0.63	0.04
Industrial	278 acres				
IBT	0 acres				
Institutional	982 acres				
Parks	64 acres				
City Total					**5.20**
District					
SFR	0 units	-	N/A		0.00
MFR	0 units	-			0.00
Commercial/Office	250 acres	-			0.40
Industrial	2,607 acres	-			2.21
IBT	0 acres	-			0.00
Institutional	45 acres	-			0.06
Parks	0 acres	-			0.00
District Total					**2.67**
Total No Project					**7.87**
Project					
City					
SFR	4,273 units	17,007	2.55	0.00	2.55
MFR	9,255 units	31,930	2.87	0.21	2.66
Commercial/Office	175 acres	13,758 employees	0.83	0.69	0.14
Industrial	239 acres				
IBT	24 acres				
Institutional	946 acres				
Parks	97 acres				
City Total					**5.35**
District					
SFR	0 units	-	N/A		0.00
MFR	5,246 units	18,099			1.34
Commercial/Office	142 acres	-			0.23
Industrial	876 acres	-			0.74
IBT	1,286 acres	-			2.08
Institutional	220 acres	-			0.31
Parks	61 acres	-			0.00
District Total					**4.70**
Total Project					**10.05**

6.0 Approach to Comparison of Utilities

In order to compare the Project with the No Project alternative, master planning documents were assumed to evaluate ultimate conditions under the No Project scenario. For each utility, existing and proposed infrastructure deficiencies and improvements were noted. Any identified improvements under the No Project alternative were subsequently considered as the minimum required improvements for the assessment of the Project. The identified impacts and improvements for the Project are defined as compared to the No Project alternative, not the adopted master plan documents.

As previously noted, the potable water system was analyzed using water demands without any reduction for potential recycled water supplies since irrigation of turf areas will most likely be irrigated using potable water until the recycled water distribution system is constructed to serve the OMCP area. The recycled water distribution system was evaluated independently and compared with the anticipated improvements associated with the proposed ultimate recycled water system, as provided by the District.

6.1 Water System Analysis

Assessment of the OMCP water distribution system involved the analysis of two independent water systems: the City system and the District system.

City Potable Water System

The City's Otay Mesa service area was evaluated and reviewed in the *Otay Master Plan Optimization Baseline Report* (Baseline Report, Optimatics, May 2009). Optimatics received a SynerGEE water model from the City, which was set up to run a 24-hour extended period simulation.

As previously described, the City's Otay Mesa service area is large and does not contain any storage outside the South San Diego Reservoir and the Otay WTP clearwells. Supply to this area comes from the Otay WTP and the area is served by three pump stations and several pressure reducing stations. Pump station capacity is considered to be the total pumping capacity of the pump station with the largest pump out of service. The pump stations include:

- Otay Mesa Pump Station – (2) 695-gpm pumps, (3) 3,080-gpm pumps; 7,550 gpm capacity
- Ocean View Hills Pump Station – (2) 1,000-gpm pumps, (1) 3,000-gpm pump; 2,000 gpm capacity
- Princess Park Pump Station – (2) 380-gpm pumps, (1) 1,500-gpm pump not in service, (2) 3,100-gpm pumps not in service; 380 gpm current capacity

District Potable Water System

The District's water system model was updated in October 2008 as part of the 2008 WRMP and again in November 2010 as part of the 2010 WRMP Update. The model includes existing facilities and improvements anticipated to meet the District's ultimate water demands. The locations of the demands in the District model were grouped at just a few nodes throughout the system. The District model includes several planned water pipelines that are proposed to cross SR-125, SR-11, and SR-905 that are critical to the operation of the District water system. Based on conversations with the District, it is assumed for purposes of this analysis that these facilities will be installed prior to construction of these roadways, or sleeves will be installed when the freeways are built to allow construction of these mains to occur at a later date. The planned water distribution system, including the highway crossings, was used as the basis for evaluating the No Project condition and the Project.

For both the City and District potable water systems, the following design criteria was used as a guideline for determining potential improvement projects. However, specific recommended improvements were made based on engineering judgment to determine which pipe improvements would provide the greatest benefit to the system based on velocity, headloss per thousand feet, total headloss, location, and length of pipe.

Table 7 Potable Water Design Criteria

Criteria	Value
Maximum Velocity	15 fps
Maximum Headloss per Thousand Feet	10 feet/1000 feet
Maximum Total Headloss	15 feet
Minimum Pressure	40 psi
Maximum Pressure	150 psi

No Project Analysis

Both the City's Baseline Report and the District's 2008 WRMP included demands for the OMCP Update under the No Project alternative, which is based on currently approved land uses. The City's Baseline Report recommended the following backbone infrastructure improvements within Otay Mesa:

A. Upgrade the Otay Mesa Pump Station to 11,500 gpm to meet ultimate demands. Additional capacity may also be installed at Ocean View Hills and Princess Park Pump Stations to meet the No Project demands of the OMCP Update, or an addition 1,000 gpm pumping capacity may be added to the Otay Mesa Pump Station.

B. Install 12,380 feet of new 20-inch pipe between the South San Diego Reservoir and the Otay Mesa Pump Station or replace the 33-inch South San Diego Pipeline #1 with a new 48-inch pipe for redundancy.

C. Install 2,400 feet of new 24-inch pipe in Otay Mesa Road between Hawken Drive and Crescent Bay Drive to provide redundancy in Otay Mesa and allow the Princess Park pump station to supply the 680 PZ.

Additional developer-driven projects to improve service and provide redundancy in the Otay Mesa area are as follows:

D. Install 2,080 feet of new 16-inch pipe to provide redundant service between Otay Mesa Road and Beyer Boulevard.

E. Install 2,500 feet of new 16-inch pipe to extend service in Airway Road and provide redundancy in the 680 PZ. The City may upsize this pipe as part of the Otay Mesa Road 24-inch water main replacement project.

The identified impacts and improvements for Otay Mesa are in response to projected growth within the Otay Mesa service area as a whole and not specific to the increase in potable water demands from the OMCP Update. The identified water system improvements are shown on **Figure 8**.

In the District system, the 2008 WRMP did not identify pumping deficiencies within the OMCP area. The District has adequate pumping capacity to serve the OMCP under the No Project scenario. A 10-mg 870-2 Reservoir is recommended to be constructed to provide capacity for projected ultimate storage requirements. The proposed site for the 870-2 Reservoir is adjacent to the existing 870-1 Reservoir. Although portions of the buildout distribution system have yet to be constructed, the 2010 WRMP assumed these pipelines would be installed by developers. No upgrades to the sizes or locations of these pipelines are anticipated.

Project

The City's Baseline Report did not evaluate alternative demand scenarios for the OMCP area, such as the Project. In the District's 2010 WRMP, demands for the OMCP area were revised to include increased potable water demands from the Project.

The identified impacts and improvements for Otay Mesa under the No Project scenario are not capacity-based deficiencies. The Project will increase potable water demands in the City service area by only 0.36 mgd, which is not a significant increase to warrant transmission main upgrades. Any identified improvements under the No Project alternative are considered as the minimum required improvements for the assessment of the Project; installing an additional 750 gpm of pumping capacity at the Otay Mesa pump station would provide sufficient capacity to serve the additional demands of the OMCP.

The 2010 WRMP did not identify storage or pumping deficiencies under ultimate conditions in addition to projects identified under the No Project condition. The District has adequate storage and pumping capacity to serve the future Project demands of the OMCP. As new developments move forward, the District may require individual projects to submit detailed hydraulic studies.

6.2 Sewer System Analysis

The sewer collection system in the OMCP was analyzed in the 2009 OMTS Refinement Report using the InfoWorks computer software package (Wallingford Software, Version 4.5). InfoWorks is a dynamic modeling tool that computes the time-varying water surface profile in each reach of the modeled sewer, subject to diurnal wastewater loading and rainfall-derived inflow and infiltration. The model is capable of simulating fixed and variable speed pumps, diversions and other hydraulic structures. The OMTS model included the Otay Valley drainage basin and trunk sewer collection system, as well as the San Ysidro drainage basin and interceptor, up to the connection to the 72-inch South Metro Interceptor, as one integrated collection system. As part of the 2009 OMTS Refinement Report, the build out condition was modeled for the Otay Mesa area. Based on that model, new facilities and improvements to the existing collection system were recommended, as shown in **Figure 9**. A phased upgrade of the existing of SPS 23T was recommended so that additional capacity could be added as needed, as well as improvements necessary to meet the design guidelines for permanent pump stations. The phasing plan called for incremental capacity beginning with 4 mgd, increasing to 8 mgd at buildout capacity. It is anticipated that a new Otay Mesa sewer pump station will be required when the capacity at SPS 23T exceeds 8 mgd.

In order to evaluate the No Project and Project alternatives in this study, demand projections were compared to the projections and assumptions made in the 2004 Sewer Master Plan and 2009 OMTS Refinement Report.

No Project Analysis

The 2009 OMTS Refinement Report included sewer flows for the OMCP based on currently approved land uses, which is the basis for the No Project alternative. The 2009 OMTS Refinement Report recommended the following OMTS phased improvements:

A. Upgrade SPS 23T from temporary to permanent status by adding 0.25 mg emergency storage and upgrade pumping capacity to 4.3 mgd (8 mgd build-out).

B. Upgrade SPS 23T from temporary to permanent status by installing 8,000 feet of 24-inch force main from SPS 23T to Heritage Road.

C. Install diversion structure to split sewer flows between the OMTS and the OVTS, which gives the City more flexibility in operating the system and defers costly improvements to the San Ysidro Trunk Sewer.

D. Install 8,000 feet dual 24-inch force main along Otay Mesa Road from diversion structure to gravity sewer.

E. Replace 3,600 feet of 16-inch force main with 24-inch force main from SR-905 to diversion structure.

F. Install 2,800 feet of 20-inch gravity main along Otay Mesa Road from force main to existing 42-inch gravity main.

G. Install 5,000 feet of 24-inch gravity main from existing 42-inch gravity main to existing 24-inch San Ysidro Trunk Sewer.

In addition to the phased projects identified in the 2009 OMTS Refinement Report, two new sewer pump stations are still required to serve the Otay Mesa western area—the Bauchmann Sewer Pump Station and the South Otay Mesa Sewer Pump Station. The identified sewer system improvements are shown on **Figure 10**.

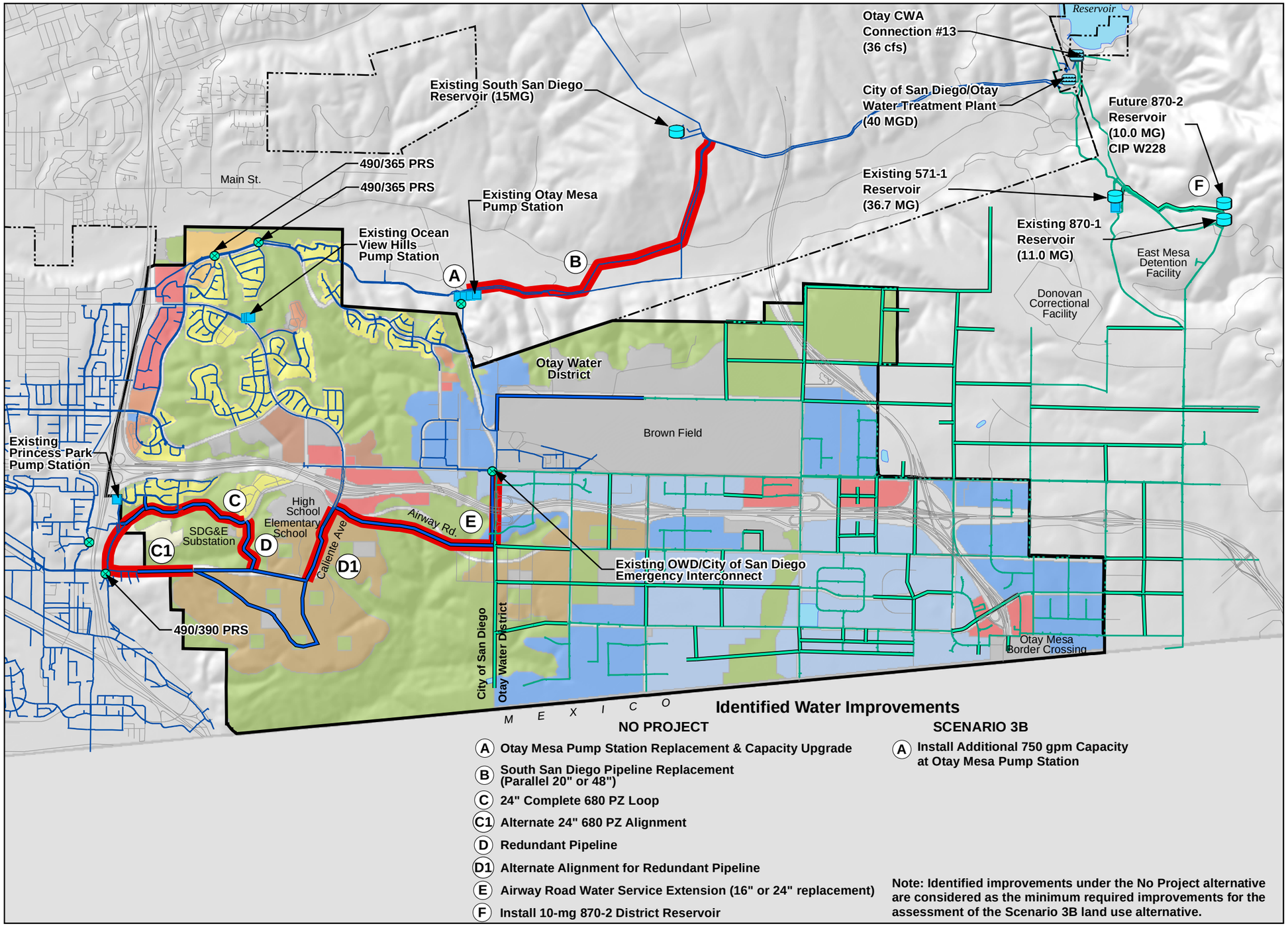
Project

The identified improvements under the No Project alternative are considered the minimum required improvements for the assessment of the Project. The increased flows from the Project will not require any additional capacity of SPS 23T beyond 8 mgd, as noted in the 2009 OMTS Refinement Report, but may alter the phased improvements for capacity at SPS 23T and build-out sizing of sewer pipelines.

3A. Increase emergency storage at SPS 23T to 0.50 mg.

3F. Upsize 20-inch to 20-inch gravity main along Otay Mesa Road from force main to existing 42-inch gravity main.

3G. Upsize 24-inch to 30-inch gravity main from existing 42-inch gravity main to existing 24-inch San Ysidro Trunk Sewer.



N

3,400

Feet

OMCP Boundary

Existing City Pipe

Existing Otay Pipe

Proposed Pipe

City of San Diego

Otay Water District

Identified Improvements

Scenrio 3B Land Use

BUSINESS AND INTERNATIONAL TRADE

INDUSTRIAL

VILLAGE CENTER

COMMERCIAL

INSTITUTIONAL

VERY LOW

LOW

LOW MEDIUM

MEDIUM

MEDIUM HIGH

OPEN SPACE & PARKS

Identified Water Improvements

NO PROJECT

- **A** Otay Mesa Pump Station Replacement & Capacity Upgrade
- **B** South San Diego Pipeline Replacement (Parallel 20" or 48")
- **C** 24" Complete 680 PZ Loop
- **C1** Alternate 24" 680 PZ Alignment
- **D** Redundant Pipeline
- **D1** Alternate Alignment for Redundant Pipeline
- **E** Airway Road Water Service Extension (16" or 24" replacement)
- **F** Install 10-mg 870-2 District Reservoir

SCENARIO 3B

- **A** Install Additional 750 gpm Capacity at Otay Mesa Pump Station

Note: Identified improvements under the No Project alternative are considered as the minimum required improvements for the assessment of the Scenario 3B land use alternative.

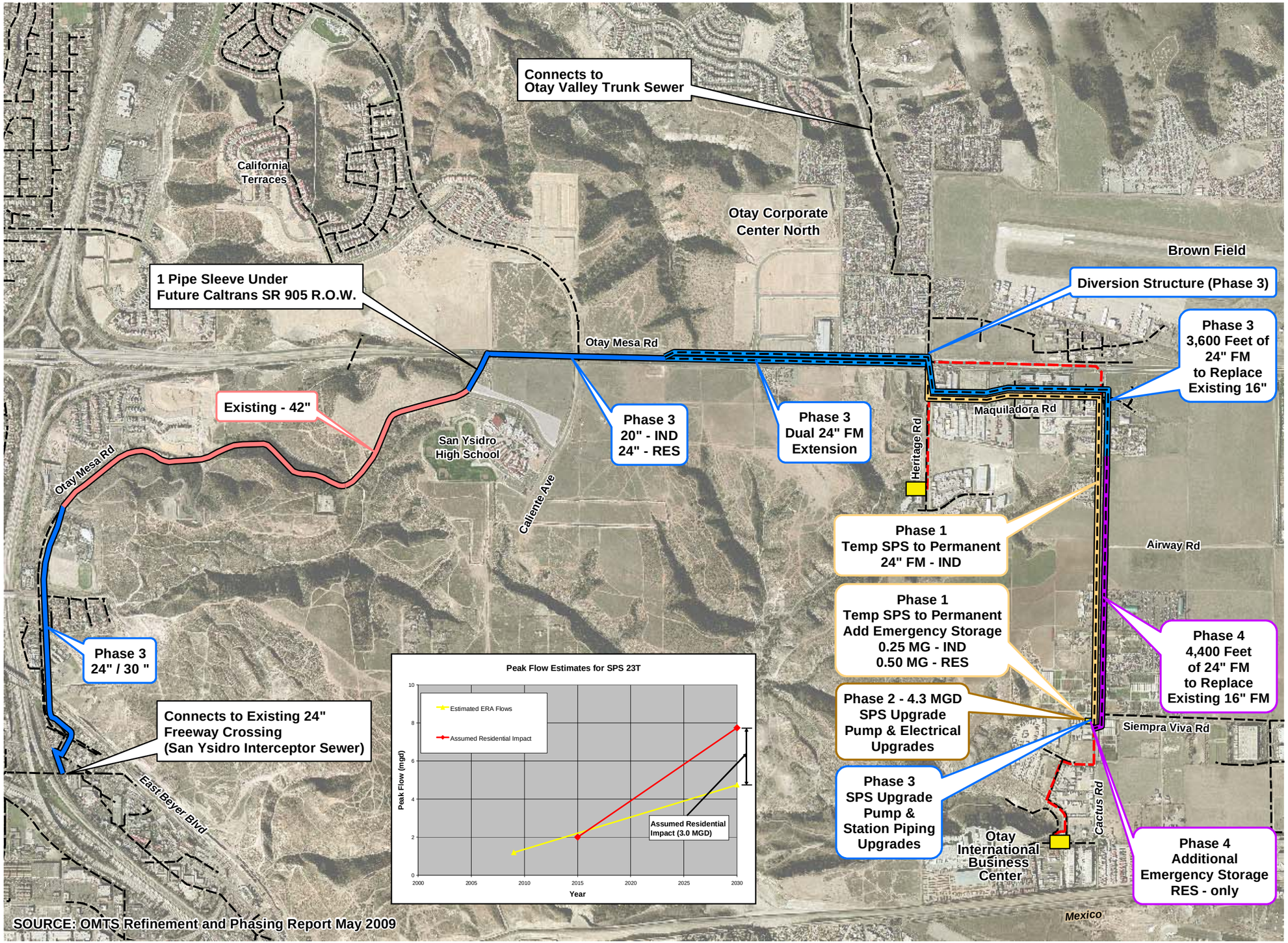
Identified
Water System Improvements

Figure 8

5/21/13 LH SD Z:\Projects\IS\OMCPU\mxd\8335_WaterImps_IDd.mxd

ATKINS

This page intentionally left blank.



N

1,400

Feet

Existing Sewer Mains

Force Main

Gravity

Phase Pipeline

Existing

Phase 1

Phase 2 (SPS)

Phase 3

Phase 4 (RES)

Pumped

Gravity

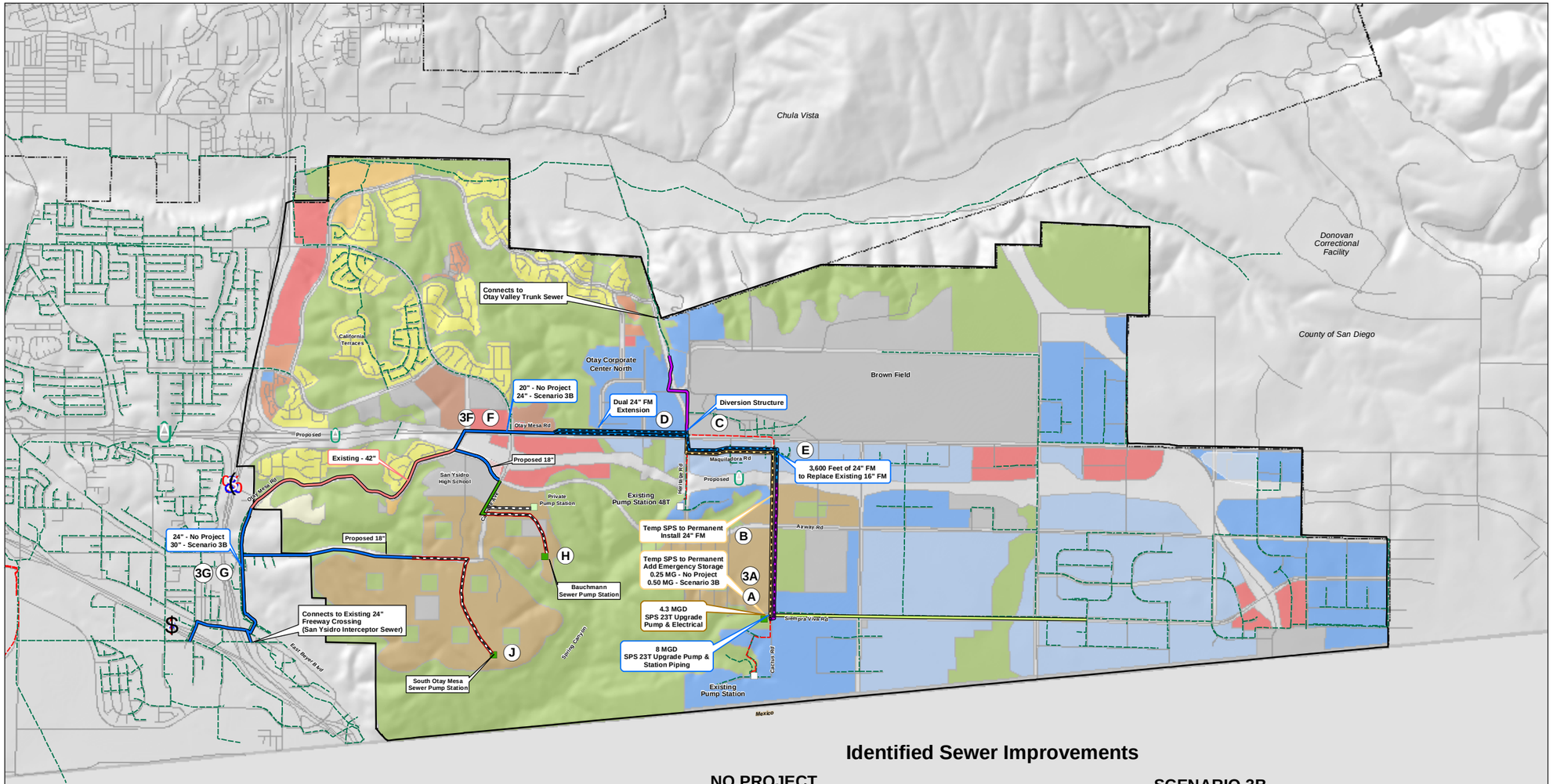
Existing Pump Station

Phased OMTS
System Improvements

Figure 9

5/21/13 LH SD Z:\Projects\IS\OMCPU\mxd\8335_OMCPU_PhasedSystImprs_F9.mxd

This page intentionally left blank.



Identified Sewer Improvements

NO PROJECT

- **A** Upgrade SPS 23T to permanent SPS – emergency storage & capacity
- **B** Upgrade SPS 23T to permanent SPS – 24-inch force main
- **C** Diversion Structure
- **D** Dual 24-inch force main
- **E** Replace 16-inch force main with 24-inch forcemain
- **F** Install 20-inch gravity main
- **G** Install 24-inch gravity main
- **H** Bauchmann Sewer Pump Station and Forcemain
- **J** South Otay Mesa Sewer Pump Station and Forcemain

SCENARIO 3B

- **3A** Increase SPS 23T emergency storage
- **3F** Upsize 20-inch to 24-inch
- **3G** Upsize 24-inch to 30-inch

Note: Identified improvements under the No Project alternative are considered as the minimum required improvements for the assessment of the Scenario 3B land use alternative.

N

3,500

Feet

- OMCP Boundary
- Existing Gravity Main
- Existing Force Main

Phase Pipeline

- Existing
- Phase 1
- Phase 2 (SPS)
- Phase 3
- Phase 4 (RES)
- Pumped
- Gravity
- Existing Pump Station
- Private Pump Station
- Proposed Pump Station

Scenrio 3B Land Use

- BUSINESS AND INTERNATIONAL TRADE
- INDUSTRIAL
- VILLAGE CENTER
- COMMERCIAL
- INSTITUTIONAL
- VERY LOW
- LOW
- LOW MEDIUM
- MEDIUM
- MEDIUM HIGH
- OPEN SPACE & PARKS

Identified
Sewer System Improvements

Figure 10

5/21/13 LH SD Z:\Projects\IS\OMCPU\mxd\8335_OMCPU_SewerImps_IDd.mxd

ATKINS

This page intentionally left blank.

6.3 Recycled Water System Analysis

Recycled water service in the OMCP is planned to be provided by the District only. Although the City produces recycled water, it has no distribution system in the western side of the OMCP that lies within its service area. Because the City has no current plans to expand their distribution system in this area, recycled water service to the western side of Otay Mesa would likely require expansion of the District recycled water system to the west along Otay Mesa Road and then north and south along Ocean View Hills Parkway. When the South Bay Plant was constructed an agreement was formed between the District and the City whereby the District would serve City customers. Reclaimed water facilities are already in place in some areas within the northwest quadrant of the OMCP area, such as along Ocean View Hills Parkway; however, there is currently no distribution system in the western side of the OMCP area. Recycled water service to the western side of Otay Mesa would likely require a connection to the District's recycled water system with a main to the west along Otay Mesa Road. An agreement between the District and the City would have to be negotiated to provide transportation of reclaimed water in the Districts facilities should capacity ever become available.

The District's recycled water system model was updated as part of the 2010 WRMP. The model includes existing facilities and improvements anticipated to meet the District's ultimate recycled water demands as projected in their 2010 WRMP. The District model also includes several planned recycled water pipelines that are proposed to cross SR-125, SR-11, and SR-905 and that are critical to the operation of the District's recycled water system. Based on conversations with the District, it is assumed for purposes of this analysis that these facilities will be installed prior to construction of these roadways, or sleeves will be installed when the freeways are built to allow construction of these mains to occur at a later date. The planned recycled water distribution system, including the highway crossings, was used as the basis for evaluating the alternatives in this study.

No Project Analysis

The District's 2008 WRMP evaluated ultimate recycled water supply, storage, and pumping conditions, which would be comparable to the No Project scenario. The OMCP is within the District's 860 Pressure Zone (PZ), which will ultimately be supplied from a new 860-1 Reservoir located near the County Prison through planned 30-inch diameter transmission mains. The new 860-1 Reservoir is recommended to serve the 860 PZ and will be supplied directly through the 927 PZ from the north. The District's current CIP includes the 4-mg 860-1 Reservoir. Although the analysis in the 2008 WRMP notes a need for approximately 2 mg of additional storage, the ultimate capacity of the 860-1 Reservoir of 4 mg is recommended due to the potential variability of recycled water use in Otay Mesa. Recycled water use has been assumed for outdoor irrigation in the 2008 WRMP; however, industrial users could potentially increase recycled water demand in this PZ with indoor, dual-plumbed facilities.

It is possible to temporarily operate the 860 PZ off the 927 PZ without use of the 860-1 Reservoir until demands in Otay Mesa increase and funding can be secured for the tank. Additional analysis may be required to determine the exact timing of the proposed reservoir.

Project

In the District's 2010 WRMP, demands for the OMCP area were revised to include increased potable water demands from the Project.

The 2010 WRMP did not identify additional storage or pumping deficiencies under ultimate conditions, beyond improvements recommended in the 2008 WRMP. The District has adequate storage and pumping capacity to serve the future Project demands of the OMCP within the District's jurisdiction. As new developments move forward, the District may require individual projects to submit detailed hydraulic studies.

7.0 Summaries and Conclusions

In this technical infrastructure study, the Project is being compared to the No Project alternative to determine what additional infrastructure may be required to support the proposed changes in land use. The No Project condition is based on currently adopted master planning documents that conform to the 1981 OMCP. These Master Plans (the *1999 South San Diego-Otay Mesa Water Study*, the *2008 District Water Resources Master Plan and 2010 Update (revised 2013)*, and the *2004 Otay Mesa Trunk Sewer Master Plan and Alignment Study and 2009 Refinement Report, and the 2009 Baseline Report*) and their associated certified environmental planning documents provide a benchmark for infrastructure planning in the OMCP area. However, some of the design standards used in the master planning documents are out of date and the population/density assumptions have been changed. So, in order to compare the Project with the No Project Condition, the infrastructure requirements for the No Project Condition were evaluated to conform to the City's current water, sewer and recycled water design guides and the current population/density assumptions.

In the previous sections, this technical study outlined the approach toward evaluating identified impacts and improvements necessary to provide water, recycled water and sewer service for the OMCP area under the No Project condition and to accommodate increased demands from the Project. The identified impacts are summarized in the following sections.

7.1 Summary of Water Improvements

The improvements associated with the water system serving the OMCP under the alternative land use scenarios, previously shown on Figure 8, are summarized in **Table 8**, below.

As shown in **Table 8**, backbone improvements are required to existing and planned water facilities to implement the No Project condition and corresponding water demands. Within the OMCP area, future development requires the construction of new pipeline to provide redundant water service to the OMCP area and complete service looping, as well as upgraded capacity at the Otay Mesa Pump Station. Prior planning studies, such as the *1999 South San Diego-Otay Mesa Water Study,* planned that all peak demands and fire flows would be provided by a combination of the three pump stations.

Within the District, no identified improvements were located within the OMCP area; however, a new reservoir will provide adequate storage to meet buildout demands.

7.2 Summary of Sewer Improvements

The improvements associated with the City's sewer system serving the OMCP area under the alternative land use scenarios, previously shown on **Figure 9**, are summarized in **Table 9,** below.

Table 8 Summary of Identified Water System Improvements

Land Use Alternative	Improvement Identification No.	Facility	Location	Description of Improvement
No Project	A	Otay Mesa Pump Station Replacement & Upgrade Capacity	Outside of the OMCP, within the City	Upgrade the Otay Mesa Pump Station to 11,500 gpm to meet ultimate demands. Additional capacity may also be installed at Ocean View Hills and Princess Park Pump Stations.
	B	33" South San Diego pipeline replacement (Parallel 20" or 48")	Outside of the OMCP, within the City	Install 12,380 feet of new 20-inch pipe between the South San Diego Reservoir and the Otay Mesa Pump Station or replace the 33-inch South San Diego Pipeline #1 with a new 48-inch pipe for redundancy.
	C	Complete 24" 680 PZ loop	Within the OMCP, within the City	Install 2,400 feet of new 24-inch pipe in Otay Mesa Road between Hawken Drive and Crescent Bay Drive to provide redundancy in Otay Mesa and allow the Princess Park pump station to supply the 680 PZ.
	C1	Alternate 680 PZ alignment	Within the OMCP, within the City	Alternate alignment to provide redundancy to 680 PZ.
	D	Redundant Pipeline	Within the OMCP, within the City	Install 2,080 feet of new 16-inch pipe to provide redundant service between Otay Mesa Road and Beyer Boulevard.
	D1	Alternate Alignment for Redundant Pipeline	Within the OMCP, within the City	Alternate alignment to provide redundancy to 680 PZ.
	E	Airway Road Water Service Extension	Within the OMCP, within the City	Install 2,500 feet of new 16" or 24" pipe in Airway Road, between Heritage Road and Caliente Avenue serve future City area to the east and provide alternative alignment for 24-inch Otay Mesa Road pipeline replacement. Timing of this project may be based on Airway Road extension. As an alternative, the area just west of Heritage Road could be served by the District.
	F	New 10-mg 870-2 Reservoir	Outside of the OMCP, within the District	Install 10-mg 870-2 Reservoir to provide capacity to satisfy projected buildout storage requirements. The proposed site for the 870-2 Reservoir is adjacent to the existing 870-1 Reservoir.
3B	3A	Otay Mesa Pump Station Upgrade Capacity	Outside of the OMCP, within the City	Add 750-gpm pump to increase capacity of pump station.

Table 9 Summary of Identified Sewer System Improvements

Land Use Alternative	Improvement Identification No.	Facility	Location	Description of Improvement
No Project	A	Upgrade SPS 23T to permanent SPS – emergency storage & capacity	Within the OMCP	Upgrade SPS 23T from temporary to permanent status by adding 0.25 mg emergency storage and upgrade pumping capacity to 4.3 mgd (8 mgd build-out).
	B	Upgrade SPS 23T to permanent SPS – 24-inch force main	Within the OMCP	Upgrade SPS 23T from temporary to permanent status by installing 8,000 feet of 24-inch force main from SPS 23T to Heritage Road.
	C	Diversion Structure	Within the OMCP	Install diversion structure to split sewer flows between the OMTS and the OVTS, which gives the City more flexibility in operating the system and defers costly improvements to the San Ysidro Trunk Sewer.
	D	Dual 24-inch force main	Within the OMCP	Install 8,000 feet dual 24-inch force main along Otay Mesa Road from diversion structure to gravity sewer.
	E	Replace 16-inch force main with 24-inch force main	Within the OMCP	Replace 3,600 feet of 16-inch force main with 24-inch force main from SR-905 to diversion structure.
	F	Install 20-inch gravity main	Within the OMCP	Install 2,800 feet 20-inch gravity main along Otay Mesa Road from force main to existing 42-inch gravity main.
	G	Install 24-inch gravity main	Outside the OMCP	Install 5,000 feet 24-inch gravity main from existing 42-inch gravity main to existing 24-inch San Ysidro Trunk Sewer.
	H	Bauchmann Sewer Pump Station and Force main	Within the OMCP	Install future pump station to accommodate new residential development.
	J	South Otay Mesa Sewer Pump Station and Force main	Within the OMCP	Install future pump station to accommodate new residential development.
3B	3A	Increase SPS 23T emergency storage	Within the OMCP	Increase emergency storage at SPS 23T to 0.50 mg.
	3F	Upsize 20-inch to 24-inch	Within the OMCP	Upsize 20-inch to 20-inch gravity main along Otay Mesa Road from force main to existing 42-inch gravity main.
	3G	Upsize 24-inch to 30-inch	Outside the OMCP	Upsize 24-inch to 30-inch gravity main from existing 42-inch gravity main to existing 24-inch San Ysidro Trunk Sewer.

These improvements are not considered significant as the 2004 OMTS Sewer Master Plan and 2009 OMTS Refinement Report identified these improvements as potentially required in future phases to accommodate build-out wastewater generation from the area.

7.3 Summary of Recycled Water Improvements

The recycled water analysis assumed that the City's recycled water demands would be served by wheeling recycled water through the District's recycled water service, delivering recycled water from the east through an extension of the District's recycled water pipeline in Otay Mesa Road. The planned facilities identified in the 2008 WRMP and 2010 WRMP are sufficient to serve the No Project and Project demands. If the City decides in the future to serve their jurisdiction without using the District's distribution system, the system should be reevaluated.

7.4 Final Conclusions

The water, sewer and recycled water distribution and collection systems are adequate, with some minor improvements identified, to serve the No Project condition and the proposed Project.

APPENDIX A

Development Summary Tables

2/17/2011

Otay Mesa Draft Scenario 3B Development Summary Table

http://www.sandiego.gov/planning/community/profiles/otaymesa/cpu/

Otay Mesa Draft Scenario 3B Summary Table					
	SF Units	MF Units	Total Units	Total Pop	Park Acres
Northwest Area	2,873	4,775	7,648	27,908	51
Southwest Village	1,400	4,480	5,880	21,028	59
Central Village	-	5,246	5,246	18,099	51
TOTAL	**4,273**	**14,501**	**18,774**	**67,035**	**161**

Land Use Categories	**Draft Scenario 3B**
Residential	757
Village Centers	721
Commercial	318
Industrial	2,432
Institutional	1,165
Parks	161
Open Space	2,752
Right of Way	1,023
	9,329
SF Detached	4,273
MF and attached	14,501
Total	18,774

ZONE	TAZ Acres	DESIGTN	Acres	Water	Area	SF Units	MF Units	HH Pop	Emp Pop
4429	506.18	INSTITUTIONAL	12.14	City	NW	-	-	-	109
4443	482.55	INSTITUTIONAL	2.54	City	NW	-	-	-	-
4460	177.94	INSTITUTIONAL	8.29	City	NW	-	-	-	8
4472	940.42	INSTITUTIONAL	773.22	City	BF	-	-	-	773
4505	142.15	INSTITUTIONAL	29.80	City	NW	-	-	-	268
4526	159.90	INSTITUTIONAL	22.82	City	SW	-	-	-	160
4546	142.90	INSTITUTIONAL	4.21	City	SW	-	-	-	-
4558	196.87	INSTITUTIONAL	0.00	City	SW	-	-	-	-
4561	469.20	INSTITUTIONAL	12.15	City	SW	-	-	-	109
4578	388.64	INSTITUTIONAL	9.58	City	SW	-	-	-	86
4608	102.71	INSTITUTIONAL	0.04	City	BF	-	-	-	-
4609	65.10	INSTITUTIONAL	60.82	City	BF	-	-	-	61
4610	74.50	INSTITUTIONAL	46.48	City	SW	-	-	-	325
4611	71.73	INSTITUTIONAL	0.02	City	SW	-	-	-	-
4460	177.94	LIGHT INDUSTRIAL	36.04	City	NW	-	-	-	778
4467	238.74	LIGHT INDUSTRIAL	0.03	City	NW	-	-	-	1
4497	170.98	LIGHT INDUSTRIAL	100.65	City	NW	-	-	-	2,172
4499	143.27	LIGHT INDUSTRIAL	2.42	City	NW	-	-	-	52
4522	68.97	LIGHT INDUSTRIAL	21.75	City	NW	-	-	-	469
4608	102.71	LIGHT INDUSTRIAL	69.40	City	BF	-	-	-	1,498
4429	506.18	LOW	157.60	City	NW	985	820	6,749	-
4443	482.55	LOW	196.05	City	NW	1,046	224	4,936	-
4467	238.74	LOW	71.26	City	NW	447	445	3,314	-
4496	102.60	LOW	4.57	City	NW	-	1,016	3,505	-
4499	143.27	LOW	37.79	City	NW	123	630	2,663	-
4505	142.15	LOW	0.46	City	NW	-	-	-	-
4517	210.41	LOW	47.79	City	NW	501	32	2,104	-
4526	159.90	LOW	0.02	City	SW	-	-	-	-
4558	196.87	LOW	40.93	City	SW	205	-	815	-
4561	469.20	LOW	120.20	City	SW	841	-	3,349	-
4578	388.64	LOW	52.24	City	SW	261	-	1,040	-
4611	71.73	LOW	2.25	City	SW	-	-	-	-
4429	506.18	LOW MEDIUM	15.43	City	NW	-	-	-	-
4467	238.74	LOW MEDIUM	5.65	City	NW	-	-	-	-
4517	210.41	LOW MEDIUM	31.11	City	NW	-	-	-	-
4558	196.87	LOW MEDIUM	29.42	City	SW	-	412	1,421	-
4561	469.20	LOW MEDIUM	0.12	City	SW	-	2	6	-
4611	71.73	LOW MEDIUM	30.33	City	SW	-	425	1,465	-
4429	506.18	MEDIUM	28.80	City	NW	-	-	-	-
4431	85.03	MEDIUM	0.46	City	NW	-	-	-	-
4443	482.55	MEDIUM	13.10	City	NW	-	-	-	-
4464	83.75	MEDIUM	0.30	City	NW	-	-	-	-
4467	238.74	MEDIUM	13.34	City	NW	-	-	-	-
4496	102.60	MEDIUM	11.02	City	NW	-	-	-	-
4499	143.27	MEDIUM	30.12	City	NW	-	-	-	-
4520	52.10	MEDIUM	0.91	City	NW	-	-	-	-
4526	159.90	MEDIUM	56.93	City	SW	-	1,651	5,695	-
4546	142.90	MEDIUM	2.49	City	SW	-	72	249	-
4558	196.87	MEDIUM	0.01	City	SW	-	0	0	-
4608	102.71	MEDIUM	4.68	City	BF	-	145	500	-
4610	74.50	MEDIUM	0.14	City	SW	-	-	-	-
4496	102.60	MEDIUM HIGH	23.02	City	NW	-	-	-	-
4505	142.15	MEDIUM HIGH	45.03	City	NW	-	1,578	5,444	-
4511	42.49	MEDIUM HIGH	0.21	City	NW	-	-	-	-
4429	506.18	OPEN SPACE	165.41	City	NW	-	-	-	-
4431	85.03	OPEN SPACE	0.00	City	NW	-	-	-	-
4443	482.55	OPEN SPACE	253.18	City	NW	-	-	-	-
4460	177.94	OPEN SPACE	30.34	City	NW	-	-	-	-
4467	238.74	OPEN SPACE	130.78	City	NW	-	-	-	-
4472	940.42	OPEN SPACE	155.69	City	BF	-	-	-	-
4496	102.60	OPEN SPACE	58.22	City	NW	-	-	-	-
4497	170.98	OPEN SPACE	68.04	City	NW	-	-	-	-
4499	143.27	OPEN SPACE	24.27	City	NW	-	-	-	-

ZONE	TAZ Acres	DESIGTN	Acres	Water	Area	SF Units	MF Units	HH Pop	Emp Pop
4505	142.15	OPEN SPACE	23.44	City	NW	-	-	-	-
4517	210.41	OPEN SPACE	59.64	City	NW	-	-	-	-
4520	52.10	OPEN SPACE	0.28	City	NW	-	-	-	-
4520	52.10	OPEN SPACE	0.00	City	NW	-	-	-	-
4521	38.42	OPEN SPACE	4.49	City	NW	-	-	-	-
4522	68.97	OPEN SPACE	23.97	City	NW	-	-	-	-
4526	159.90	OPEN SPACE	47.08	City	SW	-	-	-	-
4546	142.90	OPEN SPACE	100.39	City	SW	-	-	-	-
4558	196.87	OPEN SPACE	110.81	City	SW	-	-	-	-
4561	469.20	OPEN SPACE	230.51	City	SW	-	-	-	-
4578	388.64	OPEN SPACE	246.65	City	SW	-	-	-	-
4608	102.71	OPEN SPACE	12.90	City	BF	-	-	-	-
4610	74.50	OPEN SPACE	24.14	City	SW	-	-	-	-
4611	71.73	OPEN SPACE	36.19	City	SW	-	-	-	-
4429	506.18	PARKS	13.03	City	NW	-	-	-	26
4443	482.55	PARKS	6.78	City	NW	-	-	-	14
4467	238.74	PARKS	7.97	City	NW	-	-	-	16
4499	143.27	PARKS	4.95	City	NW	-	-	-	10
4505	142.15	PARKS	15.11	City	NW	-	-	-	30
4561	469.20	PARKS	8.21	City	SW	-	-	-	16
4578	388.64	PARKS	7.80	City	SW	-	-	-	16
4431	85.03	REGIONAL COMMERCIAL - NO RESIDENTIAL	30.62	City	NW	-	-	-	980
4464	83.75	REGIONAL COMMERCIAL - NO RESIDENTIAL	57.79	City	NW	-	-	-	1,849
4467	238.74	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.24	City	NW	-	-	-	8
4496	102.60	REGIONAL COMMERCIAL - NO RESIDENTIAL	1.87	City	NW	-	-	-	60
4497	170.98	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	City	NW	-	-	-	0
4499	143.27	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.01	City	NW	-	-	-	0
4511	42.49	REGIONAL COMMERCIAL - NO RESIDENTIAL	38.37	City	NW	-	-	-	280
4520	52.10	REGIONAL COMMERCIAL - NO RESIDENTIAL	25.27	City	NW	-	-	-	184
4520	52.10	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	City	NW	-	-	-	0
4520	52.10	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.01	City	NW	-	-	-	0
4521	38.42	REGIONAL COMMERCIAL - NO RESIDENTIAL	21.95	City	NW	-	-	-	160
4522	68.97	REGIONAL COMMERCIAL - NO RESIDENTIAL	2.95	City	NW	-	-	-	22
4526	159.90	REGIONAL COMMERCIAL - NO RESIDENTIAL	3.84	City	SW	-	-	-	28
4558	196.87	REGIONAL COMMERCIAL - NO RESIDENTIAL	13.85	City	SW	-	-	-	443
4608	102.71	REGIONAL COMMERCIAL - NO RESIDENTIAL	2.55	City	BF	-	-	-	19
4611	71.73	REGIONAL COMMERCIAL - NO RESIDENTIAL	2.51	City	SW	-	-	-	80
4429	506.18	RIGHT-OF-WAY	23.47	City	NW	-	-	-	-
4431	85.03	RIGHT-OF-WAY	9.28	City	NW	-	-	-	-
4443	482.55	RIGHT-OF-WAY	10.89	City	NW	-	-	-	-
4460	177.94	RIGHT-OF-WAY	2.62	City	NW	-	-	-	-
4464	83.75	RIGHT-OF-WAY	23.54	City	NW	-	-	-	-
4467	238.74	RIGHT-OF-WAY	9.46	City	NW	-	-	-	-
4472	940.42	RIGHT-OF-WAY	11.15	City	BF	-	-	-	-
4496	102.60	RIGHT-OF-WAY	3.89	City	NW	-	-	-	-
4497	170.98	RIGHT-OF-WAY	2.29	City	NW	-	-	-	-
4499	143.27	RIGHT-OF-WAY	43.67	City	NW	-	-	-	-
4505	142.15	RIGHT-OF-WAY	28.32	City	NW	-	-	-	-
4507	187.56	RIGHT-OF-WAY	1.18	City	NW	-	-	-	-
4511	42.49	RIGHT-OF-WAY	3.91	City	NW	-	-	-	-
4517	210.41	RIGHT-OF-WAY	71.07	City	NW	-	-	-	-
4520	52.10	RIGHT-OF-WAY	25.62	City	NW	-	-	-	-
4520	52.10	RIGHT-OF-WAY	0.01	City	NW	-	-	-	-
4521	38.42	RIGHT-OF-WAY	11.99	City	NW	-	-	-	-
4522	68.97	RIGHT-OF-WAY	20.31	City	NW	-	-	-	-
4526	159.90	RIGHT-OF-WAY	29.20	City	SW	-	-	-	-
4546	142.90	RIGHT-OF-WAY	6.15	City	SW	-	-	-	-
4558	196.87	RIGHT-OF-WAY	1.69	City	SW	-	-	-	-
4561	469.20	RIGHT-OF-WAY	2.60	City	SW	-	-	-	-
4578	388.64	RIGHT-OF-WAY	1.95	City	SW	-	-	-	-
4608	102.71	RIGHT-OF-WAY	13.15	City	BF	-	-	-	-
4609	65.10	RIGHT-OF-WAY	4.29	City	BF	-	-	-	-
4610	74.50	RIGHT-OF-WAY	3.74	City	SW	-	-	-	-

ZONE	TAZ Acres	DESIGTN	Acres	Water	Area	SF Units	MF Units	HH Pop	Emp Pop
4611	71.73	RIGHT-OF-WAY	0.42	City	SW	-	-	-	-
4546	142.90	VERY LOW	29.54	City	SW	59	-	235	-
4558	196.87	VERY LOW	0.16	City	SW	-	-	-	-
4561	469.20	VERY LOW	95.21	City	SW	190	-	758	-
4578	388.64	VERY LOW	70.42	City	SW	141	-	561	-
4463	184.29	INSTITUTIONAL	7.33	OWD		-	-	-	7
4580	68.50	INSTITUTIONAL	27.64	OWD		-	-	-	1,327
4581	111.66	INSTITUTIONAL	0.00	OWD		-	-	-	-
4584	53.22	INSTITUTIONAL	0.00	OWD		-	-	-	-
4606	3.65	INSTITUTIONAL	3.65	OWD		-	-	-	175
4607	6.68	INSTITUTIONAL	6.68	OWD		-	-	-	321
4450	200.79	LIGHT INDUSTRIAL	52.36	OWD		-	-	-	1,130
4463	184.29	LIGHT INDUSTRIAL	60.81	OWD		-	-	-	1,313
4479	303.37	LIGHT INDUSTRIAL	172.80	OWD		-	-	-	3,730
4524	82.25	LIGHT INDUSTRIAL	53.63	OWD		-	-	-	1,158
4525	80.01	LIGHT INDUSTRIAL	56.58	OWD		-	-	-	1,221
4527	80.39	LIGHT INDUSTRIAL	58.98	OWD		-	-	-	1,273
4528	82.36	LIGHT INDUSTRIAL	0.20	OWD		-	-	-	4
4529	40.49	LIGHT INDUSTRIAL	0.08	OWD		-	-	-	2
4530	96.52	LIGHT INDUSTRIAL	49.51	OWD		-	-	-	1,069
4531	106.32	LIGHT INDUSTRIAL	59.26	OWD		-	-	-	1,279
4532	79.52	LIGHT INDUSTRIAL	56.62	OWD		-	-	-	1,222
4545	157.54	LIGHT INDUSTRIAL	45.16	OWD		-	-	-	975
4547	80.41	LIGHT INDUSTRIAL	64.47	OWD		-	-	-	1,392
4548	80.95	LIGHT INDUSTRIAL	60.98	OWD		-	-	-	1,316
4549	79.02	LIGHT INDUSTRIAL	0.00	OWD		-	-	-	0
4550	39.86	LIGHT INDUSTRIAL	0.01	OWD		-	-	-	0
4551	121.73	LIGHT INDUSTRIAL	76.64	OWD		-	-	-	1,654
4560	316.66	LIGHT INDUSTRIAL	162.83	OWD		-	-	-	3,515
4562	160.88	LIGHT INDUSTRIAL	151.35	OWD		-	-	-	3,267
4563	162.24	LIGHT INDUSTRIAL	155.48	OWD		-	-	-	3,356
4564	161.45	LIGHT INDUSTRIAL	112.74	OWD		-	-	-	2,433
4565	177.81	LIGHT INDUSTRIAL	149.10	OWD		-	-	-	3,218
4566	144.46	LIGHT INDUSTRIAL	128.42	OWD		-	-	-	2,772
4567	55.77	LIGHT INDUSTRIAL	6.45	OWD		-	-	-	139
4569	68.58	LIGHT INDUSTRIAL	13.96	OWD		-	-	-	301
4570	69.39	LIGHT INDUSTRIAL	56.01	OWD		-	-	-	1,209
4580	68.50	LIGHT INDUSTRIAL	0.54	OWD		-	-	-	12
4581	111.66	LIGHT INDUSTRIAL	94.08	OWD		-	-	-	2,031
4584	53.22	LIGHT INDUSTRIAL	28.49	OWD		-	-	-	615
4586	370.62	LIGHT INDUSTRIAL	110.09	OWD		-	-	-	2,376
4587	159.34	LIGHT INDUSTRIAL	147.05	OWD		-	-	-	3,174
4588	140.96	LIGHT INDUSTRIAL	132.13	OWD		-	-	-	2,852
4589	124.27	LIGHT INDUSTRIAL	119.67	OWD		-	-	-	2,583
4590	192.94	LIGHT INDUSTRIAL	170.98	OWD		-	-	-	3,690
4607	6.68	LIGHT INDUSTRIAL	0.00	OWD		-	-	-	0
4450	200.79	OPEN SPACE	133.65	OWD		-	-	-	-
4463	184.29	OPEN SPACE	87.31	OWD		-	-	-	-
4545	157.54	OPEN SPACE	90.62	OWD		-	-	-	-
4549	79.02	OPEN SPACE	6.27	OWD		-	-	-	-
4560	316.66	OPEN SPACE	146.80	OWD		-	-	-	-
4564	161.45	OPEN SPACE	41.68	OWD		-	-	-	-
4586	370.62	OPEN SPACE	254.63	OWD		-	-	-	-
4592	74.73	OPEN SPACE	0.01	OWD		-	-	-	-
4602	52.83	OPEN SPACE	0.26	OWD		-	-	-	-
4528	82.36	REGIONAL COMMERCIAL - NO RESIDENTIAL	59.47	OWD		-	-	-	434
4529	40.49	REGIONAL COMMERCIAL - NO RESIDENTIAL	17.25	OWD		-	-	-	126
4530	96.52	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	OWD		-	-	-	0
4545	157.54	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.27	OWD		-	-	-	9
4548	80.95	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	OWD		-	-	-	0
4549	79.02	REGIONAL COMMERCIAL - NO RESIDENTIAL	43.77	OWD		-	-	-	319
4550	39.86	REGIONAL COMMERCIAL - NO RESIDENTIAL	30.40	OWD		-	-	-	222
4567	55.77	REGIONAL COMMERCIAL - NO RESIDENTIAL	31.55	OWD		-	-	-	230

ZONE	TAZ Acres	DESIGTN	Acres	Water	Area	SF Units	MF Units	HH Pop	Emp Pop
4569	68.58	REGIONAL COMMERCIAL - NO RESIDENTIAL	30.26	OWD		-	-	-	221
4580	68.50	REGIONAL COMMERCIAL - NO RESIDENTIAL	27.17	OWD		-	-	-	198
4581	111.66	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	OWD		-	-	-	0
4584	53.22	REGIONAL COMMERCIAL - NO RESIDENTIAL	10.24	OWD		-	-	-	75
4606	3.65	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.00	OWD		-	-	-	0
4450	200.79	RIGHT-OF-WAY	13.97	OWD		-	-	-	-
4463	184.29	RIGHT-OF-WAY	28.75	OWD		-	-	-	-
4479	303.37	RIGHT-OF-WAY	71.61	OWD		-	-	-	-
4524	82.25	RIGHT-OF-WAY	28.62	OWD		-	-	-	-
4525	80.01	RIGHT-OF-WAY	23.43	OWD		-	-	-	-
4527	80.39	RIGHT-OF-WAY	21.41	OWD		-	-	-	-
4528	82.36	RIGHT-OF-WAY	22.69	OWD		-	-	-	-
4529	40.49	RIGHT-OF-WAY	23.16	OWD		-	-	-	-
4530	96.52	RIGHT-OF-WAY	47.01	OWD		-	-	-	-
4531	106.32	RIGHT-OF-WAY	47.06	OWD		-	-	-	-
4532	79.52	RIGHT-OF-WAY	22.90	OWD		-	-	-	-
4545	157.54	RIGHT-OF-WAY	21.49	OWD		-	-	-	-
4547	80.41	RIGHT-OF-WAY	15.93	OWD		-	-	-	-
4548	80.95	RIGHT-OF-WAY	19.97	OWD		-	-	-	-
4549	79.02	RIGHT-OF-WAY	28.99	OWD		-	-	-	-
4550	39.86	RIGHT-OF-WAY	9.45	OWD		-	-	-	-
4551	121.73	RIGHT-OF-WAY	45.10	OWD		-	-	-	-
4560	316.66	RIGHT-OF-WAY	7.03	OWD		-	-	-	-
4562	160.88	RIGHT-OF-WAY	9.53	OWD		-	-	-	-
4563	162.24	RIGHT-OF-WAY	6.76	OWD		-	-	-	-
4564	161.45	RIGHT-OF-WAY	7.03	OWD		-	-	-	-
4565	177.81	RIGHT-OF-WAY	28.71	OWD		-	-	-	-
4566	144.46	RIGHT-OF-WAY	16.04	OWD		-	-	-	-
4567	55.77	RIGHT-OF-WAY	17.77	OWD		-	-	-	-
4569	68.58	RIGHT-OF-WAY	24.36	OWD		-	-	-	-
4570	69.39	RIGHT-OF-WAY	12.02	OWD		-	-	-	-
4580	68.50	RIGHT-OF-WAY	13.14	OWD		-	-	-	-
4581	111.66	RIGHT-OF-WAY	16.61	OWD		-	-	-	-
4584	53.22	RIGHT-OF-WAY	14.49	OWD		-	-	-	-
4586	370.62	RIGHT-OF-WAY	5.90	OWD		-	-	-	-
4587	159.34	RIGHT-OF-WAY	12.28	OWD		-	-	-	-
4588	140.96	RIGHT-OF-WAY	8.83	OWD		-	-	-	-
4589	124.27	RIGHT-OF-WAY	4.60	OWD		-	-	-	-
4590	192.94	RIGHT-OF-WAY	21.96	OWD		-	-	-	-
4592	74.73	VERY LOW	0.02	OWD		-	-	-	-
Totals	39847.41		9302.47			4,800	7,451	44,810	71,056

District	SF Units	MF Units	HH Pop	Emp Pop
City	4800	7451	44810	11112
OWD	0	0	0	59943
Total	**4800**	**7451**	**44810**	**71056**

TAZ	TAZ_Acres	DESIGTN	LU_Acres	Water
4521	38.42	BUSINESS AND INTERNATIONAL TRADE	0.49	City
4522	68.97	BUSINESS AND INTERNATIONAL TRADE	23.81	City
4496	102.60	COMMUNITY COMMERCIAL - NO RESIDENTIAL	2.46	City
4505	142.15	COMMUNITY COMMERCIAL - NO RESIDENTIAL	0.00	City
4511	42.49	COMMUNITY COMMERCIAL - NO RESIDENTIAL	18.44	City
4520	52.10	COMMUNITY COMMERCIAL - NO RESIDENTIAL	23.32	City
4521	38.42	COMMUNITY COMMERCIAL - NO RESIDENTIAL	19.90	City
4522	68.97	COMMUNITY COMMERCIAL - NO RESIDENTIAL	0.01	City
4526	159.90	COMMUNITY COMMERCIAL - NO RESIDENTIAL	19.07	City
4608	102.71	COMMUNITY COMMERCIAL - NO RESIDENTIAL	2.98	City
4608	102.71	HEAVY INDUSTRIAL	65.25	City
4472	940.42	HEAVY INDUSTRIAL	0.01	City
4431	85.03	INSTITUTIONAL	5.80	City
4443	482.55	INSTITUTIONAL	3.05	City
4460	177.94	INSTITUTIONAL	4.90	City
4505	142.15	INSTITUTIONAL	30.71	City
4505	142.15	INSTITUTIONAL	0.00	City
4511	42.49	INSTITUTIONAL	18.24	City
4526	159.90	INSTITUTIONAL	22.23	City
4546	142.90	INSTITUTIONAL	2.02	City
4558	196.87	INSTITUTIONAL	8.48	City
4561	469.20	INSTITUTIONAL	11.68	City
4608	102.71	INSTITUTIONAL	0.02	City
4609	65.10	INSTITUTIONAL	59.09	City
4610	74.50	INSTITUTIONAL	29.92	City
4472	940.42	INSTITUTIONAL	749.59	City
4460	177.94	LIGHT INDUSTRIAL	38.15	City
4497	170.98	LIGHT INDUSTRIAL	90.49	City
4499	143.27	LIGHT INDUSTRIAL	2.33	City
4499	143.27	LIGHT INDUSTRIAL	0.00	City
4608	102.71	LIGHT INDUSTRIAL	5.01	City
4472	940.42	LIGHT INDUSTRIAL	0.18	City
4429	506.18	LOW	159.60	City
4443	482.55	LOW	192.96	City
4443	482.55	LOW	0.07	City
4467	238.74	LOW	71.35	City
4496	102.60	LOW	4.74	City
4496	102.60	LOW	0.00	City
4499	143.27	LOW	33.11	City
4505	142.15	LOW	0.00	City
4517	210.41	LOW	87.11	City
4517	210.41	LOW	0.02	City
4429	506.18	LOW MEDIUM	61.34	City
4431	85.03	LOW MEDIUM	0.02	City
4546	142.90	LOW MEDIUM	2.03	City
4610	74.50	LOW MEDIUM	0.86	City
4429	506.18	MEDIUM	0.00	City
4443	482.55	MEDIUM	13.38	City
4467	238.74	MEDIUM	7.25	City
4467	238.74	MEDIUM	0.00	City
4499	143.27	MEDIUM	29.57	City
4499	143.27	MEDIUM	0.00	City
4608	102.71	MEDIUM	4.72	City
4496	102.60	MEDIUM HIGH	21.68	City
4505	142.15	MEDIUM HIGH	43.35	City
4526	159.90	NEIGHBORHOOD VILLAGE	40.87	City
4558	196.87	NEIGHBORHOOD VILLAGE	70.33	City
4561	469.20	NEIGHBORHOOD VILLAGE	241.49	City
4578	388.64	NEIGHBORHOOD VILLAGE	137.44	City
4610	74.50	NEIGHBORHOOD VILLAGE	13.31	City
4611	71.73	NEIGHBORHOOD VILLAGE	31.57	City
4429	506.18	OPEN SPACE	163.68	City
4431	85.03	OPEN SPACE	3.83	City
4443	482.55	OPEN SPACE	255.94	City

4443	482.55	OPEN SPACE	0.07	City
4450	200.79	OPEN SPACE	185.17	City
4460	177.94	OPEN SPACE	31.58	City
4467	238.74	OPEN SPACE	140.36	City
4467	238.74	OPEN SPACE	0.00	City
4496	102.60	OPEN SPACE	69.17	City
4496	102.60	OPEN SPACE	0.00	City
4497	170.98	OPEN SPACE	69.32	City
4499	143.27	OPEN SPACE	26.56	City
4505	142.15	OPEN SPACE	21.37	City
4505	142.15	OPEN SPACE	0.00	City
4517	210.41	OPEN SPACE	57.07	City
4517	210.41	OPEN SPACE	0.02	City
4520	52.10	OPEN SPACE	0.28	City
4521	38.42	OPEN SPACE	4.10	City
4522	68.97	OPEN SPACE	24.11	City
4526	159.90	OPEN SPACE	44.23	City
4546	142.90	OPEN SPACE	111.50	City
4558	196.87	OPEN SPACE	108.01	City
4561	469.20	OPEN SPACE	182.16	City
4578	388.64	OPEN SPACE	239.00	City
4608	102.71	OPEN SPACE	8.32	City
4610	74.50	OPEN SPACE	27.95	City
4611	71.73	OPEN SPACE	31.45	City
4472	940.42	OPEN SPACE	156.45	City
4429	506.18	PARKS	5.89	City
4431	85.03	PARKS	13.48	City
4443	482.55	PARKS	3.94	City
4467	238.74	PARKS	6.87	City
4499	143.27	PARKS	4.90	City
4505	142.15	PARKS	15.43	City
4558	196.87	PARKS	5.75	City
4561	469.20	PARKS	22.30	City
4578	388.64	PARKS	12.20	City
4611	71.73	PARKS	5.75	City
4431	85.03	REGIONAL COMMERCIAL - NO RESIDENTIAL	29.12	City
4464	83.75	REGIONAL COMMERCIAL - NO RESIDENTIAL	59.31	City
4499	143.27	REGIONAL COMMERCIAL - NO RESIDENTIAL	0.01	City
4429	506.18	RIGHT-OF-WAY	25.32	City
4431	85.03	RIGHT-OF-WAY	15.91	City
4443	482.55	RIGHT-OF-WAY	13.21	City
4450	200.79	RIGHT-OF-WAY	14.45	City
4460	177.94	RIGHT-OF-WAY	2.35	City
4464	83.75	RIGHT-OF-WAY	24.38	City
4467	238.74	RIGHT-OF-WAY	12.79	City
4467	238.74	RIGHT-OF-WAY	0.00	City
4496	102.60	RIGHT-OF-WAY	4.55	City
4497	170.98	RIGHT-OF-WAY	11.17	City
4499	143.27	RIGHT-OF-WAY	46.63	City
4499	143.27	RIGHT-OF-WAY	0.00	City
4505	142.15	RIGHT-OF-WAY	31.30	City
4511	42.49	RIGHT-OF-WAY	5.81	City
4517	210.41	RIGHT-OF-WAY	66.09	City
4520	52.10	RIGHT-OF-WAY	28.50	City
4521	38.42	RIGHT-OF-WAY	13.93	City
4522	68.97	RIGHT-OF-WAY	21.04	City
4526	159.90	RIGHT-OF-WAY	33.50	City
4546	142.90	RIGHT-OF-WAY	3.44	City
4558	196.87	RIGHT-OF-WAY	4.30	City
4561	469.20	RIGHT-OF-WAY	11.45	City
4608	102.71	RIGHT-OF-WAY	16.42	City
4609	65.10	RIGHT-OF-WAY	6.01	City
4610	74.50	RIGHT-OF-WAY	2.45	City
4611	71.73	RIGHT-OF-WAY	2.96	City
4472	940.42	RIGHT-OF-WAY	33.94	City

4546	142.90	VERY LOW	23.81	City	
4524	82.25	BUSINESS AND INTERNATIONAL TRADE	59.88	OWD	IBT
4525	80.01	BUSINESS AND INTERNATIONAL TRADE	56.51	OWD	IBT
4527	80.39	BUSINESS AND INTERNATIONAL TRADE	65.58	OWD	IBT
4528	82.36	BUSINESS AND INTERNATIONAL TRADE	17.78	OWD	IBT
4529	40.49	BUSINESS AND INTERNATIONAL TRADE	18.06	OWD	IBT
4529	40.49	BUSINESS AND INTERNATIONAL TRADE	0.00	OWD	IBT
4530	96.52	BUSINESS AND INTERNATIONAL TRADE	0.00	OWD	IBT
4530	96.52	BUSINESS AND INTERNATIONAL TRADE	0.00	OWD	IBT
4550	39.86	BUSINESS AND INTERNATIONAL TRADE	32.50	OWD	IBT
4551	121.73	BUSINESS AND INTERNATIONAL TRADE	78.49	OWD	IBT
4563	162.24	BUSINESS AND INTERNATIONAL TRADE	152.48	OWD	IBT
4564	161.45	BUSINESS AND INTERNATIONAL TRADE	108.83	OWD	IBT
4565	177.81	BUSINESS AND INTERNATIONAL TRADE	163.48	OWD	IBT
4566	144.46	BUSINESS AND INTERNATIONAL TRADE	129.83	OWD	IBT
4567	55.77	BUSINESS AND INTERNATIONAL TRADE	35.47	OWD	IBT
4584	53.22	BUSINESS AND INTERNATIONAL TRADE	27.15	OWD	IBT
4588	140.96	BUSINESS AND INTERNATIONAL TRADE	125.25	OWD	IBT
4589	124.27	BUSINESS AND INTERNATIONAL TRADE	49.57	OWD	IBT
4590	192.94	BUSINESS AND INTERNATIONAL TRADE	164.98	OWD	IBT
4590	192.94	BUSINESS AND INTERNATIONAL TRADE	0.02	OWD	IBT
4606	3.65	BUSINESS AND INTERNATIONAL TRADE	0.01	OWD	IBT
4607	6.68	BUSINESS AND INTERNATIONAL TRADE	0.02	OWD	IBT
4545	157.54	BUSINESS PARK	36.18	OWD	Commercia
4548	80.95	BUSINESS PARK	66.65	OWD	Commercia
4548	80.95	BUSINESS PARK	0.00	OWD	Commercia
4549	79.02	BUSINESS PARK	8.59	OWD	Commercia
4562	160.88	BUSINESS PARK	53.09	OWD	Commercia
4562	160.88	BUSINESS PARK	0.00	OWD	Commercia
4547	80.41	BUSINESS PARK - RESIDENTIAL	25.38	OWD	Res
4545	157.54	COMMUNITY COMMERCIAL - NO RESIDENTIAL	0.41	OWD	Commercia
4525	80.01	COMMUNITY VILLAGE	0.01	OWD	Res
4545	157.54	COMMUNITY VILLAGE	10.89	OWD	Res
4547	80.41	COMMUNITY VILLAGE	30.43	OWD	Res
4560	316.66	COMMUNITY VILLAGE	73.60	OWD	Res
4562	160.88	COMMUNITY VILLAGE	0.58	OWD	Res
4586	370.62	COMMUNITY VILLAGE	0.00	OWD	Res
4528	82.36	HEAVY COMMERCIAL	44.40	OWD	Commercia
4529	40.49	HEAVY COMMERCIAL	0.00	OWD	Commercia
4529	40.49	HEAVY COMMERCIAL	0.00	OWD	Commercia
4530	96.52	HEAVY COMMERCIAL	49.44	OWD	Commercia
4530	96.52	HEAVY COMMERCIAL	0.00	OWD	Commercia
4567	55.77	HEAVY COMMERCIAL	8.58	OWD	Commercia
4580	68.50	HEAVY COMMERCIAL	27.65	OWD	Commercia
4581	111.66	HEAVY COMMERCIAL	0.45	OWD	Commercia
4584	53.22	HEAVY COMMERCIAL	10.81	OWD	Commercia
4606	3.65	HEAVY COMMERCIAL	0.00	OWD	Commercia
4479	303.37	HEAVY INDUSTRIAL	90.37	OWD	Industrial
4531	106.32	HEAVY INDUSTRIAL	7.88	OWD	Industrial
4586	370.62	HEAVY INDUSTRIAL	86.66	OWD	Industrial
4587	159.34	HEAVY INDUSTRIAL	144.77	OWD	Industrial
4463	184.29	INSTITUTIONAL	0.78	OWD	Institutiona
4548	80.95	INSTITUTIONAL	0.00	OWD	Institutiona
4548	80.95	INSTITUTIONAL	0.00	OWD	Institutiona
4549	79.02	INSTITUTIONAL	40.47	OWD	Institutiona
4560	316.66	INSTITUTIONAL	12.05	OWD	Institutiona
4562	160.88	INSTITUTIONAL	56.38	OWD	Institutiona
4580	68.50	INSTITUTIONAL	31.01	OWD	Institutiona
4581	111.66	INSTITUTIONAL	6.78	OWD	Institutiona
4584	53.22	INSTITUTIONAL	4.71	OWD	Institutiona
4586	370.62	INSTITUTIONAL	9.21	OWD	Institutiona
4587	159.34	INSTITUTIONAL	9.18	OWD	Institutiona
4588	140.96	INSTITUTIONAL	10.43	OWD	Institutiona
4589	124.27	INSTITUTIONAL	9.60	OWD	Institutiona
4590	192.94	INSTITUTIONAL	18.72	OWD	Institutiona

4606	3.65	INSTITUTIONAL	3.64	OWD	Institutiona
4607	6.68	INSTITUTIONAL	6.66	OWD	Institutiona
4479	303.37	LIGHT INDUSTRIAL	90.33	OWD	Industrial
4531	106.32	LIGHT INDUSTRIAL	53.15	OWD	Industrial
4532	79.52	LIGHT INDUSTRIAL	61.39	OWD	Industrial
4569	68.58	LIGHT INDUSTRIAL	52.82	OWD	Industrial
4570	69.39	LIGHT INDUSTRIAL	59.08	OWD	Industrial
4580	68.50	LIGHT INDUSTRIAL	3.80	OWD	Industrial
4581	111.66	LIGHT INDUSTRIAL	99.01	OWD	Industrial
4560	316.66	NEIGHBORHOOD VILLAGE	49.73	OWD	
4463	184.29	OPEN SPACE	153.84	OWD	OS
4545	157.54	OPEN SPACE	87.19	OWD	OS
4549	79.02	OPEN SPACE	6.38	OWD	OS
4560	316.66	OPEN SPACE	158.59	OWD	OS
4564	161.45	OPEN SPACE	45.53	OWD	OS
4586	370.62	OPEN SPACE	274.69	OWD	OS
4589	124.27	OPEN SPACE	60.77	OWD	OS
4547	80.41	PARKS	10.53	OWD	Parks
4560	316.66	PARKS	10.11	OWD	Parks
4562	160.88	PARKS	40.63	OWD	Parks
4562	160.88	PARKS	0.00	OWD	Parks
4463	184.29	RIGHT-OF-WAY	29.63	OWD	ROW
4479	303.37	RIGHT-OF-WAY	59.63	OWD	ROW
4524	82.25	RIGHT-OF-WAY	22.37	OWD	ROW
4525	80.01	RIGHT-OF-WAY	23.49	OWD	ROW
4527	80.39	RIGHT-OF-WAY	14.81	OWD	ROW
4528	82.36	RIGHT-OF-WAY	20.18	OWD	ROW
4529	40.49	RIGHT-OF-WAY	22.42	OWD	ROW
4529	40.49	RIGHT-OF-WAY	0.00	OWD	ROW
4530	96.52	RIGHT-OF-WAY	42.66	OWD	ROW
4530	96.52	RIGHT-OF-WAY	0.00	OWD	ROW
4531	106.32	RIGHT-OF-WAY	43.32	OWD	ROW
4532	79.52	RIGHT-OF-WAY	16.86	OWD	ROW
4545	157.54	RIGHT-OF-WAY	22.88	OWD	ROW
4547	80.41	RIGHT-OF-WAY	14.06	OWD	ROW
4548	80.95	RIGHT-OF-WAY	14.30	OWD	ROW
4548	80.95	RIGHT-OF-WAY	0.00	OWD	ROW
4549	79.02	RIGHT-OF-WAY	23.58	OWD	ROW
4550	39.86	RIGHT-OF-WAY	7.36	OWD	ROW
4551	121.73	RIGHT-OF-WAY	43.24	OWD	ROW
4560	316.66	RIGHT-OF-WAY	12.58	OWD	ROW
4562	160.88	RIGHT-OF-WAY	10.20	OWD	ROW
4562	160.88	RIGHT-OF-WAY	0.00	OWD	ROW
4563	162.24	RIGHT-OF-WAY	9.77	OWD	ROW
4564	161.45	RIGHT-OF-WAY	7.09	OWD	ROW
4565	177.81	RIGHT-OF-WAY	14.33	OWD	ROW
4566	144.46	RIGHT-OF-WAY	14.63	OWD	ROW
4567	55.77	RIGHT-OF-WAY	11.72	OWD	ROW
4569	68.58	RIGHT-OF-WAY	15.59	OWD	ROW
4570	69.39	RIGHT-OF-WAY	6.13	OWD	ROW
4580	68.50	RIGHT-OF-WAY	6.04	OWD	ROW
4581	111.66	RIGHT-OF-WAY	3.70	OWD	ROW
4584	53.22	RIGHT-OF-WAY	10.55	OWD	ROW
4586	370.62	RIGHT-OF-WAY	0.06	OWD	ROW
4587	159.34	RIGHT-OF-WAY	5.38	OWD	ROW
4588	140.96	RIGHT-OF-WAY	5.29	OWD	ROW
4589	124.27	RIGHT-OF-WAY	4.33	OWD	ROW
4590	192.94	RIGHT-OF-WAY	9.24	OWD	ROW
4590	192.94	RIGHT-OF-WAY	0.02	OWD	ROW
			9,315.51		

District	SF Units	MF Units	HH Pop	Emp Pop
City	4273	9255	48936	13758
OWD	0	5246	18099	N/A
Total	4800	7451	44810	

APPENDIX M-1

Water Supply Assessment Report

THE CITY OF SAN DIEGO

MEMORANDUM

DATE: October 11, 2011

TO: Cecilia Gallardo, Assistant Deputy Director, Development Services Department

FROM: John Minhas, Assistant Engineer, Public Utilities Department

SUBJECT: Water Supply Assessment Report (WSA) for the Otay Mesa Community Plan Update (Project No. 30330)

In response to your request, please find attached the approved WSA for the Otay Mesa Community Plan Update.

The Public Utilities Department prepared this WSA to assess whether sufficient water supplies are or will be available to meet the projected water demands of the project. The findings verify that there is sufficient water supply to serve existing demands, projected demands of the project, and future water demands within the Department's service area in normal and dry year forecasts during a 20-year projection.

Should there be any comments on the WSA at the conclusion of the public review process of the EIR, please forward them for our review and comment.

If you have any questions, please call me at (619) 533-5454.

John Minhas

John Minhas

JM

Attachment: Water Supply Assessment Report

cc: Ray Palmucci, Deputy City Attorney
Myra Herrmann, Senior Planner, Development Services Department
George Adrian, Principal Water Resources Specialist, Public Utilities Department
RMS 6.8.4

City of San Diego
PUBLIC UTILITIES
Water & Wastewater

WATER SUPPLY ASSESSMENT REPORT

Otay Mesa Community Plan Update
(Project # 30330)

Prepared by:

City of San Diego Public Utilities Department

Approved by:

10-05-11

Roger Bailey, Director of Public Utilities **Date**

Prepared: September 2011

City of San Diego Public Utilities Department
Water Supply Assessment Report

Otay Mesa Community Plan Update

Table of Contents

Section 1 - Purpose 1

Section 2 – Project Description 3

Section 3 - Findings 5

Section 4 - City of San Diego Public Utilities Department 9

- 4.1 Overview of Potable System Facilities 9
- 4.2 Overview of Recycled System Facilities 10

Section 5 - Existing and Projected Supplies 12

- 5.1 Metropolitan Water District of Southern California 13
- 5.2 San Diego County Water Authority 14
- 5.3 2009 Comprehensive Water Package 16
- 5.4 Public Utilities Department 17
  - 5.4.1 Demonstrating the Availability of Sufficient Supplies 17
  - 5.4.2 Plans for Acquiring Additional Supplies 22

Section 6 - Projected Demands 26

- 6.1 Sales to other Agencies 30
- 6.2 Projected Single-Dry-Year Water Supply and Demand 33
- 6.3 Projected Multiple-Dry-Year Water Supply and Demand 33

Section 7 – Conclusion – Availability of Sufficient Supplies 35

Source Documents 37

Section 1 - Purpose

On January 1, 2002, Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) took effect. The intent of SB 610 and SB 221 was to improve the link between information on water supply availability and certain land-use decisions made by cities and counties. Under SB 610 (codified in the Water Code beginning at Section 10910), a water supply assessment (WSA) must be furnished to cities and counties for inclusion in any environmental documentation of projects (defined in the Water Code) that propose to construct 500 or more residential units, or that will use an amount of water equivalent to what would be used by 500 residential units, and are subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply or water supply verification (WSV).

Not every project that is subject to the requirements of SB 610 is also subject to the mandatory water verification of SB 221 (e.g., if there is no subdivision map approval). Conversely, not every project that is subject to the requirements of SB 221 must also obtain a SB 610 water supply assessment.

A foundational document for compliance for both SB 610 and SB 221 is the Urban Water Management Plan (UWMP) of the relevant water agency. Both of these statutes repeatedly identify the UWMP as a planning document that can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners and developers will all be able to utilize this document when planning for and proposing new projects. It is crucial that cities, counties and water suppliers work closely when developing and updating these planning documents. The City of San Diego's 2010 UWMP, which is used as the basis for this Report (WSA), was adopted by the San Diego City Council in June 2011.

The City of San Diego Development Services Department (DSD) requested that the City of San Diego Public Utilities Department (Public Utilities Department) prepare the Report as part of the environmental review of the Otay Mesa Community Plan Update (Plan Update). A more detailed description of the Plan Update is provided in Section 2 of this Report. This Report evaluates water supplies that are or will be available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet the projected demands of the Plan Update, in addition to existing and planned future water demands of the Public Utilities Department. This Report provides an assessment of the availability of sufficient water supplies for the Plan Update only and does not constitute approval of the Plan Update.

This Report includes, among other information, identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply for the Plan Update and quantities of water received in prior years pursuant to those entitlements, rights, contracts and agreements.

This Report has been prepared in compliance with the requirements under SB 610 by the Public Utilities Department in consultation with DSD, the San Diego County Water Authority (Water Authority) and the Metropolitan Water District of Southern California (MWD).

Section 2 - Project Description

The proposed Project is a comprehensive update of the City's Otay Mesa Community Plan (OMCP) as adopted in 1981. The update includes modifications to the various elements of the plan to incorporate current planning policies and practices in the City of San Diego, as well as to make the plan reflective of the substantial land use changes that have occurred over the last 28 years.

The Otay Mesa community encompasses approximately 9,300 acres in the southeastern portion of the City of San Diego. The community is bordered by San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Diego on the east and the US/Mexico border and the City of Tijuana on the south. Approximately 4,900 acres are served by the City's Public Utilities Department, with the remaining 4,400 acres served by Otay Water District. This Report provides analysis of the portions of the OMCP being served by the Public Utilities Department as required by SB 610.

FIGURE 2-1
OTAY MESA COMMUNITY PLAN

The updated OMCP would provide a long-range, comprehensive policy framework for growth and development in Otay Mesa over the next 20 to 30 years. Guided by citywide policy direction contained within the General Plan (adopted by the City Council on March 8, 2009), the updated community plan will identify a land use strategy with new land use designation proposals to create villages, activity centers and industrial/employment centers along major transportation corridors, while strengthening cultural and business linkages to Tijuana, Mexico via the Otay Mesa Port of

Entry, as well as other enhancements to the existing planning area. The Plan Update would anticipate land use designations that support a fully integrated circulation system which includes, but is not limited to, high frequency transit and/or public transportation. The Plan Update will be consistent with and implement the City's General Plan.

DSD has requested the Public Utilities Department to evaluate land use Scenario 3B of the Plan Update for this Report:

Land Use Scenario 3B

Scenario 3B would re-designate land uses to increase the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses. Modified industrial and commercial land use designations also are included that are similar to the industrial intensity found in the adopted community plan. This alternative proposes 4,273 single-family units, 9,255 multi-family units and 13,758 employees within the portion served by the City's Public Utilities Department.

Section 3 - Findings

Water Assessment

This Report identifies that the water demand projections for the Plan Update, as proposed, are included in the regional water resource planning documents of the Water Authority, and MWD. Current and future water supplies, as well as actions necessary to develop the future water supplies, have been identified. This Report demonstrates that there will be sufficient water supplies available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet the projected demands of the Plan Update, in addition to existing and planned future water demands of the Public Utilities Department. Although the Plan Update does not meet the definition of a project as defined in Water Code section 10912, the City of San Diego Office of the City Attorney has opined that where a community plan update includes a rezone of a parcel or parcels and will allow development to occur ministerially, and that development falls within the Water Code definition of a project, a WSA must be prepared for the Project.

Based on a normal water supply year, the estimated water supply projected in five-year increments for a 20-year projection will meet the City's projected water demand of 240,472 acre-feet[1] (AF) in 2015 to 298,860 AF in 2035 (**Table 6-5**). Based on a single-dry year forecast (**Table 6-7**), the estimated water supply will meet the projected water demand of 318,586 AF (2035). Based on a multiple-dry year, third year supply (**Table 6-8**), the estimated water supply will meet the projected demands of 281,466 AF (2015); 303,004 AF (2020); 322,166 AF (2025); 334,720 AF (2030); and 346,823 AF (2035).

The Water Authority's 2010 UWMP provides for a comprehensive planning analysis at a regional level and includes water use associated with accelerated forecasted residential development as part of its municipal and industrial sector demand projections. These housing units were identified by the San Diego Association of Government (SANDAG) in the course of its regional housing needs assessment, but are not yet included in existing general land use plans of local jurisdictions. The demand associated with accelerated forecasted growth is intended to account for SANDAG's land-use development currently projected to occur between 2035 and 2050, but has the likely potential to occur on an accelerated schedule. SANDAG estimates that this accelerated residential development could occur within the planning horizon of the Water Authority's 2010 UWMP update. These units are not yet included in local jurisdictions' general plans, so their projected demands are incorporated at a regional level. When necessary, this additional demand increment, termed Accelerated Forecasted Growth, can be used by member agencies to meet the demands of development projects not identified in the general land use plans.

The SANDAG Series 12 2050 Regional Growth Forecast (SANDAG Series 12 Forecast) did not include the level of development of the proposed Project for the 20-year planning horizon required by SB 610 and SB 221. The difference between the planned and proposed water demands of the Project can be accounted for in the Water Authority's 2010 UWMP accelerated forecasted growth

[1] An acre-foot of water equals 325,851 gallons, which is enough water for two average families of four for one year.

demand increment. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will also assist its member agencies in tracking the certified EIRs provided by the agencies that include water supply assessments that utilize the accelerated forecasted growth demand increment, to demonstrate adequate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project.

As demonstrated in **Table 3-1** of this Report, which has been prepared by the Public Utilities Department in compliance with the requirements of SB 610 and using the City's and Water Authority's 2010 UWMP, which are based on SANDAG Series 12 Forecast, there is sufficient water planned to supply the Plan Update's estimated annual average usage. The estimated annual water usage for the Plan Update was calculated using the demand numbers from land use Scenario 3B. The projected water demands of the Plan Update are estimated at 5,563 acre feet per year (AFY). Per the City of San Diego 2010 UWMP, the planned water demand of the Otay Mesa Community Plan is 5,393 AFY. The remaining portion of the estimated 170 AFY is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. Therefore, based on the findings from the City's 2010 UWMP and the Water Authority's 2010 UWMP, this Plan Update will result in no unanticipated demands.

TABLE 3-1
OTAY MESA COMMUNITY PLAN WATER DEMAND ANALYSIS

Planned Water Demands for OMCP per the 2010 UWMP		
Single-family[1]	*4,040 units*	*1,767 Acre Feet per Year (AFY)*
Multi-family[2]	*8,487 units*	*2,540 AFY*
Employees[3]	*16,149*	*1,086 AFY*
Total Planned		***5,393 AFY***
Projected Water Demands for the Plan Update		
Land Use Scenario 3B		
Single-family	*4,273 units*	*1,869 AFY*
Multi-family	*9,255 units*	*2,769 AFY*
Employees	*13,758*	*925 AFY*
Total Projected		***5,563 AFY***
Net Water Demands		
Projected		***5,563 AFY***
Planned – City of San Diego 2010 UWMP		***5,393 AFY***
Planned from Water Authority's Accelerated Forecasted Growth		***170 AFY***
Net Unanticipated Demands		***0***

Table 3-1 Notes:

1. 116 gallons per person per day is the City's acceptable standard for single-family water consumption. The SANDAG Series 12 forecast projects a residential occupancy of 3.42 persons per household and a vacancy rate of 1.6 % for single-family units in 2035.
2. 80 gallons per person per day is the City's acceptable standard for multi-family water consumption. The SANDAG Series 12 forecast projects a residential occupancy of 3.42 persons per household and a vacancy rate of 2.3 % for multi-family units in 2035.
3. The utilization of 60 gallons per person per day is the City's acceptable standard for employment water use.

Conclusion

In summary, these findings substantiate that there is sufficient water supply planned to serve this Plan Update's future water demands within the Public Utilities Department service area in normal, single-dry year, and multiple-dry water year forecasts.

Therefore, this Report concludes that the proposed level of water use for this Plan Update is within the regional water resource planning documents of the Water Authority and MWD. Current and future water supplies, as well as the actions necessary to develop these supplies, have been identified in the water resources planning documents of the Public Utilities Department, the Water Authority, and MWD to serve the projected demands of the Plan Update, in addition to existing and planned future water demands of the Public Utilities Department.

Section 4 - City of San Diego Public Utilities Department

The City of San Diego (City) purchased its initial water system in 1901 from the privately owned San Diego Water & Telephone Company. Since then, continual expansion of the water system has been required to meet the demands of the growing population of the City. To meet the demand, the Public Utilities Department purchased a number of reservoirs between 1913 and 1935 to supplement local water supplies. Despite low annual precipitation for the area (approximately 10 inches per year), these reservoirs supplied the City's growing demands until 1940.

The need to import water emerged with the increased demand generated by the presence of the United States Navy before and up to World War II, and the ensuing population boom. As a result, the Public Utilities Department and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from MWD. The Public Utilities Department and other local retail water distributors began receiving imported water from the Colorado River in 1947.

Today, the Public Utilities Department treats and delivers more than 200,000 AFY of water to more than 1.3 million residents. The water system extends over 404 square miles, including 342 square miles in the City. The Public Utilities Department potable water system serves the City of San Diego and certain surrounding areas, including both retail and wholesale customers. The Plan Update is located within the Public Utilities Department service area.

In addition to delivering potable water the City has a recycled water program. Its objectives are to optimize the use of local water supplies, lessen the reliance on imported water and free up capacity in the potable system. Recycled water provides the City a dependable, year-round, locally produced and controlled water resource.

4.1 Overview of Potable System Facilities

The water system consists primarily of nine raw water storage facilities with over 408,000 AF of storage capacity, three water treatment plants, 31 treated water storage facilities, and more than 3,213 miles of transmission and distribution lines.

The Public Utilities Department maintains and operates nine local surface raw water storage facilities, which are connected directly or indirectly to the City's water treatment operations. The Lower Otay, Barrett, and Morena Reservoirs (135,349 AF total capacity) service the Otay Water Treatment Plant in south San Diego; the El Capitan, San Vicente, Sutherland, and Lake Murray Reservoirs (236,311 AF total capacity) service the Alvarado Water Treatment Plant in central San Diego; and the Miramar Reservoir (6,682 AF total capacity) services the Miramar Water Treatment Plant in north San Diego. Lake Hodges Reservoir has a total capacity of 30,251 AF and is connected to Olivenhain Reservoir, which is owned by Water Authority and Olivenhain Municipal Water District. The connection provides the City the ability to access 20,000 AF of water in Hodges Reservoir via the Water Authority's delivery system.

The Public Utilities Department maintains and operates three water treatment plants with a combined total rated capacity of 294.4 million gallons per day (MGD). The Miramar Water

Treatment Plant (Miramar WTP), originally constructed in 1962, has a rated capacity of 140 MGD with the ability to increase to 215 MGD in the future with further approval from the State of California Department of Public Health (CDHP) based upon a future treatment process study (High Filtration Rate Study) that is yet to be performed. Current and short term (5 years) forecasted demands indicate no current need to increase the plants rated capacity from 140 MGD to 215 MGD. The required study to increase the rated capacity to 215 MGD will be performed in anticipation and as required to ensure future demands are met. The Miramar WTP generally serves the City's geographical area north of the San Diego River (north San Diego). The Alvarado Water Treatment Plant (Alvarado WTP), operational since 1951, had an initial capacity rating of 66 MGD. Several hydraulic improvements to the Alvarado WTP were constructed in the mid-1970s to increase the plant's capacity to 120 MGD. Upon completion of ongoing upgrades and improvements and approval of the operations plan by the CDHP, the rated capacity of the Alvarado WTP is anticipated to increase to 200 MGD. The Alvarado WTP generally serves the geographical area from National City to the San Diego River (central San Diego). The Otay Water Treatment Plant (Otay WTP) was originally constructed in 1940, and has a current rated capacity of 34.4 MGD, which meets current and short term forecasted demands. The Otay WTP has hydraulic capacity to increase to 40 MGD in the future. In order to do so, approval is required, similar to the process mentioned above for the Miramar WTP. The Otay WTP generally serves the geographical area bordering Mexico (south San Diego) and parts of the southeastern portion of central San Diego. Currently, the Otay WTP is in the process of being upgraded to include a third set of flocculation and sedimentation basins, filter piping and media improvements.

The Public Utilities Department maintains and operates 31 treated water storage facilities including steel tanks, standpipes, concrete tanks and rectangular concrete reservoirs, with capacities varying from less than one to 35 million gallons.

The water system consists of more than 3,213 miles of pipelines, including transmission lines up to 84 inches in diameter and distribution lines as small as four inches in diameter. Transmission lines are pipelines with larger diameters that convey raw water to the water treatment plants and convey treated water from the water treatment plants to the treated water storage facilities. Distribution lines are pipelines with smaller diameters that directly service the retail users connected to a meter. In addition, the Public Utilities Department maintains and operates 49 water pump stations that deliver treated water from the water treatment plants to approximately 274,000 metered service connections in over 127 different pressure zones. The Public Utilities Department also maintains several emergency connections to and from neighboring water agencies, including the Santa Fe Irrigation District (Miramar WTP), the City of Poway, Olivenhain Municipal Water District (Miramar WTP), the Cal-American Water Company (Alvarado and Otay WTP's), the Sweetwater Authority (Otay WTP) and the Otay Water District (Otay WTP).

4.2 Overview of Recycled System Facilities

The City of San Diego built the North City Water Reclamation Plant (NCWRP) and the South Bay Water Reclamation Plant (SBWRP) to treat wastewater to a level approved for irrigation, manufacturing, and other non-potable purposes.

The NCWRP provides recycled water to businesses, golf courses, homeowner associations, and other users in the northern service area of the City; as well as the City of Poway and the

Olivenhain Municipal Water District. The NCWRP currently treats 22.5 MGD of wastewater, although the Plant has an ultimate treatment capability of 30 MGD. In CY 2010, an average of 6.2 MGD of the wastewater flows were treated to a tertiary level and beneficially reused. During dry months, the beneficial reuse of recycled water has peaked at 11.6 MGD. The Public Utilities Department maintains and operates the North City recycled water distribution system which consists of 83 miles of recycled water pipeline, two reservoirs, and two pump stations.

In July 2006 SBWRP began production of recycled water with service to the International Boundary and Water Commission (IBWC). Recycled water production at South Bay expanded in May 2007 when the Otay Water District began taking deliveries. The SBWRP currently treats approximately 10 MGD of wastewater, although the Plant has an ultimate treatment capability of 15 MGD. In CY 2010, an average of 3.9 MGD of the wastewater flows were treated to a tertiary level and beneficially reused. During dry months, the beneficial reuse of recycled water has peaked at 7.92 MGD. Winter beneficial reuse from SBWRP is approximately 3 MGD. The Public Utilities Department maintains and operates the South Bay recycled water distribution system which consists of 3000 feet of recycled water pipeline, one storage tank, and one pump station.

Section 5 - Existing and Projected Supplies

The Public Utilities Department relies on imported water as its major water supply source, and is a member public agency of the Water Authority. The Water Authority is a member agency of MWD. The statutory relationships between the Water Authority and its member agencies, and MWD and its member agencies, respectively, establish the scope of the Public Utilities Department's entitlements to water from these two agencies. Due to the Public Utilities Department's reliance on these two agencies, this Report relies and includes information on the existing and projected supplies, supply programs, and related projects of the Water Authority and MWD.

The City of San Diego relies on the long-term water resources planning documents of the Water Authority and MWD to support the work on this Report. These documents are available at the following websites and contacts:

San Diego County Water Authority

http://www.sdcwa.org/2010-urban-water-management-plan

Dana Friehauf, Principal Water Resources Specialist (858) 522-6749

Metropolitan Water District of Southern California

http://www.mwdh2o.com/mwdh2o/pages/yourwater/ywater01.html#RUWMP

MWD staff, (213) 217-6000

The Water Authority and MWD are actively pursuing programs and projects to diversify their water supply resources. A description of these efforts as well as the challenges facing the Water Authority and MWD can be found in the San Diego County Water Authority Official Statement, dated January 21, 2010, relating to Water Revenue Bonds 2010B, and MWD's Official Statement, dated June 8, 2011, relating to Water Revenue Refunding Bonds, 2011 Series B. These Official Statements are available at the following websites[1]:

http://www.sdcwa.org/sites/default/files/files/finance-investor/2010Bond.pdf

http://www.mwdh2o.com/mwdh2o/pages/finance/statement.html

A brief overview of MWD and the Water Authority, including the Public Utilities Department relationship to these agencies, is included below.

A description of local surface and local recycled water supplies available to the Public Utilities Department can be found is Section 5.4 of this Report.

[1] This information is current at the time this document was prepared.

5.1 Metropolitan Water District of Southern California

MWD was created in 1928, under authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended) (the "MWD Act"). MWD's primary purpose is to provide a supplemental supply of wholesale water for domestic and municipal uses to its constituent agencies. The MWD service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. There are 26 member agencies of MWD, consisting of 14 cities, 11 municipal water districts and the Water Authority. A Board of Directors, currently numbering 37 members, governs MWD. Each constituent agency has at least one representative on the MWD Board. Representation and voting rights are based upon the assessed valuation of property within each constituent agency. The Water Authority has four members on the MWD Board. The total population of the MWD service area is currently estimated at approximately 19 million.

MWD's existing water supplies have been historically sufficient to meet demands within the service area of MWD during years of normal precipitation. Although MWD plans and manages reserve supplies to account for normal occurrences of drought conditions, regulatory restrictions, including but not limited to restrictions under the Federal and California Endangered Species Acts, have placed limitations on MWD's ability to provide water to its member agencies. In the future, population growth, regulatory restrictions, increased competition for low-cost water supplies, and other factors such as climate change could impact MWD's ability to supply its member agencies even in normal years.

MWD Water Supply

MWD's two major sources of water are from the Colorado River and the State Water Project (SWP).

Colorado River Water: The Colorado River was MWD's original source of water after MWD's establishment in 1928. The Colorado River Aqueduct, which is owned and operated by MWD, is 242 miles long, starting at Lake Havasu and terminating at Lake Mathews in Riverside County.

Under applicable laws, agreements and treaties governing the use of water from the Colorado River, California is entitled to use 4.4 million acre-feet of Colorado River water annually, plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada as declared on an annual basis by the United States Secretary of the Interior. Under the priority system that governs the distribution of Colorado River water made available to California, MWD holds the fourth priority right of 550,000 acre-feet per year and a fifth priority right of 662,000 acre-feet per year. MWD's fourth priority right is within California's basic annual apportionment of 4.4 million acre-feet; however, the fifth priority right is outside of this entitlement and therefore is not considered a firm supply of water.

Several fish species and other wildlife species either directly or indirectly have the potential to affect Colorado River operations, thus changing the amount of water deliveries to the Colorado River Aqueduct. A number of species that are on either "endangered" or "threatened" lists under

the federal and/or California endangered species acts ("ESAs") are present in the area of the Lower Colorado River. MWD and other stakeholder agencies have developed a multi-species conservation program that allows MWD to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species.

State Water Project: The SWP is owned by the State of California and operated by the State Department of Water Resources ("DWR"). The SWP transports Feather River water stored in and released from Oroville Dam and unregulated flows diverted directly from the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("Bay-Delta") south via the California Aqueduct to four delivery points near the northern and eastern boundaries of MWD. The total length of the California Aqueduct is 444 miles. MWD is one of 29 agencies that have long-term contracts for water service from DWR, but is the largest agency in terms of the number of people it serves, the share of SWP water to which it is entitled, and the total amount of annual payments made to DWR. MWD's contract with DWR provides for the ultimate delivery of 1,911,400 acre-feet per year (46 percent of the total SWP entitlement). MWD also retains a "call" on 100,000 acre-feet per year on water transferred to the Coachella Valley Water District and the Desert Water Agency, if needed, so long as it pays for the financial obligations associated with the water during the call period. The SWP was originally intended to meet demands of 4.2 million acre-feet per year. Initial SWP facilities were completed in the early 1970s, and it was envisioned that additional facilities would be constructed as contractor demands increased. Several factors, including public opposition, increased costs, and increased non-SWP demands for limited water supplies, combined to delay the construction of additional facilities.

The quantity of SWP water available for delivery each year is controlled by hydrology, environmental and operational considerations. In addition to its importance to urban and agricultural water users, the Bay-Delta is of critical ecological importance. The Bay-Delta is the largest estuary on the West Coast of the United States and provides habitat for more than 750 plant and animal species. One hundred fifty years of human activity have contributed to the destruction of habitat, the decline of several estuarine and anadromous fish species, and the deterioration of water quality. These activities include increasing water demands from urban and agricultural uses, the dredging and filling of tidal marshes, the construction of levees, urban runoff, agricultural drainage, runoff from abandoned mines, and the introduction of non-native species, thus affecting the supply and reliability of this source. Since 2008, layers of new pumping restrictions have been put in place to address the migration pattern of various fish species. Delta pumping restrictions now exist in nine out of twelve months of the year. The result is a loss of supply of approximately 30 percent in an average year.

5.2 San Diego County Water Authority

The Water Authority's service area lies within the foothill and coastal areas of the westerly third of San Diego County, encompassing 952,208 acres (1,488 square miles). When the Water Authority was established in 1944, its service area consisted of 94,707 acres. Growth has primarily resulted from the addition and annexation of additional service areas by member agencies. The City of San Diego, with 210,726 acres, is the largest service area within the Water Authority's total service area. Of the total population of San Diego County, 97 percent live within the Water Authority's

service area. The City of San Diego represents approximately 43 percent of the total population of the Water Authority's service area.

The Water Authority's service area is a semi-arid region where historically the natural occurrence of water from rainfall and groundwater provides a firm water supply for only a small portion of the water needs of the current population. Since 1990, the Water Authority has provided an average of 85 percent of the water supply within its service area. As a wholesaling entity, the Water Authority has no retail customers, but serves only its member agencies.

The Water Authority's mission is to provide its service area a safe and reliable water supply. Historically, the principal source of supply for the Water Authority's service area has been water purchased by the Water Authority from MWD for sale to the Water Authority's member agencies. However, drought conditions and population growth in the Water Authority's service area have highlighted the need for diversification of the Water Authority's water supply. Therefore, consistent with its mission statement, the Water Authority has actively pursued a strategy of supply diversification that includes the acquisition and importation of additional water supplies, the development of additional local water supply projects and augmentation of its water supply via local and regional water storage capacity. Water supplies utilized within the Water Authority service area originate from two sources: (1) water imported by the Water Authority and (2) local supplies (such as local runoff, groundwater, recycled water and, prospectively seawater desalination). Since 1990, local supplies have grown to constitute 15 percent of the Water Authority's water supply, and the Water Authority has implemented programs and supported new technologies in order to assist its member agencies in increasing this percentage. Although MWD remains the Water Authority's largest source of imported water, recent years have also seen the diversification of the Water Authority's sources of imported water through core and spot water transfers with other agencies.

The Quantification Settlement Agreement (QSA) for the Colorado River was completed in October 2003. This historic agreement was enacted to provide California the means to implement water transfers and supply programs that will allow California to live within the state's 4.4 million acre-foot basic annual apportionment of Colorado River water. The QSA also commits the state to a restoration path for the environmentally sensitive Salton Sea and provides full mitigation for these water supply programs.

Specific programs under the QSA that directly benefits the Water Authority include the San Diego County Water Authority-Imperial Irrigation District water transfer agreement, which will provide up to 200,000 acre-feet of water a year through water conservation measures in Imperial Valley. The QSA also allows for the transfer of water conserved from the concrete lining of portions of the previously earthen All-American and Coachella Canals from the Imperial Irrigation District. The canal lining projects reduce the loss of water that occurs through seepage. The Water Authority will annually receive 77,700 acre-feet of this conserved water.

The QSA intended to assure California up to 75 years of stability in its Colorado River water supplies. In February 2010, Sacramento County Superior Court Judge Roland Candee invalidated the QSA on grounds that a provision in the contract failed to cap the State of California's Salton Sea environmental mitigation fees. The MWD, IID, Water Authority, the State and others have

appealed various aspects of the court's ruling, which has been stayed pending outcome of the appeal. If the ruling stands, it could delay the implementation of programs authorized under the QSA or result in increased costs or other adverse impacts. The impact, if any, which the ruling might have on water supplies, cannot be adequately determined at this time.

The Water Authority has encouraged development of additional local water supply projects such as water recycling and groundwater projects through the award of Local Water Supply Development ("LWSD") incentives of up to $200 per acre-foot for recycled water and groundwater produced and beneficially reused within the Water Authority's service area. The purpose of the Water Authority's LWSD program is to promote the development of cost-effective water recycling and groundwater projects that prevent or reduce a demand for imported water and improve regional water supply reliability. The LWSD Program reimburses member agencies for all, or a portion of the difference between the actual per acre-foot cost of producing recycled water, and the revenue generated by the LWSD participant through the sale of that acre-foot of recycled water (not to exceed $200 per acre-foot). In February 2008, the program was expanded to include funding for local brackish and seawater desalination projects.

5.3 2009 Comprehensive Water Package

On November 4, 2009, the California State Legislature passed a comprehensive package of water legislation (the "2009 State Water Legislation") that included five bills (four of which were subsequently signed by Governor Schwarzenegger) addressing California's statewide water situation, with particular emphasis on the Bay-Delta. The 2009 State Water Legislation includes, among other things, a 20 percent water conservation mandate for most localities in the State by 2020, new regulations regarding voluntary monitoring of groundwater levels by localities, and an $11.1 billion State general obligation bond measure. The 2009 State Water Legislation also created two new governmental agencies – the Delta Stewardship Council and the Sacramento-San Joaquin Delta Conservancy. The Delta Stewardship Council is charged with developing and implementing a Delta Plan, which would include the Bay Delta Conservation Plan, upon meeting certain conditions. The Sacramento-San Joaquin Delta Conservancy will implement ecosystem restoration activities in the Bay-Delta. In addition, the 2009 State Water Legislation includes legislation addressing unauthorized Bay-Delta water diversions. At this time, it is not known what effect the 2009 State Water Legislation will have on future water supplies.

The $11.1 billion State general obligation bond measure originally set to be presented to the voters for their approval in 2010 would provide funding for projects and programs throughout the State and in the Bay-Delta. Major categories of bond funding would include statewide water system operational improvements, Bay-Delta sustainability, water supply reliability, conservation and watershed protection, groundwater protection, water quality improvements, and water recycling and water conservation.
On August 9, 2010, the California Legislature voted to postpone the water bond to the 2012 general elections. The decision was made since the state was facing a massive budget deficit and the chances of the bond passing by a general vote were slim. Postponing the bond required amendment of the water bond legislation. Governor Schwarzenegger affirmed that delaying the bond will not impact other parts of the 2009 water legislation. Supporters of the bond say that the delay will help lawmakers eliminate any imperfections in the bond.

Additional information regarding the 2009 Comprehensive Water Package can be found at the following website: http://www.sdcwa.org/

5.4 Public Utilities Department

The Public Utilities Department currently purchases approximately 85 to 90 % of its water from the Water Authority, which supplies the water (raw and treated) through two aqueducts consisting of five pipelines. While the Public Utilities Department imports a majority of its water, it uses three local supply sources to meet or offset potable demands: local surface water, conservation, and recycled water.

The availability of sufficient imported and regional water supplies to serve existing and planned uses within the Public Utilities Department service area is demonstrated in the prior discussion on the water supply reliability of MWD and the Water Authority. The City has been receiving water from the Water Authority since 1947 and during the last 20 years the City has purchased between 100,000 and 228,000 AFY. For Calendar Year 2010, water purchases totaled approximately 180,488 AF. Depending upon demands, growth and the success of local water supply initiatives, this could remain somewhat constant or increase up to a projected maximum of 298,860 AFY in 2035 during normal years. For the purpose of this analysis the maximum is used.

5.4.1 Demonstrating the Availability of Sufficient Supplies

Imported Supplies

Section 5, subdivision 11 of the County Water Authority Act states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." Depending on local weather and supply conditions, the Water Authority provides between 75 to 95 percent of the total supplies used by its 24 member agencies. As mentioned in Section 4, the Public Utilities Department and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from the MWD.

Local Surface Water Supplies

The Public Utilities Department maintains and operates nine local surface raw water storage facilities which are connected directly or indirectly to water treatment operations. In the San Diego region approximately 13 percent of the local precipitation produces surface runoff to streams that supply Public Utilities Department reservoirs. Approximately half of this run-off is used for the municipal water supply, while the remainder evaporates during reservoir storage. In very wet years, the run-off remainder may spill over the reservoir dams and return to the Pacific Ocean. Average rainfall produces less than half of the average runoff in San Diego. The local climate requires about average rainfall to saturate the soils sufficiently for significant surface run-off to occur. Therefore, most of the run-off to reservoirs is produced in years with much greater than average rainfall. Some flooding may occur even during average or below average rainfall years if the annual rainfall is concentrated in a few intense storms.

The use of local water is affected by availability and water resource management policies. The Public Utilities Department's policy is to use local water first to reduce imported water purchases and costs. The Public Utilities Department also operates emergency and seasonal storage programs in conjunction with its policy.

The purpose of emergency storage is to increase the reliability of the imported water aqueduct system. This is accomplished by maintaining an accessible amount of stored water that could provide an uninterrupted supply of water to the City's water treatment facilities should an interruption to the supply of imported water occur. The management of reservoirs is guided by Council Policy 400-04, which outlines the City's Emergency Water Storage Program. The policy mandates that the Public Utilities Department store sufficient water in active, available storage to meet six-tenths of the normal annual (7.2 months) City water demand requirements (conservation is not included). Active, available storage is that portion of the water that is above the lowest usable outlet of each reservoir.

The monthly emergency storage requirement changes from month to month and is based on the upcoming seven months water demand. This results in a seasonally fluctuating emergency storage requirement, generally peaking in May and reaching its minimum in October. This seasonally fluctuating requirement makes a portion of the required emergency storage capacity available for impounding or seasonal storage.

The purpose of seasonal storage is to increase imported water supply. This is done by storing surplus imported water in the wet winter season for use during the dry summer season. This may also be accomplished by increased use of imported water in lieu of local water in the winter when local water may be saved in reservoirs or groundwater basins for summer use. In addition to increased water yield, this type of seasonal operation also reduces summer peaking on the imported water delivery system.

Conservation

The Public Utilities Department's Water Conservation Program is effective in promoting permanent water savings. Established by the City Council in 1985, the Water Conservation Program now accounts for over 34,000 AF of potable water savings per year. This savings has been achieved by creating a water conservation ethic, adopting programs, policies and ordinances designed to promote water conservation practices, and implementing comprehensive public information and education campaigns.

The City offers a broad range of conservation methods to help meet the needs of our residential and commercial water customers. These include:

- Rebate programs for high efficiency toilets, washing machines and commercial water saving devices
- Survey programs
- Regulations
- Landscape and irrigation efficiency
- Public Education and Outreach

Research conducted by the City, the Water Authority, and the Water Research Foundation has shown that more than half of residential water-use is outdoors. Therefore, the City has added outdoor conservation programs to focus on water efficient landscaping and irrigation management which provide the best opportunity to achieve significant water savings.

Tools and services available and being developed for customers include:

- Commercial and Residential Water-Use Survey Programs — account for all water-use, determine leaks, and check irrigation systems for proper function and uniform coverage. Residential surveys average 15% water savings, while commercial surveys, depending on type of facility, can achieve 15% to 25% water savings. The current focus is on multi-family surveys.

- Nationally recognized Landscape Watering Calculator — an on-line tool that creates watering schedules based on landscaping features, soil type, and weather data. The Calculator is very popular and those who have used it are impressed with its ease of use. MWD has adapted this tool and it is available throughout Southern California.

- Water Resources Landscape Database — another tool used to create water budgets and manage irrigation using aerial photographs, GIS maps, weather data, etc. This service has generated significant water savings in City parks, freeway landscapes, schools, and homeowner associations.

- New programs in place include incentives to install water efficient irrigation equipment and evapo-transpiration controllers (smart irrigation clocks that use weather data to set watering schedules); as well as incentives to replace turf with sustainable landscapes.

In addition to offering landscape water conservation programs to existing customers, the Public Utilities Department is also working closely with the City's Planning and Development Services Departments to incorporate water conservation requirements in the City's General Plan and permitting process. This will ensure that new communities and properties will also have water efficient landscapes.

Planning to increase water conservation is an ongoing process. The aforementioned water conservation programs undergo periodic reevaluation to ensure the realization of forecasted savings. Additionally, changes in water conservation technologies may require reassessment of long-range plans. The Public Utilities Department continues to work with proven water conservation programs, while including irrigation management programs to maximize water savings. The Public Utilities Department regularly examines new technologies and annually checks progress towards conservation goals. The Public Utilities Department continues to work collaboratively with MWD and the Water Authority to formulate new conservation initiatives.

Drought Management

In response to the Governor's Executive Order in 2008, the Mayor declared a water shortage emergency for the City of San Diego under Municipal Code and implemented a "Level 1 – Voluntary Compliance – Water Watch" and called for redoubling of efforts aimed to achieve

voluntary water reduction. Also in 2008, the Mayor directed the Public Utilities Department to review the City's existing Emergency Water Regulations and propose amendments with the goal of improving the City's response to water shortage conditions. The review resulted in a series of amendments to the existing Municipal Code which established year-round water waste prohibitions, provided clear water shortage "triggers" for moving from one drought response level to another, provided clear targets for achieving water use reductions, and provided an updated penalty and hardship variance process which governs the application and enforcement of the emergency water restrictions. These amendments became effective January 14, 2009. On April 27, 2009 the City Council adopted a "Level 2 – Drought Alert". Level 2 consists of additional mandatory water use restrictions. These restrictions became effective on June 1, 2009. In FY 2011, an unusually heavy snow and rainfall season brought California's water storage levels way up after three drought years. Following the footsteps of DWR, MWD and the Water Authority, the San Diego City Council decided to end mandatory water-use restrictions in May 2011. The move did not affect several water-waste restrictions that remain permanent year-round.

Recycled Water Supplies

Recycled water is produced from wastewater processed at two water reclamation plants owned and operated by the City of San Diego: North City and South Bay. In CY 2010, financial incentives from the sale of recycled water resulted in nearly $2.3 million in savings towards imported water purchases. The financial incentives are a result of local water resources development agreements with MWD and Water Authority.

In 2010, the beneficial reuse of the recycled water was 11,317 AF: 6,948 AF from the North City Water Reclamation Plant and 4,369 AF from the South Bay Plant. Proactive marketing activities targeting existing irrigation customers, to encourage them to convert their cooling systems to recycled water, coupled with outreach efforts to connect new customers have been successful, as recycled water meter connections have increased over 25% (2007 figures compared to 2010). On December 31, 2007, 406 retail meters were connected to the distribution system and as of December 31, 2010, 511 retail meters are connected. Major retail customers include the City of San Diego Park & Recreation Department, CalTrans, University of California at San Diego, Black Mountain Ranch HOA, Santa Luz Golf Course, the City of San Diego Metro Biosolids Center, Miramar Marine Corps Air Station Golf Course, and the IBWC. The City also provides recycled water to 4 wholesale connections. The majority of customers use the recycled water for irrigation purposes.

By the end of CY 2011, the Public Utilities Department, in cooperation with the Park & Recreation Department, will have completed thirteen parkland/street median irrigation system conversions to recycled water. The retrofits are funded in part by reimbursement grants from the Bureau of Reclamation, MWD and San Diego Gas & Electric.

Public Utilities Department's Capital Improvement Program

The Public Utilities Department reevaluates the projects contained in the Capital Improvements Program (CIP) and the timing thereof periodically. Changes to the CIP are made to reflect changing priorities within the water system and occur as a result of project scope changes, date

revisions, project sequencing, and operational considerations. The Public Utilities Department expended approximately $1.1 billion from July 1, 1998 through June 30, 2010 on CIP projects. Improvements included projects to upgrade and expand water treatment plants, rehabilitate raw and treated water storage facilities, construct major transmission pipelines, replace and/or upgrade existing pump stations, replace cast iron water mains citywide, expand the recycled water system, and other new supply initiatives. In February 2007, the City Council adopted increases for the next four fiscal years of 6% per year. These rate increases will provide needed revenue to continue funding the upgrade and expansion of the water system through the CIP in order to ensure a reliable water supply for all City residents. For the Fiscal Years ending June 30, 2008 through June 30, 2011, the Public Utilities Department plans to expend approximately $585 million on such improvements.

With the above program coming to a close, the Public Utilities Department initiated a facilities master plan in 2009 to identify long-term facility needs. Over 80 projects were identified through this master planning effort and will comprise the 2012-2032 CIP. Project scopes were based on findings primarily from facility condition assessments and system evaluations that identified areas in which hydraulic performance criteria cannot all be met. Council Policy 800-14 (CP 800-14) establishes a framework for prioritizing CIP projects, and it has been refined to reflect water-specific needs. The refined framework has provided a mechanism for objectively and consistently prioritizing over 80 recently-identified projects. CP 800-14 refinements were made with significant input from staff throughout the department as well as IROC (Independent Rates Oversight Committee). The list of prioritized projects, along with cost estimates and durations, will be the basis for 2012-2032 CIP.

Summary of Supplies

Historic imported water deliveries from the Water Authority to the Public Utilities Department and local surface water, conservation savings and recycled water deliveries are shown in **Table 5-1.**

Table 5-1
Historic Imported, Local and Recycled Water Demands*
Public Utilities Department

Fiscal Year	Imported Water (acre-feet)	Local Surface Water (acre-feet)	Conservation[1] (acre-feet)	Recycled Water (acre-feet)	Total[2] (acre-feet)
1990	233,158	22,500	-	-	255,658
1995	162,404	59,024	8,914	-	230,342
2000	207,874	39,098	17,410	3,250	267,632
2005	204,144	26,584	29,410	4,294	264,432
2010	188,337	13,117	34,317	12,173	247,944

[1]Conserved water results in savings and is not a direct supply.
[2]Total includes water supplied and conserved.
*Includes retail and wholesale demands

5.4.2 Plans for Acquiring Additional Supplies

Future Supplies

In 2002, the City of San Diego City Council adopted the Long-Range Water Resources Plan 2002-2030 (Long-Range Plan). This plan provides a decision-making framework for evaluating water supply options. The Long-Range Plan identifies water conservation, water recycling, groundwater desalination, groundwater storage, ocean desalination, marine transport, water transfers, and imported supply from the Water Authority and MWD as potential near-term and long-term supplies. The Long-Range Plan concluded that no single supply source would be sufficient to meet the City's future water demands, but a portfolio of supply options would reduce the dependence upon imported water over time.

The Public Utilities Department has begun work on updating the Long-Range Plan and will have the update complete in 2012. The 2012 Long-Range Plan will evaluate supply options such as water conservation, recycled water, groundwater storage, brackish groundwater desalination and indirect potable reuse. Conservation and water recycling have been implemented and will be increased. The Public Utilities Department is currently investigating the development of groundwater. Once these supplies are developed, and contracts, permits, and approvals obtained, these new supplies will be included in the UWMP.

Conservation

Future conservation supply development programs and technologies that may be pursued include:

1) Hot water circulating pump: This emerging water-savings technology reduces "warm-up" time for showers and other fixtures throughout the home. This system can save the average family approximately 2 gallons per use at the fixture.
2) "ShowerStart™": ShowerStart™ is an innovative device designed to be installed at the shower. This device has an internal temperature sensor and valve that works to stop the flow of water to a trickle once hot water has arrived at the fixture.
3) Flow restrictors: Flow restrictions for hospital sinks can reduce water waste during medical "scrubbing".

"Other" potential programs

- Special programs for dedicated landscape meters
- Landscape requirements and water budgets
- Tiered water rates to encourage water savings
- Retrofit multi-family meters with sub meters
- Retrofit mixed use commercial meters with separate irrigation meters

For the purposes of this Report, these enhanced conservation programs are not included as a resource to meet demands.

Recycled Water Study

The City of San Diego is currently conducting a Recycled Water Study. The purpose of this study is to identify opportunities to increase the usage of recycled water for potable and non-potable uses, the potential costs of implementing such opportunities, and to what extent such recycling could feasibly offload wastewater flows to the Point Loma Wastewater Treatment Plant (PLWTP).

The United States Environmental Protection Agency (USEPA) recently made a decision to grant the City San Diego a waiver to its National Pollutant Discharge Elimination System Permit. The waiver allows the City to continue to operate the PLWTP as an Advanced-Primary Treatment facility rather than requiring an upgrade to secondary treatment. Members of the environmental community (San Diego Coastkeeper and Surfrider Foundation) have traditionally opposed past permit waiver issuance in favor of urging higher level of water recycling. However, during the 2009 permit waiver process and in lieu of such opposition, San Diego Coastkeeper and the San Diego Chapter of Surfrider Foundation entered into a Cooperative Agreement with the City to conduct a Recycled Water Study. In accordance with the Agreement, both of these organizations will provide their support of the USEPA's decision to grant the waiver. The City's responsibility per the Agreement is to execute this study.

Additional goals of the study include identification and evaluation of recycling alternatives that would result in:

- The upgrade of the existing PLWTP to secondary treatment at the lowest possible cost.
- Maximizing water reclamation and to use recycled water to the fullest extent possible, including indirect potable reuse, non potable reuse and direct potable reuse.
- Evaluating opportunities to increase recycled water reuse via satellite facilities or via existing water reclamation plants. Evaluation will include detailed economic analysis that will consider potential capital and operation and maintenance savings on both the water and wastewater systems.

Groundwater

The City has several groundwater basins within its jurisdiction, including San Pasqual in the north; San Diego River System in the center of the City comprising the Mission Valley Basin and the El Monte/Santee Basin; the Tijuana River Valley Basin in the south; and the San Diego Formation, a large geological water bearing formation, underlying the southwestern portion of San Diego County along the coast, roughly from the Mexican border to Mission Valley.

The groundwater from these basins is predominantly brackish. Improved technologies provide consideration of affordable water supply sources, such as brackish groundwater, that were not available a few decades ago. This supply source is a viable alternative and is part of the City's planning efforts. Local water supply projects, particularly groundwater exploration, benefit city rate payers, offer drought protection, and are locally controlled. The City is presently pursuing groundwater feasibility projects in San Pasqual, Mission Valley Basin, El Monte/Santee Basin, Tijuana River Valley Basin, and the San Diego Formation.

In the San Pasqual Basin, the San Pasqual Brackish Groundwater Desalination Project, which included a small scale demonstration project and looked at the feasibility of building a full-scale desalination facility in the lower western end of the San Pasqual basin, is complete. In addition, a planning study for San Pasqual Conjunctive Use that investigates the feasibility of storing and recovering raw water in the upper eastern portion of the San Pasqual basin has been completed. Identified in the report are percolation basins alternatives and project costs. The project team is focused on investigating the synergies between the potential full scale desalination facility and conjunctive use studies completed. Finally, efforts are in progress to implement basin recommendations and actions from the Council adopted 2007 San Pasqual Groundwater Management Plan (GMP).

The City is executing a feasibility study in the Mission Valley Basin, El Monte/Santee Basin, and the San Diego Formation known as the Pilot Production Wells Investigation. The goal of this investigation is to install a single production well in each of the basins to test the performance of the basin, evaluate potential environmental impacts, and assess appropriate treatment technologies for approximate two year duration while delivering the groundwater for beneficial use. At the end of the testing period, the City will decide whether to keep the wells in operation, expand the facilities, or shut down operations depending on the outcome of the investigation in each basin.

Separately, the City is examining the feasibility of using the Tijuana River Valley alluvial basin for aquifer storage and recovery (ASR) to seasonally store recycled water during the wet season, and extraction during the dry season to meet the service area peak demands for recycled water. A number of concerns will be addressed including: useable storage capacity of the alluvial aquifer, the injection or spreading of tertiary treated wastewater into a groundwater basin, potential lowering or mounding of the groundwater table near environmentally sensitive lands, potential of contributing to sea water intrusion, the mixing of native groundwater with recycled water when extracted for distribution, compliance with Basin Plan objectives, and potential impacts to neighboring Tijuana municipal supply wells.

Water Purification Demonstration Project

The City has implemented a Water Purification Demonstration Project to evaluate the feasibility of using advanced water purification (AWP) on recycled wastewater for eventual augmentation of supplies in a local reservoir. Reservoir water would undergo further treatment before being distributed as drinking water. The AWP Demonstration Facility will operate for 18 months. During the first 12 months of operation the advanced purified water will be frequently tested to determine the effectiveness of the treatment equipment in removing contaminants; the equipment will be monitored for flow-and overall performance; operating data will be gathered and analyzed to refine operation and maintenance estimates for a full-scale system; tours are being conducted as part of the public outreach effort; a study of the San Vicente Reservoir will be conducted to establish residence time and short circuiting conditions of the AWP water in the reservoir and all necessary steps will be taken to ensure that the treatment process meets the requirements set by the CDHP. A Final Project Report for the Demonstration Project will be prepared and serve as a single document describing the results of the Demonstration Project for elected officials, regulators, and the public. The Demonstration Project is an essential step towards full implementation of the Indirect Potable Reuse/Reservoir Augmentation program. On November

18, 2008, the City Council approved a rate increase to fund the $11.8 million Demonstration Project. The rate increase went into effect on January 1, 2009 and ended in September 2010.

Water Transfers

Water transfers are agreements in which water supplies are transferred from the original point of origin or control to a new place of use. Transfers can offer flexibility and help ensure that the state's water resources are used effectively. While a myriad of rules surround transfers in California, water transfers are not currently considered as a supply resource as defined in SB 610 to meet projected demands. The Public Utilities Department is relying upon the Water Authority and MWD to pursue water transfers.

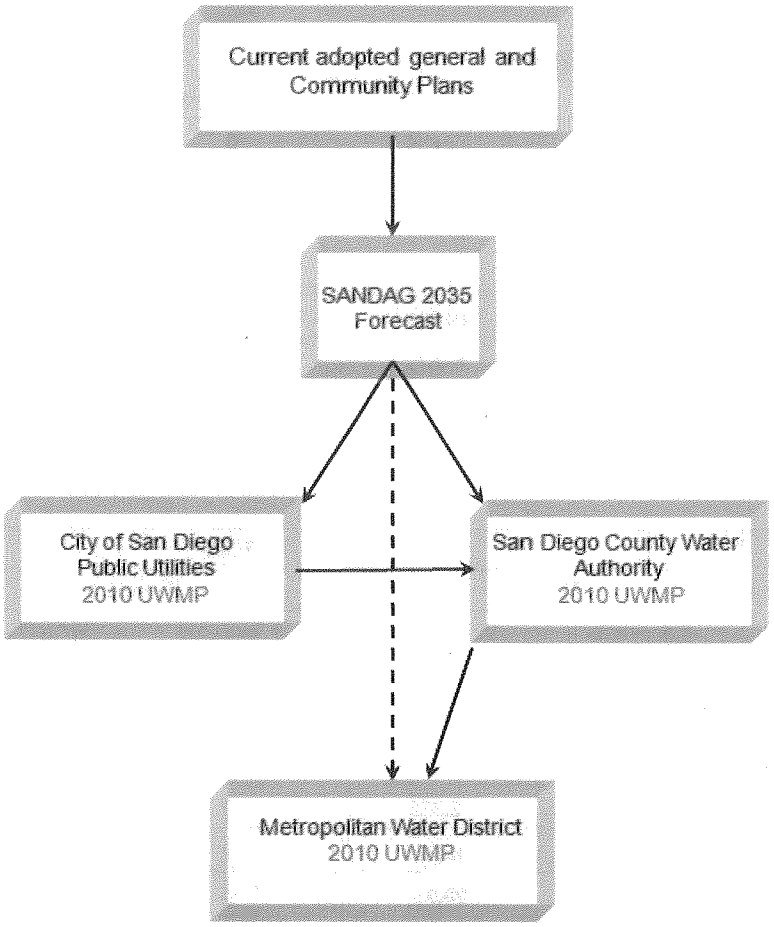
Section 6 - Projected Demands

Approximately every three years the Public Utilities Department calculates projected water demands within its service area for planning purposes. A computer model is used (IWR-MAIN) to break down water-use by major water-use sectors: Commercial, Industrial, Residential and Public uses. Using past water-use data from the Public Utilities Department and demographic data provided by SANDAG, the model is able to correlate the data to determine sector water demands. Using this correlated data, future demographic data is used to project water demands. The model also accounts for water conservation, weather and water rate changes.

In addition to the Public Utilities Department, the Water Authority and MWD use regional growth forecasts to calculate projected water demands within their respective service areas. This provides for consistency between the retail and wholesale agencies projected water demands, thereby ensuring that adequate supplies are being planned for the Public Utilities Department's existing and future water users. The SANDAG forecasts are based on adopted community plan land use, but not citywide zoning. SANDAG forecasts the number of residents, dwelling units, and employees in an area, but not square footage, hotel rooms, or visitors (non-residents or non-employees). For urban areas the smallest forecast geography is typically at the block level, but for suburban and less developed area the forecast geography can be larger. SANDAG typically updates the regional growth forecast every three to four years. The Public Utilities Department water demand projections, based on the SANDAG Series 12 Forecast, are incorporated in the City's 2010 UWMP. These projections are then forwarded to the Water Authority for use in the preparation of their UWMP, which is further incorporated into MWD's UWMP to calculate the ultimate water demands of the region (see **Figure 6-1**).

The Public Utilities Department updates its UWMP every five years. The 2010 UWMP, originally scheduled for completion in December 2010, was completed and adopted in June 2011. The time extension granted for the completion of the 2010 UWMP was due to the new SBX7-7 reporting requirement that needed to be incorporated into the 2010 UWMP. SBX7-7, which is part of the 2009 Water Legislation, requires urban water agencies to reduce statewide per capita water consumption 20 percent by 2020.

FIGURE 6-1
WATER DEMAND PROJECTIONS



The demands from the 2010 UWMP are used throughout this Report. The historical and projected water demands for a normal year are shown in **Table 6-1**.

As part of the requirements for complying with SB 610, **Table 6-7** and **Table 6-8** show the single dry year and consecutive multiple dry year demands. All tables in this section are based on data from the 2010 UWMP.

TABLE 6-1
PAST, CURRENT, AND PROJECTED WATER DELIVERIES
(AFY)

Water Use Sector	2005				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	217,983	77,864	0	0	77,864
Multi-family	28,443	39,220	0	0	39,220
Commercial	14,468	33,099	0	0	33,099
Industrial	253	4,276	0	0	4,276
Institutional/Governmental	2,341	16,842	0	0	16,842
Landscape Irrigation	7,245	27,877	0	0	27,877
Total	270,733	199,178	0	0	199,178

Source: City of San Diego Public Utilities Report U02-P10715.

Water Use Sector	2010				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	220,862	62,367	0	0	62,367
Multi-family	28,361	36,324	0	0	36,324
Commercial	14,542	27,244	0	0	27,244
Industrial	186	2,325	0	0	2,325
Institutional/Governmental	2,321	13,774	0	0	13,774
Landscape Irrigation	7,327	20,257	0	0	20,257
Total	273,599	162,291	0	0	162,291

Source: City of San Diego Public Utilities Report U02-P100715.

Table 6-1, Continued

Water Use Sector	2015				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	231,346	75,922	0	0	75,922
Multi-family	32,082	47,266	0	0	47,266
Commercial	14,376	31,617	0	0	31,617
Industrial	186	2,071	0	0	2,071
Institutional/Governmental	2,302	13,359	0	0	13,359
Landscape Irrigation	7,583	25,452	0	0	25,452
Total	287,587	195,688	0	0	195,688

Water Use Sector	2020				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	236,639	79,992	0	0	79,992
Multi-family	37,330	56,700	0	0	56,700
Commercial	14,783	33,541	0	0	33,541
Industrial	186	2157	0	0	2157
Institutional/Governmental	2,302	13,772	0	0	13,772
Landscape Irrigation	7,869	27,247	0	0	27,247
Total	298,582	213,409	0	0	213,409

Water Use Sector	2025		2030		2035	
	Metered		Metered		Metered	
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)
Single family	241,491	83,370	244,138	85,633	245,682	86,471
Multi-family	42,662	66,070	47,910	75,328	52,420	82,781
Commercial	14,681	34,012	14,100	33,116	13,853	32,740
Industrial	176	2,077	166	1,995	166	1,967
Institutional/Governmental	2,247	13,639	2,172	13,399	2,154	13,329
Landscape irrigation	8,192	28,893	8,162	29,301	8,543	30,698
Total	308,505	228,061	315,534	238,772	321,337	247,986

Table 6-2 summarizes the current and planned water sources the City is relying on to meet future demands.

TABLE 6-2
PLANNED WATER SUPPLY SOURCES
(AFY)

Water Supply Sources	Wholesaler Supplied Volume (yes/no)	2015	2020	2025	2030	2035
San Diego County Water Authority	Yes	201,719	221,458	237,622	249,728	260,107
Supplier produced surface water [a]		29,000	29,000	29,000	29,000	29,000
Supplier produced groundwater		500	500	500	500	500
Transfers In		0	0	0	0	0
Exchanges In		0	0	0	0	0
Recycled Water [b]		9,253	9,253	9,253	9,253	9,253
Desalinated Water		0	0	0	0	0
Other		0	0	0	0	0
Total		240,472	260,211	276,375	288,481	298,860

Notes:

[a] Local surface water estimates provided by City, 2011.

[b] Recycled water excludes recycled water sold to other agencies and is from table entitled, "NCWRP and SBWRP Summary of Baseline Demands", provided by the City on April 22, 2011.

6.1 Sales to other Agencies

Potable

The City, through past agreements, sells treated water to the Cal-Am which provides water service to the cities of Coronado and Imperial Beach, City of Del Mar, and Naval Air Station North Island. The population of Naval Station North Island is located within the City of Coronado, whereas the other military bases that the City serves are within the City. The City also sells untreated water to Santa Fe Irrigation District and San Dieguito Water District. **Table 6-3** presents the water sales to other agencies.

Per the agreement between the City and Cal-Am, only local surface water is sold to Cal-Am to provide water to supply Cal-Am customers. A portion of City residents in the South Bay area are also served by Cal-Am and can be served by imported water as well. Per the agreement between the City and the City of Del Mar, the City takes deliveries of water, which the City of Del Mar purchases from the Water Authority, through the Second Aqueduct Connection at Miramar. This water is then treated at the City's Miramar WTP and transported to the City of Del Mar through several interconnections.

The City has agreements to provide surplus treated water to Otay Water District and untreated exchange water to Ramona Municipal Water District. These water deliveries occur infrequently and for short periods of time, and are therefore not shown in **Table 6-3**.

TABLE 6-3
SALES TO OTHER AGENCIES-POTABLE
(AFY)

Water Distributed	2005	2010	2015	2020	2025	2030	2035
California American Water Company	13,311	11,462	13,153	13,395	13,452	13,757	13,988
Santa Fe Irrigation District and San Dieguito Water District [a]	2,012	7,227	7,596	7,983	8,391	8,819	9,268
City of Del Mar [b]	1,324	1,058	1,112	1,168	1,228	1,290	1,356
Naval Air Station North Island	1,204	1,568	1,568	1,568	1,568	1,568	1,568
Total	14,515	13,030	14,721	14,963	15,020	15,325	15,556

Notes:

[a] Through a joint agreement, the City supplies raw water from local surface water supplies to Santa Fe Irrigation District/San Dieguito Water District, and treated water to the other agencies. This water supply is not included in total since the supply is not included in the local surface water supply.

[b] City of Del Mar not included in total as the City is treating water for Del Mar that is provided by Water Authority.

Recycled and Non-Revenue Water

The City has three separate agreements to sell recycled water. Olivenhain Municipal Water District and the City of Poway are provided recycled water from the City's North City Water Reclamation Plant while Otay Water District receives recycled water from the City's South Bay Water Reclamation Plant.

Non-Revenue Water (NRW) is water that is unaccounted for or unbilled water consumption. Unaccounted for water can be attributed to unauthorized consumption, meter inaccuracies, data errors, leakage on mains, leakage and overflow at storage and leakage at service connections. Using metered demand and total City delivered values, NRW was computed as 9.0 percent in 2008. Water use for firefighting, line flushing and other authorized, but unbilled use is classified in the computation of NRW as unbilled consumption.

City staff deemed it reasonable to assume this percent system loss could be maintained in future years given the City's aggressive program of leak detection and repair. The City is going forward with an automated meter reading system that could improve billing accuracy, better quantify real versus apparent losses and identify customer leaks. Thus, NRW is held constant in the projections at 9.0 percent for forecast years. **Table 6-4** presents the City's additional water uses (recycled water) and NRW.

TABLE 6-4
ADDITIONAL WATER USES AND LOSSES
(AFY)

Water Use	2005	2010	2015	2020	2025	2030	2035
Recycled water	4,294	7,656	9,253	9,253	9,253	9,253	9,253
Non-revenue water	10,404	21,909	20,810	22,586	24,041	25,131	26,065
Total	14,698	29,565	30,063	31,839	33,294	34,384	35,318

Notes:

1. *Source for recycled water: 2005 from Table 2-8 of the City's 2005 Urban Water Management Plan. 2010 from NCWRP and SBWRP beneficial reuse summary tables with wholesale deliveries excluded provided by the City on March 2, 2011. 2015 and later from table entitled, "NCWRP and SBWRP Summary of Baseline Demands", provided by the City on April 22, 2011.*
2. *Recycled water is City use only and excludes recycled water sold to other agencies.*
3. *Source for non-revenue water: For 2005, Table 2-8 of the City's 2005 Urban Water Management Plan with 4.3% assumption. For 2010 to 2035, City of San Diego Public Utilities, Update of Long-Term Water Demand Forecast, Table 6-5, Water Demand Forecast with Normal Weather, June 2010.*

Table 6-5 is a summary of and displays City's past water use from 2005 and 2010 with projected water use shown for 2015 thru 2035.

TABLE 6-5
TOTAL WATER-USE
(AFY)

Water Distributed	Total Water Use (AFY)						
	2005	2010	2015	2020	2025	2030	2035
Total Water Deliveries (Table 6-1)	199,178	162,291	195,688	213,409	228,061	238,772	247,986
Sales to Other Water Agencies (Table 6-3)	14,515	13,030	14,721	14,963	15,020	15,325	15,556
Additional Water Uses and Losses (Table 6-4)	14,698	29,565	30,063	31,839	33,294	34,384	35,318
Total	228,391	204,886	240,472	260,211	276,375	288,481	298,860

The analysis in **Table 6-6** below compares the projected normal water supply and customer demands from 2010 to 2035, in five-year increments.

TABLE 6-6
PROJECTED NORMAL SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	240,472	260,211	276,375	288,481	298,860
Demand totals	240,472	260,211	276,375	288,481	298,860
Difference (supply minus demand)	0	0	0	0	0

6.2 Projected Single-Dry-Year Water Supply and Demand

Table 6-7 provides a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments. The City's demands in single dry years are projected to be higher similar in proportion to the increase in regional water demands projected in the Water Authority's 2010 UWMP. An increase in use for landscape irrigation accounts for most of the increase in demands. It is assumed that recycled water demands would not increase in single dry years. The wholesale water supplies from the Water Authority are assumed to increase to meet the difference between the City's increased water demands and reduced local water supplies.

TABLE 6-7
PROJECTED SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	255,040	276,526	293,895	307,230	318,586
Demand totals	255,040	276,526	293,895	307,230	318,586
Difference (supply minus demand)	0	0	0	0	0

6.3 Projected Multiple-Dry-Year Water Supply and Demand

Table 6-8 compares the total water supply available in multiple dry water years with projected total water use over the next 25 years. The City's demands in multiple dry years are projected to be higher similar in proportion to the increase in regional water demands projected in Water Authority's 2010 UWMP. It is assumed that recycled water demands would not increase in multiple dry years. The wholesale water supplies from Water Authority are assumed to increase to meet the difference between the City's increased water demands and reduced local water supplies. Multiple dry year scenarios represent hot, dry weather periods which may generate urban water demands that are greater than normal. No extraordinary conservation measures are reflected in the demand projections. The recycled water supplies are assumed to experience no reduction in a dry year.

TABLE 6-8
PROJECTED SUPPLY AND DEMAND COMPARISON DURING MULTIPLE DRY YEAR PERIOD ENDING IN 2035
(AFY)

		Supply and Demand Comparison – Multiple Dry Year Events				
		2015	2020	2025	2030	2035
Multiple-dry year First year supply	Supply totals	257,587	278,451	296,319	309,230	320,382
	Demand totals	257,587	278,451	296,319	309,230	320,382
	Difference	0	0	0	0	0
Multiple-dry year Second year supply	Supply totals	267,323	288,723	306,726	320,467	332,038
	Demand totals	267,323	288,723	306,726	320,467	332,038
	Difference	0	0	0	0	0
Multiple-dry year Third year supply	Supply totals	281,466	303,004	322,166	334,720	346,823
	Demand totals	281,466	303,004	322,166	334,720	346,823
	Difference	0	0	0	0	0

Section 7 - Conclusion - Availability of Sufficient Supplies

The Plan Update is consistent with water demand assumptions in the regional water resource planning documents of MWD, and the Water Authority. The Public Utilities Department receives the majority of its water supply from MWD through the Water Authority. In addition, MWD and the Water Authority have developed water supply plans to improve reliability and reduce dependence upon existing imported supplies. MWD's Regional Urban Water Management Plan and Integrated Resources Plan, the Water Authority's 2010 UWMP and annual water supply report include projects that meet long-term supply needs through securing water from the State Water Project, Colorado River, local water supply development and recycled water.

The forecasted normal year water demands compared with projected supplies for the Public Utilities Department are shown in **Table 7-1**. This demonstrates that with existing supplies and implementation of the projects discussed in the three agencies's planning documents there will be adequate water supplies to serve all anticipated growth (existing and future planned uses) and development.

TABLE 7-1
PROJECTED SUPPLY AND DEMAND COMPARISON – NORMAL YEAR
(AFY)

	2015	2020	2025	2030	2035
Supply totals	240,472	260,211	276,375	288,481	298,860
Demand totals	240,472	260,211	276,375	288,481	298,860
Difference (supply minus demand)	0	0	0	0	0

Table 7-2 provides a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments.

TABLE 7-2
PROJECTED SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	255,040	276,526	293,895	307,230	318,586
Demand totals	255,040	276,526	293,895	307,230	318,586
Difference (supply minus demand)	0	0	0	0	0

The multiple-dry year scenarios, within a 20-year projection, are shown in **Table 7-3**. This demonstrates that supplies will be adequate to meet all anticipated growth (existing and future planned uses) and development in multiple dry year periods.

TABLE 7-3
PROJECTED SUPPLY AND DEMAND COMPARISON DURING MULTIPLE DRY YEAR PERIOD ENDING IN 2035
(AFY)

		Supply and Demand Comparison – Multiple Dry Year Events				
		2015	2020	2025	2030	2035
Multiple-dry year First year supply	Supply totals	257,587	278,451	296,319	309,230	320,382
	Demand totals	257,587	278,451	296,319	309,230	320,382
	Difference	0	0	0	0	0
Multiple-dry year Second year supply	Supply totals	267,323	288,723	306,726	320,467	332,038
	Demand totals	267,323	288,723	306,726	320,467	332,038
	Difference	0	0	0	0	0
Multiple-dry year Third year supply	Supply totals	281,466	303,004	322,166	334,720	346,823
	Demand totals	281,466	303,004	322,166	334,720	346,823
	Difference	0	0	0	0	0

This Report demonstrates that there are sufficient water supplies over a 20-year planning horizon to meet the projected demands of the Plan Update as well as the existing and other planned development projects within the Public Utilities Department service area in normal, dry year, and multiple dry year forecasts. This Plan Update is proposing water demands which are included in the regional water resource planning documents of the Water Authority, and MWD.

Source Documents

California Department of Water Resources (DWR), Progress on Incorporating Climate Change into Management of California's Water Resources, July 2006 Report

California Climate Change Center, 2006 Biennial Report: Our Changing Climate: Assessing the Risks to California, 2006

California Department of Water Resources Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, March 2011

DSD Memorandum - Request for assessment and project description, October 2010

MWD 2010 Regional Urban Water Management Plan

MWD Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability, March 2003

MWD Integrated Resources Plan Update, Oct 2010

Water Authority 2010 Urban Water Management Plan

Water Authority Regional Water Facilities Master Plan, 2003

Water Department Long-Range Water Resources Plan (2002-2030), December 2002

Public Utilities Department 2010 Urban Water Management Plan

Water Department The City of San Diego Subordinated Water Revenue Bonds, Series 2002, October 2002

APPENDIX M-2

Water Supply Assessment and Verification Report

OTAY WATER DISTRICT

WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

City of San Diego
Otay Mesa Community Plan Update

D0899-090154

Prepared by:

Robert Kennedy, P.E.
Engineering Manager
Otay Water District
in consultation with
Atkins
and
San Diego County Water Authority

May 2013

Otay Water District
Water Supply Assessment and Verification Report
May 2013

City of San Diego Otay Mesa Community Plan Update

Table of Contents

Executive Summary 1

Section 1 - Purpose 5

Section 2 - Findings 6

Section 3 - Project Description 8

Section 4 – Otay Water District 10

4.1 Urban Water Management Plan 12

Section 5 – Historical and Projected Water Demands 13

5.1 Demand Management (Water Conservation) 17

Section 6 - Existing and Projected Supplies 20

6.1 Metropolitan Water District of Southern California 2005 Regional Urban Water Management Plan 21

6.2 San Diego County Water Authority Regional Water Supplies 22

6.3 Otay Water District 39

6.3.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies 40

6.3.1.1 Imported and Regional Supplies 41

6.3.1.2 Recycled Water Supplies 43

Section 7 – Conclusion: Availability of Sufficient Supplies 51

Source Documents *56*

Appendix A: Otay Mesa Community Plan Update Regional Location Map

Appendix B: Otay Mesa Community Plan Update Proposed Development Plan

Otay Water District
Water Supply Assessment and Verification Report
May 2013

Otay Mesa Community Plan Update

Executive Summary

The Otay Water District (Otay WD) prepared this Water Supply Assessment and Verification Report (WSA&V Report) at the request of the City of San Diego (City) for the Otay Mesa Community Plan (OMCP) Update project (Project).

Otay Mesa Community Plan Update Project Overview and Water Use

The City of San Diego proposes to update the 1981 OMCP and the Otay Mesa Development District Ordinance zoning regulations. The Otay Mesa community encompasses approximately 9,300 acres in the southeastern portion of the City of San Diego. Approximately 5,200 acres are served by the City, with the remaining 4,100 acres served by Otay WD. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Diego on the east and the US/Mexico border and the City of Tijuana on the south.

The Project will re-designate land uses to increase the number of allowed residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses. Modified industrial and commercial land use designations are also included that are similar to the industrial intensity found in the adopted community plan. The International Business and Trade would be the dominant industrial land use in this scenario. Other features of the Project include:

- Increasing housing unit yield in the southwestern residential areas
- Creating a village center in an area south of SR-905 and west of Britannia Boulevard
- Designating a corridor of Business Park-themed industrial uses along SR-905
- Seeking to enhance the image of the community along SR-905 with flex space and corporate office users flanking the freeway
- Encouraging outdoor storage and heavy industry uses to shift to the border area

The expected potable water demands to be served by the Otay WD for the Otay Mesa Community Plan Update is 4.70 million gallons per day (mgd) or about 5,273 acre feet per

year (AFY) which is slightly less than what was projected in the District's 2010 Water Resources Master Plan Update (WRMP Update). The projected recycled water demand for the proposed project is approximately 0.68 mgd, or about 774 AFY, which represents approximately 13% of total project water demand.

Planned Imported Water Supplies

The San Diego County Water Authority (Water Authority) and the Metropolitan Water District (MWD) have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the San Diego Association of Governments (SANDAG) updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their Urban Water Management Plans (UWMP). Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, nor MWD jurisdictions (i.e. pending or proposed annexations) or that have revised land use plans than what is in the existing growth forecasts. Land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, Water Authority, and MWD next demand forecast, supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

The California Urban Water Management Planning Act (Act), which is included in the California Water Code, requires all urban water suppliers within the state to prepare an UWMP and update it every five years. The purpose and importance of the UWMP has evolved since it was first required 25 years ago. State agencies and the public frequently use the document to determine if agencies are correctly planning to reliably meet future water demands. As such, UWMPs serve as an important element in documenting supply availability for the purpose of compliance with state laws, Senate Bills 610 and 221, linking water supply sufficiency to large land-use development approval. Agencies must also have a UWMP prepared, pursuant to the Act, in order to be eligible for state funding and drought assistance.

MWD's Integrated Resource Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The MWD's 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of the implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the

region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet future demands.

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta issues and the recent drought impacting the western states. It is expected that challenges such as these will always be present. Regardless of the challenges, the regional water supply agencies, the Water Authority and MWD, along with Otay WD fully intend to have sufficient, reliable supplies to serve demands.

Section ES-5 of MWD's 2010 Regional Urban Water Management Plan (2010 RUWMP) states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet unanticipated demands such as those related to the Otay Mesa Community Plan Update.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority, "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs."

As part of the preparation of a written water supply assessment report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

Otay Water District Water Supply Development Program

In evaluating the availability of sufficient water supply, the Otay Mesa Community Plan Update proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by

the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. The new water supply projects are in response to regional water supply issues. These projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects are the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents will capture any increase in water supplies resulting from new water resources developed by the Otay WD.

Findings

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed Otay Mesa Community Plan Update will be fully included in the water demand and supply forecasts of the Urban Water Management Plans and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the proposed project demands, as well as existing and other projected future users, and the actions necessary and development status of these supplies, have been identified in the Otay Mesa Community Plan Update WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed Otay Mesa Community Plan Update. The WSA&V Report demonstrates and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single and multiple dry years to meet the projected demand of the proposed Otay Mesa Community Plan Update and the existing and other planned development projects to be served by the Otay WD.

Accordingly, after approval of a WSA&V Report for the Otay Mesa Community Plan Update by the Otay WD Board of Directors (Board), the WSA&V Report may be used to comply with the requirements of the legislation enacted by Senate Bills 610 and 221 as follows:

1. <u>Senate Bill 610 Water Supply Assessment</u>: The Otay WD Board approved WSA&V Report may be incorporated into the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) compliance process for the Otay Mesa Community Plan Update as a water supply assessment report consistent with the requirements of the legislation enacted by SB 610. The City, as lead agency under CEQA for the Otay Mesa Community Plan Update EIR amendment, may cite the approved WSA&V Report as evidence that a sufficient water supply is planned for and is intended to be made available to serve the Otay Mesa Community Plan Update.

2. Senate Bill 221 Water Supply Verification: The Otay WD Board approved WSA&V Report may be incorporated into the City's Tentative Map approval process for the Otay Mesa Community Plan Update as a water supply verification report, consistent with the requirements of the legislation enacted by SB 221. The City, within their process of approving the Otay Mesa Community Plan Update's Tentative Map, may cite the approved WSA&V Report as verification of intended sufficient water supply to serve the Otay Mesa Community Plan Update.

Section 1 - Purpose

The Otay Mesa community encompasses approximately 9,300 acres in the southeastern portion of the City of San Diego. Approximately 5,200 acres are served by the City, with the remaining 4,100 acres served by Otay WD. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Diego on the east and the US/Mexico border and the City of Tijuana on the south. The City requested that Otay WD prepare a WSA&V Report for the Otay Mesa Community Plan Update. The current Otay Mesa Community Plan Update description is provided in Section 3 of this WSA&V Report.

This WSA&V Report for the Otay Mesa Community Plan Update has been prepared by the Otay WD in consultation with Atkins, the San Diego County Water Authority, and the City pursuant to Public Resources Code Section 21151.9 and California Water Code Sections 10631, 10656, 10910, 10911, 10912, and 10915 referred to as Senate Bill (SB) 610 and Business and Professions Code Section 11010 and Government Code Sections 65867.5, 66455.3, and 66473.7 referred to as SB 221. The intent of SB 610 and SB 221 amended state law, effective January 1, 2002, is to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires that the water purveyor of the public water system prepare a water supply assessment to be included in the CEQA environmental documentation and approval process of certain proposed projects. SB 221 requires affirmative written verification from the water purveyor of the public water system that sufficient water supplies will be available for certain residential subdivisions of property prior to approval of a tentative map. The requirements of SB 610 and SB 221 are being addressed by this WSA&V Report. The City requested that the water supply assessment and verification be prepared concurrently, since the requirements of SB610 and SB 221 are substantially similar.

This WSA&V Report evaluates water supplies that are planned to be available during normal, single dry year, and multiple dry water years during a 20-year planning horizon to meet existing demands, expected demands of the Otay Mesa Community Plan Update, and reasonably foreseeable planned future water demands served by Otay WD. The Otay WD Board of Directors (Board) approved WSA&V Report is planned to be used by the City in its evaluation of the Otay Mesa Community Plan Update under the CEQA and Tentative Map approval processes.

Section 2 - Findings

The Otay WD prepared this WSA&V Report at the request of the City for the Otay Mesa Community Plan Update project.

The Otay Mesa Community Plan Update is located within the jurisdictions of the Otay WD, the City, the Water Authority, and the MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The expected potable water demand for the Otay Mesa Community Plan Update is 4.7 mgd or about 5,273 AFY which is slightly less than what was projected in the District's 2010 WRMP Update. The projected recycled water demand for the Otay Mesa Community Plan Update is 0.68 mgd or 774 AFY, representing about 13% of the total Otay Mesa Community Plan Update water demand.

The Otay Mesa Community Plan Update development proponents are required to use recycled water for irrigation and other appropriate uses. The primary benefit of using recycled water is that it will offset the potable water demands by an estimated 774 AFY. The WRMP Update and the Otay WD 2010 Urban Water Management Plan (2010 UWMP) anticipated that the land area to be utilized for the Otay Mesa Community Plan Update would use both potable and recycled water.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in the SANDAG updated forecasts for land use planning, demographics, and economic projections. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports for proposed land developments that are not within the Otay WD, Water Authority, nor MWD jurisdictions (i.e. pending or proposed annexations) or that have revised land use plans than those used in the existing growth forecasts. Proposed land areas with pending or proposed annexations or revised land use plans typically result in creating higher demand and supply requirements than anticipated. The Otay WD, the Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions. The Otay Mesa Community Plan Update was included in SANDAG's Series 12 forecast that was accepted in 2010.

This process is utilized by the Water Authority and MWD to document the water supplies necessary to serve the demands of the proposed Otay Mesa Community Plan Update, along with existing and other projected future users, as well as the actions necessary to develop these supplies. This process ensures that the necessary demand and supply information is identified and incorporated within the water supply planning documents of the Water Authority and MWD.

The Otay WD 2010 UWMP included a water conservation component to comply with Senate Bill 7 of the Seventh Extraordinary Session (SBX 7-7), which became effective February 3, 2010. This new law is the water conservation component to the Delta legislation package, and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target as provided in the State's Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gallons per capita per day (gpcd) and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD's recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and economic conditions. However, Otay WD's effective water use awareness campaign and the enhanced conservation mentality of its customers will likely result in some degree of long-term carryover of these reduced consumption rates.

In evaluating the availability of sufficient water supply, the Otay Mesa Community Plan Update proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay Water District Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. The new water supply projects are in response to the regional water supply issues related to the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

Water supplies necessary to serve the demands of the proposed Otay Mesa Community Plan Update, along with existing and other reasonably foreseeable projected future users, as well as the actions necessary and the development status of these supplies, will be identified and included within the water supply planning documents of the Water Authority and MWD. This WSA&V Report demonstrates and verifies that, with development of the resources currently identified and those that may be additionally acquired; there are sufficient water supplies being planned for and/or being developed over the next 20-year planning horizon. These water supplies meet the projected demand of the proposed Otay Mesa Community Plan Update and the existing and other reasonably foreseeable planned development projects within the Otay WD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, proposed water supply projects, or agreements relevant to the identified water supply needs for the proposed Otay Mesa Community Plan Update. This WSA&V Report incorporates by reference the current Urban Water Management Plans and other water resources planning documents of the Otay WD, the Water Authority, and MWD. The Otay WD prepared this WSA&V to verify and document that sufficient water supplies are being planned for and are intended to be acquired to meet projected water demands of the Otay Mesa Community Plan Update and the existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal supply years, and in single dry and multiple dry years.

Based on a normal water supply year, the five-year increments for a 20-year projection indicate projected potable and recycled water supply is being planned for and is intended to be acquired to meet the estimated water demand targets of the Otay WD. These water demand targets are 44,883 AF in 2015 and increase to 56,614 AF in 2035 per the Otay WD 2010 UWMP. Based on dry year forecasts, the estimated water supply is also being planned for and is intended to be acquired to meet the projected water demand, during single dry and multiple dry year scenarios. On average, the dry-year demands are about 6.4 percent higher than the normal year demands. The Otay WD recycled water supply is assumed to be drought-proof and not subject to reduction during dry periods.

These findings demonstrate and verify that sufficient water supplies are being planned for and are intended to be acquired to serve the proposed Otay Mesa Community Plan Update and the existing and other reasonably foreseeable planned projects within the Otay WD in both normal and single and multiple dry year forecasts for a 20-year planning horizon.

Section 3 - Project Description

The Otay Mesa Community Plan Update project is located within the City of San Diego, California. Refer to Appendix A for a regional location map of the proposed project.

The Otay Mesa community encompasses approximately 9,300 acres in the southeastern portion of the City of San Diego. Approximately 5,200 acres are served by the City, with the remaining 4,100 acres served by Otay WD. The community is bordered by the San Ysidro and Otay Mesa-Nestor communities on the west, the City of Chula Vista and the Otay Valley Regional Park on the north, the County of San Diego on the east and the US/Mexico border and the City of Tijuana on the south.

The Project will re-designate land uses to increase the number of allowable residential units and reduce the acreage for industrial uses. New land use designations are proposed to allow the establishment of industrial centers, mixed commercial and residential uses, and, where appropriate, residential uses near industrial uses. Modified industrial and commercial land use designations also are included that are similar to the industrial intensity found in the adopted community plan. The International Business and Trade would be the dominant industrial land use in this scenario. Other features of the Project include:

- Increasing housing unit yield in the southwestern residential areas
- Creating a village center in an area south of SR-905 and west of Britannia Boulevard
- Designating a corridor of Business Park-themed industrial uses along SR-905
- Seeking to enhance the image of the community along SR-905 with flex space and corporate office users flanking the freeway
- Encouraging outdoor storage and heavy industry uses to shift to the border area

Table 1 illustrates the combination of land uses in the Otay Mesa Community Plan Update.

Table 1
Otay Mesa Community Plan Update Proposed Land Uses

	Total	City	Otay WD
Acreage	**9,320**	**5,190**	**4,130**
Residential	757	757	
Residential w/ Village Center	726	535	191
Commercial	317	175	142
Industrial	1,115	239	876
IBT	1,310	24	1,286
Institutional	1,166	946	220
Parks & Open Space	2,910	2,062	848
Right of Way	1,019	452	567
Housing Units	**18,774**		
SF	4,273	4,273	0
MF	14,501	9,255	5,246

Source: Otay Mesa Community Plan Update, Technical Infrastructure Study, May 2013

Refer to Appendix B for the proposed development plan of the Otay Mesa Community Plan Update.

The City has identified discretionary actions and/or permit approval requirements for the Otay Mesa Community Plan Update. The projected potable and recycled water demands and resulting water supply requirements associated with the Otay Mesa Community Plan Update have considered the discretionary actions and/or permit approvals and are incorporated into and used in this WSA&V Report. The water demands for the proposed Otay Mesa Community Plan Update are provided in Section 5 – Historical and Projected Water Demands.

Section 4 – Otay Water District

The Otay WD is a municipal water district formed in 1956 pursuant to the Municipal Water District Act of 1911 (Water Code §§ 71000 et seq.). The Otay WD joined the Water Authority as a member agency in 1956 to acquire the right to purchase and distribute imported water throughout its service area. The Water Authority is an agency responsible for the wholesale supply of water to its 24 public agency members in San Diego County.

The Otay WD currently relies on the Water Authority for 100 percent of its treated potable water supply. The Water Authority is the agency responsible for the supply of imported water into San Diego County through its membership in MWD. The Water Authority currently obtains the vast majority of its imported supply from MWD, but is in the process of diversifying its available supplies.

The Otay WD provides water service to residential, commercial, industrial, and agricultural customers, and for environmental and fire protection uses. In addition to providing water throughout its service area, Otay WD also provides sewage collection and treatment services to a portion of its service area known as the Jamacha Basin. The Otay WD also owns and operates the Ralph W. Chapman Water Reclamation Facility (RWCWRF) to produce recycled water. The RWCWRF has an effective treatment capacity of 1.2 mgd or about 1,300 AFY. On May 18, 2007 an additional source of recycled water supply of at least 6 mgd (approximately 6,720 AFY) became available to Otay WD from the City of San Diego's South Bay Water Reclamation Plant (SBWRP).

The Otay WD jurisdictional area is generally located within the south central portion of San Diego County and includes approximately 125 square miles. The Otay WD serves portions of the unincorporated communities of southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, and Otay Mesa, the eastern portion of the City of Chula Vista and a portion of the City of San Diego on Otay Mesa. The Otay WD jurisdiction boundaries are roughly bounded on the north by the Padre Dam Municipal Water District, on the northwest by the Helix Water District, and on the west by the South Bay Irrigation District (Sweetwater

Authority) and the City of San Diego. The southern boundary of Otay WD is the international border with Mexico.

The planning area addressed in the Otay WD WRMP Update and the Otay WD 2010 UWMP includes the land within the jurisdictional boundary of the Otay WD and those areas outside of the present Otay WD boundaries considered to be in the Area of Influence of the Otay WD. Figure 2-1 within the Otay WD WRMP Update shows the jurisdictional boundary of the Otay WD and the Area of Influence. The planning area is approximately 143 square miles, of which approximately 125 square miles are within the Otay WD current boundaries and approximately 18 square miles are in the Area of Influence. The area east of Otay WD is rural and currently not within any water purveyor jurisdiction and potentially could be served by the Otay WD in the future if the need for imported water becomes necessary, as is the case for the Area of Influence.

The City of Chula Vista, the City of San Diego, and the County of San Diego are the three land use planning agencies within the Otay WD jurisdiction. Data on forecasts for land use planning, demographics, economic projections, population, and the future rate of growth within Otay WD were obtained from the SANDAG. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information through the year 2050. Population growth within the Otay WD service area is expected to increase from the 2010 figure of approximately 198,616 to an estimated 284,997 by 2035. Land use information used to develop water demand projections are based upon Specific or Sectional Planning Areas, the Otay Ranch General Development Plan/Sub-regional Plan, East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista, and County of San Diego General Plans.

The Otay WD long-term historic growth rate has been approximately 4 percent. The growth rate has significantly slowed due to the current economic conditions and it is expected to slow as the inventory of developable land is diminished.

Climatic conditions within the Otay WD service area are characteristically Mediterranean near the coast, with mild temperatures year round. Inland areas are both hotter in summer and cooler in winter, with summer temperatures often exceeding 90 degrees and winter temperatures occasionally dipping to below freezing. Most of the region's rainfall occurs during the months of December through March. Average annual rainfall is approximately 12.17 inches per year.

Historic climate data were obtained from the Western Regional Climate Center for Station 042706 (El Cajon). This station was selected because its annual temperature variation is representative of most of the Otay WD service area. While there is a station in the City of Chula Vista, the temperature variation at the City of Chula Vista station is more typical of a coastal environment than the conditions in most of the Otay WD service area.

4.1 Urban Water Management Plan

In accordance with the California Urban Water Management Planning Act and recent legislation, the Otay Water District Board adopted an UWMP in June 2011 and subsequently submitted the plan to the California Department of Water Resources (DWR). The Otay WD 2010 UWMP is currently being reviewed by DWR. As required by law, the Otay WD 2010 UWMP includes projected water supplies required to meet future demands through 2035. In accordance with Water Code Section 10910 (c)(2) and Government Code Section 66473.7 (c)(3), information from the Otay WD 2010 UWMP along with supplemental information from the Otay WD WRMP Update have been utilized to prepare this WSA&V Report and are incorporated herein by reference.

The state Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session (SBX 7-7) on November 10, 2009, which became effective February 3, 2010. This new law was the water conservation component to the Delta legislation package and seeks to achieve a 20 percent statewide reduction in urban per capita water use in California by December 31, 2020. Specifically, SBX 7-7 from this Extraordinary Session requires each urban retail water supplier to develop urban water use targets to help meet the 20 percent reduction goal by 2020 (20x2020), and an interim water reduction target by 2015.

The SBX 7-7 target setting process includes the following: (1) baseline daily per capita water use; (2) urban water use target; (3) interim water use target; (4) compliance daily per capita water use, including technical bases and supporting data for those determinations. In order for an agency to meet its 2020 water use target, each agency can increase its use of recycled water to offset potable water use and also increase its water conservation measures. The required water use targets for 2020 and an interim target for 2015 are determined using one of four target methods – each method has numerous methodologies. The 2020 urban water use target may be updated in a supplier's 2015 UWMP.

In 2015, urban retail water suppliers will be required to report interim compliance followed by actual compliance in 2020. Interim compliance is halfway between the baseline water use and 2020 target. Baseline, target, and compliance-year water use estimates are required to be reported in gallons per capita per day (gpcd).

Failure to meet adopted targets will result in the ineligibility of a water supplier to receive grants or loans administered by the State unless one (1) of two (2) exceptions is met. Exception one (1) states a water supplier may be eligible if they have submitted a schedule, financing plan, and budget to DWR for approval to achieve the per capita water use reductions. Exception two (2) states a water supplier may be eligible if an entire water service area qualifies as a disadvantaged community.

Otay WD has adopted Method 1 to set its 2015 interim and 2020 water use targets. Method 1 requires setting the 2020 water use target to 80 percent of baseline per capita water use target

as provided in the State's Draft 20x2020 Water Conservation Plan. The Otay WD 2015 target is 171 gpcd and the 2020 gpcd target at 80 percent of baseline is 152 gpcd.

The Otay WD's recent per capita water use has been declining to the point where current water use already meets the 2020 target for Method 1. This recent decline in per capita water use is largely due to drought water use restrictions, increased water costs, and poor economic conditions. However, Otay WD's effective water use awareness campaign and the enhanced conservation mentality of its customers will likely result in some long-term carryover of these reduced consumption rates.

Section 5 – Historical and Projected Water Demands

The projected demands for Otay WD are based on Specific or Sectional Planning Areas, the Otay Ranch General Development Plan/Sub-regional Plan, the East Otay Mesa Specific Plan Area, San Diego County Community Plans, and City of San Diego Otay Mesa Community Plan, City of Chula Vista and County of San Diego General Plans. This land use information is also used by SANDAG as the basis for its most recent forecast data. This land use information is utilized in the preparation of the Otay WD WRMP Update and Otay WD 2010 UWMP to develop the forecasted demands and supply requirements.

In 1994, the Water Authority selected the Institute for Water Resources-Municipal and Industrial Needs (MAIN) computer model to forecast municipal and industrial water use for the San Diego region. The MAIN model uses demographic and economic data to project sector-level water demands (i.e. residential and non-residential demands). This econometric model has over a quarter of a century of practical application and is used by many cities and water agencies throughout the United States. The Water Authority's version of the MAIN model was modified to reflect the San Diego region's unique parameters and is known as CWA-MAIN.

The foundation of the water demand forecast is the underlying demographic and economic projections. In 1992, the Water Authority and SANDAG entered into a Memorandum of Agreement (MOA), in which the Water Authority agreed to use the SANDAG current regional growth forecast for water supply planning purposes. In addition, the MOA recognizes that water supply reliability must be a component of San Diego County's regional growth management strategy required by Proposition C, as passed by the San Diego County voters in 1988. The MOA ensures a strong linkage between local general plan land use forecasts and water demand projections and resulting supply needs for the San Diego region.

Consistent with the previous CWA-MAIN modeling efforts, on February 26, 2010, the SANDAG Board of Directors accepted the Series 12: 2050 Regional Growth Forecast. The 2050 Regional Growth Forecast will be used by SANDAG as the foundation for the next Regional Comprehensive Plan update. SANDAG forecasts also are used by local

governments for planning, including the San Diego County Water Authority 2010 Urban Water Management Plan update. The City of San Diego Otay Mesa Community Plan Update was included in SANDAG's Series 12 regional growth forecast.

The municipal and industrial forecast also included an updated accounting of projected conservation savings based on projected regional implementation of the California Urban Water Conservation Council (CUWCC) Best Management Practices and SANDAG demographic information for the period 2010 through 2035. These savings estimates were then factored into the baseline municipal and industrial demand forecast.

A separate agricultural model, also used in prior modeling efforts, was used to forecast agricultural water demands within the Water Authority service area. This model estimates agricultural demand to be met by the Water Authority's member agencies based on agricultural acreage projections provided by SANDAG, crop distribution data derived from the Department of Water Resources and the California Avocado Commission, and average crop-type watering requirements based on California Irrigation Management Information System data.

The Water Authority and MWD update their water demand and supply projections within their jurisdictions utilizing the SANDAG most recent growth forecast to project future water demands. This provides for the important strong link between demand and supply projections to the land use plans of the cities and the county. This provides for consistency between the retail and wholesale agencies water demand projections, thereby ensuring that adequate supplies are and will be planned for the Otay WD existing and future water users. Existing land use plans, any revisions to land use plans, and annexations are captured in the SANDAG updated forecasts. The Water Authority and MWD will update their demand forecasts based on the SANDAG most recent forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions may require water supply assessment and/or verification reports consistent with Senate Bills 610 and 221 for proposed land use developments that either have pending or proposed annexations into the Otay WD, Water Authority, and MWD or that have revised land use plans than originally anticipated. The Water Authority and MWD next forecast and supply planning documents would then capture any increase or decrease in demands caused by annexations or revised land use plans.

In evaluating the availability of sufficient water supply, the Otay Mesa Community Plan Update proponents are required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay Water District Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought

conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. A few examples of these alternative water supply projects include the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Rosarito Ocean Desalination Facility project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD next forecast and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

In addition, MWD's 2010 Regional Urban Water Management Plan identified potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet any unanticipated demands. The Water Authority and MWD's next forecast and supply planning documents would capture any increase in necessary supply resources resulting from any new water supply resources.

The Otay WD water demand projection methodology utilizes a component land use approach. This is done by applying representative values of water use to the acreage of each land use type and then aggregating these individual land use demand projections into an overall total demand for the Otay WD. This is called the water duty method, and the water duty is the amount of water used in acre-feet per acre per year. This approach is used for all the land use types except residential development where a demand per dwelling unit was applied. In addition, commercial and industrial water use categories are further subdivided by type including separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are established.

To determine water duties for the various types of land use, the entire water meter database of the Otay WD is utilized and sorted by the appropriate land use types. The metered consumption records are then examined for each of the land uses, and water duties are determined for the various types of residential, commercial, industrial, and institutional land uses. For example the water duty factors for commercial and industrial land uses are estimated using 1,785 and 893 gallons per day per acre, respectively. Residential water demand is established based on the same data but computed on a per-dwelling unit basis. The focus is to ensure that for each of the residential land use categories (very low, low, medium, and high densities), the demand criteria used is adequately represented based upon actual data. This method is used because residential land uses constitute a substantial percentage of the total developable planning area of the Otay WD.

The WRMP Update calculates potable water demand by taking the gross acreage of a site and applying a potable water reduction factor (PWRF), which is intended to represent the percentage of acreage to be served by potable water and that not served by recycled water for irrigation. For industrial land use, as an example, the PWRF is 0.95 (i.e., 95% of the site is assumed to be served by potable water, 5% of the site is assumed to be irrigated with recycled water). The potable net acreage is then multiplied by the unit demand factor corresponding to its respective land use. This approach is used in the WRMP Update for all the land use types except residential development where a demand per dwelling unit is applied. In addition, commercial and industrial water use categories are further subdivided by type including

separate categories for golf courses, schools, jails, prisons, hospitals, etc. where specific water demands are allocated.

By applying the established water duties to the proposed land uses, the projected water demand for the entire Otay WD planning area at ultimate development is determined. Projected water demands for the intervening years were determined using growth rate projections consistent with data obtained from SANDAG and the experience of the Otay WD.

The historical and projected potable water demands for Otay WD are shown in Table 2.

Table 2
Historical and Projected Potable Water Fiscal Year Demands (AF)

Water Use Sectors	2005	2010	2015	2020	2025	2030	2035
Single Family	21,233	17,165	23,633	28,312	33,600	37,211	40,635
Multi-Family	3,095	3,605	3,444	4,126	4,897	5,423	5,922
Commercial &	1,657	2,243	1,844	2,209	2,622	2,904	3,171
Institutional &	2,262	1,867	2,518	3,017	3,580	3,965	4,330
Landscape	6,458	3,732	10,134	12,141	14,408	15,957	17,425
Other	2,426	584	2,700	3,235	3,839	4,252	4,643
Unaccounted for	547	23	608	729	865	958	1,046
Totals	**37,668**	**29,270**	**44,883**	**53,768**	**63,811**	**70,669**	**77,171**

Source: Otay Water District 2010 UWMP.

The historical and projected recycled water demands for Otay WD are shown in Table 3.

Table 3
Historical and Projected Recycled Water Fiscal Year Demands (AF)

Water Use Sector	2005	2010	2015	2020	2025	2030	2035
Landscape	4,090	4,000	4,400	5,000	5,800	6,800	8,000
Totals	**4,090**	**4,000**	**4,400**	**5,000**	**5,800**	**6,800**	**8,000**

Source: Otay Water District 2010 UWMP, Table 10.

Using the land use demand projection criteria as established in the Otay WD WRMP Update, the current projected potable water demand for the proposed Otay Mesa Community Plan Update is shown in Table 4, which totals approximately 4.70 mgd or about 5,273 AFY.

Table 4
Otay Mesa Community Plan Updated Potable Water Annual Average Demands

Location (Land Use)	Quantity	Unit Rate	Potable Water Factor	Net Potable Unit Rate	Average Demand (gpd)
Multi-Family Residential	5,246 units	300 gpd/unit	85%	255 gpd/unit	1,337,730
Commercial/Office	142 acres	1,785 gpd/acre	90%	1,607 gpd/acre	228,123
Industrial	876 acres	893 gpd/acre	95%	848 gpd/acre	743,155
IBT	1,286 acres	1,800 gpd/acre	90%	1,620 gpd/acre	2,083,320
Institutional	220 acres	1,785 gpd/acre	80%	1,428 gpd/acre	314,160
Total					4,706,488

The current projected recycled water demand for the proposed Otay Mesa Community Plan Update is provided in Table 5, which totals approximately 0.68 mgd or about 774 AFY, representing about 13% of total Otay Mesa Community Plan Update demand.

Table 5
Otay Mesa Community Plan Updated Recycled Water Average Demands

Location (Land Use)	Quantity	Recycled Water Factor	Net Recycled Acreage	Unit Rate	Average Demand (gpd)
Multi-Family Residential	191 acres	15%	29	2,155 gpd/acre	61,741
Commercial/Office	142 acres	10%	14	2,155 gpd/acre	30,601
Industrial	876 acres	5%	44	2,155 gpd/acre	94,389
IBT	1,286 acres	10%	129	2,155 gpd/acre	277,133
Institutional	220 acres	20%	44	2,155 gpd/acre	94,820
Parks	61 acres	100%	61	2,155 gpd/acre	131,455
Total			**321**		**690,139**

5.1 Demand Management (Water Conservation)

Demand management, or water conservation is a critical part of the Otay WD 2010 UWMP and its long term strategy for meeting water supply needs of the Otay WD customers. Water conservation, is frequently the lowest cost resource available to any water agency. The goals of the Otay WD water conservation programs are to:

- Reduce the demand for more expensive, imported water.
- Demonstrate continued commitment to the Best Management Practices (BMP).
- Ensure a reliable water supply.

The Otay WD is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the California Urban Water Conservation Council (CUWCC) in 1991 in an effort to reduce California's long-term water demands. Water conservation programs are developed and implemented on the premise that water conservation increases the water supply by reducing the demand on available supply, which is vital to the optimal utilization of a region's water supply resources. The Otay WD participates in many water conservation programs designed and typically operated on a shared cost participation program basis among the Water Authority, MWD, and their member agencies. The demands shown in Tables 2 and 3 take into account implementation of water conservation measures within Otay WD.

As one of the first signatories to the MOU Regarding Urban Water Conservation in California, the Otay WD has made BMP implementation for water conservation the cornerstone of its conservation programs and a key element in its water resource management strategy. As a member of the Water Authority, Otay WD also benefits from regional programs performed on behalf of its member agencies. The BMP programs implemented by Otay WD and regional BMP programs implemented by the Water Authority that benefit all their member agencies are addressed in the Otay WD 2010 UWMP. In partnership with the Water Authority, the County of San Diego, City of San Diego, City of Chula Vista, and developers, the Otay WD water conservation efforts are expected to grow and expand. The resulting savings directly relate to additional available water in the San Diego County region for beneficial use within the Water Authority service area, including the Otay WD.

Additional conservation or water use efficiency measures or programs practiced by the Otay WD include the following:

- Supervisory Control and Data Acquisition System

  The Otay WD implemented and has operated for many years a Supervisory Control and Data Acquisition (SCADA) system to control, monitor, and collect data regarding the operation of the water system. The major facilities that have SCADA capabilities are the water flow control supply sources, transmission network, pumping stations, and water storage reservoirs. The SCADA system allows for many and varied useful functions. Some of these functions provide for operating personnel to monitor the water supply source flow rates, reservoir levels, turn on or off pumping units, etc. The SCADA system aids in the prevention of water reservoir overflow events and increases energy efficiency.

- Water Conservation Ordinance

California Water Code Sections 375 et seq. permit public entities which supply water at retail to adopt and enforce a water conservation program to reduce the quantity of water used by the people therein for the purpose of conserving water supplies of such public entity. The Otay WD Board of Directors established a comprehensive water conservation program pursuant to California Water Code Sections 375 et seq., based upon the need to conserve water supplies and to avoid or minimize the effects of any future shortage. A water shortage could exist based upon the occurrence of one or more of the following conditions:

1. A general water supply shortage due to increased demand or limited supplies.
2. Distribution or storage facilities of the Water Authority or other agencies become inadequate.
3. A major failure of the supply, storage, and distribution facilities of MWD, the Water Authority, and/or Otay WD.

The Otay WD water conservation ordinance finds and determines that the conditions prevailing in the San Diego County area require that the available water resources be put to maximum beneficial use to the extent to which they are capable, and that the waste or unreasonable use, or unreasonable method of use, of water be prevented and that the conservation of such water be encouraged with a view to the maximum reasonable and beneficial use thereof in the interests of the people of the Otay WD and for the public welfare.

Otay WD is currently engaged in a number of conservation and water use efficiency activities. Listed below are the current programs that are either on-going or were recently concluded:

- Residential Water Surveys: 1,349 completed since 1994
- Large Landscape Surveys: 194 completed since 1990
- Cash for Water Smart Plants Landscape Retrofit Program: over 217,600 square feet of turf grass replaced with water wise plants since 2003
- Rotating Nozzles Rebated: 3,170
- Residential Weather-Based Irrigation Controller (WBIC) Incentive Program: 231 distributed or rebated since 2004
- Residential High Efficiency Clothes Washers: 7,187 rebates since 1994
- Residential ULFT/HET Rebate Program: 22,376 rebates provided between 1991-2010
- Outreach Efforts to Otay WD Customers - the Otay WD promotes its conservation programs through staffing outreach events, bill inserts, articles in the Otay WD's quarterly customer Pipeline newsletter, direct mailings to Otay WD customers, the Otay WD's webpage and through the Water Authority's marketing efforts.
- School Education Programs- the Otay WD funds school tours of the Water Conservation Garden, co-funds Splash Labs, provides classroom water themed kits,

maintains a library of school age appropriate water themed books, DVDs, and videos, and runs both a school poster contest and a water themed photo contest.

- Water efficiency in new construction through Cal Green and the Model Water Efficient Landscape Ordinance
- Focus on Commercial/Institutional/Industrial through Promoting MWD's Save a Buck (Commercial) Program in conjunction with the Otay WD's own Commercial Process Improvement Program

As a signatory to the MOU Regarding Urban Water Conservation in California, the Otay WD is required to submit biannual reports that detail the implementation of current water conservation practices. The Otay WD voluntarily agreed to implement the fourteen water conservation Best Management Practices beginning in 1992. The Otay WD submits its report to the CUWCC every two years. The Otay WD BMP Reports for 2005 to 2010, as well as the BMP Coverage Report for 1999-2010, are included in the Otay WD 2010 UWMP.

The Otay Mesa Community Plan Update will implement the CUWCC Best Management Practices for water conservation such as installation of ultra low flow toilets, development of a water conservation plan, and potential beneficial use of recycled water, all of which are typical requirements of development projects within the City of San Diego.

Section 6 - Existing and Projected Supplies

The Otay WD currently does not have an independent raw or potable water supply source. The Otay WD is a member public agency of the Water Authority. The Water Authority is a member public agency of MWD. The statutory relationships between the Water Authority and its member agencies, and MWD and its member agencies, respectively, establish the scope of the Otay WD entitlement to water from these two agencies.

The Water Authority through two delivery pipelines, referred to as Pipeline No. 4 and the La Mesa Sweetwater Extension Pipeline, currently supply the Otay WD with 100 percent of its potable water. The Water Authority in turn, currently purchases the majority of its water from MWD. Due to the Otay WD reliance on these two agencies, this WSA&V Report includes referenced documents that contain information on the existing and projected supplies, supply programs, and related projects of the Water Authority and MWD. The Otay WD, Water Authority, and MWD are actively pursuing programs and projects to diversify their water supply resources.

The description of local recycled water supplies available to the Otay WD is also discussed below.

6.1 MWD Water District of Southern California 2005 Regional Urban Water Management Plan

In November 2010, MWD adopted its 2010 RUWMP. The 2010 RUWMP provides MWD's member agencies, retail water utilities, cities, and counties within its service area with, among other things, a detailed evaluation of the supplies necessary to meet future demands, and an evaluation of reasonable and practical efficient water uses, recycling, and conservation activities. During the preparation of the 2010 RUWMP, MWD also utilized the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority service area.

6.1.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

MWD is a wholesale supplier of water to its member public agencies and obtains its supplies from two primary sources: the Colorado River, via the Colorado River Aqueduct (CRA), which it owns and operates, and Northern California, via the State Water Project (SWP). The 2010 RUWMP documents the availability of these existing supplies and additional supplies necessary to meet future demands.

6.1.1.1 MWD Supplies

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP (2010 IRP Update) includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs. The planning buffer identifies an additional increment of water that could potentially be developed if other supplies are not implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development to ensure that the region is not under or over-developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate supplies to meet future demands.

In November 2010, MWD adopted its 2010 RUWMP in accordance with state law. The resource targets included in the preceding 2010 IRP Update serve as the foundation for the planning assumptions used in the 2010 RUWMP. MWD's 2010 RUWMP contains a water supply reliability assessment that includes a detailed evaluation of the supplies necessary to meet demands over a 25-year period in average, single dry year, and multiple dry year periods. As part of this process, MWD also uses the current SANDAG regional growth forecast in calculating regional water demands for the Water Authority's service area.

As stated in MWD's 2010 RUWMP, that plan may be used as a source document for meeting the requirements of SB 610 and SB 221 until the next scheduled update is completed in 2015. The 2005 RUWMP includes a "Justifications for Supply Projections" in Appendix A.3, that provides detailed documentation of the planning, legal, financial, and regulatory basis for including each source of supply in the plan. A copy of MWD's 2010 RUWMP can be found on the World Wide Web at the following site address:
http://www.mwdh2o.com/mwdh2o/pages/yourwater/RUWMP/RUWMP_2010.pdf

Water supply agencies throughout California continue to face climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current western states drought conditions. Challenges such as these essentially always will be present. The regional water supply agencies, the Water Authority and MWD, along with Otay WD nevertheless fully intend to have sufficient, reliable supplies to serve demands.

6.1.2 MWD Capital Investment Plan

As part of MWD's annual budget approval process, a Capital Investment Plan is prepared. The cost, purpose, justification, status, progress, etc. of MWD's infrastructure projects to deliver existing and future supplies are documented in the Capital Investment Plan. The financing of these projects is addressed as part of the annual budget approval process.

MWD's Capital Investment Plan includes a series of projects identified from MWD studies of projected water needs, which, when considered along with operational demands on aging facilities and new water quality regulations, identify the capital projects needed to maintain infrastructure reliability and water quality standards, improve efficiency, and provide future cost savings. All projects within the Capital Investment Plan are evaluated against an objective set of criteria to ensure they are aligned with the MWD's goals of supply reliability and quality.

6.2 San Diego County Water Authority Regional Water Supplies

The Water Authority has adopted plans and is taking specific actions to develop adequate water supplies to help meet existing and future water demands within the San Diego region. This section contains details on the supplies being developed by the Water Authority. A summary of recent actions pertaining to development of these supplies includes:

- In accordance with the Urban Water Management Planning Act, the Water Authority adopted their 2010 UWMP in June 2011. The updated Water Authority 2010 UWMP identifies a diverse mix of local and imported water supplies to meet future demands. A copy of the updated Water Authority 2010 UWMP can be found on the internet at http://www.sdcwa.org/2010-urban-water-management-plan

- Deliveries of conserved agricultural water from the Imperial Irrigation District (IID) to San Diego County have increased annually since 2003, with 70,000 ac-ft of deliveries in Fiscal Year (FY) 2010. These quantities will increase annually to 200,000 AFY by 2021, and then remain fixed for the duration of the transfer agreement.

- As part of the October 2003 Quantification Settlement Agreement (QSA), the Water Authority was assigned MWD's rights to 77,700 AFY of conserved water from the All-American Canal (AAC) and Coachella Canal (CC) lining projects. Deliveries of this conserved water from the CC reached the region in 2007 and deliveries from the AAC reached the region in 2010. Expected supplies from the canal lining projects are considered verifiable Water Authority supplies.

Through implementation of the Water Authority and member agency planned supply projects, along with reliable imported water supplies from MWD, the region anticipates having adequate supplies to meet existing and future water demands.

To ensure sufficient supplies to meet projected growth in the San Diego region, the Water Authority uses the SANDAG most recent regional growth forecast in calculating regional water demands. The SANDAG regional growth forecast is based on the plans and policies of the land-use jurisdictions with San Diego County. The existing and future demands of the member agencies are included in the Water Authority's projections.

6.2.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The Water Authority currently obtains imported supplies from MWD, conserved water from the AAC and CC lining projects, and an increasing amount of conserved agricultural water from IID. Of the twenty-seven member agencies that purchase water supplies from MWD, the Water Authority is MWD's largest customer.

Section 135 of MWD's Act defines the preferential right to water for each of its member agencies. As calculated by MWD, the Water Authority's preferential right as of December 11, 2012 is 17.22 percent of MWD's supply, while the Water Authority accounted for approximately 25 percent of MWD's total revenue. Under preferential rights, MWD could allocate water without regard to historic water purchases or dependence on MWD. The Water Authority and its member agencies are taking measures to reduce dependence on MWD through development of additional supplies and a water supply portfolio that would not be jeopardized by a preferential rights allocation. MWD has stated, consistent with Section 4202 of its Administrative Code that it is prepared to provide the Water Authority's service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs, MWD stated it will be prepared to deliver such supplies. In Section ES-5 of their 2010 RUWMP, MWD states that MWD has supply capacities that would be sufficient to meet expected demands

from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs.

The Water Authority has made large investments in MWD's facilities and will continue to include imported supplies from MWD in the future resource mix. As discussed in the Water Authority's 2010 UWMP, the Water Authority and its member agencies are planning to diversify the San Diego regions supply portfolio and reduce purchases from MWD.

As part of the Water Authority's diversification efforts, the Water Authority is now taking delivery of conserved agricultural water from IID and water saved from the AAC and CC lining projects. The CC lining project is complete and the Water Authority has essentially completed construction of the AAC lining project. Table 6 summarizes the Water Authority's supply sources with detailed information included in the sections to follow. Deliveries from MWD are also included in Table 6, which is further discussed in Section 6.1 above. The Water Authority's member agencies provided the verifiable local supply targets for groundwater, groundwater recovery, recycled water, and surface water, which are discussed in more detail in Section 5 of the Water Authority's 2010 UWMP.

Table 6
Projected Verifiable Water Supplies – Water Authority Service Area
Normal Year (AF)

Water Supply Sources	2015	2020	2025	2030	2035
Water Authority Supplies					
MWD Supplies	358,189	230,601	259,694	293,239	323,838
Water Authority/IID Transfer	100,000	190,000	200,000	200,000	200,000
AAC and CC Lining Projects	80,200	80,200	80,200	80,200	80,200
Proposed Regional Seawater Desalination (1)	0	56,000	56,000	56,000	56,000
Member Agency Supplies					
Surface Water	48,206	47,940	47,878	47,542	47,289
Water Recycling	38,660	43,728	46,603	48,278	49,998
Groundwater	11,710	11,100	12,100	12,840	12,840
Groundwater Recovery	10,320	15,520	15,520	15,520	15,520
Total Projected Supplies	**647,285**	**675,089**	**717,995**	**753,619**	**785,685**

Source: Water Authority 2010 Urban Water Management Plan – Table 9-1.
Note 1: On November 29, 2012, the Water Authority approved a water purchase agreement with Poseidon for 48,000 AFY with the right to purchase up to 56,000 AFY

Section 5 of the Water Authority's 2010 UWMP also includes a discussion on the local supply target for seawater desalination. Seawater desalination supplies represent a significant future local resource in the Water Authority's service area.

The Carlsbad Desalination Project (Project) is a fully-permitted seawater desalination plant and conveyance pipeline designed to provide a highly reliable local supply of up to 56,000 AFY for the region. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. If the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991. The desalination plant itself will be fully financed, built, and operated by Poseidon. The Water Authority will purchase water from the plant under a water purchase agreement. The new pipeline connecting the desalination plant with the Water Authority's Second Aqueduct will be owned and operated by the Water Authority, but responsibility for design and construction will reside with Poseidon through a separate Design-Build Agreement. The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority's system for optimal distribution to member agencies.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA. On November 29, 2012, the Water Authority Board adopted a resolution approving the Water Purchase Agreement (WPA).

The Water Authority's existing and planned supplies from the IID transfer and canal lining projects are considered "drought-proof" supplies and should be available at the yields shown in Table 6 in normal water year supply and demand assessment. Single dry year and multiple dry year scenarios are discussed in more detail in Section 9 of the Water Authority's 2010 UWMP.

As part of preparation of a written water supply assessment and/or verification report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall

conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies throughout the San Diego region.

6.2.1.1 Water Authority-Imperial Irrigation District Water Conservation and Transfer Agreement

The QSA was signed in October 2003, and resolves long-standing disputes regarding priority and use of Colorado River water and creates a baseline for implementing water transfers. With approval of the QSA, the Water Authority and IID were able to implement their Water Conservation and Transfer Agreement. This agreement not only provides reliability for the San Diego region, but also assists California in reducing its use of Colorado River water to its legal allocation.

On April 29, 1998, the Water Authority signed a historic agreement with IID for the long-term transfer of conserved Colorado River water to San Diego County. The Water Authority-IID Water Conservation and Transfer Agreement (Transfer Agreement) is the largest agriculture-to-urban water transfer in United States history. Colorado River water will be conserved by Imperial Valley farmers who voluntarily participate in the program and then transferred to the Water Authority for use in San Diego County.

Implementation Status

On October 10, 2003, the Water Authority and IID executed an amendment to the original 1998 Transfer Agreement. This amendment modified certain aspects of the 1998 Agreement to be consistent with the terms and conditions of the QSA and related agreements. It also modified other aspects of the agreement to lessen the environmental impacts of the transfer of conserved water. The amendment was expressly contingent on the approval and implementation of the QSA, which was also executed on October 10, 2003.

On November 5, 2003, IID filed a complaint in Imperial County Superior Court seeking validation of 13 contracts associated with the Transfer Agreement and the QSA. Imperial County and various private parties filed additional suits in Superior Court, alleging violations of CEQA, the California Water Code, and other laws related to the approval of the QSA, the water transfer, and related agreements. The lawsuits were coordinated for trial. The IID, Coachella Valley Water District, MWD, the Water Authority, and state are defending these suits and coordinating to seek validation of the contracts. In January 2010, a California Superior Court judge ruled that the QSA and 11 related agreements were invalid, because one of the agreements created an open-ended financial obligation for the state, in violation of California's constitution. The QSA parties appealed this decision and are continuing to seek validation of the contracts. The appeal is currently pending in the Third District Court of Appeal. A stay of the trial court judgment has been issued during the appeal. Implementation of the transfer provisions is proceeding during litigation.

Expected Supply

Deliveries into San Diego County from the transfer began in 2003 with an initial transfer of 10,000 AFY. The Water Authority received increasing amounts of transfer water each year, according to a water delivery schedule contained in the transfer agreement. In 2012, the Water Authority will receive 90,000 AF. The quantities will increase annually to 200,000 AFY by 2021 then remain fixed for the duration of the transfer agreement. The initial term of the Transfer Agreement is 45 years, with a provision that either agency may extend the agreement for an additional 30-year term.

During dry years, when water availability is low, the conserved water will be transferred under the IID Colorado River rights, which are among the most senior in the Lower Colorado River Basin. Without the protection of these rights, the Water Authority could suffer delivery cutbacks. In recognition for the value of such reliability, the 1998 contract required the Water Authority to pay a premium on transfer water under defined regional shortage circumstances. The shortage premium period duration is the period of consecutive days during which any of the following exist: 1) a Water Authority shortage; 2) a shortage condition for the Lower Colorado River as declared by the Secretary; and 3) a Critical Year. Under terms of the October 2003 amendment, the shortage premium will not be included in the cost formula until Agreement Year 16.

Transportation

The Water Authority entered into a water exchange agreement with MWD on October 10, 2003, to transport the Water Authority-IID transfer water from the Colorado River to San Diego County. Under the exchange agreement, MWD will take delivery of the transfer water through its Colorado River Aqueduct. In exchange, MWD will deliver to the Water Authority a like quantity and quality of water. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. According to the water exchange agreement, MWD will make delivery of the transfer water for 35 years, unless the Water Authority elects to extend the agreement another 10 years for a total of 45 years.

Cost/Financing

The costs associated with the transfer are financed through the Water Authority's rates and charges. In the agreement between the Water Authority and IID, the price for the transfer water started at $258 per acre-feet and increased by a set amount for the first seven years. In December 2009, the Water Authority and IID executed a fifth amendment to the water transfer agreement that sets the price per acre-feet for transfer water for calendar years 2010 through 2015, beginning at $405 per acre-feet in 2010 and increasing to $624 per acre-feet in 2015. For calendar years 2016 through 2034, the unit price will be adjusted using an agreed-upon index. The amendment also required the Water Authority to pay IID $6 million at the end of calendar year 2009 and another $50 million on or before October 1, 2010, provided that a transfer stoppage is not in effect as a result of a court order in the QSA coordinated cases. Beginning in

2035, either the Water Authority or IID can, if certain criteria are met, elect a market rate price through a formula described in the water transfer agreement.

The October 2003 exchange agreement between MWD and the Water Authority set the initial cost to transport the conserved water at $253 per acre-feet. Thereafter, the price is set to be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable laws and regulation, and generally applicable to the conveyance of water by MWD on behalf of its member agencies. The transportation charge in 2010 was $314 per acre-feet.

The Water Authority is providing $10 million to help offset potential socioeconomic impacts associated with temporary land fallowing. IID will credit the Water Authority for these funds during years 16 through 45. In 2007, the Water Authority prepaid IID an additional $10 million for future deliveries of water. IID will credit the Water Authority for this up-front payment during years 16 through 30.

As part of implementation of the QSA and water transfer, the Water Authority also entered into an environmental cost sharing agreement. Under this agreement the Water Authority is contributing a total of $64 million to fund environmental mitigation projects and the Salton Sea Restoration Fund.

Written Contracts or Other Proof

The supply and costs associated with the transfer are based primarily on the following documents:

Agreement for Transfer of Conserved Water by and between IID and the Water Authority (April 29, 1998). This Agreement provides for a market-based transaction in which the Water Authority would pay IID a unit price for agricultural water conserved by IID and transferred to the Water Authority.

Revised Fourth Amendment to Agreement between IID and the Water Authority for Transfer of Conserved Water (October 10, 2003). Consistent with the executed Quantification Settlement Agreement (QSA) and related agreements, the amendments restructure the agreement and modify it to minimize the environmental impacts of the transfer of conserved water to the Water Authority.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the transfer water to the Water Authority.

Environmental Cost Sharing, Funding, and Habitat Conservation Plan Development Agreement among IID, Coachella Valley Water District (CVWD), and Water Authority (October 10, 2003). This Agreement provides for the specified allocation of QSA-related

environmental review, mitigation, and litigation costs for the term of the QSA, and for development of a Habitat Conservation Plan.

Quantification Settlement Agreement Joint Powers Authority Creation and Funding Agreement (October 10, 2003). The purpose of this agreement is to create and fund the QSA Joint Powers Authority and to establish the limits of the funding obligation of CVWD, IID, and Water Authority for environmental mitigation and Salton Sea restoration pursuant to SB 654 (Machado).

Fifth Amendment to Agreement Between Imperial Irrigation District and San Diego County Water Authority for Transfer of Conserved Water (December 21, 2009). This agreement implements a settlement between the Water Authority and IID regarding the base contract price of transferred water.

Federal, State, and Local Permits/Approvals

Federal Endangered Species Act Permit. The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion on January 12, 2001, that provides incidental take authorization and certain measures required to offset species impacts on the Colorado River regarding such actions.

State Water Resources Control Board (SWRCB) Petition. SWRCB adopted Water Rights Order 2002-0016 concerning IID and Water Authority's amended joint petition for approval of a long-term transfer of conserved water from IID to the Water Authority and to change the point of diversion, place of use, and purpose of use under Permit 7643.

Environmental Impact Report (EIR) for Conservation and Transfer Agreement. As lead agency, IID certified the Final EIR for the Conservation and Transfer Agreement on June 28, 2002.

U. S. Fish and Wildlife Service Draft Biological Opinion and Incidental Take Statement on the Bureau of Reclamation's Voluntary Fish and Wildlife Conservation Measures and Associated Conservation Agreements with the California Water Agencies (12/18/02). The U. S. Fish and Wildlife Service issued the biological opinion/incidental take statement for water transfer activities involving the Bureau of Reclamation and associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

Addendum to EIR for Conservation and Transfer Agreement. IID as lead agency and Water Authority as responsible agency approved addendum to EIR in October 2003.

Environmental Impact Statement (EIS) for Conservation and Transfer Agreement. Bureau of Reclamation issued a Record of Decision on the EIS in October 2003.

CA Department of Fish and Game California Endangered Species Act Incidental Take Permit #2081-2003-024-006). The California Department of Fish and Game issued this permit

(10/22/04) for potential take effects on state-listed/fully protected species associated with IID/other California water agencies' actions on listed species in the Imperial Valley and Salton Sea (per the June 28, 2002 EIR).

California Endangered Species Act (CESA) Permit. A CESA permit was issued by California Department of Fish and Game (CDFG) on April 4, 2005, providing incidental take authorization for potential species impacts on the Colorado River.

6.2.1.2 All-American Canal and Coachella Canal Lining Projects

As part of the QSA and related contracts, the Water Authority was assigned MWD's rights to 77,700 AFY of conserved water from projects that will line the All-American Canal (AAC) and Coachella Canal (CC). The projects will reduce the loss of water that currently occurs through seepage, and the conserved water will be delivered to the Water Authority. This conserved water will provide the San Diego region with an additional 8.5 million AF over the 110-year life of the agreement.

Implementation Status

The CC lining project began in November 2004 and was completed in 2006. Deliveries of conserved water to the Water Authority began in 2007. The project constructed a 37-mile parallel canal adjacent to the CC. The AAC lining project was begun in 2005 and was completed in 2010. The lining project constructed a concrete-lined canal parallel to 24 miles of the existing AAC from Pilot Knob to Drop 3.

In July 2005, a lawsuit (*CDEM v United States,* Case No. CV-S-05-0870-KJD-PAL) was filed in the U. S. District Court for the District of Nevada on behalf of U.S. and Mexican groups challenging the lining of the AAC. The lawsuit, which names the Secretary of the Interior as a defendant, claims that seepage water from the canal belongs to water users in Mexico. California water agencies note that the seepage water is actually part of California's Colorado River allocation and not part of Mexico's allocation. The plaintiffs also allege a failure by the United States to comply with environmental laws. Federal officials have stated that they intend to vigorously defend the case.

Expected Supply

The AAC lining project makes 67,700 AF of Colorado River water per year available for allocation to the Water Authority and San Luis Rey Indian water rights settlement parties. The CC lining project makes 26,000 AF of Colorado River water each year available for allocation. The 2003 Allocation Agreement provides for 16,000 AFY of conserved canal lining water to be allocated to the San Luis Rey Indian Water Rights Settlement Parties. The remaining amount, 77,700 AFY, is to be available to the Water Authority, with up to an additional 4,850 AFY available to the Water Authority depending on environmental requirements from the CC lining project. For planning purposes, the Water Authority

assumes that 2,500 AF of the 4,850 AF will be available each year for delivery, for a total of 80,200 AFY of that supply. According to the Allocation Agreement, IID has call rights to a portion (5,000 AFY) of the conserved water upon termination of the QSA for the remainder of the 110 years of the Allocation Agreement and upon satisfying certain conditions. The term of the QSA is for up to 75 years.

Transportation

The October 10, 2003, Exchange Agreement between the Water Authority and MWD also provides for the delivery of the conserved water from the canal lining projects. The Water Authority will pay MWD's applicable wheeling rate for each acre-foot of exchange water delivered. In the Agreement, MWD will deliver the canal lining water for the term of the Allocation Agreement (110 years).

Cost/Financing

Under California Water Code Section 12560 et seq., the Water Authority received $200 million in state funds for construction of the canal lining projects. In addition, $20 million was made available from Proposition 50 and $36 million from Proposition 84. The Water Authority was responsible for additional expenses above the funds provided by the state.

The rate to be paid to transport the canal lining water will be equal to the charge or charges set by MWD's Board of Directors pursuant to applicable law and regulation and generally applicable to the conveyance of water by MWD on behalf of its member agencies.

In accordance with the Allocation Agreement, the Water Authority will also be responsible for a portion of the net additional Operation, Maintenance, and Repair (OM&R) costs for the lined canals. Any costs associated with the lining projects as proposed, are to be financed through the Water Authority's rates and charges.

Written Contracts or Other Proof

The expected supply and costs associated with the lining projects are based primarily on the following documents:

U.S. Public Law 100-675 (1988). Authorized the Department of the Interior to reduce seepage from the existing earthen AAC and CC. The law provides that conserved water will be made available to specified California contracting water agencies according to established priorities.

California Department of Water Resources - MWD Funding Agreement (2001). Reimburse MWD for project work necessary to construct the lining of the CC in an amount not to exceed $74 million. Modified by First Amendment (2004) to replace MWD with the Authority. Modified by Second Amendment (2004) to increase funding amount to $83.65 million, with addition of funds from Proposition 50.

California Department of Water Resources - IID Funding Agreement (2001). Reimburse IID for project work necessary to construct a lined AAC in an amount not to exceed $126 million.

MWD - CVWD Assignment and Delegation of Design Obligations Agreement (2002). Assigns design of the CC lining project to CVWD.

MWD - CVWD Financial Arrangements Agreement for Design Obligations (2002). Obligates MWD to advance funds to CVWD to cover costs for CC lining project design and CVWD to invoice MWD to permit the Department of Water Resources to be billed for work completed.

Allocation Agreement among the United States of America, The MWD Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District (October 10, 2003). This agreement includes assignment of MWD's rights and interest in delivery of 77,700 AF of Colorado River water previously intended to be delivered to MWD to the Water Authority. Allocates water from the AAC and CC lining projects for at least 110 years to the Water Authority, the San Luis Rey Indian Water Rights Settlement Parties, and IID, if it exercises its call rights.

Amended and Restated Agreement between MWD and Water Authority for the Exchange of Water (October 10, 2003). This agreement was executed pursuant to the QSA and provides for delivery of the conserved canal lining water to the Water Authority.

Agreement between MWD and Water Authority regarding Assignment of Agreements related to the AAC and CC Lining Projects. This agreement was executed in April 2004 and assigns MWD's rights to the Water Authority for agreements that had been executed to facilitate funding and construction of the AAC and CC lining projects.

Assignment and Delegation of Construction Obligations for the Coachella Canal Lining Project under the Department of Water Resources Funding Agreement No. 4600001474 from the San Diego County Water Authority to the Coachella Valley Water District, dated September 8, 2004.

Agreement Regarding the Financial Arrangements between the San Diego County Water Authority and Coachella Valley Water District for the Construction Obligations for the Coachella Canal Lining Project, dated September 8, 2004.

Agreement No. 04-XX-30-W0429 Among the United States Bureau of Reclamation, the Coachella Valley Water District, and the San Diego County Water Authority for the Construction of the Coachella Canal Lining Project Pursuant to Title II of Public Law 100-675, dated October 19, 2004.

California Water Code Section 12560 et seq. This Water Code Section provides for $200 million to be appropriated to the Department of Water Resources to help fund the canal lining projects in furtherance of implementing California's Colorado River Water Use Plan.

California Water Code Section 79567. This Water Code Section identifies $20 million as available for appropriation by the California Legislature from the Water Security, Clean Drinking Water, Coastal, and Beach Protection Fund of 2002 (Proposition 50) to DWR for grants for canal lining and related projects necessary to reduce Colorado River water use. According to the Allocation Agreement, it is the intention of the agencies that those funds will be available for use by the Water Authority, IID, or CVWD for the AAC and CC lining projects.

California Public Resources Code Section 75050(b)(1). This section identifies up to $36 million as available for water conservation projects that implement the Allocation Agreement as defined in the Quantification Settlement Agreement.

Federal, State, and Local Permits/Approvals

AAC Lining Project Final EIS/EIR (March 1994). A final EIR/EIS analyzing the potential impacts of lining the AAC was completed by the Bureau of Reclamation (Reclamation) in March 1994. A Record of Decision was signed by Reclamation in July 1994, implementing the preferred alternative for lining the AAC. A re-examination and analysis of these environmental compliance documents by Reclamation in November 1999 determined that these documents continued to meet the requirements of the NEPA and the CEQA and would be valid in the future.

CC Lining Project Final EIS/EIR (April 2001). The final EIR/EIS for the CC lining project was completed in 2001. Reclamation signed the Record of Decision in April 2002. An amended Record of Decision has also been signed to take into account revisions to the project description.

Mitigation, Monitoring, and Reporting Program for Coachella Canal Lining Project, SCH #1990020408; prepared by Coachella Valley Water District, May 16, 2001.

Environmental Commitment Plan for the Coachella Canal Lining Project, approved by the US Bureau of Reclamation (Boulder City, NV) on March 4, 2003.

Environmental Commitment Plan and Addendum to the All-American Canal Lining Project EIS/EIR California State Clearinghouse Number SCH 90010472 (June 2004, prepared by IID).

Addendum to Final EIS/EIR and Amendment to Environmental Commitment Plan for the All-American Canal Lining Project (approved June 27, 2006, by IID Board of Directors).

6.2.1.3 Carlsbad Seawater Desalination Project

Development of seawater desalination in San Diego County will assist the region in diversifying its water resources, reduce dependence on imported supplies, and provide a new drought-proof, locally treated water supply. The Carlsbad Desalination Project is a fully-permitted seawater desalination plant and conveyance pipeline currently being developed by Poseidon, a private investor–owned company that develops water and wastewater infrastructure. The project, located at the Encina Power Station in Carlsbad, has been in development since 1998 and was incorporated into the Water Authority's 2003 Water Facilities Master Plan and 2010 UWMP. The Carlsbad Desalination Project has obtained all required permits and environmental clearances and, when completed, will provide a highly reliable local supply of 48,000 to 56,000 AFY for the region.

Implementation Status

The Project has obtained all required permits and environmental clearances, including the following:

- National Pollutant Discharge Elimination System (NPDES) Discharge Permit (Regional Water Quality Control Board)
- Conditional Drinking Water Permit (California Department of Health Services)
- State Lands Commission Lease (State Lands Commission)
- Coastal Development Permit (California Coastal Commission)

IDE Technologies, a worldwide leader in the design, construction, and operation of desalination plants, was selected by Poseidon to be the desalination process contractor for the Project.

On July 22, 2010, the Board approved a Term Sheet between the Water Authority and Poseidon Resources that outlined the key terms and conditions that would be detailed and incorporated in a comprehensive Water Purchase Agreement (WPA). Beginning in October 2011 and under the direction of the Board's Carlsbad Desalination Project Advisory Group, staff began developing and negotiating with Poseidon a WPA consistent with the July 22, 2010 Board approved Term Sheet. The July 2010 Term Sheet also identified specific conditions precedent to Board consideration of the WPA.

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of

construction, the Water Authority will assume operational control of all pipeline improvements.

Expected Supply

When completed, the Project will provide a highly reliable local supply of 48,000 to 56,000 AFY of supply for the region, available in both normal and dry hydrologic conditions. In 2020, the Project would account for approximately 8% of the total projected regional supply and 30% of all locally generated water in San Diego County. When the project becomes operational in 2016, it will more than double the amount of local supplies developed in the region since 1991.

Transportation

On November 29, 2012, the Water Authority Board adopted a resolution approving the Design-Build Agreement between the Water Authority and Poseidon. The Design-Build Agreement establishes the commercial and technical terms for implementation of the desalination product pipeline improvements. These improvements consist of an approximate 10-mile long, 54-inch diameter conveyance pipeline connecting the Desalination Plant to the Water Authority's Second Aqueduct. The pipeline will generally be constructed within improved streets in commercial and industrial areas in the cities of Carlsbad, Vista, and San Marcos. The Water Authority will own the Project Water Pipeline Improvements upon execution of the Design-Build Agreement, and upon completion and acceptance of construction, the Water Authority will assume operational control of all pipeline improvements.

The Water Authority will be responsible for aqueduct improvements, including the relining and rehabilitation of Pipeline 3 to accept desalinated water under higher operating pressures, modifications to the San Marcos Vent that allows the flow of water between Pipelines 3 and 4, and improvements at the Twin Oaks Valley Water Treatment Plant necessary to integrate desalinated water into the Water Authority's system for optimal distribution to member agencies.

Cost/Financing

The plant and the offsite pipeline will be financed through tax exempt government bonds issued for the Water Authority by the California Pollution Control Financing Authority (CPCFA). On November 29, 2012, the Water Authority Board adopted a resolution approving agreements to accomplish tax exempt project financing through the CPCFA.

A preliminary September 2012 unit cost estimate was $2,300/AF. The Water Authority's water purchase costs will be financed through Water Authority rates and charges. Poseidon is financing the capital cost of the Project with a combination of private equity and tax-exempt Private Activity Bonds.

Written Contracts or Other Proof

The expected supply and costs associated with the Carlsbad Desalination Project are based primarily on the following documents:

Development Agreement between City of Carlsbad and Poseidon (October 2009). A Development Agreement between Carlsbad and Poseidon was executed on October 5, 2009

Agreement of Term Sheet between the Water Authority and Poseidon Resources (July 2010). The Water Authority approved the Term Sheet at its July 2010 Board Meeting. The Term Sheet outlines the terms and conditions of a future Water Purchase Agreement with Poseidon and allocates the resources to prepare the draft Water Purchase Agreement.

Federal, State, and Local Permits/Approvals

Carlsbad Desalination Project Final EIR
The City of Carlsbad, acting as lead agency for Carlsbad Seawater Desalination Plant and appurtenant facilities proposed by Poseidon (the "Project") prepared an Environmental Impact Report for the Project in compliance with the California Environmental Quality Act ("CEQA"), which the City of Carlsbad certified on June 13, 2006.
http://www.sdcwa.org/rwfmp-peir

The City of Carlsbad prepared an Addendum to the Carlsbad EIR ("Addendum") which was adopted on September 15, 2009, and reflects minor and immaterial design modifications to the Project site plan, appurtenant facilities, and water delivery pipeline network.
The environmental documents and permits are found at the following link:
http://www.carlsbad-desal.com/EIR.asp

The Water Authority, as a Responsible Agency under CEQA, adopted a resolution on November 29, 2012 approving a Second Addendum to the Carlsbad Precise Development Plan and Desalination Plant Final EIR and First Addendum that evaluates the environmental impacts of several proposed facility modifications that are necessary to allow for operational flexibility and efficiency in receiving and delivering desalination product water. These modifications include: a realignment of a portion of the approved desalination pipeline, the addition of chemical injection at the approved San Marcos Aqueduct Connection site, the relining of a portion of Pipeline 3, the addition of a pipeline and expanded flow control facility at Twin Oaks Valley Water Treatment Plant and a replacement of the San Marcos Vent on Pipeline 4. Impacts associated with the proposed modifications would not result in a new significant impact or substantial increase in the severity of impacts previously evaluated in the Carlsbad FEIR or the First Addendum. There are no substantial changes to the circumstances under which the project will be undertaken, and no new information of substantial importance that was not known and could not have been known when the FEIR was certified and the First Addendum was approved, and that have since been identified.

Therefore, the Second Addendum satisfies the CEQA requirements for the proposed project modifications.

Regional Water Facilities Master Plan EIR
On November 20, 2003, the Water Authority Board of Directors adopted Resolution No. 2003-34 certifying the Final Program Environmental Impact Report (State Clearinghouse No. 2003021052) for the Water Authority's Regional Water Facilities Master Plan Project (the "Master Plan EIR"), which evaluated, among other things, potential growth inducing impacts associated with new water supplies to the region including, but not limited to, up to 150 million gallons per day (mgd) of new supplies from seawater desalination. This certification included a 50 mgd plant located in the City of Carlsbad.
The environmental documents and permits are found at the following link:
http://www.sdcwa.org/rwfmp-peir

Sub regional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP)
On December 8, 2010, the Board adopted Resolution No. 2010-18 certifying a Final environmental Impact Report/Environmental Impact Statement for the San Diego County Water Authority Subregional Natural Community Conservation Plan/Habitat Conservation Plan (State Clearinghouse No. 2003121012) (the "Habitat Conservation Plan EIR/EIS"), which Plan was implemented on December 28, 201.
The environmental documents and permits are found at the following link:
http://www.sdcwa.org/nccp-hcp

Twin Oaks Valley Water Treatment Plant EIR
On September 8, 2005, the Board adopted Resolution No. 2005-31 certifying a Final Environmental Impact Report for the Twin Oaks Valley Water Treatment Plant Project (State Clearinghouse No. 20040071034) (the "Twin Oaks EIR"), which project was constructed as a 100 MGD submerged membrane water treatment facility, including treated water holding tanks and distribution pipelines and other facilities, consistent with the conditions and mitigation measures included in the Twin Oaks EIR.
http://www.sdcwa.org/twin-oaks-valley-treatment-plant-final-eir

2010 Urban Water Management Plan
http://www.sdcwa.org/2010-urban-water-management-plan

Drinking Water Permit (October 2006). The California Department of Health Services approved the Conditional Drinking Water Permit on October 19, 2006.

Coastal Development Permit
The Project is fully permitted, with the California Coastal Commission issuing the following permits: Coastal Development Permit No. E-06-013, Energy Minimization and Greenhouse Gas Reduction Plan (December 2008), Marine Life Mitigation Plan (December 2008), Erosion Control Plan (November 2009), Landscaping Plan (September 2009), Lighting Plan (August 2009), Construction Plan (September 2009), and Water Pollution Control Plan

(September 2009); the California Department of Public Health issuing Conceptual Approval Letter dated October 19, 2006; the California Regional Water Quality Control Board issuing NPDES Permit No. CA0109223 and Notice of Intent to Discharge for Storm Water Associated with Construction Activities (WDID #9 37C361181); the City of Carlsbad issuing Redevelopment Permit RP 05-12(A), Specific Plan 144 with Amendment 144(J) SP 144(J), Habitat Management Plan Permit Amendment HMP 05-08(A), Precise Development Plan PDP 00-02(B), Mitigation Monitoring and Reporting Program for EIR 03-05(A), Development Agreement DA 05-01(A), Standard Urban Storm Water Mitigation Program (September 2009), and Coastal Development Permit 04-41; the State of California State Lands Commission issuing an Amendment of Lease PRC 8727.1 (August 2008).
The environmental documents and permits are found at the following link:
http://www.sdcwa.org/carlsbad-desalination-project-approved-permits-and-plans

State Lands Commission Lease Application (Amendment of Lease PRC 8727.1 August 2008). Amends lease of land by Cabrillo Power I LLC (Cabrillo) from the State Lands Commission for the lands where the project will be constructed. Cabrillo and Poseidon entered into agreement on July 1, 2003, authorizing Poseidon to use those lands to construct the project.

6.2.2 Water Authority Capital Improvement Program and Financial Information

The Water Authority's Capital Improvement Program (CIP) can trace its beginnings to a report approved by the Board in 1989 entitled, The Water Distribution Plan, and a Capital Improvement Program through the Year 2010. The Water Distribution Plan included ten projects designed to increase the capacity of the aqueduct system, increase the yield from existing water treatment plants, obtain additional supplies from MWD, and increase the reliability and flexibility of the aqueduct system. Since that time the Water Authority has made numerous additions to the list of projects included in its CIP as the region's infrastructure needs and water supply outlook have changed.

The current list of projects included in the CIP is based on the results of planning studies, including the 2005 UWMP and the 2002 Regional Water Facilities Master Plan. These CIP projects, which are most recently described in the Water Authority's Adopted Multi-Year Budget, include projects valued at $3.50 billion. These CIP projects are designed to meet projected water supply and delivery needs of the member agencies through 2035. The projects include a mix of new facilities that will add capacity to existing conveyance, storage, and treatment facilities, as well as repair and replace aging infrastructure:

- Asset Management – The primary components of the asset management projects include relining and replacing existing pipelines and updating and replacing metering facilities.

- New Facilities – These projects will expand the capacity of the aqueduct system, complete the projects required under the Quantification Settlement Agreement (QSA), and evaluate new supply opportunities.
- Emergency Storage Project – Projects remaining to be completed under the ongoing ESP include the San Vicente Dam Raise, the Lake Hodges projects, and a new pump station to extend ESP supplies to the northern reaches of the Water Authority service area.
- Other Projects – This category includes out-of-region groundwater storage, increased local water treatment plant capacity, and projects that mitigate environmental impacts of the CIP.

The Water Authority Board of Directors is provided a semi-annual and annual report on the status of development of the CIP projects. As described in the Water Authority's biennial budget, a combination of long and short term debt and cash (pay-as-you-go) will provide funding for capital improvements. Additional information is included in the Water Authority's biennial budget, which also contains selected financial information and summarizes the Water Authority's investment policy.

6.3 Otay Water District

The Otay WD 2010 Water Resources Master Plan Update and the 2010 Urban Water Management Plan contain comparisons of projected supply and demands through the year 2035. Projected potable water resources to meet planned demands as documented were planned to be supplied entirely with imported water received from the Water Authority. Recycled water resources to meet projected demands are planned to be supplied from local wastewater treatment plants. The Otay WD currently has no local supply of raw water, potable water, or groundwater resources.

The development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD have evolved and are planned to occur in response to the regional water supply issues. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new additional water supply projects are not currently developed and are in various stages of the planning process. These local and regional water supply projects will allow for less reliance upon imported water and are considered a new water supply resource for the Otay WD.

The Otay WD expansion of the market areas for the use of recycled water within the watersheds upstream of the Sweetwater Reservoir, Otay Mesa, and the Lower Otay Reservoir will increase recycled water use and thus require less dependence on imported water for irrigation purposes.

The supply forecasts contained within this WSA&V Report do consider development and/or acquisition of potential groundwater, recycled water market expansion, and seawater desalination supplies by the Otay WD.

6.3.1 Availability of Sufficient Supplies and Plans for Acquiring Additional Supplies

The availability of sufficient potable water supplies and plans for acquiring additional potable water supplies to serve existing and future demands of the Otay WD is founded upon the preceding discussions regarding MWD's and the Water Authority's water supply resources and water supplies to be acquired by the Otay WD. Historic imported water deliveries from the Water Authority to Otay WD and recycled water deliveries from the Otay WD Ralph W. Chapman Water Reclamation Facility (RWCWRF) are shown in Table 7. Since the year 2000 through mid May 2007, recycled water demand has exceeded the recycled water supply capability typically in the summer months. The RWCWRF is limited to a maximum production of about 1,300 AFY. The recycled water supply shortfall had been met by supplementing with potable water into the recycled water storage system as needed by adding potable water supplied by the Water Authority. On May 18, 2007 an additional source of recycled water supply from the City of San Diego's South Bay Water Reclamation Plant (SBWRP) became available. The supply of recycled water from the SBWRP is a result of essentially completing construction and commencement of operations of the transmission, storage, and pump station systems necessary to link the SBWRP recycled water supply source to the existing Otay WD recycled water system.

Table 7
Historic Imported and Local Water Supplies
Otay Water District

Calendar Year	Imported Water (AF)	Recycled Water (AF)	Total (AF)
1980	12,558	0	12,558
1985	14,529	0	14,529
1990	23,200	0	23,200
1995	20,922	614	21,536
2000	29,901	948	30,849
2005	37,678	1,227	38,905
2010	29,270	4,090	33,270
2011	30,158	3,776	34,038
2012	31,268	4,155	35,423

Source: Otay Water District operational records.

6.3.1.1 Imported and Regional Supplies

The availability of sufficient imported and regional potable water supplies to serve existing and planned uses within Otay WD is demonstrated in the above discussion on MWD and the Water Authority's water supply reliability. The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." The Water Authority provides between 75 to 95 percent of the total supplies used by its 24 member agencies, depending on local weather and supply conditions. In calendar year 2010 the supply to Otay WD was 29,270 AF of supply from the Water Authority. An additional 4,090 AF of recycled water came from the City of San Diego and from the District's Ralph W. Chapman Water Reclamation Facility. The demand for potable water within the Otay WD is expected to increase to about 77,177 AF by 2035 as per the Otay WD 2010 UWMP.

Potable Water System Facilities

The Otay WD continues to pursue diversification of its water supply resources to increase reliability and flexibility. The Otay WD also continues to plan, design, and construct potable water system facilities to obtain these supplies and to distribute potable water to meet customer demands. The Otay WD has successfully negotiated two water supply diversification agreements that enhance reliability and flexibility, which are briefly described as follows.

- The Otay WD entered into an agreement with the City of San Diego, known as the Otay Water Treatment Plant (WTP) Agreement. The Otay WTP Agreement provides for raw water purchase from the Water Authority and treatment by the City of San Diego at their Otay WTP for delivery to Otay WD. The supply system link to implement the Otay WTP Agreement to access the regions raw water supply system and the local water treatment plant became fully operational in August 2005. This supply link consists of the typical storage, transmission, pumping, flow measurement, and appurtenances to receive and transport the treated water to the Otay WD system. The City of San Diego obligation to supply 10 mgd of treated water under the Otay WTP Agreement is contingent upon there being available 10 mgd of surplus treatment capacity in the Otay WTP until such time as Otay WD pays the City of San Diego to expand the Otay WTP to meet the Otay WD future needs. In the event that the City of San Diego's surplus is projected to be less than 10 mgd the City of San Diego will consider and not unreasonably refuse the expansion of the Otay WTP to meet the Otay WD future needs. The Otay WTP existing rated capacity is 40 mgd with an actual effective capacity of approximately 34 mgd. The City of San Diego's typical demand for treated water from the Otay WTP is approximately 20 mgd. It is at the City of San Diego's discretion to utilize either imported raw water delivered by the Water Authority Pipeline No. 3 or local water stored in Lower Otay Reservoir for treatment to supply the Otay WD demand.

- The Otay WD entered into an agreement with the Water Authority, known as the East County Regional Treated Water Improvement Program (ECRTWIP Agreement). The ECRTWIP Agreement provides for transmission of raw water to the Helix WD R. M. Levy WTP for treatment and delivery to Otay WD. The supply system link to implement the ECRTWIP Agreement is complete allowing access to the regions raw water supply system and the local water treatment plant. This supply link consists of the typical transmission, pumping, storage, flow control, and appurtenances to receive and transport the potable water from the R. M. Levy WTP to Otay WD. The Otay WD is required to take a minimum of 10,000 AFY of treated water from the R.M. Levy WTP supplied from the regions raw water system.

Cost and Financing

The capital improvement costs associated with water supply and delivery are financed through the Otay WD water meter capacity fee, New Water Supply Fee, and user rate structures. The Otay WD potable water sales revenue are used to pay for the wholesale cost of the treated water supply and the operating and maintenance expenses of the potable water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of treated water from the Otay WTP and the R.M. Levy WTP is based on the following documents.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District. The Otay WD entered into an agreement dated January 11, 1999 with the City of San Diego that provides for 10 mgd of surplus treated water to the Otay WD from the existing Otay WTP capacity. The agreement allows for the purchase of treated water on an as available basis from the Otay WTP. The Otay WD pays the Water Authority at the prevailing raw water rate for raw water and pays the City of San Diego at a rate equal to the actual cost of treatment to potable water standards.

Agreement between the San Diego County Water Authority and Otay Water District Regarding Implementation of the East County Regional Treated Water Improvement Program. The ECRTWIP Agreement requires the purchase of at least 10,000 AFY of potable water from the Helix WD R.M. Levy WTP at the prevailing Water Authority treated water rate. The ECRTWIP Agreement is dated April 27, 2006.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification. The Otay WD entered into the Otay 14 Flow Control Facility Modification Agreement dated January 24, 2007 with the Water Authority to increase the physical capacity of the Otay 14 Flow Control Facility. The Water Authority and Otay WD to 50% share the capital cost to expand its capacity from 8 mgd to 16 mgd.

Federal, State, and Local Permits/Approvals

The Otay WD acquired all the permits for the construction of the pipeline and pump station associated with the Otay WTP supply source and for the 640-1 and 640-2 water storage reservoirs project associated with the ECRTWIP Agreement through the typical planning, environmental approval, design, and construction processes.

The transmission main project constructed about 26,000 feet of a 36-inch diameter steel pipeline from the Otay 14 Flow Control Facility to the 640-1 and 640-2 Reservoirs project. The Otay 14 Flow Control Facility modification increased the capacity of the existing systems from 8 mgd to 16 mgd. CEQA documentation is complete for both projects. Construction of both of these projects was completed October 2010.

The City of San Diego and the Helix Water District are required to meet all applicable federal, state, and local health and water quality requirements for the potable water produced at the Otay WTP and the R.M. Levy WTP respectively.

6.3.1.2 Recycled Water Supplies

Wastewater collection, treatment, and disposal services provided by the Otay WD is limited to a relatively small area within what is known as the Jamacha Basin, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater Reservoir and downstream of Loveland Reservoir. Water recycling is defined as the treatment and disinfection of municipal wastewater to provide a water supply suitable for non-potable reuse. The Otay WD owns and operates the Ralph W. Chapman Water Reclamation Facility, which produces recycled water treated to a tertiary level for landscape irrigation purposes. The recycled water market area of the Otay WD is located primarily within the eastern area of the City of San Diego and on the Otay Mesa. The Otay WD distributes recycled water to a substantial market area that includes but is not limited to the U.S. Olympic Training Center, the EastLake Golf Course, and other development projects.

The Otay WD projects that annual average demands for recycled water will increase to 8,000 AFY by 2035. About 1,300 AFY of supply is generated by the RWCWRF, with the remainder planned to be supplied to Otay WD by the City of San Diego's SBWRP.

<u>North District Recycled Water Concept</u>

The Otay WD is a recognized leader in the use of recycled water for irrigation and other commercial uses. The Otay WD continues the quest to investigate all viable opportunities to expand the successful recycled water program into areas that are not currently served. One of these areas is in the portion of the service area designated as the North District, located within the Middle Sweetwater River Basin watershed upstream of the Sweetwater River. The close proximity of the recycled water markets in the North District to the Otay WD's source of

recycled water, the RWCWRF, means that the distribution system to serve this area could be constructed relatively cost effectively. This makes the North District a logical location for the expansion of the Otay WD's recycled water system and market area.

The purpose of the North District Recycled Water System Development Project, Phase I Concept Study, is to identify the feasibility of using recycled water in the North District and to investigate and assess any limitations or constraints to its use. The Phase I study components of the North District Recycled Water Concept encompassed the preparation of six technical memorandums including the project definition, a discussion of the regulatory process, a discussion of the protection of the watershed that would be affected by recycled water use in the North District, identification of stakeholders, public outreach, and an implementation plan.

Several opportunities that could be realized with the implementation of the use of recycled water in the North District were identified. These include a reduction of demand on the potable water system and maximizing recycled water resources which in turn minimizes treated wastewater discharges to the local ocean outfall. Other opportunities are a possible partnership with Sweetwater Authority to monitor any benefits and impacts of increased recycled water use in the watershed and stakeholder outreach to resolve any water quality concerns and to retain consumer confidence. Also identified were two major constraints associated with the North District Recycled Water System Development Project. One constraint is the water quality objectives for the Middle Sweetwater Basin that will affect the effluent limitations for the recycled water produced at the RWCWRF. At this time, the effluent limit that is of concern is total nitrogen. An examination as to how the treatment process might be modified to enhance nitrogen removal and an action plan is being developed. The other major constraint is the cost of the infrastructure needed to convey and store recycled water in the North District. These costs are estimated to be in the range of $14 to $15 million dollars.

There are two additional phases proposed for the North District Recycled Water System Development Project. Phase II would include further investigation of the issues identified in Phase I as requiring further study. These include stakeholder outreach, regulatory issues, and facility planning. The third phase of the effort would include the facility planning, permitting, environmental compliance, design, and construction of the improvements necessary for delivery of recycled water to the North District markets.

The estimated amount of imported water saved at full implementation of the North District Recycled Water System Development Project is 1,200 AFY. This saved imported water could then be used to offset new potable water demands.

Recycled Water System Facilities

The Otay WD has and continues to construct recycled water storage, pumping, transmission, and distribution facilities to meet projected recycled water market demands. For nearly 20

years, millions of dollars of capital improvements have been constructed. The supply link consisting of a transmission main, storage reservoir, and a pump station to receive and transport the recycled water from the City of San Diego's SBWRP are complete and recycled water deliveries began on May 18, 2007.

Cost and Financing

The capital improvement costs associated with the recycled water supply and distribution systems are financed through the Otay WD water meter capacity fee and user rate structures. The Otay WD recycled water sales revenue, along with MWD and the Water Authority's recycled water sales incentive programs are used to help offset the costs for the wholesale purchase and production of the recycled water supply, the operating and maintenance expenses, and the capital costs of the recycled water system facilities.

Written Agreements, Contracts, or Other Proof

The supply and cost associated with deliveries of recycled water from the SBWRP is based on the following document.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant. The agreement provides for the purchase of at least 6,721 AFY of recycled water from the SBWRP at an initial price of $350 per acre-foot. The Otay WD Board of Directors approved the final agreement on June 4, 2003 and the San Diego City Council approved the final agreement on October 20, 2003.

Federal, State, and Local Permits/Approvals

The Otay WD has in place an agreement with MWD for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. Also, the Otay WD has in place an agreement with the Water Authority for their recycled water sales incentive program for supplies from the RWCWRF and the SBWRP. The Water Authority sales incentive agreement was approved by Water Authority on July 26, 2007 and by Otay WD on August 1, 2007. All permits for the construction of the recycled water facilities to receive, store, and pump the SBWRP supply have been acquired through the typical planning, environmental approval, design, and construction processes.

The California Regional Water Quality Control Board San Diego Region (RWQCB) "Master Reclamation Permit for Otay Water District Ralph W. Chapman Reclamation Facility" was adopted on May 9, 2007 (Order No. R9-2007-0038). This order establishes master reclamation requirements for the production, distribution, and use of recycled water in the Otay WD service area. The order includes the use of tertiary treated water produced and received from the City of San Diego's SBWRP. Recycled water received from and produced by the SBWRP is regulated by Regional Board Order No. 2000-203 and addenda. The City of San Diego is required to meet all applicable federal, state, and local health and water

quality requirements for the recycled water produced at the SBWRP and delivered to Otay WD in conformance with Order No. 2000-203.

6.3.1.3 Potential Groundwater Supplies

The Otay WD 2010 UWMP, the WRMP Update, and the Otay WD March 2007 Integrated Water Resources Plan (2007 IRP) both contain a description of the development of potential groundwater supplies. Over the past several years, Otay WD has studied numerous potential groundwater supply options that have shown, through groundwater monitoring well activities, poor quality water and/or insufficient yield from the basins at a cost effective level. The Otay WD has a few capital improvement program projects that continue the quest to develop potential groundwater resources. Local Otay WD groundwater supply development is currently considered as a viable water supply resource to meet projected demands.

The development and/or acquisition of potential groundwater supply projects by the Otay WD have evolved and been resurrected in response to the regional water supply issues related to water source supply conditions. Local ground water supply projects will allow for less reliance upon imported water, achieve a level of independence of the regional wholesale water agencies, and diversify the Otay WD's water supply portfolio consistent the Otay WD 2007 IRP.

In recognition of the need to develop sufficient alternative water supplies, the Otay WD has taken the appropriate next steps towards development of production groundwater well projects.

There are three groundwater well projects that the Otay WD is actively pursuing to develop as new local water supplies. They are known as the Middle Sweetwater River Basin Groundwater Well, the Otay Mesa Lot 7 Groundwater Well, and the Rancho del Rey Groundwater Well.

<u>Middle Sweetwater River Basin Groundwater Well</u>

The Middle Sweetwater River Basin Groundwater Well is an additional water supply project that was thoroughly studied and documented in the 1990s. The Middle Sweetwater River Basin is located within the Sweetwater River watershed and that reach of the river extends from Sweetwater Reservoir to the upstream Loveland Reservoir. The next step in development of the Middle Sweetwater River Basin Groundwater Well is the implementation of a pilot well project. The ultimate objective of the Otay WD is to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water as a local supply.

The purpose of the Middle Sweetwater River Basin Groundwater Well Pilot project is to identify the feasibility of developing a groundwater resource production system and then

determine and assess any limitations or constraints that may arise. The Middle Sweetwater River Basin Groundwater Well Pilot Project will accomplish six primary goals:

- Update project setting
- Update applicable project alternatives analysis
- Prepare groundwater well pilot project implementation plan
- Construct and test pilot monitoring and extraction wells
- Provide recommendations regarding costs and feasibility to develop a groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of potable water
- Prepare groundwater well production project implementation plan and scope of work

The groundwater conjunctive use concept is described as the extraction of the quantity of water from the groundwater basin that was placed there by customers of the Otay Water District, Helix Water District, and Padre Dam Municipal Water District by means of their use of imported treated water that contributed to the overall volume of groundwater within the basin. An estimated quantity was developed to be approximately 12.5 percent of the total consumption of the Otay WD customers within that basin, as measured by water meters. In the 1994-1995 period, the quantity of water that was returned to the groundwater basin by Otay WD customers was estimated to be 810 AFY. Currently, that 12.5 percent quantity could be on the order of 1,000 AFY. A future scope of work will need to addresses this concept while considering further development of the groundwater basin as an additional supply resource. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan, cost estimate, and related scope of work.

Further development of the groundwater basin to enhance the total groundwater production could be accomplished by the Otay WD by means of additional extraction of water from the basin that is placed there by means of either injection and/or spreading basins using imported untreated water as the resource supply. The existing La Mesa Sweetwater Extension Pipeline, owned by the Water Authority, once converted to an untreated water delivery system, could be the conveyance system to transport untreated water for groundwater recharge in support of this conjunctive use concept. These two distinct water resource supply conjunctive use concepts will be addressed so they may coexist and to allow for their development as separate phases.

The scope of work to complete Middle Sweetwater River Basin Groundwater Well Pilot Project consists of many major tasks and is to address the groundwater supply concepts outlined above. It is anticipated that the cost for the entire scope of work, will be on the order of $2,000,000, which includes a contingency and may take up to one and a half years to complete.

The primary desired outcome of the Middle Sweetwater River Basin Groundwater Well Pilot Project is for the engineering consultant to determine and make recommendations if it is

financially prudent and physically feasible to develop a Phase I groundwater well production system within the Middle Sweetwater River Basin capable of producing a sustainable yield of up to 1,500 AFY of potable water for the Otay WD. If it is deemed that a Middle Sweetwater River Basin Groundwater Well Production Project is viable then the consultant will develop and provide a groundwater well production project implementation plan and related scope of work.

Otay Mesa Lot 7 Groundwater Well

In early 2001 the Otay WD was approached by a landowner representative about possible interest in purchasing an existing well or alternatively, acquiring groundwater supplied from the well located on Otay Mesa. The landowner, National Enterprises, Inc., reportedly stated that the well could produce 3,200 AFY with little or no treatment required prior to introducing the water into the Otay WD potable water system or alternatively, the recycled water system. In March 2001 authorization to proceed with testing of the Otay Mesa Lot 7 Groundwater Well was obtained and the Otay WD proceeded with the investigation of this potential groundwater supply opportunity.

The May 2001 Geoscience Support Services, Inc. completed for the Otay WD the preparation of a report entitled, "Otay Mesa Lot 7 Well Investigation," to assess the Otay Mesa Lot 7 Well. The scope of work included a geohydrologic evaluation of the well, analyses of the water quality samples, management and review of the well video log, and documentation of well pump testing. The primary findings, as documented in the report, formed the basis of the following recommendations:

- For the existing well to be use as a potable water supply resource, a sanitary seal must be installed in accordance with the CDPH guidelines.
- Drawdown in the well must be limited to avoid the possibility of collapsing the casing.
- Recover from drawdown from pumping is slow and extraction would need to be terminated for up to 2 days to allow for groundwater level recovery.
- The well water would need to be treated and/or blended with potable water prior to introduction into the potable water distribution system.

The existing Otay Mesa Lot 7 Well, based upon the above findings, was determined not to be a reliable municipal supply of potable water and that better water quality and quantity perhaps could be discovered deeper or at an alternative location within the San Diego Formation.

The Otay WD may still continue to pursue the Otay Mesa groundwater well opportunity with due consideration of the recommendations of the existing report. Based on the recommendations of the investigation report, a groundwater well production facility at Otay Mesa Lot 7 could realistically extract approximately 300 AFY.

Rancho del Rey Groundwater Well

In 1991, the McMillin Development Company drilled the Rancho del Rey Groundwater Well to augment grading water supplies for their Rancho del Rey development projects. Although the well was considered a "good producer," little was known regarding its water quality and sustainable yield because the water was used solely for earthwork (i.e. dust control and soil compaction). The well was drilled to 865 feet, with a finished depth of 830 feet and produced approximately 400 AFY of low quality water for four years until its use was discontinued in April 1995 when the well was no longer needed. McMillin notified the Otay WD of its intent to sell off the groundwater well asset.

In 1997, the Otay WD purchased an existing 7-inch well and the surrounding property on Rancho del Rey Parkway from the McMillin Company with the intent to develop it as a source of potable water. Treatment was required to remove salts and boron, among other constituents, using reverse osmosis membranes and ion exchange.

In 2000, having received proposals for the design and construction of a reverse osmosis treatment facility that far exceeded the allocated budget, the Board of Directors instructed staff to suspend the project until such time as it became economically viable.

In January 2010, citing the rising cost of imported water and the Otay WD's interest in securing its own water source for long-term supply reliability, the Board authorized Phase 1 for drilling and development of the Rancho del Rey Well.

On March 3, 2010, the Board adopted the Mitigated Negative Declaration for this project and a Notice of Determination was filed with the County of San Diego on March 5, 2010. In September 2010, a new 12-inch production well was drilled to a depth of 900 feet through the groundwater formation and into fractured bedrock. Testing showed the long-term yield of the new well to be 450 gpm, higher than previous studies had estimated. Separation Processes, Inc. (SPI), a highly qualified membrane treatment firm, was hired to conduct a detailed economic feasibility study to confirm that the annualized unit cost of the new water source was economically competitive with other sources. The economic study estimated the unit cost of water to be $1,500 to $2,000 per acre-feet for an alternative that utilizes a seawater membrane for treating both salts and boron. When compared with the current imported treated water rate from the Water Authority, and with the knowledge that this rate will continue to increase as MWD and the Water Authority raise their rates, the Rancho del Rey Well project appears to be economically viable.

The Otay WD is continuing to pursue the Rancho del Rey groundwater well opportunity with due consideration of the recommendations of the existing reports and plans to develop a groundwater well production facility to extract approximately 500 AFY. For water planning purposes, production of groundwater from the Rancho del Rey well is considered "additional planned" for local supplies. During preparation of this 2010 UWMP, the Otay WD has contracted for design services for the wellhead treatment facilities.

6.3.1.4 Otay Water District Desalination Project

The Otay WD is currently investigating the feasibility of purchasing desalinated water from a seawater reverse osmosis plant that is planned to be located in Rosarito, Mexico, known as the Otay Mesa Desalinated Water Conveyance System (Desalination) project. The treatment facility is intended to be designed, constructed, and operated in Mexico by a third party. The Otay WD's draft Desalination Feasibility Study, prepared in 2008, discusses the likely issues to be considered in terms of water treatment and monitoring, potential conveyance options within the United States from the international border to potential delivery points, and environmental, institutional, and permitting considerations for the Otay WD to import the Desalination project product water as a new local water supply resource.

While the treatment facility for the Desalination project will likely not be designed or operated by the Otay WD as the lead agency, it is important that the Otay WD maintain involvement with the planning, design, and construction of the facility to ensure that the implemented processes provide a product water of acceptable quality for distribution and use within the Otay WD's system as well as in other regional agencies' systems that may use the product water, i.e. City of San Diego, the Water Authority, etc. A seawater reverse osmosis treatment plant removes constituents of concern from the seawater, producing a water quality that far exceeds established United States and California drinking water regulations for most parameters, however, a two-pass treatment system may be required to meet acceptable concentrations of boron and chlorides, similar to the levels seen within the existing Otay WD supply sources. The Desalination Feasibility Study addresses product water quality that is considered acceptable for public health and distribution.

The Otay WD, or any other potential participating agencies, will be required to obtain approval from the CDPH in order to use the desalinated seawater as a water source. Several alternative approaches are identified for obtaining this approval. These alternatives vary in their cost and their potential of meeting CDPH approval.

The Rosarito Desalination Facility Conveyance and Disinfection System Project report addresses two supply targets for the desalinated water (i.e. local and regional). The local alternative assumes that only Otay WD would participate and receive desalinated water, while the regional alternative assumes that other regional and/or local agencies would also participate in the Rosarito project.

On November 3, 2010, the Otay WD authorized the General Manager to enter into an agreement with AECOM for the engineering design, environmental documentation, and the permitting for the construction of the conveyance pipeline, pump station, and disinfection facility to be constructed within the Otay WD. The supply target is assumed to be 50 mgd while the ultimate capacity of the plant will be 100 mgd.

The Otay WD is proceeding with negotiations among the parties to establish water supply resource acquisition terms through development of a Principles of Understanding document.

6.3.2 Otay WD Capital Improvement Program

The Otay WD plans, designs, constructs, and operates water system facilities to acquire sufficient supplies and to meet projected ultimate demands placed upon the potable and recycled water systems. In addition, the Otay WD forecasts needs and plans for water supply requirements to meet projected demands at ultimate build out. The necessary water facilities and water supply projects are implemented and constructed when development activities proceed and require service to achieve timely and adequate cost effective water service.

New water facilities that are required to accommodate the forecasted growth within the entire Otay WD service area are defined and described within the Otay WD WRMP Update. These facilities are incorporated into the annual Otay WD Six Year Capital Improvement Program (CIP) for implementation when required to support development activities. As major development plans are formulated and proceed through the land use jurisdictional agency approval processes, Otay WD prepares water system requirements specifically for the proposed development project consistent with the Otay WD WRMP Update. These requirements document, define, and describe all the potable water and recycled water system facilities to be constructed to provide an acceptable and adequate level of service to the proposed land uses, as well as the financial responsibility of the facilities required for service. The Otay WD funds the facilities identified as CIP projects. Established water meter capacity fees and user rates are collected to fund the CIP project facilities. The developer funds all other required water system facilities to provide water service to their project.

Section 7 – Conclusion: Availability of Sufficient Supplies

The Otay Mesa Community Plan Update is currently located within the jurisdictions of the Otay WD, Water Authority, and MWD. To obtain permanent imported water supply service, land areas are required to be within the jurisdictions of the Otay WD, Water Authority, and MWD to utilize imported water supply.

The Water Authority and MWD have an established process that ensures supplies are being planned to meet future growth. Any annexations and revisions to established land use plans are captured in SANDAG updated forecasts for land use planning, demographics, and economic projections. These forecasts include the City of San Diego Otay Mesa Community Plan Update that was included in SANDAG's Series 12 Regional Growth Forecast. SANDAG serves as the regional, intergovernmental planning agency that develops and provides forecast information. The Water Authority and MWD update their demand forecasts and supply needs based on the most recent SANDAG forecast approximately every five years to coincide with preparation of their urban water management plans. Prior to the next forecast update, local jurisdictions with land use authority may require water supply assessment and/or

verification reports for proposed land developments that are not within the Otay WD, Water Authority, or MWD jurisdictions (i.e. pending or proposed annexations) or that have revised land use plans with either lower or higher development intensities than reflected in the existing growth forecasts. Proposed land areas with pending or proposed annexations, or revised land use plans, typically result in the creation of higher demand and supply requirements than previously anticipated. The Otay WD, Water Authority, and MWD next demand forecast and supply requirements and associated planning documents would then capture any increase or decrease in demands and required supplies as a result of annexations or revised land use planning decisions.

MWD's Integrated Resources Plan (IRP) identifies a mix of resources (imported and local) that, when implemented, will provide 100 percent reliability for full-service demands through the attainment of regional targets set for conservation, local supplies, State Water Project supplies, Colorado River supplies, groundwater banking, and water transfers. The 2010 update to the IRP includes a planning buffer supply intended to mitigate against the risks associated with implementation of local and imported supply programs and for the risk that future demands could be higher than projected. The planning buffer identifies an additional increment of water that could potentially be developed when needed and if other supplies are not fully implemented as planned. As part of implementation of the planning buffer, MWD periodically evaluates supply development, supply conditions, and projected demands to ensure that the region is not under or over developing supplies. Managed properly, the planning buffer will help ensure that the southern California region, including San Diego County, will have adequate water supplies to meet long-term future demands.

In Section ES-5 of their 2010 RUWMP, MWD states that MWD has supply capacities that would be sufficient to meet expected demands from 2015 through 2035. MWD has plans for supply implementation and continued development of a diversified resource mix including programs in the Colorado River Aqueduct, State Water Project, Central Valley Transfers, local resource projects, and in-region storage that enables the region to meet its water supply needs. MWD's 2010 RUWMP identifies potential reserve supplies in the supply capability analysis (Tables 2-9, 2-10, and 2-11), which could be available to meet the unanticipated demands.

The County Water Authority Act, Section 5 subdivision 11, states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs."

As part of preparation of a written water supply assessment report, an agency's shortage contingency analysis should be considered in determining sufficiency of supply. Section 11 of the Water Authority's 2010 Updated UWMP contains a detailed shortage contingency analysis that addresses a regional catastrophic shortage situation and drought management. The analysis demonstrates that the Water Authority and its member agencies, through the Emergency Response Plan, Emergency Storage Project, Carlsbad Desalination Project, and Drought Management Plan (DMP) are taking actions to prepare for and appropriately handle

an interruption of water supplies. The DMP, adopted in May 2006, provides the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from MWD due to prolonged drought or other supply shortfall conditions. The actions will help the region avoid or minimize the impacts of shortages and ensure an equitable allocation of supplies.

The WSA&V Report identifies and describes the processes by which water demand projections for the proposed Otay Mesa Community Plan Update will be fully included in the water demand and supply forecasts of the Urban Water Management Plans and other water resources planning documents of the Water Authority and MWD. Water supplies necessary to serve the demands of the proposed Otay Mesa Community Plan Update, along with existing and other projected future users, as well as the actions necessary and status to develop these supplies, have been identified in the Otay Mesa Community Plan Update WSA&V Report and will be included in the future water supply planning documents of the Water Authority and MWD.

This WSA&V Report includes, among other information, an identification of existing water supply entitlements, water rights, water service contracts, water supply projects, or agreements relevant to the identified water supply needs for the proposed Otay Mesa Community Plan Update. This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be available over a 20-year planning horizon, under normal conditions and in single and multiple dry years to meet the projected demand of the proposed Otay Mesa Community Plan Update and the existing and other planned development projects to be served by the Otay WD.

Table 8 presents the forecasted balance of water demands and required supplies for the Otay WD service area under average or normal year conditions. The total actual demand for FY 2010 was 33,270 AF. The demand for FY 2010 is 5,635 AF lower than the demand in FY 2005 of 38,905 AF. The drop in demand is a result of the unit price of water, the conservation efforts of users as a result of the prolonged drought, and the economy.

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single dry year conditions. Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple dry year conditions for the three year period ending in 2018. The multiple dry year conditions for periods ending in 2023, 2028, and 2033 are provided in the Otay Water District 2010 UWMP. The projected potable demand and supply requirements shown the Tables 8 and 9 are from the Otay Water District 2010 UWMP. Hot, dry weather may generate urban water demands that are about 6.4 percent greater than normal. This percentage was utilized to generate the dry year demands shown in Table 9. The recycled water supplies are assumed to experience no reduction in a dry year.

Table 8
Projected Balance of Water Demands and Supplies Normal Year Conditions (AF)

Description	FY 2015	FY 2020	FY 2025	FY 2030	FY 2035
Demands					
Otay WD Demands	44,883	53,768	63,811	70,669	77,171
Additional Conservation Target	0	(7,447)	(13,996)	(17,895)	(20,557)
Total Demand	44,883	46,321	49,815	52,774	56,614
Supplies					
Water Authority Supply	40,483	41,321	44,015	45,974	48,614
Recycled Water Supply	4,400	5,000	5,800	6,800	8,000
Total Supply	44,883	46,321	49,815	52,774	56,614
Supply Surplus/(Deficit)	**0**	**0**	**0**	**0**	**0**

Table 9 presents the forecasted balance of water demands and supplies for the Otay WD service area under single dry year and multiple dry year conditions as from the Otay Water District 2010 UWMP.

Table 9
Projected Balance of Water Demands and Supplies
Single Dry and Multiple Dry Year Conditions (AF)

	Normal Year	Single Dry Year	Multiple Dry Years		
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Demands					
Otay WD Demands	37,176	41,566	43,614	46,385	50,291
Total Demand	37,176	41,566	43,614	46,385	50,291
Supplies					
Water Authority Supply	33,268	37,535	39,460	42,108	45,891
Recycled Water Supply	3,908	4,031	4,154	4,277	4,400
Total Supply	37,176	41,566	43,614	46,385	50,291
Supply Surplus/(Deficit)	**0**	**0**	**0**	**0**	**0**
District Demand totals with SBX7-7 conservation target achievement plus single dry year increase as shown. The Water Authority could implement its DMP. In this instances, the Water Authority may have to allocate supply shortages based on it equitable allocation methodology in its DMP.					

Dry year demands assumed to generate a 6.4% increase in demand over normal conditions for each year in addition to new demand growth.

Table 9 also presents the forecasted balance of water demands and supplies for the Otay WD service area under multiple dry year conditions for the three year period ending in 2015.

In evaluating the availability of sufficient water supply, the Otay Mesa Community Plan Update development proponents will be required to participate in the development of alternative water supply project(s). This can be achieved through payment of the New Water Supply Fee adopted by the Otay WD Board in May 2010. These water supply projects are in addition to those identified as sustainable supplies in the current Water Authority and MWD UWMP, IRP, Master Plans, and other planning documents. These new water supply projects are in response to the regional water supply issues related to climatological, environmental, legal, and other challenges that impact water source supply conditions, such as the court rulings regarding the Sacramento-San Joaquin Delta and the current ongoing western states drought conditions. These new additional water supply projects are not currently developed and are in various stages of the planning process. The Otay WD water supply development program includes but is not limited to projects such as the Middle Sweetwater River Basin Groundwater Well project, the North District Recycled Water Supply Concept, the Otay WD Desalination project, and the Rancho del Rey Groundwater Well project. The Water Authority and MWD's next forecasts and supply planning documents would capture any increase in water supplies resulting from any new water resources developed by the Otay WD.

The Otay WD acknowledges the ever-present challenge of balancing water supply with demand and the inherent need to possess a flexible and adaptable water supply implementation strategy that can be relied upon during normal and dry weather conditions. The responsible regional water supply agencies have and will continue to adapt their resource plans and strategies to meet climate, environmental, and legal challenges so that they may continue to provide water supplies to their service areas. The regional water suppliers, along with Otay WD, fully intend to maintain sufficient reliable supplies through the 20-year planning horizon under normal, single, and multiple dry year conditions to meet projected demand of the Otay Mesa Community Plan Update, along with existing and other planned development projects within the Otay WD service area.

This WSA&V Report assesses, demonstrates, and documents that sufficient water supplies are planned for and are intended to be acquired, as well as the actions necessary and status to develop these supplies, to meet projected water demands of the Otay Mesa Community Plan Update as well as existing and other reasonably foreseeable planned development projects within the Otay WD for a 20-year planning horizon, in normal and in single and multiple dry years.

Source Documents

Atkins, "Otay Mesa Community Plan Update - Technical Infrastructure Study, May 2013

City of San Diego, Otay Mesa Community Plan Update SB 610 and SB 221 Compliance request letter received May 30, 2013.

City of Chula Vista, "Otay Ranch General Development Plan/Sub-regional Plan, The Otay Ranch Joint Planning Project," October 1993 amended June 1996.

County of San Diego, "East Otay Mesa Specific Plan Area," adopted July 27, 1994.

Otay Water District, "2010 Water Resources Master Plan Update," revised May 2013.

Atkins and Otay Water District, "Otay Water District 2010 Urban Water Management Plan," June 2011.

Camp Dresser & McKee, Inc., "Otay Water District Integrated Water Resources Plan," March 2007

San Diego County Water Authority, "Urban Water Management Plan 2005 Update," November 2005 amended May 2007.

MWD Water District of Southern California, "Regional Urban Water Management Plan," November 2005.

Camp Dresser & McKee, Inc., "Rosarito Desalination Facility Conveyance and Disinfection System Project," June 21, 2010.

PBS&J, "Draft Otay Water District North District Recycled Water System Development Project, Phase I Concept Study," December 2008.

NBS Lowry, "Middle Sweetwater River System Study Water Resources Audit," June 1991.

Michael R. Welch, "Middle Sweetwater River System Study Alternatives Evaluation," May 1993.

Michael R. Welch, "Middle Sweetwater River Basin Conjunctive Use Alternatives," September 1994.

Geoscience Support Services, Inc., "Otay Mesa Lot 7 Well Investigation," May 2001.

Boyle Engineering Corporation, "Groundwater Treatment Feasibility Study Ranch del Ray Well Site," September 1996.

Agreement for the Purchase of Treated Water from the Otay Water Treatment Plant between the City of San Diego and the Otay Water District.

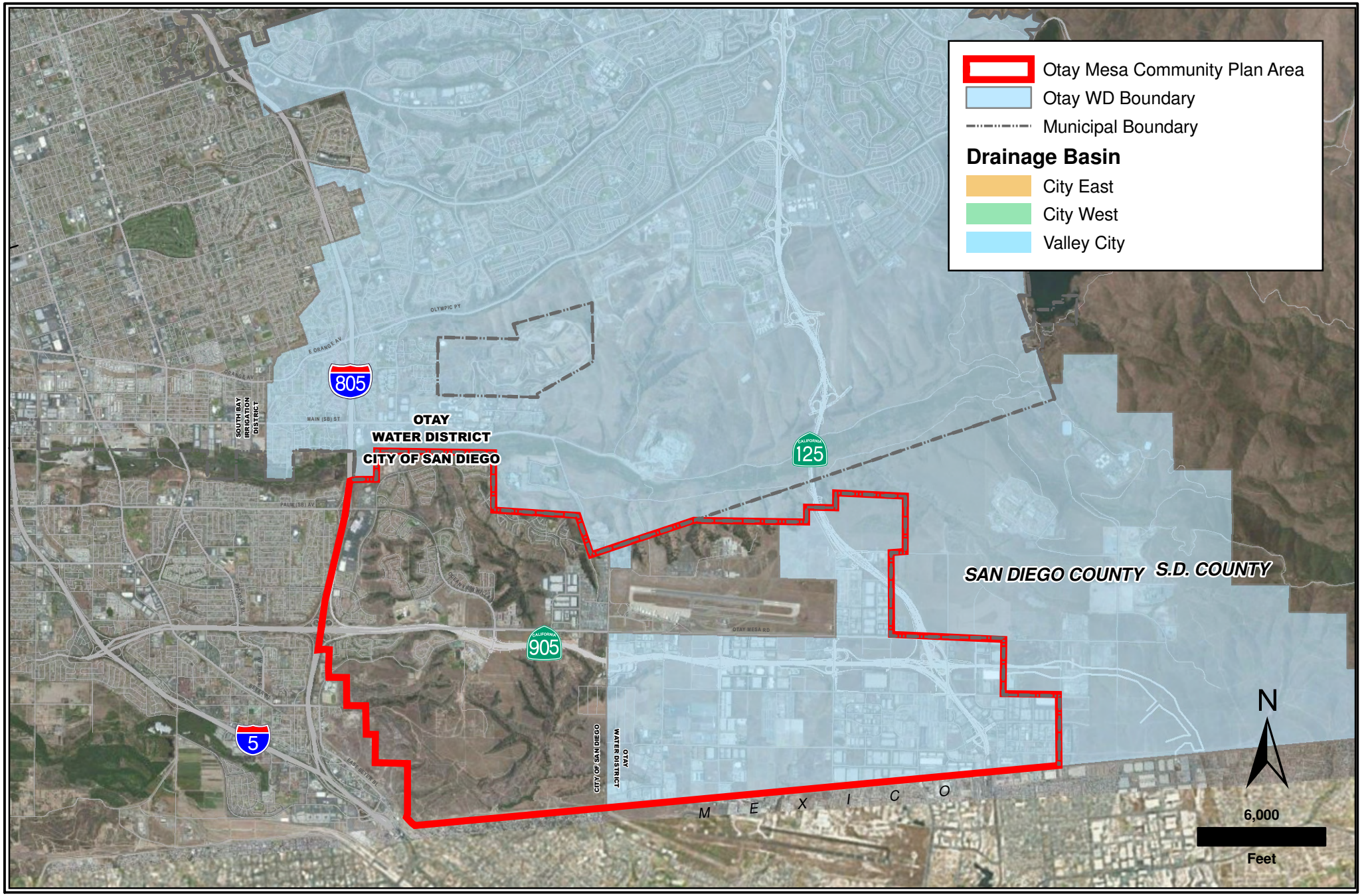
Agreement between the San Diego County Water Authority and Otay Water District regarding Implementation of the East County Regional Treated Water Improvement Program.

Agreement between the San Diego County Water Authority and Otay Water District for Design, Construction, Operation, and Maintenance of the Otay 14 Flow Control Facility Modification.

Agreement between the Otay Water District and the City of San Diego for Purchase of Reclaimed Water from the South Bay Water Reclamation Plant.

Appendix A

Otay Mesa Community Plan Update Regional Location Map



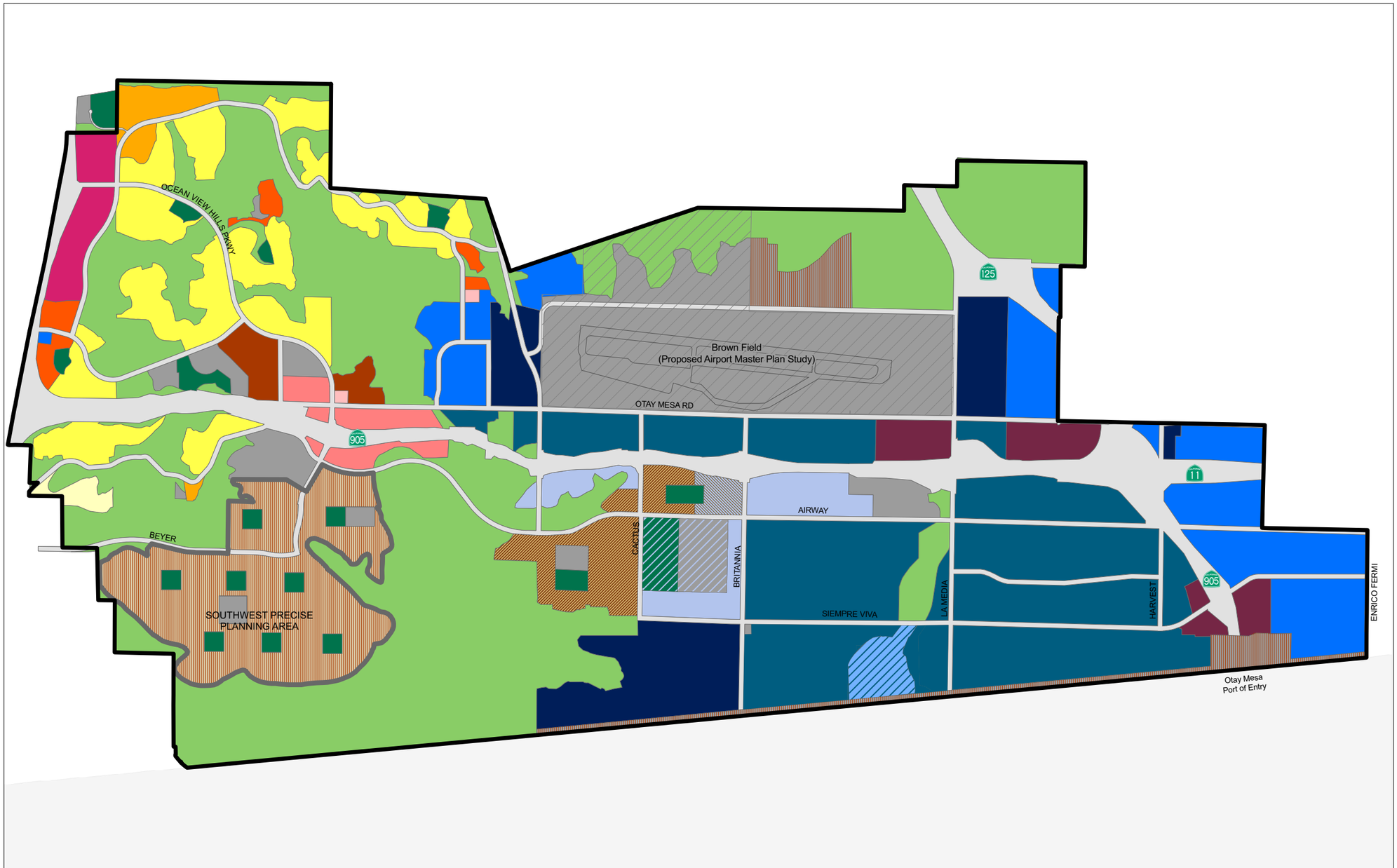
Project Location

Appendix A

3/13/2013 LA SD Z:\Projects\IS\OMCPU\mxd\LocationMap.mxd

Appendix B

Otay Mesa Community Plan Update Proposed Development Plan



THE CITY OF SAN DIEGO
CITY PLANNING & COMMUNITY INVESTMENT

*This land use plan scenario is one of three that has been prepared by the City for further analysis and public input.

Portions of this product may contain geographic information copyrighted by SanGIS. All Rights Reserved.

Portions of this map contain information from the San Diego Association of Governments (SANDAG) Regional Information System. This product cannot be reproduced without the written permission of SANDAG.

Map created by: SourcePoint

Area Scale (In Acres) 40 10

0 500 1,000 1,500 2,000 Feet

N

FIGURE 1: **Otay Mesa Community Plan Update Modified Scenario 3B**

DRAFT

General Land Use Categories

Parks, Open Space, and Institutional
- Open Space
- Parks
- Institutional

Village Centers
- Neighborhood Village 15 - 29 du/ac
- Community Village 30 - 45 du/ac

Residential
- Residential - Very Low 0-4 du/ac
- Residential - Low 5-9 du/ac
- Residential - Low Medium 10-14 du/ac
- Residential - Medium 15-29 du/ac
- Residential - Medium High 30-44 du/ac

Commercial - Residential Prohibited
- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Heavy Commercial
- Visitor Commercial
- Office Commercial - Residential Permitted 0 - 44 du/ac

Industrial - Residential Prohibited
- Business Park - Office Permitted
- Light Industrial
- International Business and Trade
- Heavy Industrial
- Business Park - Residential Permitted 15 - 60 du/ac

Overlays
- Potential School Area
- Potential Park Area
- Potential Drainage Facility
- U.S. Government Facility
- Brown Field Boundary
- Community Plan Boundary

APPENDIX N

Greenhouse Gas Emissions Report

Greenhouse Gas Analysis for the Otay Mesa Community Plan Update, City of San Diego Project No. 30330/304032 SCH No. 2004651076

Prepared for
City of San Diego
Development Services Department
1222 First Avenue
San Diego, CA 92101
Contact: Theresa Millette

Prepared by
RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
RECON Number 3957-1
August 29, 2013

Jessica Fleming, Air Quality Analyst

THIS PAGE IS INTENTIONALLY BLANK.

TABLE OF CONTENTS

Acronyms iii

Executive Summary 1

1.0 Introduction 2

1.1 Understanding Global Climate Change 2
1.2 Greenhouse Gases of Primary Concern 3

2.0 Project Description 5

2.1 Project Overview 5
2.2 Development Summary 10
2.3 CPU Goals and Policies 13

3.0 Existing Conditions 13

3.1 Environmental Setting 13
3.2 Regulatory Background 17

4.0 Significance Criteria and Analysis Methodologies 33

4.1 Determining Significance 33
4.2 Methodology and Assumptions 38

5.0 Impact Analysis 44

5.1 Cumulative GHG Emissions 44
5.2 Consistency with Adopted Plans, Policies, and Regulations 49

6.0 Conclusions and Recommendations 54

7.0 References Cited 55

FIGURES

1: Regional Location of the Otay Mesa Community Plan Area 6
2: Aerial Photograph of CPU Area and Vicinity 7
3: Adopted Otay Mesa Community Plan Land Use Map 9
4: CPU Land Use 11

TABLES

1: Global Warming Potentials and Atmospheric Lifetimes 4
2: Otay Mesa Land Use Distribution 10
3: California GHG Emissions by Sector in 1990, 2000, 2004, and 2008 14
4: San Diego County GHG Emissions by Sector in 2006 15
5: Existing Modeled Land Uses 16
6: Existing GHG Emissions 16

TABLE OF CONTENTS (cont.)

TABLES (cont.)

7:	CARB Scoping Plan-recommended GHG Reduction Measures	21
8:	Project Types that Do Not Require a GHG Analysis and Mitigation	34
9:	California BAU 2020 GHG Emissions Forecast	35
10:	California BAU 2020 Comparative GHG Emissions Forecasts	37
11:	San Diego Gas & Electric Intensity Factors	39
12:	Future Modeled Land Uses	40
13:	BAU and CPU GHG Calculation Assumptions	43
14:	Summary of Estimated BAU Emissions	45
15:	Summary of Estimated CPU Emissions	45
16:	Estimated CPU GHG Emissions and BAU Reductions	47

ATTACHMENTS

1: CPU Goals and Policies Related to GHG
2: CalEEMod Output – Existing CPU Land Uses
3: CalEEMod Output – CPU Emissions without GHG Reduction Measures (BAU)
4: CalEEMod Output – CPU Emissions with GHG Reduction Measures
5: GHG Emissions Reduction Calculations

Acronyms

AB	Assembly Bill
AEP	Association of Environmental Professionals
APS	Alternative Planning Strategy
BAU	business-as-usual
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAP	Climate Change Action Plan
CCP	Cities for Climate Protection
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF_4	tetrafluoromethane
CH_4	methane
CMAP	Climate Mitigation and Adaptation Plan
CO_2	carbon dioxide
CPAP	Climate Protection Action Plan
CPU	Community Plan Update
CPUC	California Public Utilities Commission
C&D	Construction and Demolition
DOT	Department of Transportation
du	dwelling unit
EMFAC	Emission Factors
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPIC	Energy Policy Initiative Center
GDP	gross domestic product
GHG	greenhouse gas
GWh	gigaWatt hour
GWP	global warming potential
HFC	hydrofluorocarbons
ICLEI	International Council for Local Environmental Initiatives
I-5	Interstate 5
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
LGOP	Local Government Operations Protocol
$MMTCO_2E$	million metric tons of carbon dioxide equivalent
mpg	miles per gallon

MPO	Metropolitan Planning Organization
$MTCO_2E$	metric tons of carbon dioxide equivalent
MW	megaWatt
N_2O	nitrous oxide
ODS	ozone depleting substance
OMCP	Otay Mesa Community Plan
OMDD	Otay Mesa Development District
OPR	Office of Planning and Research
PFC	perfluorocarbon
POE	Port of Entry
RPS	Renewables Portfolio Standard
RTP	regional transportation plan
SANDAG	San Diego Association of Governments
SCP	Sustainable Community Program
SCS	Sustainable Communities Strategy
SDAPCD	San Diego Air Pollution Control District
SF_6	sulfur hexafluoride
SR-905	State Route 905
U.S. DOE	U.S. Department of Energy
VMT	vehicle miles traveled

Executive Summary

This report evaluates potential greenhouse gas (GHG) impacts associated with the Otay Mesa Community Plan Update (CPU). The Otay Mesa community planning area is located in the southern portion of the City of San Diego. The CPU is an update to the adopted 1981 Otay Mesa Community Plan. Approval of the CPU amends the General Plan and would establish land use designations and policies to guide future development consistent with the City's General Plan (2008a). The CPU expresses the General Plan policies through the provision of more site-specific recommendations.

The CPU encompasses a broad range of the land use designations defined in the General Plan and contains a more detailed description and distribution of land uses than the citywide General Plan. Land uses include residential with a variety of density ranges, village centers, commercial, industrial, open space, parks, and institutional.

This GHG analysis evaluates potential effects associated with cumulative greenhouse gas emissions generated by the CPU. In accordance with California Environmental Quality Act (CEQA) and City guidelines, this analysis evaluates the significance of the CPU in terms of (1) its contribution of GHGs to cumulative statewide emissions and (2) its consistency with local and state regulations, plans, and policies aimed at reducing GHG emissions.

With regard to the first CEQA question, i.e., to evaluate cumulative GHG emissions impacts, GHG emissions were calculated for the CPU using the California Emissions Estimator Model (CalEEMod), of March 2011. CalEEMod estimates GHG emissions from construction and operational emissions sources. Pursuant to City criteria, the estimated greenhouse gases for the CPU were evaluated relative to business-as-usual (BAU) emissions, and a determination was made as to whether or not buildout of the CPU would achieve a reduction equal to or greater than 28.3 percent relative to BAU.

It was calculated that the CPU BAU emissions would total 4,758,348 metric tons of carbon dioxide equivalent ($MTCO_2E$), while the CPU with GHG reductions accounted for would total 4,215,989 $MTCO_2E$ annually. This reduction of 542,359 $MTCO_2E$ each year would be due to regulations on auto and fuel manufacturers that would reduce vehicle emissions and to the recently updated Title 24 California Building Code that contains increased energy- and water-efficiency requirements that would reduce GHG emissions from those sources. With these GHG reductions, GHG emissions from the CPU would result in an 11.4 percent reduction in GHG emissions relative to BAU. This falls short of meeting the City's requirement of a minimum 28.3 percent reduction in GHG emissions relative to BAU. Without mitigation measures to reduce GHG emissions further, the

CPU's contribution of GHGs to statewide cumulative GHG emissions would be significant. While future development projects would be required to implement GHG emission reduction measures to the extent practical, the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program-level of analysis. Therefore, the impacts associated with the contribution of GHG emissions to cumulative statewide emissions would be considered significant and unavoidable at the program-level, even with adherence to the Mitigation Framework.

Additionally, the CPU would increase diversity of land uses through new mixed-use zoning and would increase residential and employment densities through higher density requirements. It would also increase transit accessibility by locating residential and employment uses in close proximity to each other and would improve walkability through traffic calming measures and other roadway and connectivity improvements. All of these CPU features and policies are consistent with General Plan policies, strategies in regional and state GHG-reduction plans and programs, and specified GHG-reduction measures. However, because project-level details are not known, there is the potential that projects would not meet the necessary City reduction goals put in place in order to achieve the reductions required by Assembly Bill (AB) 32. Therefore, impacts associated with conflicts with existing GHG reduction plans would be potentially significant. Future projects implemented in accordance with the CPU shall be required to demonstrate their avoidance of significant impacts related to long-term operational emissions. However, impacts would remain significant and unavoidable at the program-level, even with adherence to the Mitigation Framework.

1.0 Introduction

To evaluate the incremental effect of the Community Plan Update (CPU) on statewide emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem.

1.1 Understanding Global Climate Change

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed ice ages, which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated interacting natural factors that include: volcanic eruptions that spew gases and particles (dust) into the atmosphere; the amount of water, vegetation, and ice covering the earth's surface; subtle changes in the earth's

orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances not found in nature. This in turn has led to a marked increase in the emissions of gases shown to influence the world's climate. These gases, termed greenhouse gases, influence the amount of heat trapped in the earth's atmosphere. Because recently observed increased concentrations of greenhouse gases (GHGs) in the atmosphere are related to increased emissions resulting from human activity, the current cycle of global warming is generally believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. Because it is the collective of human actions taking place throughout the world that contributes to climate change, it is quintessentially a global or cumulative issue.

1.2 Greenhouse Gases of Primary Concern

There are numerous GHGs, both naturally occurring and manmade. Table 1 summarizes some of the most common. Each GHG has variable atmospheric lifetime and global warming potential.

The atmospheric lifetime of the GHG is the average time the molecule stays stable in the atmosphere. Most GHGs have long atmospheric lifetimes, staying in the atmosphere hundreds or thousands of years. The potential of a gas to trap heat and warm the atmosphere is measured by its global warming potential (GWP). Specifically, GWP is defined as (U.S. Environmental Protection Agency [EPA] 2010):

> the cumulative radiative forcing—both direct and indirect effects—integrated over a period of time from the emission of a unit mass of gas relative to some reference gas.

The reference gas for establishing GWP is carbon dioxide (CO_2), which—as shown in Table 1—consequently has a GWP of 1. As an example, methane (CH_4), while having a shorter atmospheric lifetime than carbon dioxide, has a 100-year GWP of 21, which means that it has a greater global warming effect than carbon dioxide on a molecule-by-molecule basis.

Of the gases listed in Table 1, CO_2, CH_4, and nitrous oxide (N_2O) are produced by both biogenic (natural) and anthropogenic (human) sources. The remaining gases occur

solely as the result of human processes. Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals used as substitutes for ozone-depleting chlorofluorocarbons used in air conditioners and as refrigerants. Perfluorocarbons (PFCs) such as tetrafluoromethane (CF_4) are used primarily in aluminum production and semiconductor manufacture. Sulfur hexafluoride (SF_6) is used for insulation in electric power transmission and distribution equipment. HFCs, PFCs, and sulfur hexafluoride are not of primary concern to the CPU.

TABLE 1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES (YEARS)

Gas	Atmospheric Lifetime	100-year GWP	20-year GWP	500-year GWP
CO_2	50–200	1	1	1
CH_4*	12±3	21	56	6.5
N_2O	120	310	280	170
HFC-23	264	11,700	9,100	9,800
HFC-32	5.6	650	2,100	200
HFC-125	32.6	2,800	4,600	920
HFC-134a	14.6	1,300	3,400	420
HFC-143a	48.3	3,800	5,000	1,400
HFC-152a	1.5	140	460	42
HFC-227ea	36.5	2,900	4,300	950
HFC-236fa	209	6,300	5,100	4,700
HFC-43-10mee	17.1	1,300	3,000	400
CF_4	50,000	6,500	4,400	10,000
C_2F_6	10,000	9,200	6,200	14,000
C_3F_8	2,600	7,000	4,800	10,100
C_4F_{10}	2,600	7,000	4,800	10,100
c-C_4F_8	3,200	8,700	6,000	12,700
C_5F_{12}	4,100	7,500	5,100	11,000
C_6F_{14}	3,200	7,400	5,000	10,700
SF_6	3,200	23,900	16,300	34,900

SOURCE: U.S. EPA 2010, Annex 6
GWP = global warming potential
CO_2 = carbon dioxide
CH_4 = methane
*The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
N_2O = nitrous oxide
HFC = hydrofluorocarbon
CF_4 = tetrafluoromethane
C_2F_6 = hexafluoroethane
C_3F_8 = octafluoropropane
C_4F_{10} = decafluorobutane
c-C_4F_8 = perfluorocyclobutane
C_5F_{12} = dodecafluoropentane
C_6F_{14} = perfluorohexane
SF_6 = sulfur hexafluoride

CO_2, CH_4 and N_2O are the GHGs of primary concern in this analysis. Carbon dioxide would be emitted by the CPU due to the combustion of fossil fuels in vehicles (including construction), from electricity generation and natural gas consumption, water use, and from solid waste disposal. Smaller amounts of methane and nitrous oxide would be emitted from the same CPU operations.

2.0 Project Description

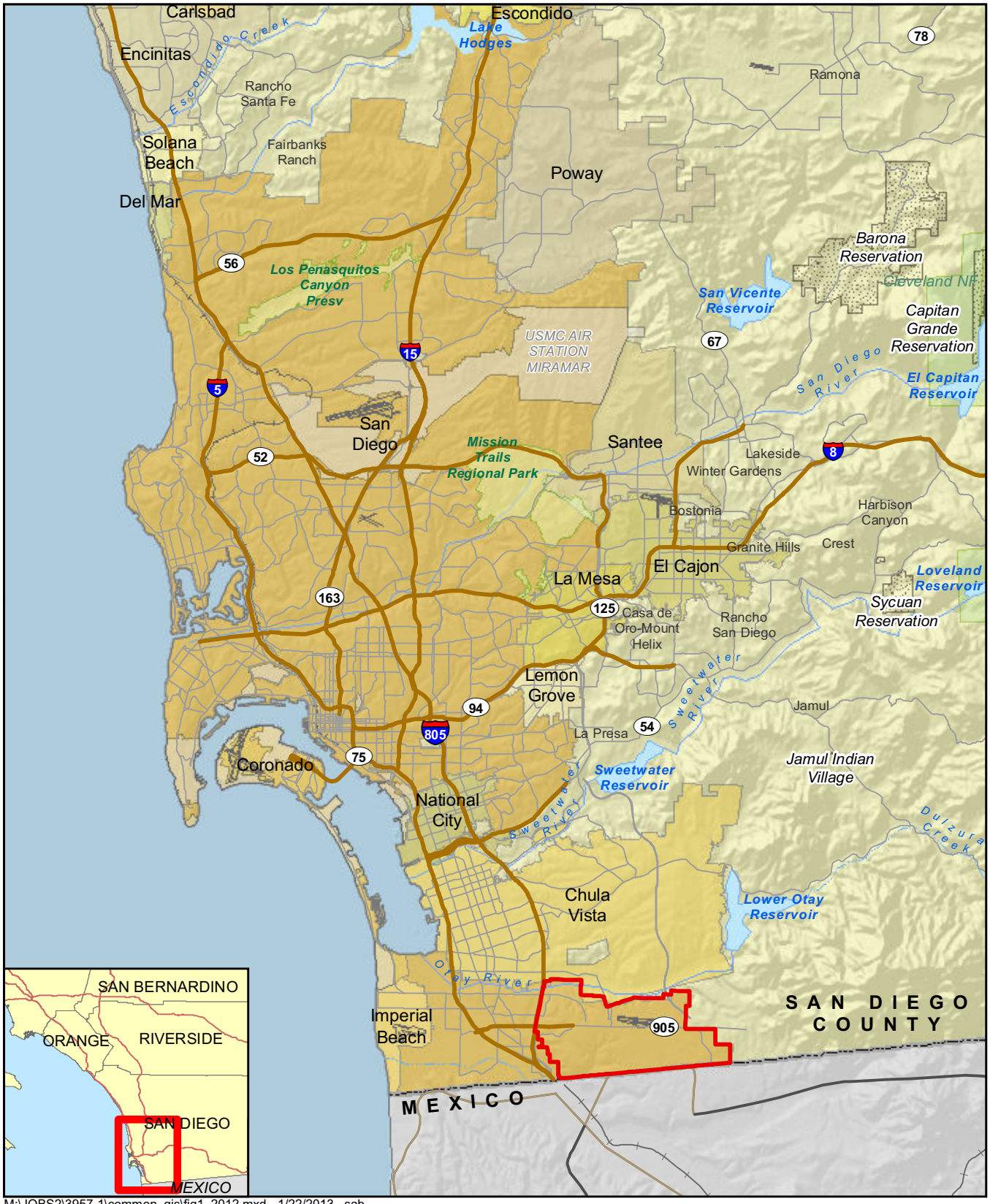
2.1 Project Overview

The CPU is an update to the adopted 1981 Otay Mesa Community Plan. The CPU provides goals and policies for future development within the CPU area. Approval of the CPU amends the General Plan. The concurrent Rezone would rescind the Otay Mesa Development District (OMDD) and update zoning regulations within the CPU area. Amendments to the Land Development Code (LDC) also would be required to create implementing zones for proposed commercial and industrial land use designations under the CPU.

Approval of the CPU would establish land use designations and policies to guide future development consistent with the City of San Diego's (City) General Plan (2008a). The CPU expresses the General Plan policies through the provision of more site-specific recommendations.

The CPU includes nine elements based on those promulgated in the City's General Plan, with goals and policies for each. The nine elements are: Land Use; Mobility; Urban Design; Economic Prosperity; Public Facilities, Services, and Safety; Recreation; Conservation; Noise; and Historic Preservation. Procedures for implementation of the goals and policies are also set forth.

Figure 1 shows the regional location of the CPU area. Figure 2 shows an aerial photograph of the CPU area and vicinity. Figure 3 shows the Adopted Otay Mesa Community Plan land uses within the CPU area. The CPU area is bounded by the City of Chula Vista (north), I-805 (west), International Border (south), and unincorporated San Diego County (east).



M:\JOBS2\3957-1\common_gis\fig1_2012.mxd 1/22/2013 sab

Otay Mesa Community Plan Boundary

FIGURE 1

Regional Location of
Otay Mesa Community Plan Area

Image source: Copyright 2010 Aerials Express, All Rights Reserved (flown March 2010)

Otay Mesa Community Plan Boundary

Not A Part

RECON

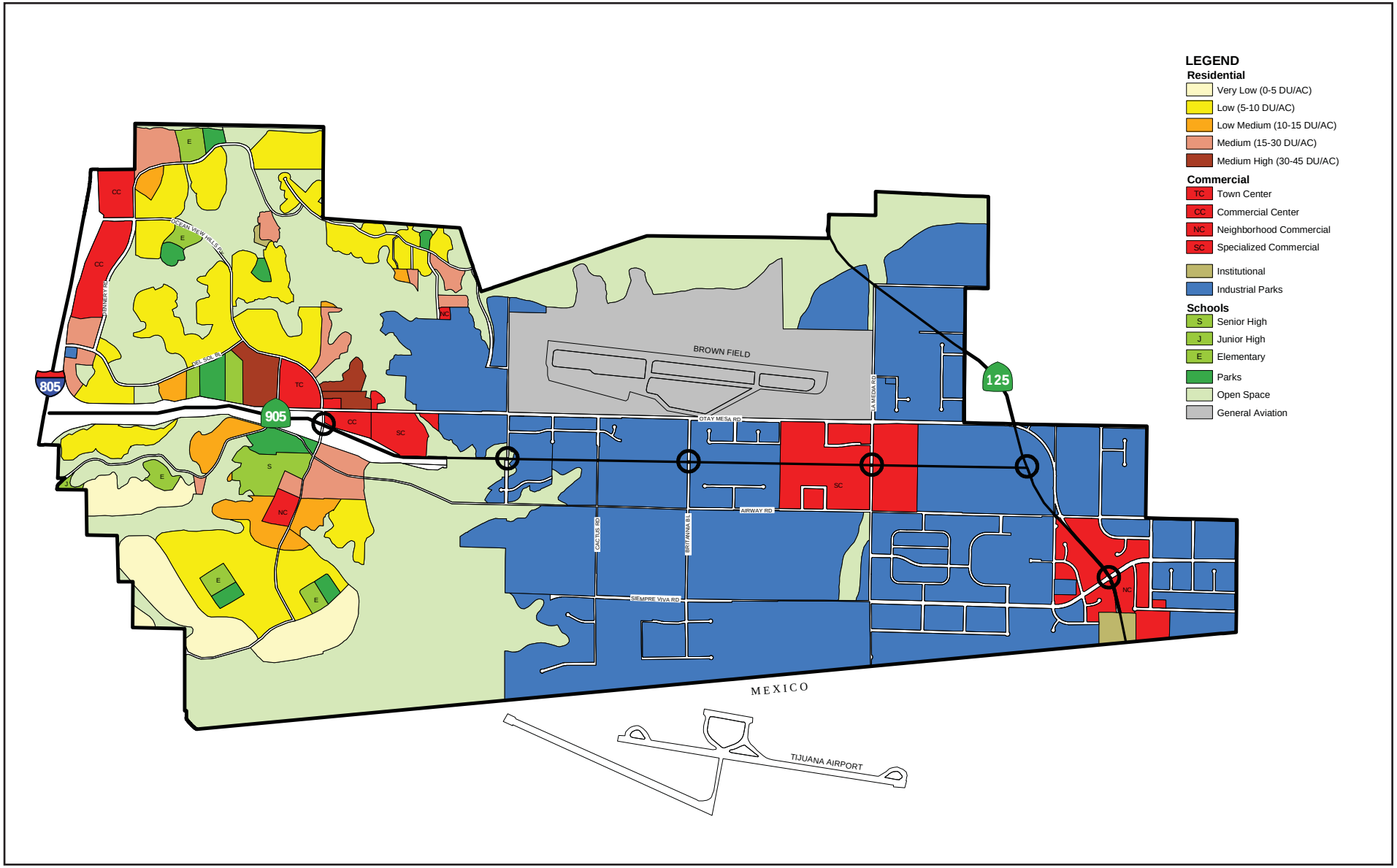
M:\JOBS2\3957-1\common_gis\2012\fig2_ghg.mxd 8/30/2013 fmm

FIGURE 2

Aerial Photograph of CPU Area and Vicinity

THIS PAGE IS INTENTIONALLY BLANK.

Map Source: City of San Diego Planning Department



No Scale

FIGURE 3

Adopted Otay Mesa Community Plan Land Use Map

M:\JOBS2\3957-1\air\graphics\fig3.ai 01/22/13

2.2 Development Summary

The CPU encompasses a broad range of the land use designations defined in the General Plan and contains a more detailed description and distribution of land uses than the citywide General Plan. Land uses include residential with a variety of density ranges, village centers, commercial, industrial, open space, parks, and institutional. The existing Adopted Otay Mesa Community Plan and CPU land use distributions are summarized in Table 2. Figure 4 shows the CPU land uses.

TABLE 2
OTAY MESA LAND USE DISTRIBUTION

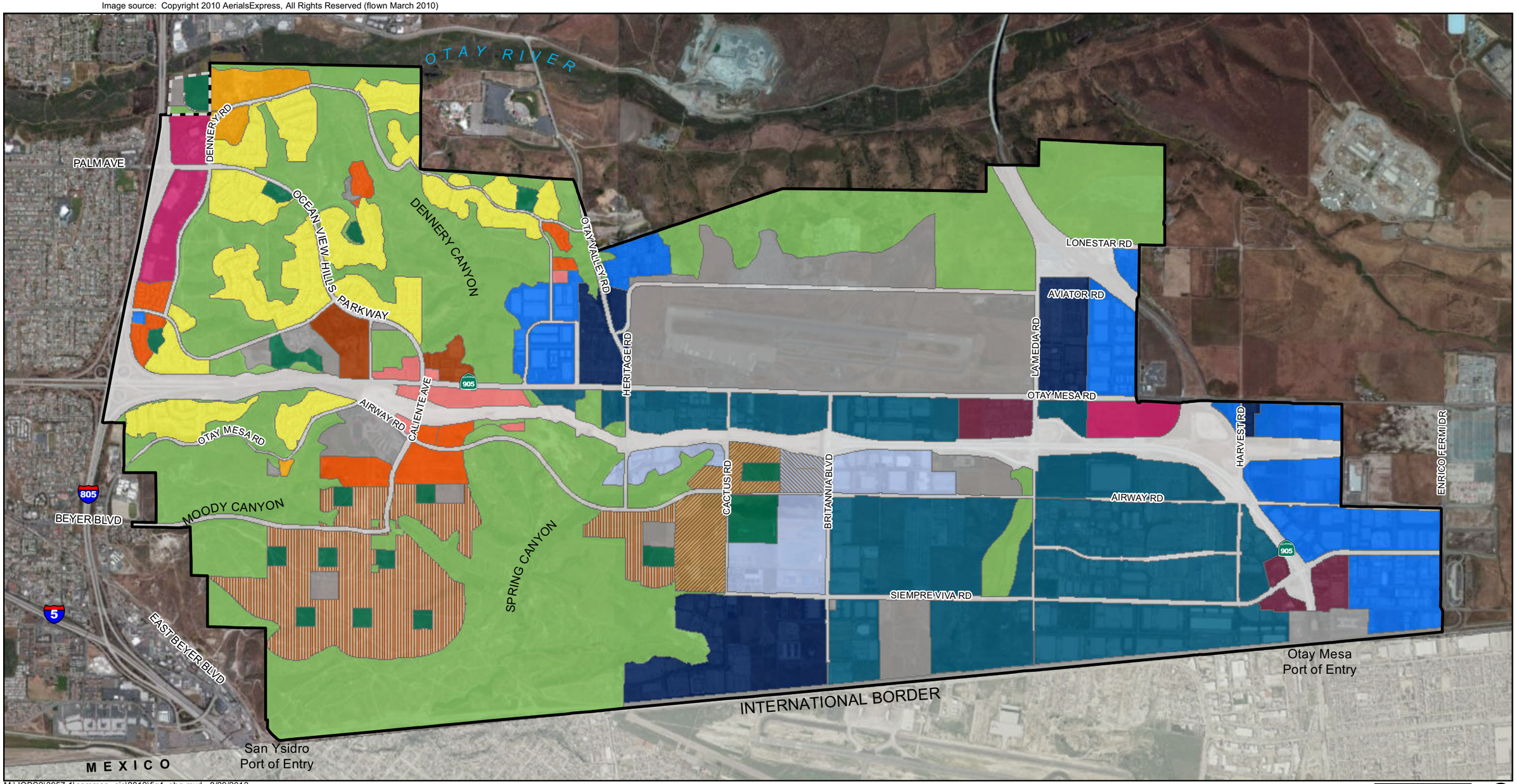
Land Use	Adopted Otay Mesa Community Plan	CPU
Open Space	2,570 acres	2,748 acres
Residential	1,269 acres/12,400 du	757 acres/7,648 du
Commercial	452 acres	316 acres
Village Area		
Residential	0 acres	695 acres/11,126 du
Mixed Use	0 acres	30 acres
Industrial	2,839 acres	2,426 acres
Institutional	1,027 acres	1,165 acres
Parks	64 acres	161 acres
Right-of-way	1,098 acres	1,021 acres
TOTAL	**9,319 acres/12,400 du**	**9,319 acres/18,774 du**

CPU = Community Plan Update
du = dwelling unit(s)

Five districts interconnected through activities and infrastructure would help organize and form the community of Otay Mesa. The districts include:

- Northwest District, which generally comprises the existing development in the northwestern portion of Otay Mesa and seven Precise Planning Area neighborhoods: California Terraces, Dennery Ranch, Hidden Trails, Remington Hills, Riviera del Sol, Robinhood Ridge, and Santee Investments.
- Southwest District, which includes the area south of State Route 905 (SR-905) and west of Spring Canyon. This district would be primarily residential in nature, with a core mixed-use center including civic and neighborhood-serving commercial uses and services.
- Central District, which generally is the land along the Airway Road corridor. The Central district would comprise three primary areas: Central Village, Grand Park, and Education Complex.
- Airport District, which generally is Brown Field and industrial land surrounding the airport.
- South District, which includes the existing port of entry (POE) and the uses intended to support the international business and trade that are necessary for the movement of goods across the border.

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown March 2010)



M:\JOBS2\3957-1\common_gis\2012\fig4_ghg.mxd 8/29/2013

0 Feet 2,500

Otay Mesa Community Plan Boundary
Not A Part

Proposed Land Use Plan

Open Space, Parks, Institutional
- Open Space
- Parks
- Institutional

Village Centers
- Community Village
- Neighborhood Village

Residential
- Low
- Low Medium
- Medium
- Medium High

Commercial - Residential Prohibited
- Community Commercial
- Regional Commercial
- Heavy Commercial

Industrial
- Business Park - Office Permitted
- Business and International Trade
- Light Industrial
- Heavy Industrial
- Business Park - Residential Permitted

Other
- Right-of-Way

FIGURE 4
Proposed CPU Land Use

THIS PAGE IS INTENTIONALLY BLANK.

2.3 CPU Goals and Policies

New policies within the CPU have been designed to reflect and implement the general GHG reduction recommendations of the General Plan and strategies of other local plans, and state GHG reduction measures. Specifically, the CPU includes updated Conservation, Mobility, and Urban Design elements that include several policies aimed at reducing GHG emissions from target emission sources and/or adapting to climate change. The CPU policies provide refinement of the General Plan and citywide policies specifically applicable to the Otay Mesa community. An overview of relevant CPU elements and policies are contained in Attachment 1.

3.0 Existing Conditions

3.1 Environmental Setting

3.1.1 State and Regional GHG Inventories

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of carbon dioxide equivalent ($MMTCO_2E$). Table 3 shows the estimated statewide GHG emissions for the years 1990, 2000, 2004, and 2008.

TABLE 3
CALIFORNIA GHG EMISSIONS BY SECTOR IN 1990, 2000, 2004, AND 2008

Sector	1990 Emissions in $MMTCO_2E$ (% total)[1]	2000 Emissions in $MMTCO_2E$ (% total)[1]	2004 Emissions in $MMTCO_2E$ (% total)[1]	2008 Emissions in $MMTCO_2E$ (% total)[1]
Sources				
Agriculture	23.4 (5%)	25.44 (6%)	28.82 (6%)	28.06 (6%)
Commercial	14.4 (3%)	12.80 (3%)	13.20 (3%)	14.68 (3%)
Electricity Generation	110.6 (26%)	103.92 (23%)	119.96 (25%)	116.35 (24%)
Forestry (excluding sinks)	0.2 (<1%)	0.19 (<1%)	0.19 (<1%)	0.19 (<1%)
High GWP	--	10.95 (2%)	13.57 (3%)	15.65 (3%)
Industrial	103.0 (24%)	97.27 (21%)	90.87 (19%)	92.66 (19%)
Recycling and Waste	--	6.20 (1%)	6.23 (1%)	6.71 (1%)
Residential	29.7 (7%)	30.13 (7%)	29.34 (6%)	28.45 (6%)
Transportation	150.7 (35%)	171.13 (37%)	181.71 (38%)	174.99 (37%)
Unspecified Remaining[2]	1.3 (<1%)	--	--	--
Subtotal	*433.3*	*458.03*	*483.89*	*477.74*
Sinks				
Forestry Sinks	-6.7 (--)	-4.72 (--)	-4.32 (--)	-3.98 (--)
TOTAL	**426.6**	**453.31**	**479.57**	**473.76**

SOURCE: CARB 2007, 2010a
$MMTCO_2E$ = million metric tons of carbon dioxide equivalent
GWP = global warming potential
[1]Percentages may not total 100 due to rounding.
[2]Unspecified fuel combustion and ozone depleting substance (ODS) substitute use, which could not be attributed to an individual sector.

As shown in Table 3, without accounting for the forestry sector, statewide GHG emissions totaled 433 $MMTCO_2E$ in 1990, 458 $MMTCO_2E$ in 2000, 484 $MMTCO_2E$ in 2004, and 478 $MMTCO_2E$ in 2008. According to data from the CARB, it appears that statewide GHG emissions peaked in 2004 and are now beginning to decrease (CARB 2010a). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The forestry sector is unique because it not only includes emissions associated with harvest, fire, and land use conversion (sources), but also includes removals of atmospheric CO_2 (sinks) by photosynthesis, which is then bound (sequestered) in plant tissues. As seen in Table 3, the forestry sector consistently removes more CO_2 from the atmosphere statewide than it emits. As a result, although decreasing over time, this sector represents a net sink, removing a net 6.5 $MMTCO_2E$ from the atmosphere in 1990, a net 4.5 $MMTCO_2E$ in 2000, a net 4.1 $MMTCO_2E$ in 2004, and a net 3.8 $MMTCO_2E$ in 2008.

A San Diego regional emissions inventory was prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2006 emissions inventory for San Diego is duplicated

below in Table 4. The sectors included in this inventory are somewhat different from those in the statewide inventory.

TABLE 4
SAN DIEGO COUNTY GHG EMISSIONS BY SECTOR IN 2006

Sector	2006 Emissions in $MMTCO_2E$ (% total)[1]	
Agriculture/Forestry/Land Use	0.7	(2%)
Waste	0.7	(2%)
Electricity	9.0	(25%)
Natural Gas Consumption	3.0	(8%)
Industrial Processes & Products	1.6	(5%)
On-road Transportation	16.0	(45%)
Off-road Equipment & Vehicles	1.3	(4%)
Civil Aviation	1.7	(5%)
Rail	0.3	(<1%)
Water-borne Navigation	0.127	(<0.5%)
Other Fuels/Other	1.1	(3%)
TOTAL	**35.5**	

SOURCE: University of San Diego 2008
$MMTCO_2E$ = million metric tons of carbon dioxide equivalent
[1]Percentages may not total 100 due to rounding.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

3.1.2 CPU Area GHG Inventory

A baseline analysis of the existing GHG emissions from CPU area land uses and associated traffic was performed using the California Emissions Estimator Model (CalEEMod) released in March 2011. This is the same methodology as that used for estimating GHG emissions resulting from CPU buildout (refer to Section 4.2). In brief, CalEEMod is a computer model that estimates GHG emissions from mobile (i.e., vehicular) sources, area sources (fireplaces, woodstoves, and landscape maintenance equipment), energy use (electricity and natural gas used in space heating and cooling, ventilation and lighting; and plug-in appliances), water and wastewater use, and solid waste disposal. Emissions are estimated based on land use information input to the model. The input land use information consists of land use subtypes (such as the residential subtypes of single-family residential and multi-family medium-rise residential) and their unit or square footage quantities. Other inputs include the air basin, climate zone, setting (urban, suburban, or rural), and utility provider (in this case San Diego Gas & Electric). In various places, the user can input additional information and/or override the default assumptions to account for project- or location-specific parameters. For this estimate of existing GHG emissions, the model default parameters including vehicle trip lengths and energy intensity factors were not changed.

Table 5 lists the existing land use quantities.

TABLE 5
EXISTING MODELED LAND USES

Land Uses	Existing
Single Family Residential (du)	2,591
Multi-family Residential (du)	1,109
Park (acres)	16
Commercial/Mixed Use (million square feet)	2.653
Institutional (million square feet)	4.988
Industrial (million square feet)	33.323

du = dwelling unit
NOTE: Land use data is from year 2009.

It was calculated that the existing uses currently emit 2,611,312 $MTCO_2E$ annually. The complete calculations of existing GHG emissions are included in Attachment 2 and summarized Table 6.

TABLE 6
EXISTING GHG EMISSIONS
($MTCO_2E$ PER YEAR)

Emission Source	Existing GHG Emissions
Vehicles	612,398
Energy Use	195,730
Area Sources	0
Water Use	916,242
Solid Waste Disposal	886,942
TOTAL	**2,611,312**

GHG = greenhouse gas

3.1.3 Consequences of Global Climate Change

CARB projected a future statewide GHG emissions increase of more than 23 percent (from 2004) by 2020 given BAU trends (CARB 2008a). Year 2020 estimates of California's GHG emissions have been updated to account for new estimates for future fuel and energy demand as well as other factors including the economic downturn. More recent estimates predict a future statewide emissions increase of approximately 7 percent (from 2008) by 2020 given current trends (CARB 2012). The 2008 EPIC study predicted a countywide increase to 43 $MMTCO_2E$, or roughly 20 percent (from 2006) by 2020, given a BAU trajectory. Updated estimates are not available, but are anticipated to be less than 20 percent for the same reasons.

The potential consequences of global climate change on the San Diego region are far reaching. The Climate Scenarios analysis report, published in 2006 by the California

Climate Change Center, uses a range of emissions scenarios to project a series of potential warming ranges (low, medium, or high temperature increases) that may occur in California during the 21st century. Throughout the state and the region, global climate and local microclimate changes could cause an increase in extreme heat days; higher concentrations, frequency, and duration of air pollutants; an increase in wildfires; more intense coastal storms; sea level rise; impacts to water supply and water quality through reduced snowpack and saltwater influx; public health impacts; impacts to near-shore marine ecosystems; reduced quantity and quality of agricultural products; pest population increases; and altered natural ecosystems and biodiversity.

3.2 Regulatory Background

In response to rising concern associated with increasing GHG emissions and global climate change impacts, several plans and regulations have been adopted at the international, national, and state levels with the aim of reducing GHG emissions.

3.2.1 Federal

3.2.1.1 Climate Change Action Plan

Adopted in 1993, the U.S. Climate Change Action Plan (CCAP) consists of voluntary actions to reduce all significant GHGs from all economic sectors. Backed by federal funding, the CCAP supports cooperative partnerships between the government and the private sector in establishing flexible and cost-effective ways to reduce GHG emissions. The CCAP encourages investments in new technologies, but also relies on previous actions and programs focused on saving energy, reducing transportation emissions, improving forestry management, and reducing waste. With respect to energy and transportation-related GHG emissions reductions, the CCAP includes the following:

- Energy Demand Actions to accelerate the use of existing energy saving technologies and encourage the development of more advanced technologies. Commercial actions focus on installing efficient heating and cooling systems in commercial buildings and upgrading to energy-efficient lighting systems (the Green Lights program). The State Buildings Energy Incentive Fund provides funding to states for the development of public building energy management programs. Residential actions focus on developing new residential energy standards and building codes and providing money-saving energy efficient options to homeowners.

- Energy Supply Actions to reduce emissions from energy supply. These actions focus on increasing the use of natural gas, which emits less CO_2 than coal or oil, and investing in renewable energy sources, such as solar and wind power, which

result in zero net CO_2 emissions. Energy supply strategies also focus on reducing the amount of energy lost during distribution from power plants to consumers.

- Transportation Actions to reduce transportation-related emissions are focused on investing in cleaner fuels and more efficient technologies, and reducing vehicle miles traveled (VMT). In addition, the U.S. EPA and Department of Transportation (DOT) are to draft guidance documents for reducing VMTs for use in developing local clean air programs.

3.2.1.2 GHG Emissions Intensity Reduction Programs

The GHG Emissions Intensity is the ratio of GHG emissions to economic output. In 2002, the U.S. GHG Emissions Intensity was 183 metric tons per million dollars of gross domestic product (GDP; U.S. EPA 2007). In February 2002, the U.S. set a goal to reduce this GHG Emissions Intensity by 18 percent by 2012 through various reduction programs. A number of ongoing voluntary programs have thus been instituted to reduce nationwide GHG emissions. These include (U.S. EPA 2007):

- **Climate VISION Partnership:** In 2003, this program established a partnership between 12 major industries and the U.S. Department of Energy (U.S. DOE), the U.S. EPA, the DOT and the U.S. Department of Agriculture. The involved industries include electric utilities; petroleum refiners and natural gas producers; automobile, iron and steel, chemical and magnesium manufacturers; forest and paper producers; railroads; and cement, mining, aluminum, and semiconductor industries. These industries are working with the four agencies to reduce their GHG emissions by developing cost-effective solutions, measuring and reporting emissions, developing strategies for the adoption of advanced technologies, and implementing voluntary mitigation actions.

- **Cleaner Energy–Environment State Partnership:** This program established a partnership between federal and state agencies to support states in implementing strategies and policies to promote renewable energy, energy efficiency, and other cost-effective clean energies. States receive technical assistance from the U.S. EPA.

- **Climate Leaders:** Climate Leaders is a U.S. EPA's voluntary program that establishes partnerships with individual companies. Together they establish individual corporate goals for GHG emissions reduction and monitor their emissions to measure progress. More than 100 corporations that represent 8 percent of U.S. GHG emissions are involved in Climate Leaders. More than half have reached their emissions goals so far.

- **Energy Star:** Energy Star was established in 1992 by the U.S. EPA and became a joint program with the U.S. DOE in 1996. Energy Star is a program that labels energy

efficient products with the Energy Star label. Energy Star enables consumers to choose energy-efficient and cost-saving products. More than 1,400 manufacturers use Energy Star labels on their energy-efficient products.

- **Green Power Partnership:** This program establishes partnerships between the U.S. EPA, and companies and organizations that have bought or are considering buying green power, which is power generated from renewable energy sources. The U.S. EPA offers recognition and promotion to organizations that replace electricity consumption with green power.

3.2.1.3 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the U.S. While the standards had not changed since 1990, as part of the Energy and Security Act of 2007, the CAFE standards were increased in 2007 for new light-duty vehicles to 35 miles per gallon (mpg) by 2020. In May 2009, President Obama announced further plans to increase CAFE standards to require light duty vehicles to meet an average fuel economy of 35.5 mpg by 2016. With improved gas mileage, fewer gallons of transportation fuel would be combusted to travel the same distance, thereby reducing nationwide GHG emissions associated with vehicle travel.

3.2.1.4 Mandatory Reporting of GHGs Rule

Starting January 1, 2010, large emitters of heat-trapping gases began collecting GHG data and reporting their annual GHG emissions to the U.S. EPA. The first reports were generally due March 31, 2011, with extensions available under certain circumstances to September 30, 2011. Under this reporting rule, approximately 10,000 facilities are covered, accounting for nearly 85 percent of the nation's GHG emissions. This mandatory reporting applies to fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 $MTCO_2E$ or more per year. Vehicle and engine manufacturers outside of the light-duty sector are required to begin phasing in their GHG reporting starting with engine/vehicle model year 2011.

3.2.2 State

The State of California has adopted a number of plans and regulations aimed at identifying statewide and regional GHG emissions caps, GHG emissions reduction targets, and actions and timelines to achieve the target GHG reductions.

3.2.2.1 EO S-3-05—Statewide GHG Emission Targets

This executive order (EO), signed on June 1, 2005, established the following GHG emission reduction targets for the state of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020 reduce GHG emissions to 1990 levels;
- by 2050 reduce GHG emissions to 80 percent below 1990 levels.

This executive order also directs the secretary of the California EPA (CalEPA) to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. With regard to impacts, the report shall also prepare and report on mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years.

3.2.2.2 AB 32—California Global Warming Solutions Act

In response to Executive Order S-3-05, the California legislature passed AB 32 (Nuñez), the California Global Warming Solutions Act of 2006, which was signed on September 27, 2006. It requires the CARB to adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. The CARB is also required to publish a list of discrete GHG emission reduction measures. As required by AB 32, CARB has established a statewide GHG emissions cap for 2020, and adopted reporting rules for large industrial sources and a Climate Change Scoping Plan (Scoping Plan).

3.2.2.3 Climate Change Scoping Plan

As directed by AB 32, the Scoping Plan prepared by CARB in December 2008 includes measures to reduce statewide GHG emissions to 1990 levels by 2020. These reductions are what CARB identified as necessary to reduce forecasted BAU 2020 emissions. CARB will update the Scoping Plan at least once every 5 years to allow evaluation of progress made and to correct the Scoping Plan's course where necessary.

As indicated in Table 7, the majority of reductions is directed at the sectors with the largest GHG emissions contributions—transportation and electricity generation—and involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities. The two measures most applicable to land use planning and development are the Regional Transportation Related GHG Targets and the Energy Efficiency measures. Implementing these two measures accounts for reduction of 31.3 $MMTCO_2E$ emissions, or 21 percent, of the total 146.7 $MMTCO_2E$ in reductions needed for capped sectors.

TABLE 7
CARB SCOPING PLAN-RECOMMENDED GHG REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted towards 2020 Target in $MMTCO_2E$	(% total)[1]
ESTIMATED REDUCTIONS RESULTING FROM THE COMBINATION OF CAPPED SECTORS AND COMPLEMENTARY MEASURES	**146.7**	
California Light-duty Vehicle Greenhouse Gas Standards • Implement Pavley standards • Develop Pavley II light-duty vehicle standards	31.7	(22%)
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 GWh • Solar Water Heating (AB 1470 goal)	26.3	(18%)
Renewables Portfolio Standard (33% by 2020)	21.3	(14%)
Low Carbon Fuel Standard	15.0	(10%)
Regional Transportation-related GHG Targets[1]	5.0	(4%)
Vehicle Efficiency Measures	4.5	(3%)
Goods Movement • Ship Electrification at Ports • System-wide efficiency improvements	3.7	(3%)
Million Solar Roofs	2.1	(2%)
Medium/Heavy Duty Trucks • Heavy-duty vehicle greenhouse gas emissions reduction (aerodynamic efficiency) • Medium- and heavy-duty vehicle hybridization	1.4	(<1%)
High Speed Rail	1.0	(<1%)
Industrial Measures (for sources covered under cap & trade program) • Refinery measures • Energy efficiency and Co-benefits audits	0.3	(<.5%)
Additional Reductions Necessary to Achieve the Cap	34.4	(23%)
ESTIMATED REDUCTIONS RESULTING FROM UNCAPPED SECTORS	**27.3**	
Industrial Measures (for sources not covered under cap & trade program) • Oil and gas extraction and transmission	1.1	
High Global Warming Potential Gas Measures	20.2	
Sustainable Forests	5.0	
Recycling and Waste (landfill methane capture)	1.0	
TOTAL REDUCTIONS COUNTED TOWARDS 2020 TARGET	**174.0**[3]	

SOURCE: Table 2 of CARB 2008b
$MMTCO_2E$ = million metric tons of carbon dioxide equivalent
GWh = gigaWatt hours
AB = Assembly Bill
GHG = greenhouse gas

[1]Percentages are relative to the capped sector subtotal of 146.7 $MMTCO_2E$, and may not total 100 due to rounding.

[2]This number represents an estimate of what may be achieved from local land use changes. It is not the Senate Bill 375 regional target. CARB will establish regional targets for each Metropolitan Planning Organization following input of the Regional Targets Advisory Committee and a public stakeholders' consultation process per Senate Bill 375.

[3]The total reduction for the recommended measures slightly exceeds the 169 MMTCO2E of reductions estimated in the BAU 2020 Emissions Forecast. This is the net effect of adding several measures and adjusting the emissions reduction estimates for some other measures.

CARB also lists several other recommended measures which will contribute toward achieving the 2020 statewide reduction goal, but whose reductions are not (for various reasons, including the potential for double counting) additive with the measures listed in Table 7. These include state and local government operations measures, green building, mandatory commercial recycling and other additional waste and recycling measures, water sector measures, and methane capture at large dairies.

The Scoping Plan reduction measures and complementary regulations are described further in the following sections, and are grouped under the two headings of Transportation-related Measures and Non-Transportation-Related Measures as representative of the sectors to which they apply.

3.2.2.4 Transportation-related Emissions Reductions

Transportation accounts for the largest share of the state's GHG emissions. Accordingly, a large share of the reduction of GHG emissions from the recommended measures comes from this sector. To address emissions from vehicles, CARB is proposing a comprehensive three-prong strategy: reducing GHG emissions from vehicles, reducing the carbon content of the fuel these vehicles burn, and reducing the miles these vehicles travel.

a. AB 1493—Pavley GHG Vehicle Standards

AB 1493 (Pavley) enacted July 2002, directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light duty trucks to the maximum extent technologically feasible, beginning with the 2009 model year. CARB adopted regulations in 2004 and applied to the U.S. EPA for a waiver under the federal Clean Air Act to implement them. Termed Pavley I, these regulations cover Model Years 2009 to 2016.

It is expected that the new regulations (Pavley I) would reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016 (CARB 2010b) for a total reduction of 31.7 $MMTCO_2E$ counted toward the total statewide reduction target (CARB 2008b) (see Table 7). These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

CARB has adopted a second, more stringent, phase of the Pavley regulations, termed Pavley II [now known as Low Emission Vehicle III GHG], that covers Model Years 2017 to 2025. Pavley II was estimated in 2008 to add an additional 4.0 $MMTCO_2E$ for 2 percent of the then-estimated 174 $MMTCO_2E$ reduction total. The revised 2010 projections estimate that Pavley II will reduce GHG emissions from passenger vehicles by 3.8 $MMTCO_2E$, 5 percent of the total 80 $MMTCO_2E$ reduction target (per CARB's 2010 revised projections; CARB 2010b). These reductions are to come from

improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

b. EO S-01-07—Low Carbon Fuel Standard

This executive order directed that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a Low Carbon Fuel Standard (LCFS). CARB adopted the LCFS as a discrete early action measure pursuant to AB 32 in April 2009 and includes it as a reduction measure in its Scoping Plan (see Table 7).

The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean, low-carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low-carbon fuels such as biofuels, electricity, and hydrogen, by taking into consideration the full life cycle of GHG emissions. A 10 percent reduction in the intensity of transportation fuels is expected to equate to a reduction of 16.5 $MMTCO_2E$ in 2020. However, in order to account for possible overlap of benefits between LCFS and the Pavley GHG standards, CARB has discounted the contribution of LCFS to 15 $MMTCO_2E$ (CARB 2008b).

c. Regional Transportation-related GHG Targets

The Regional Transportation-Related GHG Targets measure included in the Scoping Plan identifies policies to reduce transportation emissions through changes in future land use patterns and community design, as well as through improvements in public transportation, that reduce VMT. By reducing the miles vehicles travel, vehicle emissions will be reduced. Improved planning and the resulting development are seen as essential for meeting the 2050 emissions target (CARB 2008b p. 20). CARB expects that this measure will reduce transportation-related GHG emissions by about 5 $MMTCO_2E$ or 4 percent of the total statewide reductions attributed to the capped sectors (see Table 7). Specific regional reduction targets established through Senate Bill 375 (SB-375; see discussion below) will determine more accurately what reductions can be achieved through this measure.

d. SB-375—Regional Emissions Targets

The SB-375 was signed in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan measure described above. Its purpose is to align regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation to reduce GHG emissions by promoting high-density, mixed-use developments around mass transit hubs.

The CARB, in consultation with the Metropolitan Planning Organizations (MPOs), was required to provide each affected region with passenger vehicle GHG emissions

reduction targets for 2020 and 2035 by September 30, 2010. The San Diego Association of Governments (SANDAG) is the San Diego region's MPO. On August 9, 2010 CARB released the staff report on the proposed reduction target, which was subsequently approved by CARB on September 23, 2010. The San Diego region will be required to reduce greenhouse gas emissions from cars and light trucks 7 percent per capita by 2020 and 13 percent by 2035 (SANDAG 2011).

The reduction targets are to be updated every 8 years, but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets.

Once reduction targets are established, each of California's MPOs must prepare and adopt a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas reduction targets through integrated land use, housing, and transportation planning. Enhanced public transit service combined with incentives for land use development that provides a better market for public transit will play an important role in the SCS. After the SCS is adopted by the MPO, the SCS will be incorporated into that region's federally enforceable regional transportation plan (RTP).

CARB is also required to review each final SCS to determine whether it would, if implemented, achieve the greenhouse gas emission reduction target for its region. If the combination of measures in the SCS will not meet the region's target, the MPO must prepare a separate Alternative Planning Strategy (APS) to meet the target. The APS is not a part of the RTP.

As an incentive to encourage implementation of the SCS and APS, developers can obtain relief from certain requirements under the California Environmental Quality Act (CEQA) for those projects that are consistent with either the SCS or APS (CARB 2010c).

San Diego's MPO, SANDAG, completed and adopted its 2050 RTP in October 2011, the first such plan in the state that included a SCS.

3.2.2.5 Non-transportation-related Emissions Reductions

In the energy sector, Scoping Plan measures aim to provide better information and overcome institutional barriers that slow the adoption of cost-effective energy-efficiency technologies. They include enhanced energy-efficiency programs to provide incentives for customers to purchase and install more efficient products and processes and building and appliance standards to ensure that manufacturers and builders bring improved products to market. Over the long term, the recommended measures will increase the amount of electricity from renewable energy sources and improve the energy efficiency of industries, homes, and buildings. While energy efficiency accounts for the largest emissions reductions from this sector, other applicable land development measures

such as water conservation, materials use and waste reduction, and green building design and development practices, achieve additional emissions reduction.

a. Renewables Portfolio Standard

The Renewables Portfolio Standard (RPS) promotes diversification of the state's electricity supply. Originally adopted in 2002 with a goal to achieve a 20-percent renewable energy mix by 2020, the goal has been accelerated and increased, most recently so by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. Its purpose is to achieve a 33-percent renewable energy mix statewide; providing 33 percent of the state's electricity needs met by renewable resources by 2020 (CARB 2008b). The RPS is included in CARB's Scoping Plan list of reduction measures (see Table 7). Increasing the RPS to 33 percent is designed to accelerate the transformation of the electricity sector, including investment in the transmission infrastructure and systems changes to allow integration of large quantities of intermittent wind and solar generation. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Increased use of renewables would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. CARB estimates that full achievement of the RPS would decrease statewide GHG emissions by 21.3 $MMTCO_2E$ (CARB 2008b).

b. Million Solar Roofs Program

The Million Solar Roofs Program was created by SB 1 in 2006 and includes the California Public Utilities Commission's (CPUC's) California Solar Initiative and California Energy Commission's (CEC's) New Solar Homes Partnership. It requires publicly owned utilities to adopt, implement, and finance solar-incentive programs to lower the cost of solar systems and help achieve the goal of installing 3,000 megaWatts (MW) of new solar capacity by 2020. The Million Solar Roofs Program is one of CARB's GHG-reduction measures identified in the 2008 Scoping Plan (see Table 7). Achievement of the program's goal is expected to equate to a reduction of 2.1 $MMTCO_2E$ in 2020 statewide BAU emissions (CARB 2008b).

c. SB-1368—Public Utility Emission Standards

The SB-1368 (Parata), passed in 2006, requires the CEC to set GHG-emission standards for entities providing electricity in the state. The bill further requires that the CPUC prohibit electricity providers and corporations from entering into long-term contracts, if those providers and corporations do not meet the CEC's standards (Union of Concerned Scientists 2007).

d. Title 24, Part 6—California Energy Code

The California Code of Regulations, Title 24, Part 6 is the California Energy Code. This code, originally enacted in 1978 in response to legislative mandates, establishes energy-

efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. The most recent amendments to the Energy Code, known as 2008 Title 24, or the 2008 Energy Code, became effective January 1, 2010. 2008 Title 24 requires energy savings of 15–35 percent above the former 2005 Title 24 Energy Code. At a minimum, residential buildings must achieve a 15-percent reduction in their combined space heating, cooling, and water heating energy compared to the 2005 Title 24 standards. Incentives in the form of rebates and tax breaks are provided on a sliding scale for buildings achieving energy efficiency above the minimum 15 percent reduction over 2005 Title 24. The reference to 2005 Title 24 is relevant in that many of the State's long-term energy and GHG reduction goals identify energy-saving targets relative to Title 24 2005. By reducing California's energy consumption, emissions of statewide GHGs may also be reduced.

New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. The compliance reports must demonstrate a building's energy performance through use of CEC-approved energy performance software that shows iterative increases in energy efficiency given selection of various Heating, Ventilation, and Air-conditioning (HVAC), sealing, glazing, insulation, and other components related to the building envelope. Title 24 governs energy consumed by the built environment, by the major building envelope systems such as space heating, space cooling, water heating, some aspects of the fixed lighting system, and ventilation. Non-building energy use, or plug-in energy use (such as appliances, equipment, electronics, plug-in lighting), are independent of building design and are not subject to Title 24.

e. Title 24, Part 11—California Green Building Standards

In 2007, the California Building Standards Commission began to work with state agencies on the adoption of green building standards for residential, commercial, and public building construction for the 2010 code adoption process. A voluntary version of the California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11 in 2009. The 2010 version of CalGreen took effect January 1, 2011 and instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial and low-rise residential buildings, state-owned buildings, schools, and hospitals. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Its requirements for new construction include:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels, with voluntary goals for reductions of 30 percent and over;

- Mandatory water submetering;
- Mandatory diversion of 50-percent waste from landfills, with voluntary goal reductions of 65 percent for homes and 80 percent for commercial projects;
- Mandatory inspections of energy systems to ensure optimal working efficiency, with voluntary goals for 15 percent (Tier I) and 30 percent (Tier II) exceedance of 2008 Title 24; and
- Requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards.

Similar to the compliance reporting procedure described above for demonstrating energy code compliance in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for both residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

Related to CalGreen are the earlier 2000 Sustainable Building Goal (EO D-16-00) and 2004 Green Building Initiative (EO S-20-04). The 2000 Sustainable Building Goal instructed that all state buildings be constructed or renovated and maintained as models of energy, water, and materials efficiency. The 2004 Green Building Initiative recognized further that significant reductions in GHG emissions could be achieved through the design and construction of new green buildings as well as the sustainable operation, retrofitting, and renovation of existing buildings.

The CARB Scoping Plan includes a Green Building Strategy with the goal of expanding the use of green building practices to reduce the carbon footprint of new and existing buildings. Consistent with CalGreen, the Scoping Plan recognized that GHG reductions would be achieved through buildings that exceed minimum energy-efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and incorporate sustainable materials. Green building is thus a vehicle to achieve the Scoping Plan's statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

In the Scoping Plan, CARB projects that an additional 26 $MMTCO_2E$ could be reduced through expanded green building (CARB 2008b, p.17). However, this reduction is not counted toward the BAU 2020 reduction goal to avoid any double counting, as most of these reductions are accounted for in the electricity, waste, and water sectors. Because of this, CARB has assigned all emissions reductions that occur because of green building strategies to other sectors for meeting AB 32 requirements, but will continue to evaluate and refine the emissions from this sector.

f. SB-97—CEQA GHG Amendments

SB-97 (Dutton), passed by the legislature and signed on August 24, 2007, required the Office of Planning and Research (OPR) on or before July 1, 2009, to prepare, develop, and transmit to the Resources Agency amendments to the CEQA guidelines (Guidelines) to assist public agencies in the evaluation and mitigation of GHGs or the effects of GHGs as required under CEQA, including the effects associated with transportation and energy consumption. SB-97 required the Resources Agency to certify and adopt those guidelines by January 1, 2010. Proposed amendments to the state CEQA Guidelines for GHG emissions were submitted on April 13, 2009, adopted on December 30, 2009, and became effective March 18, 2010.

Section 15064.4 of the amended Guidelines includes the following requirements for determining the significance of impacts from GHG emissions:

> (a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
>
> > (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
> >
> > (2) Rely on a qualitative analysis or performance-based standards.

While the amendments require calculation of a project's contribution, they clearly do not establish a standard by which to judge a significant effect or a means to establish such a standard.

3.2.3 Local

3.2.3.1 San Diego Sustainable Community Program

In 2002, the San Diego City Council unanimously approved the San Diego Sustainable Community Program (SCP) and requested that an *Ad Hoc* Advisory Committee be established to provide recommendations that would decrease GHG emissions from City operations. Actions identified in the SCP include:

1. Participation in the International Council for Local Environmental Initiatives (ICLEI) Cities for Climate Protection (CCP) Campaign to reduce GHG emissions, and in the California Climate Action Registry;
2. Establishment of a reduction target of 15 percent by 2010, using 1990 as a baseline; and
3. Direction to use the recommendations of the *Ad Hoc* Advisory Committee as a means to expand the GHG Emission Reduction Action Plan for the City organization and broaden its scope to include community actions.

3.2.3.2 Cities for Climate Protection

As a participant in the ICLEI Cities for Climate Protection Program, the City made a commitment to voluntarily decrease its GHG emissions by 2030. The Program includes five milestones: (1) establish a CCP campaign, (2) engage the community to participate, (3) sign the U.S. Mayors Climate Protection Agreement, (4) take initial solution steps, and (5) perform a GHG audit. The City has advanced past Milestone 3 by signing the Mayor's agreement and establishing actions to decrease City Operations' emissions.

3.2.3.3 Climate Protection Action Plan

In July 2005, the City of San Diego developed a Climate Protection Action Plan (CPAP) that identifies policies and actions to decrease GHG emissions from City operations. Recommendations included in CPAP for transportation included measures such as increasing carpooling and transit ridership, improving bicycle lanes, and converting the City vehicle fleet to low-emission or non-fossil-fueled vehicles. Recommendations in the CPAP for energy and other non-transportation emissions reductions included increasing building energy efficiency (i.e., requiring that all City projects achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard); reducing waste from City operations; continuing use of landfill methane as an energy source; reducing the urban heat island by avoiding dark roofs and roads which absorb and retain heat; and increasing shade tree and other vegetative cover plantings.

Because of City actions implemented earlier between 1990 and 2002, moderate GHG emissions reductions were reported in the CPAP. City actions taken to capture methane gas from solid waste landfills and sewage treatment plants resulted in the largest decrease in GHG emissions. Actions taken thus far to incorporate energy efficiency and alternative renewable energy reached only 5 percent of the City's 2010 goal. The transportation sector remains a significant source of GHG emissions in 2010 and has had the lowest GHG reductions, reaching only 2.2 percent of the goal for 2010. The recently amended City General Plan (2008a) includes a Policy CE-A.13 to regularly monitor and update the CPAP.

3.2.3.4 Sustainable Building Policies

In several of its policies, the City aims to reduce GHG emissions by requiring sustainable development practices in City operations and incentivizing sustainable development practices in private development. In Council Policy 900-14—Green Building Policy, adopted in 1997, Council Policy 900-16—Community Energy Partnership, and the updated Council Policy 900-14—Sustainable Buildings Expedite Program, last revised in 2006 [NOTE: City needs to provide update], the City establishes a mandate for all City projects to achieve the U.S. Green Building Council's LEED Silver standard for all new buildings and major renovations over 5,000 square feet. Incentives are also provided to private developers through the Expedite Program, which expedites project review of green building projects and discounts project review fees.

The City has also enacted codes and policies aimed at helping the City achieve the State's 50-percent waste diversion mandate, including the Refuse and Recyclable Materials Storage Regulations (Municipal Code Chapter 14, Article 2, Division 8), Recycling Ordinance (O-19678 Municipal Code Chapter 6, Article 6, Division 7), and the Construction and Demolition (C & D) Debris Deposit Ordinance (0-19420 & 0-19694 Municipal Code Chapter 6, Article 6, Division 6).

3.2.3.5 General Plan

The City of San Diego 2008 General Plan includes several climate change-related policies aimed at reducing GHG emissions from future development and City operations (City of San Diego 2008a). For example, Conservation Element policy CE-A.2 aims to "reduce the City's carbon footprint" and to "develop and adopt new or amended regulations, programs, and incentives as appropriate to implement the goals and policies set forth" related to climate change. The Land Use and Community Planning Element, the Mobility Element, the Urban Design Element, and the Public Facilities, Services and Safety Element also identify GHG reduction and climate change adaptation goals. These elements contain policy language related to sustainable land use patterns, alternative modes of transportation, energy efficiency, water conservation, waste reduction, and greater landfill efficiency. The overall intent of these policies is to support climate protection actions, while retaining flexibility in the design of implementation measures, which could be influenced by new scientific research, technological advances, environmental conditions, or state and federal legislation.

Cumulative impacts of GHG emissions were qualitatively analyzed and determined to be significant and unavoidable in the 2008 PEIR for the General Plan. The PEIR included a Mitigation Framework that indicated "for each future project requiring mitigation (measures that go beyond what is required by existing programs, plans and regulations), project-specific measures will [need to] be identified with the goal of reducing

incremental project-level impacts to less than significant; or the incremental contributions of a project may remain significant and unavoidable where no feasible mitigation exists."

3.2.3.6 Climate Mitigation and Adaptation Plan

A citywide Draft Climate Mitigation and Adaptation Plan (CMAP) has been developed to provide a mechanism for the City to achieve the goals of AB 32 and the CARB Scoping Plan at a program-level. The Draft CMAP is currently undergoing public review. The Draft CMAP elements have been prepared pursuant to guidance from the amended CEQA Guidelines and CARB recommendations for what constitutes an effective GHG reduction plan, as follows.

Section 15183.5 of the amended Guidelines includes the following requirements for plans that serve to tier and streamline the analysis of GHG emissions:

(a) Lead agencies may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long-range development plan, or a separate plan to reduce GHG emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review.

(b) Plans for the Reduction of GHG Emissions. Public agencies may choose to analyze and mitigate significant GHG emissions in a plan for the reduction of GHG emissions or similar document. A plan to reduce GHG emissions may be used in a cumulative impact analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable, if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.

(1) Plan Elements. A plan for the reduction of GHG emissions should:

(A) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.

(B) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable.

(C) Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.

(D) Specify measures or a group of measures including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specific emissions level.

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.

(F) Be adopted in a public process following environmental review.

(2) Use with Later Activities. A plan for the reduction of GHG emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a GHG reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporates those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable notwithstanding the project's compliance with the specified requirements in the plan for the reduction of GHG emissions, an EIR must be prepared for the project.

(c) Special Situations. As provided in the Public Resource Code sections 21155.2 and 21159.28, environmental documents for certain residential and mixed-use projects and transit priority projects, as defined in section 21155, that are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in an applicable sustainable communities strategy or alternative planning strategy [refer to Section 4.2.3.4.d above] need not analyze global warming impacts resulting from cars and light duty trucks. A lead agency should consider whether such projects may result in GHG emissions from other sources, however, consistent with these Guidelines.

The City's Draft CMAP establishes a planning horizon of 2013 through 2035 and quantifies GHG emissions, establishes GHG reduction targets for 2020, 2035, and 2050, identifies strategies and measures to reduce GHG emissions, and provides guidance for monitoring progress on an annual basis.

3.2.3.7 Climate Action Strategy

The SANDAG Climate Action Strategy is a long-range policy (year 2030) that focuses on transportation, electricity, and natural gas sectors. It is a complement to the Regional

Energy Strategy 2030 Update and feeds into the SANDAG RTP and Regional Comprehensive Plan. It is currently in process of being prepared.

As indicated above, per the requirements of SB 375, the San Diego region will be required to reduce GHG emissions from cars and light trucks 7 percent per capita by 2020 and 13 percent by 2035 (SANDAG 2011). These reduction targets have been incorporated into the 2050 RTP and SCS for the San Diego region.

4.0 Significance Criteria and Analysis Methodologies

4.1 Determining Significance

Thresholds used to evaluate potential impacts due to GHG emissions are based on applicable criteria in the CEQA Guidelines Appendix G. The CPU would have a significant GHG impact if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs.

As stated in the Guidelines, these two statements are “intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance” (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions). To date, there have been no local, regional, state, or federal regulations establishing a threshold of significance to determine project-specific impacts of GHG emissions. The CEQA Guidelines require Lead Agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guidelines allow Lead Agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold.

The City has not adopted its own GHG Thresholds of Significance for CEQA and is following guidance from the California Air Pollution Control Officers Association (CAPCOA) report *CEQA & Climate Change*, dated January 2008, for interim screening criteria to determine when a GHG analysis would be required and information from the CARB Scoping Plan and BAU 2020 Forecast to determine when a cumulatively significant contribution of GHGs has occurred (City of San Diego 2008b).

Although the criteria discussed below are interim guidance, they represent a good faith effort to evaluate whether GHG impacts from a project are significant, taking into account the type and location of the proposed development, the best available scientific data regarding GHG emissions, and the current statewide goals and strategies for reduction of GHG emissions. It is also important to note that the San Diego Air Pollution Control District (SDAPCD) has not provided guidance on the quantification of GHG emissions or emissions thresholds for the San Diego Region.

4.1.1 900 $MTCO_2E$ Screening Criterion

A 900-metric-ton screening criterion for determining when a GHG analysis is required was chosen by the City based on available guidance from the CAPCOA report. The CAPCOA report references the 900-metric-ton guideline as a conservative threshold for requiring further analysis and mitigation. This emission level is based on the amount of vehicle trips, the typical energy and water use, and other factors associated with projects. CAPCOA identifies the following project types in Table 8 that are estimated to emit approximately 900 metric tons or $MTCO_2E$ of GHGs annually as shown. Projects that meet the following criteria are not required by the City to prepare a GHG technical analysis report.

TABLE 8
PROJECT TYPES THAT DO NOT REQUIRE A GHG ANALYSIS AND MITIGATION

Project Type	Project Size that Generates Approximately 900 Metric Tons of GHGs per Year
Single Family Residential	50 units
Apartments/Condominiums	70 units
General Commercial Office Space	35,000 square feet
Retail Space	11,000 square feet
Supermarket/Grocery Space	6,300 square feet

GHG = greenhouse gas

4.1.2 Further Analysis Demonstrating a 28.3-percent Reduction in BAU

For projects that do not meet the criteria outlined in Table 8 or emit GHGs in excess of 900 $MTCO_2E$, the City requires a GHG emissions analysis to demonstrate that a proposed project design achieves a 28.3 percent reduction relative to BAU GHG emissions. The CPU's ultimate growth capacity exceeds the screening criteria identified above in Table 8. The CPU is thus subject to the City's requirement to complete a GHG emissions analysis that demonstrates a minimum 28.3 percent reduction relative to BAU emissions.

4.1.2.1 Business-as-usual Emissions

BAU emissions are the GHG emissions that would be expected to occur in the absence of GHG-reduction measures or mitigation. As described above in Section 3.2.2.2, AB 32 directed CARB to develop a Scoping Plan that identified the reduction measures needed to achieve the targets established in AB 32/S-3-05. In order to assess the scope of the reductions California needs to make to return to 1990 emissions levels by 2020, CARB staff estimated 2020 BAU GHG emissions (Table 9), which represent the emissions that would be expected to occur without any GHG reduction measures. CARB staff estimated that statewide 2020 BAU GHG emissions would be 596 $MMTCO_2E$, requiring a reduction of 169 $MMTCO_2E$, to attain the 2020 emissions limit of 427 $MMTCO_2E$. This equates to a 28.3 percent reduction relative to BAU.

TABLE 9
CALIFORNIA BAU 2020 GHG EMISSIONS FORECAST

Sector	Projected 2020 Emissions in $MMTCO_2E$ (% total)
Transportation	225.4 (38%)
Electricity	139.2 (23%)
Commercial and Residential	46.7 (8%)
Industry	100.5 (17%)
Recycling and Waste	7.7 (1%)
High GWP	46.9 (8%)
Agriculture	29.8 (5%)
Forest Net Emissions	0.0
TOTAL	**596.4**

SOURCE: CARB 2008a
$MMTCO_2E$ = million metric tons of carbon dioxide equivalent
GWP = global warming potential

The 2020 BAU emissions forecast thus serves as the basis for establishing the City's 28.3-percent reduction relative to BAU goal and is consistent with the current CEQA Guidelines, which state that cumulative impacts may be measured relative to a cumulative baseline that includes a

> summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of GHG emissions.

4.1.2.2 Calculating Project Emissions Relative to BAU

While BAU emissions are the GHG emissions that would be expected to occur in the absence of GHG-reduction measures or mitigation, project emissions are the GHG

emissions that would be expected to occur with GHG-reduction measures or mitigation. When assessing project emissions against the City's 28.3 percent reduction relative to BAU, project emissions estimates are to account for the GHG reductions achieved through statewide regulations adopted since 2005 to reduce GHG emissions. This includes the Pavley and LCFS measures aimed at reducing vehicle emissions (by approximately 30 percent), the 2008 update to the Title 24 Energy Efficiency Standards aimed at reducing energy emissions (by a minimum of 15 percent), and the 2011 effective date of implementing the mandatory water reduction requirements of CalGreen aimed at reducing water use emissions (by approximately 20 percent). In addition to these statewide regulations, project GHG emissions estimates are to account for any project-specific GHG reductions achieved through design features or mitigation.

The project's estimated 2020 GHG emissions with GHG reductions are then evaluated relative to the 2020 BAU GHG emissions for comparison to the City's threshold as follows:

$$\left(\frac{\dot{m}_{GHG,BAU} - \dot{m}_{GHG,PR}}{\dot{m}_{GHG,BAU}}\right) \times 100 \geq 28.3?$$

Where

$\dot{m}_{GHG,BAU}$ = Project's 2020 BAU GHG emissions ($MMTCO_2E$)

$\dot{m}_{GHG,PR}$ = Project's net 2020 GHG emissions with GHG-reducing features incorporated ($MMTCO_2E$)

If the project's 2020 GHG emissions accounting for the effects of GHG-reducing regulations and project-specific design features represent a 28.3 percent reduction relative to the project's BAU GHG emissions, the project would not result in a significant impact to global climate change. Section 5.1 provides this analysis. The following Section 4.2 describes the methodology and assumptions used in quantifying project and BAU emissions.

4.1.3 Other Threshold Considerations

4.1.3.1 2020 BAU GHG Emissions Forecast Update

As described above in Section 3.2.2.3, the 2020 BAU emissions forecast modeled by CARB in 2008 was updated by CARB in 2010. In October 2010, CARB revised its 2020 BAU emissions projection based on current economic forecasts, as influenced by the economic downturn, and statewide GHG reduction measures already in place. The result of this update was to reduce the originally estimated statewide 2020 BAU emission estimate of 596 $MMTCO_2E$ to 507 $MMTCO_2E$. This value accounts not only for reduced energy demand and growth due to the economic downturn, but also incorporates two adopted Scoping Plan GHG reduction measures. The two measures the revised 2020 forecast accounts for include the Pavley I and RPS 20 percent (refer to

Sections 3.2.2.4.a and 3.2.2.5.a). Considering the updated BAU estimate of 507 MMTCO2E by 2020, a 16 percent reduction below the estimated BAU levels would be necessary to return to 1990 levels (i.e., 427 MMTCO2E) by 2020 (CARB 2011). This value has been incorporated into a revised Scoping Plan that was adopted in 2011. Table 10 shows the revised 2010 projections compared to the 2008 projections.

TABLE 10
CALIFORNIA BAU 2020 COMPARATIVE GHG EMISSIONS FORECASTS

Sector	2008 Scoping Plan Projected 2020 Emissions in $MMTCO_2E$ (% total)	2011 Scoping Plan Projected 2020 Emissions in $MMTCO_2E$ (% total)
Transportation	225.4 (38%)	183.9 (36%)
Electricity	139.2 (23%)	110.4 (22%)
Commercial and Residential	46.7 (8%)	45.3 (9%)
Industry	100.5 (17%)	91.5 (18%)
Recycling and Waste	7.7 (1%)	8.5 (2%)
High GWP	46.9 (8%)	37.9 (7%)
Agriculture	29.8 (5%)	29.1 (6%)
Forest Net Emissions	0.0	0.0
TOTAL	**596.4**	**506.6**

SOURCE: CARB 2010d
$MMTCO_2E$ = million metric tons of carbon dioxide equivalent
GWP = global warming potential

The City is currently evaluating whether or not to update its GHG guidelines and interim threshold to a 16 percent reduction relative to BAU in accordance with the updated CARB projection, or some other threshold.

4.1.3.2 Efficiency and Bright Line Thresholds

The City's 28.3 percent reduction in GHG emissions relative to BAU goal is considered a performance threshold. Other GHG performance thresholds, as well as other types of GHG thresholds, have been considered by other jurisdictions. For example, the County of San Diego has completed a recent update to its *Guidelines for Determining Significance for Climate Change,* which includes not only a 16 percent performance threshold (based on the updated BAU forecast and Scoping Plan), but also includes a 4.32 $MTCO_2E$ efficiency threshold (i.e., a per capita threshold) and a 2,500 $MTCO_2E$ bright line (i.e., maximum level, operational emissions only) threshold for projects in the County. Similar efficiency or bright line thresholds could be applicable to projects in the City; but have not yet been identified.

4.1.3.3 GHG Regulatory Program Updates

In addition to revisions to the BAU forecast and Scoping Plan, there have also been court cases subsequent to 2008 affecting what regulatory programs designed to reduce

GHG emissions statewide can be implemented and/or attributed toward a project's analysis of whether it meets the applicable BAU threshold. For example, CARB's implementation of the LCFS GHG reduction program has been impeded by recent litigation. In December 2011, a preliminary injunction blocking CARB's implementation of the LCFS was granted. On April 23, 2012, the Ninth Circuit Court of Appeals overturned the injunction pending a ruling on the merits of the case. While there is no injunction currently in place, the City has determined there is sufficient legal uncertainty with this program that projects cannot rely on taking credit for CARB's implementation of the LCFS program when analyzing whether or not it meets the BAU threshold.

Accordingly, the City has approved a new protocol requiring GHG technical studies to analyze project impacts both with and without reliance on the LCFS.

4.2 Methodology and Assumptions

Given current City guidance, the CPU land uses are evaluated relative to the 28.3 percent BAU reduction threshold; the vehicle portion of these estimates is estimated both with and without accounting for the LCFS. To evaluate the CPU's GHG emissions relative to BAU, emissions were quantified and projected to the year 2020 for both BAU and the CPU. This is because the AB 32, CARB BAU Forecast, and associated Scoping Plan GHG reduction targets (including the overall 28.3 percent reduction in BAU target) are projected to a year 2020 horizon. Although the CPU has a time horizon of 15 to 20 years, with buildout anticipated to complete by roughly 2030 or 2035, no specific GHG reduction target has been identified in state legislation after 2020. Executive Order S-3-05 identified a GHG reduction target for 2050 but did not identify interim targets for the decades between 2020 and 2050. Establishing target reductions and significance of GHG emissions beyond 2020 is speculative. Therefore, in this analysis the GHG emissions estimates based on ultimate buildout of the CPU are compared to the 2020 GHG reduction goals in order to evaluate significance. In other words, for the purpose of this analysis, CPU buildout is projected to occur by 2020.

GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2011.1.1 released by CARB in March 2011 (SCAQMD 2011). In brief, the model estimates criteria air pollutants and GHG emissions by multiplying emission source intensity factors by estimated quantities of emission sources based on the land use information.

CalEEMod estimates emissions in terms of total metric ton CO_2 equivalent ($MTCO_2E$). CO_2-equivalent emissions are the preferred way to assess combined GHG emissions because they give weight to the GWP of a gas. The GWP, as described above in Section 1.1, is the potential of a gas to warm the global climate in the same amount as an equivalent amount of emissions of CO_2. Carbon dioxide (CO_2) thus has a GWP of 1.

Methane (CH_4) has a GWP of 21 and nitrous oxide (N_2O) has a GWP of 310, which means they have a greater global warming effect than CO_2.

Emission estimates were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from construction and the five primary operational sources that would be associated with CPU buildout: mobile sources, area sources, energy use, water use, and solid waste disposal. To evaluate the reductions in GHG emissions of the CPU relative to the BAU 2020 Forecast, emissions were estimated for two scenarios: first, CPU buildout without GHG-reducing measures (i.e., CPU buildout under BAU conditions) and, second, CPU buildout with GHG-reducing measures. This allowed for a comparison between the CPU buildout with and without GHG-reducing measures in accordance with the City's 28.3 percent reduction goal.

The reported GHG estimates are provided in Section 5.1. Attachment 3 and 4 include the CalEEMod output files.

4.2.1 Defining CPU Characteristics and Land Use

The CPU is located in the San Diego Air Basin in climate zone 13 and is served by San Diego Gas and Electric (SDG&E). Each utility provider has specific energy intensity factors. SDG&E's energy intensity factors are shown in Table 11 below.

TABLE 11
SAN DIEGO GAS & ELECTRIC INTENSITY FACTORS

GHG	Intensity Factor[1] (lbs/MWh)
Carbon Dioxide (CO_2)	780.79
Methane (CH_4)	0.029
Nitrous Oxide (N_2O)	0.011

[1]SOURCE: CalEEMod Version 2011.1.1
GHG = greenhouse gas
lbs = pounds
MWh = megaWatt hour

These energy intensity values are used in CalEEMod to determine the GHG emissions associated with electricity use in various modules and are based on CARB's Local Government Operations Protocol (LGOP) (for CO_2) and E-Grid (for CH_4 and N_2O) values.

Table 12 lists the CPU buildout land use quantities. These include land uses that are currently existing in the CPU area as well as those that could be constructed under the CPU. It was assumed that future land uses would be constructed on currently vacant land (i.e., existing construction would remain). The distinction between these two categories is made because of the differences in energy and water consumption rates for new development versus existing development constructed in accordance with older building codes.

TABLE 12
FUTURE MODELED LAND USES

Land Uses[1]	Currently Existing Development	New Development	Total CPU Buildout
Single Family Residential (du)	2,591	1,682	4,273
Multi-family Residential (du)	1,106	13,395	14,501
Park (acres)	16	145	161
Commercial/Mixed Use (million square feet)	2.653	1.869	4.522
Institutional (million square feet)	4.988	10.236	15.224
Industrial (million square feet)	33.323	19.515	52.838

[1]Land use acreage obtained from Otay Mesa Community Plan Update 2011. Commercial and institutional square footages calculated from acreage assuming a 0.3 floor area ratio. Industrial square footages calculated from acreage assuming a 0.5 floor area ratio.
CPU = Community Plan Update
du = dwelling unit

4.2.2 Estimating Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through combustion of diesel and gasoline in on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted through the energy use embodied in any water use (for fugitive dust control) and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHG emissions, in volumes proportional to the quantity and type of construction equipment used. The heavier equipment typically emits more GHGs per hour of use than the lighter equipment because of their greater fuel consumption and engine design.

Construction is a temporary source of GHG emissions. Although these emissions are temporary, they must be accounted for, as the impact from the emissions of GHGs is cumulative. The Association of Environmental Professionals (AEP) has recently recommended that total construction GHG emissions resulting from a project be amortized over 30 years and added to operational GHG emissions to provide a cumulative estimate of annual GHG emissions for the plan (AEP 2010). In order to provide an estimate of the GHG emissions that would occur from construction of new development, CalEEMod construction defaults were assumed and the construction phasing was adjusted to 30 years. Also, as recommended in a recent (March 2012) CalEEMod workshop conducted by CARB, because CalEEMod overestimates construction exhaust emissions by roughly 30 percent, the resulting total quantity of construction emissions estimated by CalEEMod is multiplied by 0.70 to obtain total construction GHGs.

4.2.3 Estimating Vehicle Emissions

Transportation-related GHG emissions comprise the largest sector contributing to both inventoried and projected statewide GHG emissions, accounting for 38 percent of the projected total statewide 2020 BAU emissions (CARB 2008a). On-road vehicles alone account for 35 percent of forecasted 2020 BAU emissions. GHG emissions from vehicles come from the combustion of fossil fuels in vehicle engines.

CalEEMod estimates vehicle emissions by first calculating trip rate, trip length, trip purpose, and trip type percentages (e.g., home to work, home to shop, home to other) for each land use type, based on the land use types and quantities. For this analysis, CalEEMod default trip rates were edited to reflect the trip rates identified for each land use subtype in the traffic impact analysis (Urban Systems Associates 2012). The default trip lengths were assumed.

CalEEMod default vehicle emission factors and fleet mix are derived from the Emission Factors (EMFAC) 2007 model and adjusted for Pavley and the LCFS. For this analysis, the default values that account for Pavley and LCFS were assumed to yield accurate estimates of the future CPU with GHG reductions scenarios. To calculate each alternative BAU scenario however (i.e., the CPU without GHG reductions scenario), the CPU with reductions vehicle emissions were divided by 0.70 to achieve a 30 percent increase in order to reflect the absence of those two regulations.

4.2.4 Estimating Energy Use Emissions

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. GHGs are generated during the generation of electricity from fossil fuels off-site in power plants. These emissions are considered indirect but are calculated in CalEEMod as associated with a building's operation. Electric power generation accounts for the second largest sector contributing to both inventoried and projected statewide GHG emissions, comprising 24 percent of the projected total 2020 statewide BAU emissions (CARB 2008a). Combustion of fossil fuel emits criteria pollutants and GHGs directly into the atmosphere. When this occurs in a building this is considered a direct emissions source associated with that building.

Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or plug-in energy use, can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.).

CalEEMod default energy values are based on the CEC-sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey

(RASS) studies, which identify energy use by building type and climate zone. Because these studies are based on older buildings, adjustments have been made in CalEEMod to account for changes to Title 24 building codes. The default adjustment is to the current 2008 Title 24 energy code (part 6 of the building code). Adjustments to simulate the 2005 Title 24 energy code are also available in CalEEMod.

For the BAU energy emissions estimate and the existing conditions estimate, GHG emissions from energy use were calculated assuming construction in accordance with the 2005 Title 24 energy code. For the estimates of the CPU, energy emissions were estimated assuming all new development would be constructed in accordance with the 2008 Title 24 energy code and all existing development, which would remain under buildout of the CPU, was constructed in accordance with the 2005 Title 24 energy code. Table 12 shows the existing and the new development quantities.

4.2.5 Estimating Area Source Emissions

Area sources include hearths, woodstoves, and landscaping equipment. The use of hearths (fireplaces) and woodstoves directly emits CO_2 from the combustion of natural gas, wood, or biomass, some of which are thus classified as biogenic. The use of landscape equipment emits GHGs associated with the equipment's fuel combustion. CalEEMod estimates the number and type of equipment needed based on the number of summer days given the project's location. The model defaults for hearths, woodstoves, and landscaping equipment were assumed.

4.2.6 Estimating Water and Wastewater Emissions

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide.

Default water consumption rates were assumed for the estimates of BAU and existing conditions, including the existing land uses that would remain within the CPU horizon year (refer to explanation in energy discussion above). However, for the future/new land uses of the CPU, a 20 percent reduction in water use was assumed in accordance with recent requirements of CalGreen. Similar to energy use, recent updates to the water conservation element of Title 24 have resulted in increased water conservation for development subsequent to 2010. New construction and redevelopment that would occur under the CPU would be constructed in accordance with the current 2011 CALGreen or later water conservation requirements. Because the 2011 CalGreen (i.e., Part 11 of Title 24) requires a minimum 20 percent reduction in water use, a 20 percent reduction in BAU water use was factored into the CPU emissions.

It should be noted that industrial land uses consume significantly more water than other land uses. Due to the large amount of industrial uses in the CPU area, GHG emissions due to water use are much greater in the CPU area than in other areas in the basin dominated by residential and commercial development.

4.2.7 Estimating Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. CalEEMod determines the GHG emissions associated with disposal of solid waste into landfills. Portions of these emissions are biogenic. CalEEMod methods for quantifying GHG emissions from solid waste are based on the Intergovernmental Panel on Climate Change (IPCC) method using the degradable organic content of waste. Existing, BAU, and CPU GHG emissions associated with waste disposal were all calculated using CalEEMod's default parameters.

Similar to water use, industrial land uses typically generate more waste than other land uses. Due to the large amount of industrial uses in the CPU area, GHG emissions due to solid waste are greater in the CPU area than in other areas in the basin.

4.2.8 Summary of Assumptions

Table 13 summarizes the assumptions used for the calculation of BAU and CPU emissions.

TABLE 13
BAU AND CPU GHG CALCULATION ASSUMPTIONS

Emission Source	BAU Assumptions	CPU Assumptions
Vehicle Emissions	Default Year 2020 emissions were divided by 0.70 to achieve a 30 percent increase in order to reflect the absence of the two statewide regulations, Pavley and LCFS.	Default Year 2020 emissions were assumed. Calculation of emissions without incorporation of the LCFS is also provided per City protocol.
Energy Emissions	2005 statewide average annual energy consumption rates were used to estimate BAU emissions, consistent with the CARB 2020 BAU forecast that assumed building energy efficiencies in accordance with 2005 Title 24.	For existing development, 2005 statewide average annual energy consumption rates were used to reflect construction in accordance with 2005 Title 24. For additional new development under the CPU, default 2008 Title 24 energy rates were assumed.

TABLE 13
BAU AND CPU GHG CALCULATION ASSUMPTIONS
(continued)

Emission Source	BAU Assumptions	CPU Assumptions
Area Source Emissions	All model defaults were assumed.	All model defaults were assumed.
Water Emissions	Average rates of water consumption were used in the calculation of BAU water use emissions, consistent with plumbing code regulations in effect at the time the CARB 2020 BAU forecast was made.	For existing development, average rates of water consumption were assumed. For additional new development, a 20 percent decrease in water consumption was assumed (in accordance with CalGreen).
Solid Waste Emissions	All model defaults were assumed.	All model defaults were assumed.
Construction Emissions	There would be no construction associated with existing development. For additional new development, CalEEMod construction defaults were assumed and the construction phasing was adjusted to 30 years. Additionally, construction emissions estimated by CalEEMod were multiplied by 0.70, because CalEEMod overestimates construction emissions by roughly 30 percent	There would be no construction associated with existing development. For additional new development, CalEEMod construction defaults were assumed and the construction phasing was adjusted to 30 years. Additionally, construction emissions estimated by CalEEMod were multiplied by 0.70, because CalEEMod overestimates construction emissions by roughly 30 percent

5.0 Impact Analysis

In accordance with CEQA and City guidelines, this analysis evaluates the significance of the CPU in terms of (1) its contribution of GHGs to cumulative statewide emissions and (2) its consistency with local and state regulations, plans, and policies aimed at reducing GHG emissions.

5.1 Cumulative GHG Emissions

5.1.1 Impacts

As indicated in Section 4.1, based on the criteria shown in Table 8, the ultimate buildout that would be allowed under the CPU requires completion of a GHG emissions analysis in order to determine what, if any, cumulative impacts would result from project implementation. Specifically, the analysis must demonstrate whether or not ultimate buildout of the CPU, accounting for GHG reduction measures, would generate GHG

emissions at least 28.3 percent less than the emissions that would occur under a BAU buildout scenario. The BAU buildout scenario represents buildout of the CPU without accounting for GHG reduction measures. Thus, GHG estimates for both scenarios are discussed below.

Table 14 summarizes the estimated BAU GHG emissions in the CPU area.

TABLE 14
SUMMARY OF ESTIMATED BAU EMISSIONS ($MTCO_2E$)

Emission Source	Emissions from Currently Existing Development	Emissions from New Development	Total BAU Emissions
Vehicle	738,452	669,176	1,407,628
Energy	195,730	191,122	386,851
Area	8,856	36,118	44,975
Water Consumption	916,242	555,687	1,471,929
Solid Waste Disposal	886,942	525,419	1,412,361
Construction	0	34,604	34,604
TOTAL	**2,746,222**	**2,012,126**	**4,758,348**

BAU = business-as-usual
$MTCO_2E$ = metric tons of carbon dioxide equivalent

Based on the calculations described above, the combined total BAU GHG emissions without GHG reductions would be approximately 4,758,348 $MTCO_2E$. Of this total, approximately 2,746,222 $MTCO_2E$ (57.7 percent) would be associated with the CPU's currently existing development, and 2,012,126 $MTCO_2E$ (42.3 percent) would be associated with new proposed development.

Table 15 summarizes the estimated CPU GHG emissions with incorporation of GHG reduction measures.

TABLE 15
SUMMARY OF ESTIMATED CPU EMISSIONS ($MTCO_2E$)

Emission Source	Emissions from Currently Existing Development	Emissions from New Development	Total BAU Emissions
Vehicle	516,916	468,424	985,340
Energy	195,730	182,189	377,918
Area	8,856	36,118	44,975
Water Consumption	916,242	444,550	1,360,792
Solid Waste Disposal	886,942	525,419	1,412,361
Construction	0	34,604	34,604
TOTAL	**2,524,686**	**1,691,303**	**4,215,989**

CPU = Community Plan Update
$MTCO_2E$ = metric tons of carbon dioxide equivalent

Based on the calculations described above, the combined total CPU GHG emissions without GHG reductions would be approximately 4,215,989 $MTCO_2E$. Of this total, approximately 2,524,686 $MTCO_2E$ (59.9 percent) would be associated with the CPU's currently existing development, and 1,691,303 $MTCO_2E$ (40.1 percent) would be associated with new proposed development.

5.1.2 Significance of Impacts

Table 16 summarizes the estimated 2020 BAU emissions, the target emissions to achieve a 28.3 percent reduction relative to BAU, and the CPU emissions with the incorporation of GHG-reducing measures. Table 16 also provides the percentage reductions for comparison with the City's 28.3 percent reduction relative to BAU goal in accordance with the methodology discussed in Section 4.1.2. Emission calculations with inclusion of GHG reduction measures are provided in Attachment 5.

BAU emissions would total 4,758,348 $MTCO_2E$ annually. As shown in the second column in Table 16, a 28.3 percent reduction in CPU areawide BAU emissions would equal 3,411,735 $MTCO_2E$ per year. Therefore, the CPU would be considered to be consistent with the AB 32/Scoping Plan and City goals if it were to emit total annual emissions equal to or less than 3,411,735 $MTCO_2E$.

The CPU emissions with GHG reductions would total 4,215,989 $MTCO_2E$ annually. This reduction in BAU emissions of 542,359 $MTCO_2E$ each year would be due to regulations on auto and fuel manufacturers. Reductions would also be due to CalGreen that contains increased energy and water efficiency requirements that would reduce GHG emissions from those sources for additional new development. Of the estimated 4,215,989 $MTCO_2E$ of GHGs associated with buildout of the CPU, the majority (59.9 percent) would come from currently existing development and the remainder (40.1 percent) would come from additional new development.

TABLE 16
ESTIMATED CPU GHG EMISSIONS AND BAU REDUCTIONS
($MTCO_2E$)

Emission Source	BAU Emissions (i.e. without GHG Reductions) ($\dot{m}_{GHG,BAU}$)[1]	Target Emissions	CPU Emissions with GHG-Reductions ($\dot{m}_{GHG,PR}$)[1]	Percent Reduction relative to BAU Reduction Target
Vehicles	1,407,628	--	985,340	30.0
Energy Use	386,851	--	377,918	2.3
Area Sources	44,975	--	44,975	0.0
Water Use	1,471,929	--	1,360,792	7.6
Solid Waste	1,412,361	--	1,412,361	0.0
Construction	34,604	--	34,604	0.0
TOTAL	**4,758,348**	**3,411,735**	**4,215,989**	**11.4**[2]

CPU = Community Plan Update
GHG = greenhouse gas
BAU = business as usual
$MTCO_2E$ = metric tons of carbon dioxide equivalent
[1]Refer to Section 4.1.2.2 for nomenclature and description of City methodology for calculating BAU and Net Plan emissions.
[2]An 11.4 percent reduction accounts for Pavley and Low Carbon Fuel Standard reductions in vehicle emissions, 2008 Title 24 reductions in energy emissions, and CalGreen reductions in water use emissions. By not including the Low Carbon Fuel Standard reduction, the total percent reduction relative to BAU becomes 9.1 percent.

The CPU total GHG emissions, when compared to the BAU total annual emissions, would result in an 11.4 percent reduction in GHG emissions relative to BAU. This falls short of meeting the City's threshold of a minimum 28.3 percent reduction in GHG emissions relative to BAU. When comparing the new proposed development only (i.e., not taking into account the GHG emissions from currently existing development), the CPU would result in a 15.9 percent reduction relative to BAU. While there are other thresholds that are professionally accepted standards for review of projects, the comparison of the CPU to the 28.3 percent standard provides a conservative analysis of potential impacts. This impact associated with GHG emissions under the CPU would be considered significant and unavoidable.

The Mobility, Urban Design, and Conservation elements of the CPU include specific policies to require dense, compact, and diverse development; encourage highly efficient energy and water conservation design; increase walkability and bicycle and transit accessibility; increase urban forestry practices and community gardens; decrease urban heat islands; and increase climate-sensitive community design. These policies would serve to reduce consumption of fossil-fueled vehicles and energy resulting in a reduction in communitywide GHG emissions relative to BAU. These policies are discussed in detail in the Issue Section 5.2.

Despite the inclusion of these policies (most of which are not quantifiable in terms of their GHG emissions reductions at the program-level) and despite the GHG reductions gleaned from statewide regulations on vehicle GHG emissions and building energy and water use, the CPU's projected GHG emissions would fall short of meeting the 28.3 percent GHG reduction target relative to 2020 BAU. The approximate gap of 16.9 to 19.2 percent in meeting the target reductions would be made up through one or a combination of several effective and quantifiable GHG reduction measures that pertain to building and non-building energy use, indoor and outdoor water use, area sources, solid waste disposal, vegetation/carbon sequestration, construction equipment, and transportation/vehicles. Project-level GHG reduction design features are available that would reduce BAU GHG emissions to 28.3 percent or more relative to BAU and to the extent practicable would be implemented for future development projects under the CPU.

It should be noted that if the CPU were not adopted, development in Otay Mesa would continue to occur in accordance with the existing 1981 Otay Mesa Community Plan, which allows for more development than the CPU and would also generate more traffic than the CPU. The CPU would introduce higher density residential and commercial land use designations, as well as several new mixed-use and industrial land use designations. The GHG emissions associated with the 1981 Otay Mesa Community Plan would be greater than those of the CPU summarized in Table 4.16.

5.1.3 Mitigation Framework

GHG-1: Future projects shall demonstrate their avoidance of significant impacts related to long-term GHG emissions. The Mobility, Urban Design, and Conservation elements of the CPU include specific policies to require dense, compact, and diverse development, encourage highly efficient energy and water conservation design, increase walkability and bicycle and transit accessibility, increase urban forestry practices and community gardens, decrease urban heat islands, and increase climate-sensitive community design. These policies would serve to reduce consumption of fossil-fueled vehicles and energy resulting in a reduction in communitywide GHG emissions relative to BAU. Future projects shall incorporate GHG reducing features or mitigation measures in order to meet the City's reduction goals relative to BAU, to meet AB 32 year 2020 target levels. At the time of the writing of this report, the City's reduction goal is 28.3 percent relative to BAU emissions. Quantifiable GHG reduction measures at the level of subsequent projects pertain to:

- Building and non-building energy use
- Indoor and outdoor water use
- Area sources
- Solid waste disposal
- Vegetation/carbon sequestration

- Construction equipment
- Transportation/vehicles

The effectiveness and feasibility of these GHG reduction measures in reducing GHG emissions have been documented in the 2010 CAPCOA publication *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA 2010). They have subsequently been included in the mitigation modules of CalEEMod to quantify GHG emissions and reductions. These measures are included in the City's CMAP, yet to be adopted. These measures are best quantified at the project-level, because specific project-level design information is needed to calculate accurate GHG reductions. At the program-level, impacts would remain significant and unmitigated.

5.1.4 Significance of Impacts after Mitigation

While future development projects would be required to implement GHG emission reduction measures to the extent practical, the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot be adequately known for each specific future project at this program-level of analysis. Therefore, the impacts associated with the contribution of GHG emissions to cumulative statewide emissions would be considered significant and unavoidable, even with adherence to the Mitigation Framework.

5.2 Consistency with Adopted Plans, Policies, and Regulations

5.2.1 Impacts

5.2.1.1 Overview of Local and State GHG Reduction Measures

The regulatory plans and policies discussed extensively in Section 3.2 above aim to reduce national, state, and local GHG emissions by primarily targeting the largest emitters of GHGs: the transportation and energy sectors. The goals and regulatory standards discussed in Section 3.2 are thus largely focused on the automobile industry and public utilities. For the transportation sector, the reduction strategy is generally three pronged: to reduce GHG emissions from vehicles by improving engine design; to reduce the carbon content of transportation fuels through research, funding, and incentives to fuel suppliers; and to reduce the miles vehicles traveled through land use change and infrastructure investments. The types of land use changes that can measurably reduce GHG emissions associated with vehicle use include: increased density; increased diversity (mixed use); improved walkability design; improved transit accessibility; transit improvements; integration of below market-rate housing; and constrained parking.

By increasing density, especially within proximity of transit, people's travel distances are affected and greater options for the mode of travel are provided. This can result in a substantial reduction in VMT depending on the change in density compared to a typical suburban residential density (CAPCOA 2010). By increasing the diversity of land use (i.e., through mixed-use developments), a similar reduction in VMT can occur because trips between land use types would be shorter and may be accommodated by non-auto modes of transport. By increasing transit accessibility (e.g., by locating a high-density project near transit), a shift in travel mode is facilitated along with reduced VMT. Income has a statistically significant effect on the probability that a commuter will take transit or walk to work, as lower income families tend to have lower levels of auto ownership (CAPCOA 2010). Therefore, by integrating affordable and below market rate housing, VMT can be further reduced. By constraining parking supply, either through policy changes (e.g., reduced parking requirements for urban areas) or through pricing and/or preferential parking for ridesharing and fuel-efficient vehicles, VMT would decrease as motorists shift away from single-occupancy vehicle travel and carpool, take transit, or walk/bicycle instead.

The effectiveness of these land-use strategies ranges from less than one percent up to a maximum 30 percent reduction in community wide VMT and are not additive (CAPCOA 2010). For example, where high-density mixed use development is located within a five to ten minute walk from a transit station with high-frequency transit or bus service and is combined with walkable neighborhood design, a total VMT reduction up to 24 percent can be achieved (CAPCOA 2010).

For the energy sector, the reduction strategies of local, state and national plans aim to reduce energy demand; impose emission caps on energy providers; establish minimum building energy and green building standards; transition to renewable non-fossil fuels; incentivize homeowners and builders; fully recover landfill gas for energy; expand research and development; and so forth. At the plan or project-level, policies or incentive programs for builders to exceed the current Title 24 energy efficiency standards, to install high efficiency lighting and energy-efficient plug-in appliances (for energy uses not subject to Title 24), and to incorporate on-site renewable energy generation can result in substantial GHG emissions reductions, up to 35 percent or more. Energy use associated with water consumption and wastewater treatment can also be reduced by applying an overall water reduction strategy (e.g., of 20 percent on indoor and outdoor water use) and/or policies and actions related to using reclaimed and gray water, installation of low-flow plumbing fixtures, use of water-efficient landscape design including turf reduction, and use of water-efficient irrigation systems. The institution of recycling and composting services can also reduce the energy embodied in the disposal of solid waste.

In addition to strategies aimed at reducing GHG emissions associated with vehicle and energy use, relevant local and state plans include GHG reduction strategies aimed at: reducing the heat island effect (and therefore energy-for-cooling demand) through urban

forestry and shade tree programs. These plans also include, reducing area source emissions from woodstoves and fireplaces through stricter restrictions on fuel type and restriction against their use; and restricting the type of landscaping equipment used (such as use of only electric-powered lawn mowers, leaf blowers and chain saws).

Additional policies and strategies focus on climate adaptation and include policies and strategies to increase climate adaptability and resilience through climate-sensitive building guidelines (e.g., through appropriate building orientation and glazing design), sea-level monitoring, and defensible building design.

5.2.1.2 Consistency with Local GHG Reduction Measures

As discussed in Section 2.3, new policies within the CPU have been designed to reflect and implement the general GHG reduction recommendations of the General Plan, strategies of other local plans, and state GHG reduction measures. Specifically, the CPU includes updated Conservation, Mobility, and Urban Design elements that include several policies aimed at reducing GHG emissions from target emission sources and/or aimed at adapting to climate change. The CPU policies provide refinement of the General Plan and citywide policies specifically applicable to the Otay Mesa community. In several cases these policies are also consistent with key state GHG reduction plans, regulations, and recommended mitigation measures. An overview of relevant CPU elements and policies are contained in Attachment 1. The following is a discussion of the CPU's Conservation, Mobility, and Urban Design elements' consistency with local GHG reduction measures.

Conservation Element

The Conservation Element contains climate change and sustainability policies that provide a framework for addressing and adapting to climate change. These strategies are generally consistent and encourage the implementation of the General Plan Mitigation Framework recommendations and Policies CE-A-1 through CE-A-13 and with climate change mitigation and adaptation strategies of State plans and programs. These framework policies include the types of policies anticipated to be set forth in the Draft CMAP currently being prepared by the City.

The CPU's Conservation Element also includes water conservation measures to reduce the need for water, thereby reducing the energy use embodied in water supply and treatment and its associated GHG emissions. The policies promote the use of reclaimed and recycled water. The policies are consistent with the outdoor water-reduction strategies of the General Plan, the Scoping Plan, the 2010 CAPCOA GHG Mitigation Measures report, and the recently effective 2011 CalGreen water-reduction requirements for residential and non-residential uses.

The urban forestry policies of the CPU conform to the General Plan urban forestry Policies CE-J.1 through CE-J.5 and promote the need for an increase in tree plantings in both residential and commercial areas. Planting shade trees around buildings has been shown to effectively lower the electricity cooling demand of buildings by blocking incident sunlight and reducing heat gain through windows, walls, and roofs (CAPCOA 2010). By reducing cooling demand, shade trees help reduce electricity demand from the local utility and therefore reduce GHG emissions that would otherwise be emitted during the production of electricity.

The CPU has the potential to provide multiple sites for community gardens that would contain individual and shared-plot spaces. The CPU community farm and garden policies promote the need for the development of community gardens within the community. Establishment of community gardens has the potential to further reduce GHG emissions by providing project residents with a local source of food, potentially resulting in a reduction in the number of trips and VMT traveled by both the food and the consumers to grocery stores and supermarkets. Community gardens can also contribute to GHG reductions by displacing carbon-intensive food production practices. These emission reductions cannot be reasonably quantified at this time, because they are based on several undefined parameters: the relative locations of farmers market, supermarket, and supermarket produce suppliers; carbon intensity of food production practices; and role of a farmers market in a development.

Mobility Element:

Through increasing density, bringing people closer to their work and providing pedestrian connections to retail, commercial, and residential units, a substantial reduction in VMT can occur. A communitywide reduction in vehicle travel would reduce local VMT, which would in turn reduce emissions associated with vehicle use. The CPU would generate 1,045,025 average daily trips. The daily trip rates took into account the CPU density, diversity or mixed-use, improved walkability, and transit accessibility. The effectiveness of these land-use strategies range from less than one percent up to a maximum 30 percent reduction in communitywide VMT (CAPCOA 2010).

The CPU Mobility Element includes numerous policies to improve the pedestrian and bicycle network, increase transit accessibility, and provide transit improvements. Generally, these policies are not only consistent with the General Plan, but are also consistent with the CARB Scoping Plan vehicle reduction measures for land use development and with specific traffic mitigation measures identified in the 2010 CAPCOA GHG Mitigation Measures report.

Urban Design Element:

The Urban Design Element provides policies that promote enhanced connectivity to activity centers, active commercial centers supported by transit, improved pedestrian

access and movement, pedestrian-oriented design principles, and improved walkability. Generally, these policies are consistent with the General Plan, the CARB Scoping Plan, and the 2010 CAPCOA GHG Mitigation Measures report.

The Urban Design Element also provides sustainability policies that promote green building techniques that are consistent with General Plan policies and with green building strategies recommended in the State Climate Change Scoping Plan and several of the measures identified in the 2010 CAPCOA GHG Mitigations Measures report. GHG reductions from these policies are not quantifiable at the plan-level. Future development projects implemented in accordance with the CPU would be required to implement some of these measures, which would be quantified and their GHG reductions accounted for using the CalEEMod GHG emissions estimator model or other appropriate methods, thereby further reducing GHG emissions associated with the buildout of the CPU.

5.2.1.3 Consistency with State GHG Reduction Strategies

EO S-3-05 established GHG emission reduction targets for the State, and AB 32 launched the CARB Climate Change Scoping Plan that outlined the reduction measures needed to reach these targets. The Climate Change Scoping Plan and its implementing and complementary regulations are discussed in Section 3.2.3 and generally encompass the GHG reduction strategies described at the beginning of this section (in Section 5.2.1.1). Subsequent to the CARB Climate Change Scoping Plan, the CAPCOA (a division of CARB), released the report *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (Mitigation Measures report*)*, that identifies specific project-level and program-level GHG reduction measures (CAPCOA 2010). The report includes quantification of the GHG reductions that could be achieved through incorporation of project-level mitigation measures. These measures fall into the same categories as discussed earlier: transportation, energy, water and wastewater, solid waste, area source (woodstoves, fireplaces, landscaping equipment), and construction emissions. Most of the mitigation measures included in the CAPCOA report are identified for project-level analyses, however, the project-level reduction strategies can be extrapolated to the program-level. The program-level reduction measures included in the report are few in comparison and are largely unquantifiable. They pertain to funding and incentive programs for increased energy efficiency; establishment of local farmer's markets and community gardens; urban shade tree planting programs, and communitywide strategies to reduce urban heat island effect. Several of the program-level measures, as well as the project-level measures, have been generally incorporated into the CPU as indicated in Section 5.2.1.2 above.

In general, the CPU policies outlined in Attachment 1 correspond to the general intent of the GHG reduction measures identified in both the 2010 CAPCOA GHG Mitigation Measures report and the 2008 CARB Climate Change Scoping Plan. Where practical,

GHG reductions were included in the quantification of the CPU's GHG emissions, as described in the Section 5.1 cumulative GHG emissions analysis. In the quantification of CPU GHG emissions in Section 5.1, GHG reductions were accounted for vehicle emissions, and energy and water use emissions. These comprised the GHG reduction/mitigation measures that were quantifiable at the program-level. Subsequent projects would achieve further GHG reductions in these emissions sources, as well as in the area source, construction, and solid waste GHG emissions, through project-specific design features.

5.2.2 Significance of Impacts

The CPU contains policies that would reduce GHG emissions from transportation and operational building uses (related to water and energy consumption, and solid waste generation, etc.) that would be consistent with the strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development. Subsequent projects implemented in accordance with the CPU would be required to implement GHG-reducing features beyond those mandated under existing codes and regulations. However, because project-level details are not known, there is the potential that projects would not meet the necessary City reduction goals put in place in order to achieve the reductions required by AB 32. Thus, the level of potential impacts associated with plan conflict would be potentially significant.

6.0 Conclusions and Recommendations

With regard to plan consistency, the CPU would be consistent with the goals, strategies, and reduction targets of relevant local and State plans, and regulations aimed at reducing GHG emissions from land use and development. The level of impact associated with potential plan conflict would therefore be less than significant.

With regard to cumulative GHG emissions quantities, the CPU's GHG emissions, when compared to their BAU emissions, would result in a 9.1 to 11.4 percent reduction in emissions relative to BAU. This falls short of demonstrating a minimum 28.3 percent reduction in GHG emissions relative to BAU in accordance with City guidance on GHG emissions. Without mitigation measures to reduce emissions further, the cumulative GHG emissions generated from the CPU would be significant. Implementation of Mitigation Framework GHG-1 (see Section 5.1.3) would be required.

Significance After Mitigation

While future development projects within the CPU area would be required to implement GHG emission reduction measures to the extent practicable, the degree of future impacts and applicability, feasibility, and success of future mitigation measures cannot

be adequately known for each specific future project at this program-level of analysis. Therefore, buildout of the CPU would result in impacts associated with the contribution of GHG emissions to cumulative statewide emissions that would be considered significant and unavoidable at the program-level, even with adherence to the Mitigation Framework.

7.0 References Cited

Association of Environmental Professionals (AEP)

2010 Spring 2010 Advanced CEQA Workshop. San Diego Chapter. May 13.

California Air Pollution Control Officers Association (CAPCOA)

2010 Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures. August.

California Air Resources Board (CARB)

2007 California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16.

2008a California 2020 GHG Emissions Forecast. Accessed June 1, 2010 from the CARB website at http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Last updated October 2008; last reviewed May 28, 2010.

2008b Climate Change Scoping Plan: A Framework for Change. Accessed from the CARB website April 15, 2010 at http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. December.

2010a *Greenhouse Gas Inventory Data – 2000 to 2008*. Obtained from the CARB website at http://www.arb.ca.gov/cc/inventory/data/data.htm (last updated May 12, 2010) on December 28.

2010b Greenhouse Gas Emission Forecast for 2020: Data Sources, Methods, and Assumptions, and Status of Scoping Plan Recommended Measures. October 28. Accessed from the CARB website at http://www.arb.ca.gov/cc/inventory/data/forecast.htm and http://www.arb.ca.gov/cc/scopingplan/status_of_scoping plan measures.pdf on May 4, 2012.

2010d California's Greenhouse Gas Emissions Inventory—2020 Emissions Forecast. Accessed from CARB website at http://www.arb.ca.gov/cc/inventory/data/forecast.htm on May 4, 2012.

2010c *Senate Bill 375 – Regional Targets*. Obtained from the CARB website at http://www.arb.ca.gov/cc/sb375/sb375.htm on October 29.

2011 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. August 19. Accessed from the CARB website at http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf on May 9, 2012.

2012 California 2020 GHG Emissions Forecast. Accessed from the CARB website at http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Last updated October 2012; last reviewed April 6, 2012.

San Diego Association of Governments (SANDAG)

2011 2050 Regional Transportation Plan. October.

San Diego, City of

2008a City of San Diego General Plan.

2008b Memorandum Addressing Greenhouse Gas Emissions from Projects Subject to CEQA. From Cecilia Gallardo. March 19.

South Coast Air Quality Management District (SCAQMD)

2011 California Emissions Estimator model (CalEEMod). User's Guide Version 2011.1. February.

Union of Concerned Scientists (UCS)

2007 SB 1368 (Perata) Greenhouse Gas Emissions Performance Standard for Major Power Plant Investments – A Fact Sheet of the Union of Concerned Scientists. Obtained from the UCS web site at http://www.ucsusa.org/assets/documents/global_warming/SB-1368-Perata-fact-sheet.pdf on June 7, 2007.

Urban Systems Associates, Inc.

2012 Transportation Analysis for the Otay Mesa Community Plan Update. Prepared for the City of San Diego. June 14, 2012.

U.S. Environmental Protection Agency (U.S. EPA)

2007 *U.S. Climate Policy and Actions*. Obtained from the EPA Climate Change website at http://www.epa.gov/climatechange/policy/index.html on May 25, 2007.

2010 *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2008*. U.S. Greenhouse Gas Inventory Program, Office of Atmospheric Programs. 430-R-10-006. April 15.

University of San Diego

2008 Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets. Prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC), and available online at http://www.sandiego.edu/epic/ghginventory/. September.

THIS PAGE IS INTENTIONALLY BLANK.

ATTACHMENTS

THIS PAGE IS INTENTIONALLY BLANK.

ATTACHMENT 1

CPU Goals and Policies Related to GHG

THIS PAGE IS INTENTIONALLY BLANK.

CPU Goals and Policies Related to GHG

a. Conservation Element

Conservation Goals

- Preservation of a natural open space canyon network and associated biological resources
- Vernal pool preservation and management of greenhouse gas reductions through implementation of village land use plans, support for transit, incentives for clean technology industries, alternative energy generation, and sustainable development
- Assured water supply to meet future needs
- Implementation of urban runoff management techniques
- Development of a communitywide urban forest
- Local food generation through community farms and gardens
- Safe and healthy air quality within Otay Mesa

Climate Change and Sustainable Development

Policy 8.2.1. Implement General Plan sustainability policies through innovative regulations and the project review process.

Policy 8.2.2. Plan for energy efficiency through street orientation, building placement, and the use of shading in subdivisions and development plans.

Policy 8.2.3. Provide information on programs and incentives for achieving more energy-efficient buildings and renewable energy production.

Policy 8.2.4. Reduce project-level greenhouse gas emissions to acceptable levels through project design, application of site-specific mitigation measures, or adherence to standardized measures outlined in the City's adopted citywide climate action plan.

Policy 8.2.5. Support implementation of a solar farm as a part of the proposed Brown Field Master Plan.

Policy 8.2.6. Encourage businesses and property owners to conduct energy audits and implement retrofits to improve the energy and efficiency of existing buildings.

Water

Policy 8.3.1. Promote the expansion of the reclaimed water distribution system to allow greater use of recycled water.

Policy 8.3.3. Require installation of recycled water infrastructure as a part of the development review process.

Urban Forestry

Policy 8.5.1. Ensure that the overall tree cover and other vegetation throughout Otay Mesa is no less than 20 percent in urban residential areas and 10 percent in the business areas so that the natural landscape is sufficient in mass to provide significant benefits to the City in terms of air and water management.

Policy 8.5.2. Work with the City's Street Division/Urban Forestry Section to coordinate the appropriate selection and location of shade-producing trees from the Otay Mesa Community Plan's Street Tree List.

Policy 8.5.3. Require new development to retain significant and mature trees, where feasible.

Policy 8.5.4. Support public outreach efforts to educate business owners, residents, and school children on the care and environmental benefits of shade-producing street trees.

Policy 8.5.5. Plant trees strategically to achieve energy savings. Generally, orient tree plantings so that building structures maximize shading and cooling benefits from the canopy spread.

Community Farms and Gardens

Policy 8.6.1. Locate community gardens where there is sufficient demand, appropriate land, and where they will not generate adverse impacts on adjacent uses either on public or private land.

a. Consider locating community gardens adjacent to school facilities.

b. Provide space in new developments of a certain size or multi-family developments.

Policy 8.6.2. Support urban agriculture endeavors in Otay Mesa where consistent with other goals of the Otay Mesa Community Plan and the City's General Plan.

b. Mobility Element

Mobility Goals:

- A pedestrian sidewalk and trails network that allows for safe and comfortable walking throughout the community
- An effective transit network that provides fast and reliable service to local and regional destinations
- A complete and interconnected street system that balances the needs of drivers, bicyclists, pedestrians, and others
- A bicycle commuter network that links residents to transit, recreational, educational, and employment opportunities within the community
- Transportation infrastructure and operations investments that facilitate goods movement and international travel, while fostering economic prosperity and a high quality of life within the community

Walkability

Policy 3.1.1. Provide a sidewalk and trail system with connections to villages, activity centers, and open spaces.

Policy 3.1.2. Use street design and traffic management solutions, including but not limited to those described in the General Plan Pedestrian Improvements Toolbox, Table ME-1, to improve pedestrian safety and comfort.

Policy 3.1.3. Design Airway Road between Spring Canyon and La Media Road as Otay Mesa's "main street" with boulevard characteristics.

Policy 3.1.4. Enhance street or pedestrian connections within industrial superblocks through exterior improvements such as public art, pedestrian-scale windows, entrances, signs, street furniture, landscape, and plazas.

Policy 3.1.5. Implement the Community's Street Tree Master Plan to contribute to more walkable, tree-lined streets, using identified drought tolerant species.

Transit

Policy 3.2.1. Encourage SANDAG and MTS to expand transit investments and service in Otay Mesa.

a. Collaborate with agencies to implement the South Bay Bus Rapid Transit (BRT) services to the Port of Entry to provide access to employment.

b. Provide local bus service connecting the Iris Trolley Station, San Ysidro High School, Southwest Village, Central Village, Grand Park, and Southwestern College

Policy 3.2.2. Implement transit priority measures such as transit lanes, queue jumpers, and signal priority measures to allow transit to bypass congestion and result in faster transit travel times.

Policy 3.2.3. Coordinate with transit planners to address the needs of transit as a part of the project design and review process.

Policy 3.2.4. Emphasize transit orientation in village development plans including but not limited to those identified on the Land Use Map, Figure 2-1.

Policy 3.2.5. Work with SANDAG and MTS to provide local and regional transit linkages to California's High Speed Rail system, should the system be extended through Otay Mesa.

Bicycling

Policy 3.4.1. Refine and implement the Bicycle Master Plan in the Otay Mesa Community Plan area.

a. Develop bicycle facilities that implement internal connectivity to activity areas within the community and links to regional bicycle network.

b. Construct bicycle facilities.

c. Provide Class I bikeways along Airway Road, Caliente Road, and Beyer Boulevard.

d. Provide Class II bikeways along all new classified streets in Otay Mesa.

e. Bikeways within the village areas should connect to trail heads with access to the canyon system trails and pathways.

Policy 3.4.2. Provide multi-use trails in a manner consistent with the Multiple Species Conservation Program.

c. Urban Design Element

Urban Design Goals:

- An urban form that reflects land and topography as an amenity and provides an attractive built environment
- Functional industrial corridors with a high-quality design standard
- A Southwest Village and Central Village that respect and showcase Spring Canyon
- Active, safe, and pleasant streets, parks and public spaces
- Clearly identified routes that connect villages and major corridors to employment centers, core commercial areas, schools, parks, trails, and transit
- An urban forest that distinguishes the districts
- A community infused with distinctive public art and cultural amenities
- Attractive gateways at key entrances to the community's districts and villages

Distinct Districts

Policy 4.1.1. Enhance connectivity to activity centers.

a. Provide multimodal pathways with pedestrian and bicycle amenities to schools, parks, retail centers, and open space as part of new development, redevelopment, infill development proposals and Capital Improvement Projects.

b. Retrofit commercial areas with public spaces, where appropriate, as part of development proposals.

Policy 4.1.4. Require development intensities that create active commercial centers, support transit, and encourage lively streetscapes.

Policy 4.1.15. Improve pedestrian access and movement from the Port of Entry to transit and commercial uses through signs and enhanced pathways.

Streetscape

Policy 4.2.1. Implement pedestrian-oriented design principles at the project-level to activate the street and promote walkability in accordance with General Plan policies ME-A.7, UD-A.6, UD-B.4, UD-C.4, UD-C.6 and UD-C.7 for guidance.

Policy 4.2.2. Incorporate connectivity and walkability in the design of the street network.

a. Apply traffic-calming techniques, such as pop-outs, raised crosswalks, and parkways at truck route intersections with Airway Road and where the truck routes are adjacent to village and park uses.

b. Accommodate pedestrians along Britannia Boulevard and La Media Road with sidewalks that are separated from the travel lanes.

c. Utilize U-6 Urban Parkway Configurations from the Street Design Manual for design of sidewalks and parkways along Airway Road.

d. Separate pedestrians from vehicular traffic along Beyer Road and Ocean View Parkway, and design sidewalks to accommodate heavy pedestrian traffic to provide safe access to schools.

e. Design the street systems for the Southwest Village and the Central Village as a grid or modified-grid that utilizes existing paper streets for the north–south streets.

f. Create blocks that are no longer than 400 feet in length within residential, commercial, and village areas to provide short street segments and walkable block sizes.

g. Activate vibrant village cores using street furniture, sidewalk cafes, and public spaces.

h. Provide commercial alleys to allow rear deliveries, reduce traffic congestion, improve aesthetics, enhance parking access, and reduce the need for curb cuts.

i. Incorporate residential alleys to allow for rear garages, additional off-street parking, trash pick-up, and pedestrian areas.

Sustainability

Policy 4.9.1. Design new development to have a climate-, energy-efficient-, and environmentally oriented site design. Use sustainable methods in accordance with the policies in the General Plan, including: Conservation Element Section A. Climate Change and Sustainable Development; Section E. Urban Runoff Management; Section I. Sustainable Energy; and Section J. Urban Forestry. Urban Design Element Section A. General Urban Design.

Policy 4.9.2. Incorporate environmentally conscious building practices and materials for all new development and redevelopment proposals.

a. Use durable construction materials, as well as re-used and recycled materials.

b. Encourage the use of permeable paving elements in auto and non-auto-oriented areas.

c. Minimize impervious surfaces that have large thermal gain and hydromodification.

d. Ensure that all best management practices for storm water are implemented for both public and private properties.

Policy 4.9.3. Minimize building heat gain with appropriate shade treatments and design techniques.

a. Orient new buildings and lots to minimize east- and west-facing facades.

b. Provide awnings, canopies, and deep-set windows on south-facing windows and entries.

c. Provide exterior shades and shade screens on east-, west-, and south-facing windows

d. Use horizontal overhangs, awnings or shade structures above south-facing windows to mitigate summer sun but allow winter sun. Encourage overhang width to equal half the vertical window height to shade windows from early May to mid-August but still allowing the winter sun.

Policy 4.9.4. Provide on-site landscaping improvements that minimize heat gain and provide attractive landscape environments.

a. Plant deciduous trees on south side of buildings to shade south facades and roofs during the summer while allowing sunlight to penetrate buildings in the winter.

b. Plant groundcovers that prevent ground reflection and keep the surface cooler, preventing re-radiation.

Policy 4.9.5. Integrate storm water Low Impact Development principles as discussed in 8.4 and Best Management Practices (BMP's) early in the design process of new development, as well as any redevelopment proposals.

a. Encourage the use of green roofs and water collection devices to capture rainwater from the building for re-use.

b. Minimize on-site impermeable surfaces, such as concrete and asphalt.

c. Use permeable pavers, porous asphalt, reinforced grass pavement (turf–crete), cobblestone block pavement, etc., to detain and infiltrate run-off on-site.

ATTACHMENT 2

CalEEMod Output – Existing CPU Land Uses

THIS PAGE IS INTENTIONALLY BLANK.

3957.1 OMCPU Existing Land Uses

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Government Office Building	4987.62	1000sqft
General Light Industry	33323.4	1000sqft
City Park	16	Acre
Apartments Mid Rise	1106	Dwelling Unit
Single Family Housing	2591	Dwelling Unit
Strip Mall	2652.8	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	San Diego Gas & Electric
Climate Zone	13		2.6		
		Precipitation Freq (Days)			
			40		

1.3 User Entered Comments

Project Characteristics -
Land Use - Source: OMCPU 2011
Construction Phase - construction calculated separately
Architectural Coating -
Vehicle Trips - Source: OMCPU Traffic Report
Woodstoves -
Area Coating -
Energy Use -
Energy Mitigation -
Water Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	472.24	3.49	314.64	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.64	0.36	8,856.59
Energy	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	194,694.59	194,694.59	6.60	2.89	195,729.50
Mobile	556.49	1,159.57	5,660.31	6.82	678.47	45.47	723.94	10.83	38.76	49.58	0.00	611,560.43	611,560.43	39.90	0.00	612,398.38
Waste						0.00	0.00		0.00	0.00	395,768.19	0.00	395,768.19	23,389.23	0.00	886,942.02
Water						0.00	0.00		0.00	0.00	0.00	767,569.80	767,569.80	5,073.45	135.90	916,242.04
Total	**1,032.26**	**1,194.76**	**5,999.28**	**7.12**	**678.47**	**45.47**	**766.90**	**10.83**	**38.76**	**92.54**	**399,587.03**	**1,578,674.87**	**1,978,261.91**	**28,512.82**	**139.15**	**2,620,168.53**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	472.24	3.49	314.64	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.64	0.36	8,856.59
Energy	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	194,648.76	194,648.76	6.60	2.89	195,683.44
Mobile	556.49	1,159.57	5,660.31	6.82	678.47	45.47	723.94	10.83	38.76	49.58	0.00	611,560.43	611,560.43	39.90	0.00	612,398.38
Waste						0.00	0.00		0.00	0.00	395,768.19	0.00	395,768.19	23,389.23	0.00	886,942.02
Water						0.00	0.00		0.00	0.00	0.00	767,569.80	767,569.80	5,073.45	135.90	916,242.04
Total	**1,032.26**	**1,194.76**	**5,999.28**	**7.12**	**678.47**	**45.47**	**766.90**	**10.83**	**38.76**	**92.54**	**399,587.03**	**1,578,629.04**	**1,978,216.08**	**28,512.82**	**139.15**	**2,620,122.47**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	556.49	1,159.57	5,660.31	6.82	678.47	45.47	723.94	10.83	38.76	49.58	0.00	611,560.43	611,560.43	39.90	0.00	612,398.38
Unmitigated	556.49	1,159.57	5,660.31	6.82	678.47	45.47	723.94	10.83	38.76	49.58	0.00	611,560.43	611,560.43	39.90	0.00	612,398.38
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,848.00	8,848.00	8848.00	25,263,724	25,263,724
City Park	554.24	554.24	554.24	1,183,221	1,183,221
General Light Industry	286,248.01	286,248.01	286248.01	835,704,242	835,704,242
Government Office Building	20,299.61	20,299.61	20299.61	34,811,410	34,811,410
Single Family Housing	22,774.89	22,774.89	22774.89	65,029,220	65,029,220
Strip Mall	213,417.76	213,417.76	213417.76	328,670,402	328,670,402
Total	552,142.51	552,142.51	552,142.51	1,290,662,219	1,290,662,219

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	10.80	7.30	7.50	41.60	18.80	39.60
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	159,754.36	159,754.36	5.93	2.25	160,576.67
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	159,800.19	159,800.19	5.94	2.25	160,622.74
NaturalGas Mitigated	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	34,894.40	34,894.40	0.67	0.64	35,106.76
NaturalGas Unmitigated	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	34,894.40	34,894.40	0.67	0.64	35,106.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.23691e+007	0.07	0.57	0.24	0.00		0.00	0.05		0.00	0.05	0.00	660.06	660.06	0.01	0.01	664.08
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	4.09545e+008	2.21	20.08	16.86	0.12		0.00	1.53		0.00	1.53	0.00	21,854.86	21,854.86	0.42	0.40	21,987.86
Government Office Building	1.17508e+008	0.63	5.76	4.84	0.03		0.00	0.44		0.00	0.44	0.00	6,270.69	6,270.69	0.12	0.11	6,308.85
Single Family Housing	1.08081e+008	0.58	4.98	2.12	0.03		0.00	0.40		0.00	0.40	0.00	5,767.62	5,767.62	0.11	0.11	5,802.72
Strip Mall	6.39325e+006	0.03	0.31	0.26	0.00		0.00	0.02		0.00	0.02	0.00	341.17	341.17	0.01	0.01	343.24
Total		**3.52**	**31.70**	**24.32**	**0.18**		**0.00**	**2.44**		**0.00**	**2.44**	**0.00**	**34,894.40**	**34,894.40**	**0.67**	**0.64**	**35,106.75**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.23691e+007	0.07	0.57	0.24	0.00		0.00	0.05		0.00	0.05	0.00	660.06	660.06	0.01	0.01	664.08
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	4.09545e+008	2.21	20.08	16.86	0.12		0.00	1.53		0.00	1.53	0.00	21,854.86	21,854.86	0.42	0.40	21,987.86
Government Office Building	1.17508e+008	0.63	5.76	4.84	0.03		0.00	0.44		0.00	0.44	0.00	6,270.69	6,270.69	0.12	0.11	6,308.85
Single Family Housing	1.08081e+008	0.58	4.98	2.12	0.03		0.00	0.40		0.00	0.40	0.00	5,767.62	5,767.62	0.11	0.11	5,802.72
Strip Mall	6.39325e+006	0.03	0.31	0.26	0.00		0.00	0.02		0.00	0.02	0.00	341.17	341.17	0.01	0.01	343.24
Total		**3.52**	**31.70**	**24.32**	**0.18**		**0.00**	**2.44**		**0.00**	**2.44**	**0.00**	**34,894.40**	**34,894.40**	**0.67**	**0.64**	**35,106.75**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	3.93538e+006					1,393.76	0.05	0.02	1,400.93
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	3.12573e+008					110,701.15	4.11	1.56	111,270.97
Government Office Building	7.85051e+007					27,803.41	1.03	0.39	27,946.52
Single Family Housing	1.69596e+007					6,006.43	0.22	0.08	6,037.34
Strip Mall	3.92349e+007					13,895.45	0.52	0.20	13,966.98
Total						**159,800.20**	**5.93**	**2.25**	**160,622.74**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	3.80597e+006					1,347.92	0.05	0.02	1,354.86
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	3.12573e+008					110,701.15	4.11	1.56	111,270.97
Government Office Building	7.85051e+007					27,803.41	1.03	0.39	27,946.52
Single Family Housing	1.69596e+007					6,006.43	0.22	0.08	6,037.34
Strip Mall	3.92349e+007					13,895.45	0.52	0.20	13,966.98
Total						**159,754.36**	**5.93**	**2.25**	**160,576.67**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	472.24	3.49	314.64	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.64	0.36	8,856.59
Unmitigated	472.24	3.49	314.64	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.64	0.36	8,856.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	56.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	182.52					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	232.30	3.15	285.78	0.11		0.00	40.37		0.00	40.37	3,818.84	4,804.70	8,623.55	3.59	0.36	8,810.17
Landscaping	0.98	0.34	28.85	0.00		0.00	0.15		0.00	0.15	0.00	45.35	45.35	0.05	0.00	46.43
Total	**472.24**	**3.49**	**314.63**	**0.11**		**0.00**	**40.52**		**0.00**	**40.52**	**3,818.84**	**4,850.05**	**8,668.90**	**3.64**	**0.36**	**8,856.60**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	56.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	182.52					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	232.30	3.15	285.78	0.11		0.00	40.37		0.00	40.37	3,818.84	4,804.70	8,623.55	3.59	0.36	8,810.17
Landscaping	0.98	0.34	28.85	0.00		0.00	0.15		0.00	0.15	0.00	45.35	45.35	0.05	0.00	46.43
Total	**472.24**	**3.49**	**314.63**	**0.11**		**0.00**	**40.52**		**0.00**	**40.52**	**3,818.84**	**4,850.05**	**8,668.90**	**3.64**	**0.36**	**8,856.60**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					767,569.80	5,073.45	135.90	916,242.04
Unmitigated					767,569.80	5,073.45	135.90	916,242.04
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	72.0604 / 45.4294					511.87	2.22	0.06	577.60
City Park	0 / 19.0637					75.01	0.00	0.00	75.40
General Light Industry	163849 / 0					757,431.63	5,029.48	134.68	904,801.11
Government Office Building	990.839 / 607.288					6,969.90	30.50	0.85	7,873.38
Single Family Housing	168.814 / 106.426					1,199.14	5.20	0.14	1,353.13
Strip Mall	196.5 / 120.435					1,382.25	6.05	0.17	1,561.42
Total						**767,569.80**	**5,073.45**	**135.90**	**916,242.04**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	72.0604 / 45.4294					511.87	2.22	0.06	577.60
City Park	0 / 19.0637					75.01	0.00	0.00	75.40
General Light Industry	163849 / 0					757,431.63	5,029.48	134.68	904,801.11
Government Office Building	990.839 / 607.288					6,969.90	30.50	0.85	7,873.38
Single Family Housing	168.814 / 106.426					1,199.14	5.20	0.14	1,353.13
Strip Mall	196.5 / 120.435					1,382.25	6.05	0.17	1,561.42
Total						**767,569.80**	**5,073.45**	**135.90**	**916,242.04**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					395,768.19	23,389.23	0.00	886,942.02
Unmitigated					395,768.19	23,389.23	0.00	886,942.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	508.76					103.27	6.10	0.00	231.44
City Park	1.38					0.28	0.02	0.00	0.63
General Light Industry	1.93871e+006					393,540.94	23,257.60	0.00	881,950.61
Government Office Building	4638.49					941.57	55.65	0.00	2,110.12
Single Family Housing	3038.1					616.71	36.45	0.00	1,382.08
Strip Mall	2785.44					565.42	33.42	0.00	1,267.14
Total						**395,768.19**	**23,389.24**	**0.00**	**886,942.02**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	508.76					103.27	6.10	0.00	231.44
City Park	1.38					0.28	0.02	0.00	0.63
General Light Industry	1.93871e+006					393,540.94	23,257.60	0.00	881,950.61
Government Office Building	4638.49					941.57	55.65	0.00	2,110.12
Single Family Housing	3038.1					616.71	36.45	0.00	1,382.08
Strip Mall	2785.44					565.42	33.42	0.00	1,267.14
Total						**395,768.19**	**23,389.24**	**0.00**	**886,942.02**

9.0 Vegetation

ATTACHMENT 3

CalEEMod Output – CPU Emissions without GHG Reduction Measures (BAU)

THIS PAGE IS INTENTIONALLY BLANK.

Existing Development 2020 Business as Usual

THIS PAGE IS INTENTIONALLY BLANK.

3957.1 OMCPU - Existing Development BAU

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Government Office Building	4987.62	1000sqft
General Light Industry	33323.4	1000sqft
City Park	16	Acre
Apartments Mid Rise	1106	Dwelling Unit
Single Family Housing	2591	Dwelling Unit
Strip Mall	2652.8	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - Existing Development

Construction Phase - Existing development - no construction

Vehicle Trips - Urban Systems Associates

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves -

Energy Use -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	0.13	0.78	1.16	0.00	0.13	0.03	0.16	0.00	0.03	0.03	0.00	173.72	173.72	0.01	0.00	173.91
Total	**0.13**	**0.78**	**1.16**	**0.00**	**0.13**	**0.03**	**0.16**	**0.00**	**0.03**	**0.03**	**0.00**	**173.72**	**173.72**	**0.01**	**0.00**	**173.91**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	0.13	0.78	1.16	0.00	0.01	0.03	0.04	0.00	0.03	0.03	0.00	173.72	173.72	0.01	0.00	173.91
Total	**0.13**	**0.78**	**1.16**	**0.00**	**0.01**	**0.03**	**0.04**	**0.00**	**0.03**	**0.03**	**0.00**	**173.72**	**173.72**	**0.01**	**0.00**	**173.91**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	472.11	3.47	313.63	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.63	0.36	8,856.44
Energy	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	194,694.59	194,694.59	6.60	2.89	195,729.50
Mobile	364.69	706.29	3,292.50	6.80	689.80	38.14	727.94	11.02	36.78	47.80	0.00	516,421.80	516,421.80	23.55	0.00	516,916.28
Waste						0.00	0.00		0.00	0.00	395,768.19	0.00	395,768.19	23,389.23	0.00	886,942.02
Water						0.00	0.00		0.00	0.00	0.00	767,569.80	767,569.80	5,073.45	135.90	916,242.04
Total	**840.33**	**741.46**	**3,630.46**	**7.10**	**689.80**	**38.14**	**770.90**	**11.02**	**36.78**	**90.76**	**399,587.03**	**1,483,536.24**	**1,883,123.28**	**28,496.46**	**139.15**	**2,524,686.28**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	472.11	3.47	313.63	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.63	0.36	8,856.44
Energy	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	194,694.59	194,694.59	6.60	2.89	195,729.50
Mobile	364.69	706.29	3,292.50	6.80	689.80	38.14	727.94	11.02	36.78	47.80	0.00	516,421.80	516,421.80	23.55	0.00	516,916.28
Waste						0.00	0.00		0.00	0.00	395,768.19	0.00	395,768.19	23,389.23	0.00	886,942.02
Water						0.00	0.00		0.00	0.00	0.00	767,569.80	767,569.80	5,073.45	135.90	916,242.04
Total	**840.33**	**741.46**	**3,630.46**	**7.10**	**689.80**	**38.14**	**770.90**	**11.02**	**36.78**	**90.76**	**399,587.03**	**1,483,536.24**	**1,883,123.28**	**28,496.46**	**139.15**	**2,524,686.28**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.83	1.83	0.00	0.00	1.84
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.83**	**1.83**	**0.00**	**0.00**	**1.84**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.69	0.44	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	87.32	87.32	0.00	0.00	87.38
Worker	0.06	0.07	0.71	0.00	0.10	0.00	0.11	0.00	0.00	0.01	0.00	84.56	84.56	0.01	0.00	84.69
Total	**0.12**	**0.76**	**1.15**	**0.00**	**0.13**	**0.02**	**0.16**	**0.00**	**0.02**	**0.03**	**0.00**	**171.88**	**171.88**	**0.01**	**0.00**	**172.07**

3.2 Building Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.83	1.83	0.00	0.00	1.84
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.83**	**1.83**	**0.00**	**0.00**	**1.84**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.69	0.44	0.00	0.00	0.02	0.03	0.00	0.02	0.02	0.00	87.32	87.32	0.00	0.00	87.38
Worker	0.06	0.07	0.71	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	84.56	84.56	0.01	0.00	84.69
Total	**0.12**	**0.76**	**1.15**	**0.00**	**0.00**	**0.02**	**0.04**	**0.00**	**0.02**	**0.03**	**0.00**	**171.88**	**171.88**	**0.01**	**0.00**	**172.07**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	364.69	706.29	3,292.50	6.80	689.80	38.14	727.94	11.02	36.78	47.80	0.00	516,421.80	516,421.80	23.55	0.00	516,916.28
Unmitigated	364.69	706.29	3,292.50	6.80	689.80	38.14	727.94	11.02	36.78	47.80	0.00	516,421.80	516,421.80	23.55	0.00	516,916.28
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,848.00	8,848.00	8848.00	25,263,724	25,263,724
City Park	723.84	723.84	723.84	1,545,292	1,545,292
General Light Industry	305,575.58	305,575.58	305575.58	892,131,304	892,131,304
Government Office Building	31,621.51	31,621.51	31621.51	54,227,110	54,227,110
Single Family Housing	22,774.89	22,774.89	22774.89	65,029,220	65,029,220
Strip Mall	177,896.77	177,896.77	177896.77	273,966,900	273,966,900
Total	547,440.59	547,440.59	547,440.59	1,312,163,551	1,312,163,551

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	10.80	7.30	7.50	41.60	18.80	39.60
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	159,800.19	159,800.19	5.94	2.25	160,622.74
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	159,800.19	159,800.19	5.94	2.25	160,622.74
NaturalGas Mitigated	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	34,894.40	34,894.40	0.67	0.64	35,106.76
NaturalGas Unmitigated	3.53	31.70	24.33	0.19		0.00	2.44		0.00	2.44	0.00	34,894.40	34,894.40	0.67	0.64	35,106.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.23691e+007	0.07	0.57	0.24	0.00		0.00	0.05		0.00	0.05	0.00	660.06	660.06	0.01	0.01	664.08
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	4.09545e+008	2.21	20.08	16.86	0.12		0.00	1.53		0.00	1.53	0.00	21,854.86	21,854.86	0.42	0.40	21,987.86
Government Office Building	1.17508e+008	0.63	5.76	4.84	0.03		0.00	0.44		0.00	0.44	0.00	6,270.69	6,270.69	0.12	0.11	6,308.85
Single Family Housing	1.08081e+008	0.58	4.98	2.12	0.03		0.00	0.40		0.00	0.40	0.00	5,767.62	5,767.62	0.11	0.11	5,802.72
Strip Mall	6.39325e+006	0.03	0.31	0.26	0.00		0.00	0.02		0.00	0.02	0.00	341.17	341.17	0.01	0.01	343.24
Total		**3.52**	**31.70**	**24.32**	**0.18**		**0.00**	**2.44**		**0.00**	**2.44**	**0.00**	**34,894.40**	**34,894.40**	**0.67**	**0.64**	**35,106.75**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.23691e+007	0.07	0.57	0.24	0.00		0.00	0.05		0.00	0.05	0.00	660.06	660.06	0.01	0.01	664.08
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	4.09545e+008	2.21	20.08	16.86	0.12		0.00	1.53		0.00	1.53	0.00	21,854.86	21,854.86	0.42	0.40	21,987.86
Government Office Building	1.17508e+008	0.63	5.76	4.84	0.03		0.00	0.44		0.00	0.44	0.00	6,270.69	6,270.69	0.12	0.11	6,308.85
Single Family Housing	1.08081e+008	0.58	4.98	2.12	0.03		0.00	0.40		0.00	0.40	0.00	5,767.62	5,767.62	0.11	0.11	5,802.72
Strip Mall	6.39325e+006	0.03	0.31	0.26	0.00		0.00	0.02		0.00	0.02	0.00	341.17	341.17	0.01	0.01	343.24
Total		**3.52**	**31.70**	**24.32**	**0.18**		**0.00**	**2.44**		**0.00**	**2.44**	**0.00**	**34,894.40**	**34,894.40**	**0.67**	**0.64**	**35,106.75**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	3.93538e+006					1,393.76	0.05	0.02	1,400.93
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	3.12573e+008					110,701.15	4.11	1.56	111,270.97
Government Office Building	7.85051e+007					27,803.41	1.03	0.39	27,946.52
Single Family Housing	1.69596e+007					6,006.43	0.22	0.08	6,037.34
Strip Mall	3.92349e+007					13,895.45	0.52	0.20	13,966.98
Total						**159,800.20**	**5.93**	**2.25**	**160,622.74**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	3.93538e+006					1,393.76	0.05	0.02	1,400.93
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	3.12573e+008					110,701.15	4.11	1.56	111,270.97
Government Office Building	7.85051e+007					27,803.41	1.03	0.39	27,946.52
Single Family Housing	1.69596e+007					6,006.43	0.22	0.08	6,037.34
Strip Mall	3.92349e+007					13,895.45	0.52	0.20	13,966.98
Total						**159,800.20**	**5.93**	**2.25**	**160,622.74**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	472.11	3.47	313.63	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.63	0.36	8,856.44
Unmitigated	472.11	3.47	313.63	0.11		0.00	40.52		0.00	40.52	3,818.84	4,850.05	8,668.90	3.63	0.36	8,856.44
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	56.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	182.52					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	232.30	3.15	285.78	0.11		0.00	40.37		0.00	40.37	3,818.84	4,804.70	8,623.55	3.59	0.36	8,810.17
Landscaping	0.85	0.32	27.84	0.00		0.00	0.15		0.00	0.15	0.00	45.35	45.35	0.04	0.00	46.28
Total	**472.11**	**3.47**	**313.62**	**0.11**		**0.00**	**40.52**		**0.00**	**40.52**	**3,818.84**	**4,850.05**	**8,668.90**	**3.63**	**0.36**	**8,856.45**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	56.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	182.52					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	232.30	3.15	285.78	0.11		0.00	40.37		0.00	40.37	3,818.84	4,804.70	8,623.55	3.59	0.36	8,810.17
Landscaping	0.85	0.32	27.84	0.00		0.00	0.15		0.00	0.15	0.00	45.35	45.35	0.04	0.00	46.28
Total	**472.11**	**3.47**	**313.62**	**0.11**		**0.00**	**40.52**		**0.00**	**40.52**	**3,818.84**	**4,850.05**	**8,668.90**	**3.63**	**0.36**	**8,856.45**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					767,569.80	5,073.45	135.90	916,242.04
Unmitigated					767,569.80	5,073.45	135.90	916,242.04
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	72.0604 / 45.4294					511.87	2.22	0.06	577.60
City Park	0 / 19.0637					75.01	0.00	0.00	75.40
General Light Industry	163849 / 0					757,431.63	5,029.48	134.68	904,801.11
Government Office Building	990.839 / 607.288					6,969.90	30.50	0.85	7,873.38
Single Family Housing	168.814 / 106.426					1,199.14	5.20	0.14	1,353.13
Strip Mall	196.5 / 120.435					1,382.25	6.05	0.17	1,561.42
Total						**767,569.80**	**5,073.45**	**135.90**	**916,242.04**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	72.0604 / 45.4294					511.87	2.22	0.06	577.60
City Park	0 / 19.0637					75.01	0.00	0.00	75.40
General Light Industry	163849 / 0					757,431.63	5,029.48	134.68	904,801.11
Government Office Building	990.839 / 607.288					6,969.90	30.50	0.85	7,873.38
Single Family Housing	168.814 / 106.426					1,199.14	5.20	0.14	1,353.13
Strip Mall	196.5 / 120.435					1,382.25	6.05	0.17	1,561.42
Total						**767,569.80**	**5,073.45**	**135.90**	**916,242.04**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					395,768.19	23,389.23	0.00	886,942.02
Unmitigated					395,768.19	23,389.23	0.00	886,942.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	508.76					103.27	6.10	0.00	231.44
City Park	1.38					0.28	0.02	0.00	0.63
General Light Industry	1.93871e+006					393,540.94	23,257.60	0.00	881,950.61
Government Office Building	4638.49					941.57	55.65	0.00	2,110.12
Single Family Housing	3038.1					616.71	36.45	0.00	1,382.08
Strip Mall	2785.44					565.42	33.42	0.00	1,267.14
Total						**395,768.19**	**23,389.24**	**0.00**	**886,942.02**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	508.76					103.27	6.10	0.00	231.44
City Park	1.38					0.28	0.02	0.00	0.63
General Light Industry	1.93871e+006					393,540.94	23,257.60	0.00	881,950.61
Government Office Building	4638.49					941.57	55.65	0.00	2,110.12
Single Family Housing	3038.1					616.71	36.45	0.00	1,382.08
Strip Mall	2785.44					565.42	33.42	0.00	1,267.14
Total						**395,768.19**	**23,389.24**	**0.00**	**886,942.02**

9.0 Vegetation

New Development 2020 Business as Usual

THIS PAGE IS INTENTIONALLY BLANK.

3957.1 OMCPU - New Development BAU

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Government Office Building	10236.6	1000sqft
General Light Industry	19514.88	1000sqft
City Park	145	Acre
Apartments Mid Rise	13395	Dwelling Unit
Single Family Housing	1682	Dwelling Unit
Strip Mall	1868.72	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - New Development

Construction Phase - Defaults assumed, but adjusted to 30 year total construction length

Vehicle Trips - Urban Systems Associates

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves -

Energy Use -

Grading -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.47	11.93	6.83	0.01	4.80	0.61	5.41	2.27	0.61	2.88	0.00	996.06	996.06	0.12	0.00	998.58
2012	1.65	13.57	7.38	0.01	2.67	0.65	3.33	1.10	0.65	1.75	0.00	1,308.72	1,308.72	0.13	0.00	1,311.54
2013	1.56	12.73	7.07	0.01	2.67	0.60	3.27	1.10	0.60	1.70	0.00	1,308.22	1,308.22	0.13	0.00	1,310.88
2014	22.23	122.56	202.80	0.40	33.27	4.85	38.13	1.64	4.50	6.14	0.00	36,569.46	36,569.46	1.68	0.00	36,604.77
2015	26.83	146.32	244.80	0.53	40.37	5.86	46.23	0.72	5.41	6.13	0.00	47,239.71	47,239.71	2.02	0.00	47,282.03
2016	25.11	136.38	226.96	0.53	40.37	5.54	45.91	0.72	5.13	5.85	0.00	46,669.36	46,669.36	1.88	0.00	46,708.80
2017	23.43	127.23	209.94	0.52	40.22	5.24	45.46	0.72	4.85	5.57	0.00	45,964.72	45,964.72	1.74	0.00	46,001.27
2018	22.10	120.04	196.26	0.53	40.37	5.03	45.40	0.72	4.65	5.37	0.00	45,648.36	45,648.36	1.63	0.00	45,682.65

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	20.94	113.51	184.05	0.53	40.37	4.82	45.19	0.72	4.46	5.18	0.00	45,201.83	45,201.83	1.54	0.00	45,234.08
2020	20.08	108.34	174.55	0.53	40.53	4.67	45.19	0.72	4.31	5.03	0.00	44,962.63	44,962.63	1.46	0.00	44,993.20
2021	19.23	103.34	166.24	0.53	40.37	4.54	44.92	0.72	4.20	4.92	0.00	44,624.39	44,624.39	1.39	0.00	44,653.65
2022	18.42	99.06	157.41	0.52	40.22	4.42	44.64	0.72	4.08	4.80	0.00	44,109.60	44,109.60	1.32	0.00	44,137.36
2023	17.74	95.75	149.92	0.52	40.22	4.33	44.55	0.72	4.00	4.72	0.00	43,794.65	43,794.65	1.27	0.00	43,821.24
2024	17.26	93.69	144.23	0.53	40.53	4.29	44.81	0.72	3.96	4.69	0.00	43,846.14	43,846.14	1.23	0.00	43,871.94
2025	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2026	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2027	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2028	16.60	90.66	137.65	0.52	40.22	4.20	44.42	0.72	3.87	4.59	0.00	43,255.22	43,255.22	1.17	0.00	43,279.74
2029	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2030	14.70	83.81	119.45	0.53	40.37	4.02	44.40	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2031	14.70	83.81	119.45	0.53	40.37	4.02	44.40	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2032	14.76	84.13	119.90	0.53	40.53	4.04	44.57	0.72	3.72	4.44	0.00	42,670.04	42,670.04	1.03	0.00	42,691.60
2033	14.64	83.49	118.99	0.53	40.22	4.01	44.23	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2034	14.64	83.49	118.99	0.53	40.22	4.01	44.23	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2035	13.39	81.02	108.68	0.53	40.37	3.93	44.30	0.72	3.62	4.34	0.00	42,043.47	42,043.47	0.93	0.00	42,063.02
2036	13.44	81.33	109.10	0.53	40.53	3.94	44.47	0.72	3.64	4.36	0.00	42,204.56	42,204.56	0.93	0.00	42,224.18
2037	7.93	48.01	64.76	0.31	23.68	2.32	25.99	0.42	2.14	2.56	0.00	24,794.45	24,794.45	0.55	0.00	24,806.05
2038	0.21	1.25	2.53	0.00	0.02	0.04	0.06	0.00	0.04	0.04	0.00	358.33	358.33	0.02	0.00	358.68
2039	285.12	1.22	10.37	0.04	5.02	0.22	5.23	0.08	0.20	0.28	0.00	3,033.13	3,033.13	0.10	0.00	3,035.30

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2040	339.92	0.99	10.67	0.05	5.98	0.24	6.22	0.09	0.23	0.32	0.00	3,461.91	3,461.91	0.11	0.00	3,464.21
Total	**1,054.78**	**2,391.66**	**3,671.70**	**12.45**	**965.99**	**107.28**	**1,073.32**	**22.54**	**99.21**	**121.78**	**0.00**	**1,037,454.28**	**1,037,454.28**	**31.14**	**0.00**	**1,038,108.29**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.47	11.93	6.83	0.01	4.77	0.61	5.38	2.27	0.61	2.88	0.00	996.06	996.06	0.12	0.00	998.58
2012	1.65	13.57	7.38	0.01	2.64	0.65	3.30	1.10	0.65	1.75	0.00	1,308.72	1,308.72	0.13	0.00	1,311.54
2013	1.56	12.73	7.07	0.01	2.64	0.60	3.24	1.10	0.60	1.70	0.00	1,308.22	1,308.22	0.13	0.00	1,310.88
2014	22.23	122.56	202.80	0.40	4.19	4.85	9.05	1.64	4.50	6.14	0.00	36,569.46	36,569.46	1.68	0.00	36,604.77
2015	26.83	146.32	244.80	0.53	2.05	5.86	7.91	0.72	5.41	6.13	0.00	47,239.71	47,239.71	2.02	0.00	47,282.03
2016	25.11	136.38	226.96	0.53	2.05	5.54	7.59	0.72	5.13	5.85	0.00	46,669.36	46,669.36	1.88	0.00	46,708.80
2017	23.43	127.23	209.94	0.52	2.04	5.24	7.28	0.72	4.85	5.57	0.00	45,964.72	45,964.72	1.74	0.00	46,001.27
2018	22.10	120.04	196.26	0.53	2.05	5.03	7.08	0.72	4.65	5.37	0.00	45,648.36	45,648.36	1.63	0.00	45,682.65
2019	20.94	113.51	184.05	0.53	2.05	4.82	6.87	0.72	4.46	5.18	0.00	45,201.83	45,201.83	1.54	0.00	45,234.08
2020	20.08	108.34	174.55	0.53	2.06	4.67	6.72	0.72	4.31	5.03	0.00	44,962.63	44,962.63	1.46	0.00	44,993.20
2021	19.23	103.34	166.24	0.53	2.05	4.54	6.59	0.72	4.20	4.92	0.00	44,624.39	44,624.39	1.39	0.00	44,653.65
2022	18.42	99.06	157.41	0.52	2.04	4.42	6.46	0.72	4.08	4.80	0.00	44,109.60	44,109.60	1.32	0.00	44,137.36

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	17.74	95.75	149.92	0.52	2.04	4.33	6.37	0.72	4.00	4.72	0.00	43,794.65	43,794.65	1.27	0.00	43,821.24
2024	17.26	93.69	144.23	0.53	2.06	4.29	6.34	0.72	3.96	4.69	0.00	43,846.14	43,846.14	1.23	0.00	43,871.94
2025	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2026	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2027	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2028	16.60	90.66	137.65	0.52	2.04	4.20	6.24	0.72	3.87	4.59	0.00	43,255.22	43,255.22	1.17	0.00	43,279.74
2029	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2030	14.70	83.81	119.45	0.53	2.05	4.02	6.07	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2031	14.70	83.81	119.45	0.53	2.05	4.02	6.07	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2032	14.76	84.13	119.90	0.53	2.06	4.04	6.10	0.72	3.72	4.44	0.00	42,670.04	42,670.04	1.03	0.00	42,691.60
2033	14.64	83.49	118.99	0.53	2.04	4.01	6.05	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2034	14.64	83.49	118.99	0.53	2.04	4.01	6.05	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2035	13.39	81.02	108.68	0.53	2.05	3.93	5.98	0.72	3.62	4.34	0.00	42,043.47	42,043.47	0.93	0.00	42,063.02
2036	13.44	81.33	109.10	0.53	2.06	3.94	6.00	0.72	3.64	4.36	0.00	42,204.56	42,204.56	0.93	0.00	42,224.18
2037	7.93	48.01	64.76	0.31	1.20	2.32	3.52	0.42	2.14	2.56	0.00	24,794.45	24,794.45	0.55	0.00	24,806.05
2038	0.21	1.25	2.53	0.00	0.00	0.04	0.04	0.00	0.04	0.04	0.00	358.33	358.33	0.02	0.00	358.68
2039	285.12	1.22	10.37	0.04	0.21	0.22	0.43	0.08	0.20	0.28	0.00	3,033.13	3,033.13	0.10	0.00	3,035.30
2040	339.92	0.99	10.67	0.05	0.26	0.24	0.50	0.09	0.23	0.32	0.00	3,461.91	3,461.91	0.11	0.00	3,464.21
Total	**1,054.78**	**2,391.66**	**3,671.70**	**12.45**	**60.99**	**107.28**	**168.27**	**22.54**	**99.21**	**121.78**	**0.00**	**1,037,454.28**	**1,037,454.28**	**31.14**	**0.00**	**1,038,108.29**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Energy	3.80	33.94	24.30	0.21		0.00	2.63		0.00	2.63	0.00	190,107.66	190,107.66	6.38	2.84	191,121.54
Mobile	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Waste						0.00	0.00		0.00	0.00	234,450.53	0.00	234,450.53	13,855.63	0.00	525,418.74
Water						0.00	0.00		0.00	0.00	0.00	466,504.56	466,504.56	3,042.51	81.58	555,687.40
Total	**1,535.35**	**688.61**	**4,289.17**	**6.83**	**625.02**	**34.57**	**827.49**	**9.99**	**33.33**	**211.20**	**250,024.43**	**1,144,366.88**	**1,394,391.31**	**16,940.66**	**85.88**	**1,776,769.32**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Energy	3.80	33.94	24.30	0.21		0.00	2.63		0.00	2.63	0.00	190,107.66	190,107.66	6.38	2.84	191,121.54
Mobile	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Waste						0.00	0.00		0.00	0.00	234,450.53	0.00	234,450.53	13,855.63	0.00	525,418.74
Water						0.00	0.00		0.00	0.00	0.00	466,504.56	466,504.56	3,042.51	81.58	555,687.40
Total	**1,535.35**	**688.61**	**4,289.17**	**6.83**	**625.02**	**34.57**	**827.49**	**9.99**	**33.33**	**211.20**	**250,024.43**	**1,144,366.88**	**1,394,391.31**	**16,940.66**	**85.88**	**1,776,769.32**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.13	0.00	2.13	1.17	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.30	10.59	5.95	0.01		0.54	0.54		0.54	0.54	0.00	855.90	855.90	0.11	0.00	858.12
Total	**1.30**	**10.59**	**5.95**	**0.01**	**2.13**	**0.54**	**2.67**	**1.17**	**0.54**	**1.71**	**0.00**	**855.90**	**855.90**	**0.11**	**0.00**	**858.12**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.17	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	19.77	19.77	0.00	0.00	19.80
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**19.77**	**19.77**	**0.00**	**0.00**	**19.80**

3.2 Site Preparation - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.13	0.00	2.13	1.17	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.30	10.59	5.95	0.01		0.54	0.54		0.54	0.54	0.00	855.90	855.90	0.11	0.00	858.12
Total	**1.30**	**10.59**	**5.95**	**0.01**	**2.13**	**0.54**	**2.67**	**1.17**	**0.54**	**1.71**	**0.00**	**855.90**	**855.90**	**0.11**	**0.00**	**858.12**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.77	19.77	0.00	0.00	19.80
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.77**	**19.77**	**0.00**	**0.00**	**19.80**

3.3 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.33	0.69	0.00		0.07	0.07		0.07	0.07	0.00	118.16	118.16	0.01	0.00	118.43
Total	**0.16**	**1.33**	**0.69**	**0.00**	**2.64**	**0.07**	**2.71**	**1.10**	**0.07**	**1.17**	**0.00**	**118.16**	**118.16**	**0.01**	**0.00**	**118.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.23	0.00	0.00	2.24
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.23**	**2.23**	**0.00**	**0.00**	**2.24**

3.3 Grading - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.33	0.69	0.00		0.07	0.07		0.07	0.07	0.00	118.16	118.16	0.01	0.00	118.43
Total	**0.16**	**1.33**	**0.69**	**0.00**	**2.64**	**0.07**	**2.71**	**1.10**	**0.07**	**1.17**	**0.00**	**118.16**	**118.16**	**0.01**	**0.00**	**118.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.23	0.00	0.00	2.24
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.23**	**2.23**	**0.00**	**0.00**	**2.24**

3.3 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.63	13.55	7.19	0.01		0.65	0.65		0.65	0.65	0.00	1,284.94	1,284.94	0.13	0.00	1,287.73
Total	**1.63**	**13.55**	**7.19**	**0.01**	**2.64**	**0.65**	**3.29**	**1.10**	**0.65**	**1.75**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.73**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	23.77	23.77	0.00	0.00	23.81
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**23.77**	**23.77**	**0.00**	**0.00**	**23.81**

3.3 Grading - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.63	13.55	7.19	0.01		0.65	0.65		0.65	0.65	0.00	1,284.94	1,284.94	0.13	0.00	1,287.73
Total	**1.63**	**13.55**	**7.19**	**0.01**	**2.64**	**0.65**	**3.29**	**1.10**	**0.65**	**1.75**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.73**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.77	23.77	0.00	0.00	23.81
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**23.77**	**23.77**	**0.00**	**0.00**	**23.81**

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.64**	**0.60**	**3.24**	**1.10**	**0.60**	**1.70**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.17	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	23.27	23.27	0.00	0.00	23.30
Total	**0.02**	**0.02**	**0.17**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**23.27**	**23.27**	**0.00**	**0.00**	**23.30**

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.64**	**0.60**	**3.24**	**1.10**	**0.60**	**1.70**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.27	23.27	0.00	0.00	23.30
Total	**0.02**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**23.27**	**23.27**	**0.00**	**0.00**	**23.30**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.35	2.85	1.60	0.00		0.13	0.13		0.13	0.13	0.00	310.16	310.16	0.03	0.00	310.76
Total	**0.35**	**2.85**	**1.60**	**0.00**	**2.64**	**0.13**	**2.77**	**1.10**	**0.13**	**1.23**	**0.00**	**310.16**	**310.16**	**0.03**	**0.00**	**310.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.50	5.50	0.00	0.00	5.51
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.50**	**5.50**	**0.00**	**0.00**	**5.51**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.35	2.85	1.60	0.00		0.13	0.13		0.13	0.13	0.00	310.16	310.16	0.03	0.00	310.76
Total	**0.35**	**2.85**	**1.60**	**0.00**	**2.64**	**0.13**	**2.77**	**1.10**	**0.13**	**1.23**	**0.00**	**310.16**	**310.16**	**0.03**	**0.00**	**310.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	5.50	0.00	0.00	5.51
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.50**	**5.50**	**0.00**	**0.00**	**5.51**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.47	3.17	2.30	0.00		0.20	0.20		0.20	0.20	0.00	362.79	362.79	0.04	0.00	363.59
Total	**0.47**	**3.17**	**2.30**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**362.79**	**362.79**	**0.04**	**0.00**	**363.59**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.34	103.01	66.17	0.18	5.44	3.52	8.96	0.16	3.24	3.40	0.00	16,604.60	16,604.60	0.42	0.00	16,613.38
Worker	12.07	13.51	132.70	0.22	25.19	1.00	26.19	0.39	0.93	1.32	0.00	19,286.40	19,286.40	1.20	0.00	19,311.53
Total	**21.41**	**116.52**	**198.87**	**0.40**	**30.63**	**4.52**	**35.15**	**0.55**	**4.17**	**4.72**	**0.00**	**35,891.00**	**35,891.00**	**1.62**	**0.00**	**35,924.91**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.47	3.17	2.30	0.00		0.20	0.20		0.20	0.20	0.00	362.79	362.79	0.04	0.00	363.59
Total	**0.47**	**3.17**	**2.30**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**362.79**	**362.79**	**0.04**	**0.00**	**363.59**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.34	103.01	66.17	0.18	0.48	3.52	4.00	0.16	3.24	3.40	0.00	16,604.60	16,604.60	0.42	0.00	16,613.38
Worker	12.07	13.51	132.70	0.22	1.08	1.00	2.08	0.39	0.93	1.32	0.00	19,286.40	19,286.40	1.20	0.00	19,311.53
Total	**21.41**	**116.52**	**198.87**	**0.40**	**1.56**	**4.52**	**6.08**	**0.55**	**4.17**	**4.72**	**0.00**	**35,891.00**	**35,891.00**	**1.62**	**0.00**	**35,924.91**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	11.39	126.17	80.83	0.23	7.17	4.30	11.46	0.21	3.95	4.16	0.00	21,918.16	21,918.16	0.51	0.00	21,928.85
Worker	14.88	16.35	160.98	0.29	33.20	1.33	34.53	0.51	1.22	1.74	0.00	24,843.32	24,843.32	1.46	0.00	24,873.97
Total	**26.27**	**142.52**	**241.81**	**0.52**	**40.37**	**5.63**	**45.99**	**0.72**	**5.17**	**5.90**	**0.00**	**46,761.48**	**46,761.48**	**1.97**	**0.00**	**46,802.82**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	11.39	126.17	80.83	0.23	0.63	4.30	4.92	0.21	3.95	4.16	0.00	21,918.16	21,918.16	0.51	0.00	21,928.85
Worker	14.88	16.35	160.98	0.29	1.42	1.33	2.75	0.51	1.22	1.74	0.00	24,843.32	24,843.32	1.46	0.00	24,873.97
Total	**26.27**	**142.52**	**241.81**	**0.52**	**2.05**	**5.63**	**7.67**	**0.72**	**5.17**	**5.90**	**0.00**	**46,761.48**	**46,761.48**	**1.97**	**0.00**	**46,802.82**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	10.62	117.86	75.44	0.23	7.17	4.01	11.17	0.21	3.69	3.90	0.00	21,947.04	21,947.04	0.47	0.00	21,956.99
Worker	13.96	15.06	148.54	0.29	33.20	1.33	34.53	0.51	1.23	1.74	0.00	24,244.09	24,244.09	1.36	0.00	24,272.70
Total	**24.58**	**132.92**	**223.98**	**0.52**	**40.37**	**5.34**	**45.70**	**0.72**	**4.92**	**5.64**	**0.00**	**46,191.13**	**46,191.13**	**1.83**	**0.00**	**46,229.69**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	10.62	117.86	75.44	0.23	0.63	4.01	4.63	0.21	3.69	3.90	0.00	21,947.04	21,947.04	0.47	0.00	21,956.99
Worker	13.96	15.06	148.54	0.29	1.42	1.33	2.75	0.51	1.23	1.74	0.00	24,244.09	24,244.09	1.36	0.00	24,272.70
Total	**24.58**	**132.92**	**223.98**	**0.52**	**2.05**	**5.34**	**7.38**	**0.72**	**4.92**	**5.64**	**0.00**	**46,191.13**	**46,191.13**	**1.83**	**0.00**	**46,229.69**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.91	110.27	70.61	0.23	7.14	3.74	10.88	0.21	3.44	3.65	0.00	21,888.36	21,888.36	0.44	0.00	21,897.63
Worker	13.05	13.83	136.39	0.29	33.08	1.32	34.40	0.51	1.23	1.74	0.00	23,599.96	23,599.96	1.26	0.00	23,626.44
Total	**22.96**	**124.10**	**207.00**	**0.52**	**40.22**	**5.06**	**45.28**	**0.72**	**4.67**	**5.39**	**0.00**	**45,488.32**	**45,488.32**	**1.70**	**0.00**	**45,524.07**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.91	110.27	70.61	0.23	0.62	3.74	4.37	0.21	3.44	3.65	0.00	21,888.36	21,888.36	0.44	0.00	21,897.63
Worker	13.05	13.83	136.39	0.29	1.42	1.32	2.74	0.51	1.23	1.74	0.00	23,599.96	23,599.96	1.26	0.00	23,626.44
Total	**22.96**	**124.10**	**207.00**	**0.52**	**2.04**	**5.06**	**7.11**	**0.72**	**4.67**	**5.39**	**0.00**	**45,488.32**	**45,488.32**	**1.70**	**0.00**	**45,524.07**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.35	104.41	66.88	0.23	7.17	3.55	10.71	0.21	3.26	3.47	0.00	21,995.44	21,995.44	0.41	0.00	22,004.16
Worker	12.31	12.79	126.45	0.29	33.20	1.33	34.53	0.51	1.23	1.74	0.00	23,174.69	23,174.69	1.18	0.00	23,199.53
Total	**21.66**	**117.20**	**193.33**	**0.52**	**40.37**	**4.88**	**45.24**	**0.72**	**4.49**	**5.21**	**0.00**	**45,170.13**	**45,170.13**	**1.59**	**0.00**	**45,203.69**

3.4 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.35	104.41	66.88	0.23	0.63	3.55	4.17	0.21	3.26	3.47	0.00	21,995.44	21,995.44	0.41	0.00	22,004.16
Worker	12.31	12.79	126.45	0.29	1.42	1.33	2.75	0.51	1.23	1.74	0.00	23,174.69	23,174.69	1.18	0.00	23,199.53
Total	**21.66**	**117.20**	**193.33**	**0.52**	**2.05**	**4.88**	**6.92**	**0.72**	**4.49**	**5.21**	**0.00**	**45,170.13**	**45,170.13**	**1.59**	**0.00**	**45,203.69**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.83	99.04	63.07	0.23	7.17	3.36	10.53	0.21	3.09	3.30	0.00	22,020.15	22,020.15	0.39	0.00	22,028.36
Worker	11.72	11.89	118.06	0.29	33.20	1.32	34.53	0.51	1.23	1.74	0.00	22,703.45	22,703.45	1.11	0.00	22,726.82
Total	**20.55**	**110.93**	**181.13**	**0.52**	**40.37**	**4.68**	**45.06**	**0.72**	**4.32**	**5.04**	**0.00**	**44,723.60**	**44,723.60**	**1.50**	**0.00**	**44,755.18**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.83	99.04	63.07	0.23	0.63	3.36	3.99	0.21	3.09	3.30	0.00	22,020.15	22,020.15	0.39	0.00	22,028.36
Worker	11.72	11.89	118.06	0.29	1.42	1.32	2.75	0.51	1.23	1.74	0.00	22,703.45	22,703.45	1.11	0.00	22,726.82
Total	**20.55**	**110.93**	**181.13**	**0.52**	**2.05**	**4.68**	**6.74**	**0.72**	**4.32**	**5.04**	**0.00**	**44,723.60**	**44,723.60**	**1.50**	**0.00**	**44,755.18**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.43	94.86	60.37	0.23	7.20	3.22	10.42	0.21	2.96	3.17	0.00	22,125.34	22,125.34	0.37	0.00	22,133.14
Worker	11.29	11.14	111.27	0.29	33.33	1.33	34.66	0.51	1.23	1.74	0.00	22,357.23	22,357.23	1.05	0.00	22,379.37
Total	**19.72**	**106.00**	**171.64**	**0.52**	**40.53**	**4.55**	**45.08**	**0.72**	**4.19**	**4.91**	**0.00**	**44,482.57**	**44,482.57**	**1.42**	**0.00**	**44,512.51**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.43	94.86	60.37	0.23	0.63	3.22	3.85	0.21	2.96	3.17	0.00	22,125.34	22,125.34	0.37	0.00	22,133.14
Worker	11.29	11.14	111.27	0.29	1.43	1.33	2.76	0.51	1.23	1.74	0.00	22,357.23	22,357.23	1.05	0.00	22,379.37
Total	**19.72**	**106.00**	**171.64**	**0.52**	**2.06**	**4.55**	**6.61**	**0.72**	**4.19**	**4.91**	**0.00**	**44,482.57**	**44,482.57**	**1.42**	**0.00**	**44,512.51**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.01	90.82	57.23	0.23	7.17	3.09	10.26	0.21	2.84	3.05	0.00	22,060.57	22,060.57	0.35	0.00	22,067.96
Worker	10.88	10.43	106.12	0.29	33.20	1.36	34.56	0.51	1.26	1.77	0.00	22,085.59	22,085.59	1.01	0.00	22,106.89
Total	**18.89**	**101.25**	**163.35**	**0.52**	**40.37**	**4.45**	**44.82**	**0.72**	**4.10**	**4.82**	**0.00**	**44,146.16**	**44,146.16**	**1.36**	**0.00**	**44,174.85**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.01	90.82	57.23	0.23	0.63	3.09	3.72	0.21	2.84	3.05	0.00	22,060.57	22,060.57	0.35	0.00	22,067.96
Worker	10.88	10.43	106.12	0.29	1.42	1.36	2.78	0.51	1.26	1.77	0.00	22,085.59	22,085.59	1.01	0.00	22,106.89
Total	**18.89**	**101.25**	**163.35**	**0.52**	**2.05**	**4.45**	**6.50**	**0.72**	**4.10**	**4.82**	**0.00**	**44,146.16**	**44,146.16**	**1.36**	**0.00**	**44,174.85**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.66	87.39	54.56	0.23	7.14	2.99	10.13	0.21	2.75	2.95	0.00	21,993.60	21,993.60	0.34	0.00	22,000.64
Worker	10.45	9.78	99.99	0.29	33.08	1.35	34.43	0.51	1.25	1.76	0.00	21,639.60	21,639.60	0.96	0.00	21,659.81
Total	**18.11**	**97.17**	**154.55**	**0.52**	**40.22**	**4.34**	**44.56**	**0.72**	**4.00**	**4.71**	**0.00**	**43,633.20**	**43,633.20**	**1.30**	**0.00**	**43,660.45**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.66	87.39	54.56	0.23	0.63	2.99	3.61	0.21	2.75	2.95	0.00	21,993.60	21,993.60	0.34	0.00	22,000.64
Worker	10.45	9.78	99.99	0.29	1.42	1.35	2.77	0.51	1.25	1.76	0.00	21,639.60	21,639.60	0.96	0.00	21,659.81
Total	**18.11**	**97.17**	**154.55**	**0.52**	**2.05**	**4.34**	**6.38**	**0.72**	**4.00**	**4.71**	**0.00**	**43,633.20**	**43,633.20**	**1.30**	**0.00**	**43,660.45**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.40	84.85	52.54	0.23	7.14	2.91	10.05	0.21	2.67	2.88	0.00	22,009.60	22,009.60	0.32	0.00	22,016.37
Worker	10.05	9.18	94.52	0.29	33.08	1.35	34.43	0.51	1.26	1.77	0.00	21,308.66	21,308.66	0.92	0.00	21,327.99
Total	**17.45**	**94.03**	**147.06**	**0.52**	**40.22**	**4.26**	**44.48**	**0.72**	**3.93**	**4.65**	**0.00**	**43,318.26**	**43,318.26**	**1.24**	**0.00**	**43,344.36**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.40	84.85	52.54	0.23	0.63	2.91	3.53	0.21	2.67	2.88	0.00	22,009.60	22,009.60	0.32	0.00	22,016.37
Worker	10.05	9.18	94.52	0.29	1.42	1.35	2.77	0.51	1.26	1.77	0.00	21,308.66	21,308.66	0.92	0.00	21,327.99
Total	**17.45**	**94.03**	**147.06**	**0.52**	**2.05**	**4.26**	**6.30**	**0.72**	**3.93**	**4.65**	**0.00**	**43,318.26**	**43,318.26**	**1.24**	**0.00**	**43,344.36**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.21	83.38	50.77	0.23	7.20	2.87	10.06	0.21	2.64	2.84	0.00	22,195.44	22,195.44	0.31	0.00	22,202.04
Worker	9.78	8.73	90.58	0.29	33.33	1.36	34.70	0.51	1.27	1.78	0.00	21,170.64	21,170.64	0.89	0.00	21,189.37
Total	**16.99**	**92.11**	**141.35**	**0.52**	**40.53**	**4.23**	**44.76**	**0.72**	**3.91**	**4.62**	**0.00**	**43,366.08**	**43,366.08**	**1.20**	**0.00**	**43,391.41**

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.21	83.38	50.77	0.23	0.63	2.87	3.50	0.21	2.64	2.84	0.00	22,195.44	22,195.44	0.31	0.00	22,202.04
Worker	9.78	8.73	90.58	0.29	1.43	1.36	2.79	0.51	1.27	1.78	0.00	21,170.64	21,170.64	0.89	0.00	21,189.37
Total	**16.99**	**92.11**	**141.35**	**0.52**	**2.06**	**4.23**	**6.29**	**0.72**	**3.91**	**4.62**	**0.00**	**43,366.08**	**43,366.08**	**1.20**	**0.00**	**43,391.41**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.97	81.01	48.92	0.23	7.14	2.79	9.93	0.21	2.56	2.77	0.00	22,037.79	22,037.79	0.30	0.00	22,044.15
Worker	9.38	8.21	85.88	0.29	33.08	1.36	34.44	0.51	1.26	1.77	0.00	20,741.03	20,741.03	0.84	0.00	20,758.77
Total	**16.35**	**89.22**	**134.80**	**0.52**	**40.22**	**4.15**	**44.37**	**0.72**	**3.82**	**4.54**	**0.00**	**42,778.82**	**42,778.82**	**1.14**	**0.00**	**42,802.92**

3.4 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.97	81.01	48.92	0.23	0.63	2.79	3.41	0.21	2.56	2.77	0.00	22,037.79	22,037.79	0.30	0.00	22,044.15
Worker	9.38	8.21	85.88	0.29	1.42	1.36	2.77	0.51	1.26	1.77	0.00	20,741.03	20,741.03	0.84	0.00	20,758.77
Total	**16.35**	**89.22**	**134.80**	**0.52**	**2.05**	**4.15**	**6.18**	**0.72**	**3.82**	**4.54**	**0.00**	**42,778.82**	**42,778.82**	**1.14**	**0.00**	**42,802.92**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	7.17	2.63	9.80	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	33.20	1.37	34.58	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**40.37**	**4.00**	**44.38**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	0.63	2.63	3.26	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	1.42	1.37	2.79	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**2.05**	**4.00**	**6.05**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	7.17	2.63	9.80	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	33.20	1.37	34.58	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**40.37**	**4.00**	**44.38**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	0.63	2.63	3.26	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	1.42	1.37	2.79	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**2.05**	**4.00**	**6.05**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.86	0.01		0.02	0.02		0.02	0.02	0.00	480.06	480.06	0.02	0.00	480.43
Total	**0.22**	**1.05**	**2.86**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.44	76.48	44.71	0.23	7.20	2.64	9.83	0.21	2.43	2.64	0.00	22,250.44	22,250.44	0.28	0.00	22,256.27
Worker	8.09	6.60	72.34	0.29	33.33	1.38	34.71	0.51	1.27	1.78	0.00	19,939.55	19,939.55	0.73	0.00	19,954.90
Total	**14.53**	**83.08**	**117.05**	**0.52**	**40.53**	**4.02**	**44.54**	**0.72**	**3.70**	**4.42**	**0.00**	**42,189.99**	**42,189.99**	**1.01**	**0.00**	**42,211.17**

3.4 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.86	0.01		0.02	0.02		0.02	0.02	0.00	480.06	480.06	0.02	0.00	480.43
Total	**0.22**	**1.05**	**2.86**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.44	76.48	44.71	0.23	0.63	2.64	3.27	0.21	2.43	2.64	0.00	22,250.44	22,250.44	0.28	0.00	22,256.27
Worker	8.09	6.60	72.34	0.29	1.43	1.38	2.80	0.51	1.27	1.78	0.00	19,939.55	19,939.55	0.73	0.00	19,954.90
Total	**14.53**	**83.08**	**117.05**	**0.52**	**2.06**	**4.02**	**6.07**	**0.72**	**3.70**	**4.42**	**0.00**	**42,189.99**	**42,189.99**	**1.01**	**0.00**	**42,211.17**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	7.14	2.62	9.76	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	33.08	1.37	34.44	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**40.22**	**3.99**	**44.20**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	0.63	2.62	3.24	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	1.42	1.37	2.78	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**2.05**	**3.99**	**6.02**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	7.14	2.62	9.76	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	33.08	1.37	34.44	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**40.22**	**3.99**	**44.20**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	0.63	2.62	3.24	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	1.42	1.37	2.78	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**2.05**	**3.99**	**6.02**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.91	2.84	0.01		0.01	0.01		0.01	0.01	0.00	478.23	478.23	0.02	0.00	478.57
Total	**0.20**	**0.91**	**2.84**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.13	74.52	42.38	0.23	7.17	2.55	9.72	0.21	2.34	2.55	0.00	22,212.05	22,212.05	0.26	0.00	22,217.57
Worker	7.05	5.59	63.46	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	19,353.20	19,353.20	0.65	0.00	19,366.88
Total	**13.18**	**80.11**	**105.84**	**0.52**	**40.37**	**3.91**	**44.29**	**0.72**	**3.60**	**4.33**	**0.00**	**41,565.25**	**41,565.25**	**0.91**	**0.00**	**41,584.45**

3.4 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.91	2.84	0.01		0.01	0.01		0.01	0.01	0.00	478.23	478.23	0.02	0.00	478.57
Total	**0.20**	**0.91**	**2.84**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.57**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.13	74.52	42.38	0.23	0.63	2.55	3.18	0.21	2.34	2.55	0.00	22,212.05	22,212.05	0.26	0.00	22,217.57
Worker	7.05	5.59	63.46	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	19,353.20	19,353.20	0.65	0.00	19,366.88
Total	**13.18**	**80.11**	**105.84**	**0.52**	**2.05**	**3.91**	**5.97**	**0.72**	**3.60**	**4.33**	**0.00**	**41,565.25**	**41,565.25**	**0.91**	**0.00**	**41,584.45**

3.4 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.92	2.85	0.01		0.01	0.01		0.01	0.01	0.00	480.06	480.06	0.02	0.00	480.40
Total	**0.20**	**0.92**	**2.85**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.40**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.16	74.81	42.54	0.24	7.20	2.56	9.75	0.21	2.35	2.56	0.00	22,297.15	22,297.15	0.26	0.00	22,302.70
Worker	7.08	5.61	63.71	0.29	33.33	1.37	34.70	0.51	1.27	1.78	0.00	19,427.35	19,427.35	0.65	0.00	19,441.08
Total	**13.24**	**80.42**	**106.25**	**0.53**	**40.53**	**3.93**	**44.45**	**0.72**	**3.62**	**4.34**	**0.00**	**41,724.50**	**41,724.50**	**0.91**	**0.00**	**41,743.78**

3.4 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.92	2.85	0.01		0.01	0.01		0.01	0.01	0.00	480.06	480.06	0.02	0.00	480.40
Total	**0.20**	**0.92**	**2.85**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.40**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.16	74.81	42.54	0.24	0.63	2.56	3.19	0.21	2.35	2.56	0.00	22,297.15	22,297.15	0.26	0.00	22,302.70
Worker	7.08	5.61	63.71	0.29	1.43	1.37	2.80	0.51	1.27	1.78	0.00	19,427.35	19,427.35	0.65	0.00	19,441.08
Total	**13.24**	**80.42**	**106.25**	**0.53**	**2.06**	**3.93**	**5.99**	**0.72**	**3.62**	**4.34**	**0.00**	**41,724.50**	**41,724.50**	**0.91**	**0.00**	**41,743.78**

3.4 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.53	1.66	0.00		0.01	0.01		0.01	0.01	0.00	280.34	280.34	0.01	0.00	280.54
Total	**0.12**	**0.53**	**1.66**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**280.34**	**280.34**	**0.01**	**0.00**	**280.54**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	3.60	43.68	24.84	0.14	4.20	1.49	5.70	0.12	1.37	1.50	0.00	13,020.86	13,020.86	0.15	0.00	13,024.09
Worker	4.13	3.28	37.20	0.17	19.46	0.80	20.26	0.30	0.74	1.04	0.00	11,344.98	11,344.98	0.38	0.00	11,353.00
Total	**7.73**	**46.96**	**62.04**	**0.31**	**23.66**	**2.29**	**25.96**	**0.42**	**2.11**	**2.54**	**0.00**	**24,365.84**	**24,365.84**	**0.53**	**0.00**	**24,377.09**

3.4 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.53	1.66	0.00		0.01	0.01		0.01	0.01	0.00	280.34	280.34	0.01	0.00	280.54
Total	**0.12**	**0.53**	**1.66**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**280.34**	**280.34**	**0.01**	**0.00**	**280.54**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	3.60	43.68	24.84	0.14	0.37	1.49	1.86	0.12	1.37	1.50	0.00	13,020.86	13,020.86	0.15	0.00	13,024.09
Worker	4.13	3.28	37.20	0.17	0.83	0.80	1.63	0.30	0.74	1.04	0.00	11,344.98	11,344.98	0.38	0.00	11,353.00
Total	**7.73**	**46.96**	**62.04**	**0.31**	**1.20**	**2.29**	**3.49**	**0.42**	**2.11**	**2.54**	**0.00**	**24,365.84**	**24,365.84**	**0.53**	**0.00**	**24,377.09**

3.5 Paving - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.52	1.03	0.00		0.02	0.02		0.02	0.02	0.00	142.89	142.89	0.01	0.00	143.04
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.52**	**1.03**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**142.89**	**142.89**	**0.01**	**0.00**	**143.04**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.38	5.38	0.00	0.00	5.39
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.38**	**5.38**	**0.00**	**0.00**	**5.39**

3.5 Paving - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.52	1.03	0.00		0.02	0.02		0.02	0.02	0.00	142.89	142.89	0.01	0.00	143.04
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.52**	**1.03**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**142.89**	**142.89**	**0.01**	**0.00**	**143.04**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	5.38	0.00	0.00	5.39
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.38**	**5.38**	**0.00**	**0.00**	**5.39**

3.5 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	1.25	2.49	0.00		0.04	0.04		0.04	0.04	0.00	345.32	345.32	0.02	0.00	345.67
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**1.25**	**2.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**345.32**	**345.32**	**0.02**	**0.00**	**345.67**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.01	13.01	0.00	0.00	13.02
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**13.01**	**13.01**	**0.00**	**0.00**	**13.02**

3.5 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	1.25	2.49	0.00		0.04	0.04		0.04	0.04	0.00	345.32	345.32	0.02	0.00	345.67
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**1.25**	**2.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**345.32**	**345.32**	**0.02**	**0.00**	**345.67**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.01	13.01	0.00	0.00	13.02
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.01**	**13.01**	**0.00**	**0.00**	**13.02**

3.5 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.30	0.60	0.00		0.01	0.01		0.01	0.01	0.00	83.35	83.35	0.00	0.00	83.44
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.30**	**0.60**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**83.35**	**83.35**	**0.00**	**0.00**	**83.44**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.5 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.30	0.60	0.00		0.01	0.01		0.01	0.01	0.00	83.35	83.35	0.00	0.00	83.44
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.30**	**0.60**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**83.35**	**83.35**	**0.00**	**0.00**	**83.44**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	283.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.18	0.00		0.00	0.00		0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**284.00**	**0.07**	**0.18**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**25.12**	**25.12**	**0.00**	**0.00**	**25.14**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.06	0.84	9.58	0.04	5.01	0.21	5.22	0.08	0.19	0.27	0.00	2,921.52	2,921.52	0.10	0.00	2,923.58
Total	**1.06**	**0.84**	**9.58**	**0.04**	**5.01**	**0.21**	**5.22**	**0.08**	**0.19**	**0.27**	**0.00**	**2,921.52**	**2,921.52**	**0.10**	**0.00**	**2,923.58**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	283.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.18	0.00		0.00	0.00		0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**284.00**	**0.07**	**0.18**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**25.12**	**25.12**	**0.00**	**0.00**	**25.14**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.06	0.84	9.58	0.04	0.21	0.21	0.42	0.08	0.19	0.27	0.00	2,921.52	2,921.52	0.10	0.00	2,923.58
Total	**1.06**	**0.84**	**9.58**	**0.04**	**0.21**	**0.21**	**0.42**	**0.08**	**0.19**	**0.27**	**0.00**	**2,921.52**	**2,921.52**	**0.10**	**0.00**	**2,923.58**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	338.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.21	0.00		0.00	0.00		0.00	0.00	0.00	29.97	29.97	0.00	0.00	29.99
Total	**338.78**	**0.09**	**0.21**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**29.97**	**29.97**	**0.00**	**0.00**	**29.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.14	0.90	10.46	0.05	5.98	0.24	6.22	0.09	0.23	0.32	0.00	3,431.94	3,431.94	0.11	0.00	3,434.22
Total	**1.14**	**0.90**	**10.46**	**0.05**	**5.98**	**0.24**	**6.22**	**0.09**	**0.23**	**0.32**	**0.00**	**3,431.94**	**3,431.94**	**0.11**	**0.00**	**3,434.22**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	338.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.21	0.00		0.00	0.00		0.00	0.00	0.00	29.97	29.97	0.00	0.00	29.99
Total	**338.78**	**0.09**	**0.21**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**29.97**	**29.97**	**0.00**	**0.00**	**29.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.14	0.90	10.46	0.05	0.26	0.24	0.50	0.09	0.23	0.32	0.00	3,431.94	3,431.94	0.11	0.00	3,434.22
Total	**1.14**	**0.90**	**10.46**	**0.05**	**0.26**	**0.24**	**0.50**	**0.09**	**0.23**	**0.32**	**0.00**	**3,431.94**	**3,431.94**	**0.11**	**0.00**	**3,434.22**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Unmitigated	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	107,160.00	107,160.00	107160.00	305,974,308	305,974,308
City Park	6,559.80	6,559.80	6559.80	14,004,207	14,004,207
General Light Industry	178,951.45	178,951.45	178951.45	522,450,751	522,450,751
Government Office Building	64,900.04	64,900.04	64900.04	111,295,816	111,295,816
Single Family Housing	14,784.78	14,784.78	14784.78	42,215,032	42,215,032
Strip Mall	125,316.36	125,316.36	125316.36	192,991,340	192,991,340
Total	497,672.44	497,672.44	497,672.44	1,188,931,453	1,188,931,453

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	10.80	7.30	7.50	41.60	18.80	39.60
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	152,460.36	152,460.36	5.66	2.15	153,245.12
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	152,460.36	152,460.36	5.66	2.15	153,245.12
NaturalGas Mitigated	3.80	33.94	24.30	0.21		0.00	2.63		0.00	2.63	0.00	37,647.30	37,647.30	0.72	0.69	37,876.42
NaturalGas Unmitigated	3.80	33.94	24.30	0.21		0.00	2.63		0.00	2.63	0.00	37,647.30	37,647.30	0.72	0.69	37,876.42
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.49805e+008	0.81	6.90	2.94	0.04		0.00	0.56		0.00	0.56	0.00	7,994.16	7,994.16	0.15	0.15	8,042.82
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	2.39838e+008	1.29	11.76	9.88	0.07		0.00	0.89		0.00	0.89	0.00	12,798.66	12,798.66	0.25	0.23	12,876.55
Government Office Building	2.41174e+008	1.30	11.82	9.93	0.07		0.00	0.90		0.00	0.90	0.00	12,869.98	12,869.98	0.25	0.24	12,948.30
Single Family Housing	7.0163e+007	0.38	3.23	1.38	0.02		0.00	0.26		0.00	0.26	0.00	3,744.17	3,744.17	0.07	0.07	3,766.95
Strip Mall	4.50362e+006	0.02	0.22	0.19	0.00		0.00	0.02		0.00	0.02	0.00	240.33	240.33	0.00	0.00	241.79
Total		**3.80**	**33.93**	**24.32**	**0.20**		**0.00**	**2.63**		**0.00**	**2.63**	**0.00**	**37,647.30**	**37,647.30**	**0.72**	**0.69**	**37,876.41**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.49805e+008	0.81	6.90	2.94	0.04		0.00	0.56		0.00	0.56	0.00	7,994.16	7,994.16	0.15	0.15	8,042.82
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	2.39838e+008	1.29	11.76	9.88	0.07		0.00	0.89		0.00	0.89	0.00	12,798.66	12,798.66	0.25	0.23	12,876.55
Government Office Building	2.41174e+008	1.30	11.82	9.93	0.07		0.00	0.90		0.00	0.90	0.00	12,869.98	12,869.98	0.25	0.24	12,948.30
Single Family Housing	7.0163e+007	0.38	3.23	1.38	0.02		0.00	0.26		0.00	0.26	0.00	3,744.17	3,744.17	0.07	0.07	3,766.95
Strip Mall	4.50362e+006	0.02	0.22	0.19	0.00		0.00	0.02		0.00	0.02	0.00	240.33	240.33	0.00	0.00	241.79
Total		**3.80**	**33.93**	**24.32**	**0.20**		**0.00**	**2.63**		**0.00**	**2.63**	**0.00**	**37,647.30**	**37,647.30**	**0.72**	**0.69**	**37,876.41**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	4.76622e+007					16,880.07	0.63	0.24	16,966.96
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	1.8305e+008					64,828.91	2.41	0.91	65,162.61
Government Office Building	1.61124e+008					57,063.77	2.12	0.80	57,357.50
Single Family Housing	1.10097e+007					3,899.19	0.14	0.05	3,919.26
Strip Mall	2.76384e+007					9,788.42	0.36	0.14	9,838.80
Total						**152,460.36**	**5.66**	**2.14**	**153,245.13**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	4.76622e+007					16,880.07	0.63	0.24	16,966.96
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	1.8305e+008					64,828.91	2.41	0.91	65,162.61
Government Office Building	1.61124e+008					57,063.77	2.12	0.80	57,357.50
Single Family Housing	1.10097e+007					3,899.19	0.14	0.05	3,919.26
Strip Mall	2.76384e+007					9,788.42	0.36	0.14	9,838.80
Total						**152,460.36**	**5.66**	**2.14**	**153,245.13**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Unmitigated	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	62.28					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	187.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	947.34	12.84	1,165.47	0.46		0.00	164.64		0.00	164.63	15,573.90	19,594.40	35,168.31	14.62	1.46	35,929.37
Landscaping	3.46	1.31	113.55	0.01		0.00	0.62		0.00	0.62	0.00	184.94	184.94	0.18	0.00	188.73
Total	**1,200.71**	**14.15**	**1,279.02**	**0.47**		**0.00**	**165.26**		**0.00**	**165.25**	**15,573.90**	**19,779.34**	**35,353.25**	**14.80**	**1.46**	**36,118.10**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	62.28					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	187.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	947.34	12.84	1,165.47	0.46		0.00	164.64		0.00	164.63	15,573.90	19,594.40	35,168.31	14.62	1.46	35,929.37
Landscaping	3.46	1.31	113.55	0.01		0.00	0.62		0.00	0.62	0.00	184.94	184.94	0.18	0.00	188.73
Total	**1,200.71**	**14.15**	**1,279.02**	**0.47**		**0.00**	**165.26**		**0.00**	**165.25**	**15,573.90**	**19,779.34**	**35,353.25**	**14.80**	**1.46**	**36,118.10**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					466,504.56	3,042.51	81.58	555,687.40
Unmitigated					466,504.56	3,042.51	81.58	555,687.40
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	872.738 / 550.205					6,199.34	26.87	0.75	6,995.44
City Park	0 / 172.765					679.78	0.03	0.01	683.28
General Light Industry	95953.6 / 0					443,568.26	2,945.37	78.87	529,871.00
Government Office Building	2033.6 / 1246.4					14,305.04	62.61	1.74	16,159.34
Single Family Housing	109.589 / 69.0888					778.45	3.37	0.09	878.41
Strip Mall	138.421 / 84.8386					973.70	4.26	0.12	1,099.92
Total						**466,504.57**	**3,042.51**	**81.58**	**555,687.39**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	872.738 / 550.205					6,199.34	26.87	0.75	6,995.44
City Park	0 / 172.765					679.78	0.03	0.01	683.28
General Light Industry	95953.6 / 0					443,568.26	2,945.37	78.87	529,871.00
Government Office Building	2033.6 / 1246.4					14,305.04	62.61	1.74	16,159.34
Single Family Housing	109.589 / 69.0888					778.45	3.37	0.09	878.41
Strip Mall	138.421 / 84.8386					973.70	4.26	0.12	1,099.92
Total						**466,504.57**	**3,042.51**	**81.58**	**555,687.39**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					234,450.53	13,855.63	0.00	525,418.74
Unmitigated					234,450.53	13,855.63	0.00	525,418.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	6161.7					1,250.77	73.92	0.00	2,803.05
City Park	12.47					2.53	0.15	0.00	5.67
General Light Industry	1.13535e+006					230,466.04	13,620.15	0.00	516,489.25
Government Office Building	9520.04					1,932.48	114.21	0.00	4,330.82
Single Family Housing	1972.51					400.40	23.66	0.00	897.33
Strip Mall	1962.16					398.30	23.54	0.00	892.62
Total						**234,450.52**	**13,855.63**	**0.00**	**525,418.74**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	6161.7					1,250.77	73.92	0.00	2,803.05
City Park	12.47					2.53	0.15	0.00	5.67
General Light Industry	1.13535e+006					230,466.04	13,620.15	0.00	516,489.25
Government Office Building	9520.04					1,932.48	114.21	0.00	4,330.82
Single Family Housing	1972.51					400.40	23.66	0.00	897.33
Strip Mall	1962.16					398.30	23.54	0.00	892.62
Total						**234,450.52**	**13,855.63**	**0.00**	**525,418.74**

9.0 Vegetation

ATTACHMENT 4

CalEEMod Output – CPU Emissions with GHG Reduction Measures

THIS PAGE IS INTENTIONALLY BLANK.

3957.1 OMCPU - New Development

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Government Office Building	10236.6	1000sqft
General Light Industry	19514.88	1000sqft
City Park	145	Acre
Apartments Mid Rise	13395	Dwelling Unit
Single Family Housing	1682	Dwelling Unit
Strip Mall	1868.72	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**	San Diego Gas & Electric
Climate Zone	13	**Precipitation Freq (Days)**	40		

1.3 User Entered Comments

Project Characteristics -

Land Use - New Development

Construction Phase - Defaults assumed, but adjusted to 30 year total construction length

Grading -

Vehicle Trips - Urban Systems Associates

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves -

Energy Use -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.47	11.93	6.83	0.01	4.80	0.61	5.41	2.27	0.61	2.88	0.00	996.06	996.06	0.12	0.00	998.58
2012	1.65	13.57	7.38	0.01	2.67	0.65	3.33	1.10	0.65	1.75	0.00	1,308.72	1,308.72	0.13	0.00	1,311.54
2013	1.56	12.73	7.07	0.01	2.67	0.60	3.27	1.10	0.60	1.70	0.00	1,308.22	1,308.22	0.13	0.00	1,310.88
2014	22.23	122.56	202.80	0.40	33.27	4.85	38.13	1.64	4.50	6.14	0.00	36,569.46	36,569.46	1.68	0.00	36,604.77
2015	26.83	146.32	244.80	0.53	40.37	5.86	46.23	0.72	5.41	6.13	0.00	47,239.71	47,239.71	2.02	0.00	47,282.03
2016	25.11	136.38	226.96	0.53	40.37	5.54	45.91	0.72	5.13	5.85	0.00	46,669.36	46,669.36	1.88	0.00	46,708.80
2017	23.43	127.23	209.94	0.52	40.22	5.24	45.46	0.72	4.85	5.57	0.00	45,964.72	45,964.72	1.74	0.00	46,001.27

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	22.10	120.04	196.26	0.53	40.37	5.03	45.40	0.72	4.65	5.37	0.00	45,648.36	45,648.36	1.63	0.00	45,682.65
2019	20.94	113.51	184.05	0.53	40.37	4.82	45.19	0.72	4.46	5.18	0.00	45,201.83	45,201.83	1.54	0.00	45,234.08
2020	20.08	108.34	174.55	0.53	40.53	4.67	45.19	0.72	4.31	5.03	0.00	44,962.63	44,962.63	1.46	0.00	44,993.20
2021	19.23	103.34	166.24	0.53	40.37	4.54	44.92	0.72	4.20	4.92	0.00	44,624.39	44,624.39	1.39	0.00	44,653.65
2022	18.42	99.06	157.41	0.52	40.22	4.42	44.64	0.72	4.08	4.80	0.00	44,109.60	44,109.60	1.32	0.00	44,137.36
2023	17.74	95.75	149.92	0.52	40.22	4.33	44.55	0.72	4.00	4.72	0.00	43,794.65	43,794.65	1.27	0.00	43,821.24
2024	17.26	93.69	144.23	0.53	40.53	4.29	44.81	0.72	3.96	4.69	0.00	43,846.14	43,846.14	1.23	0.00	43,871.94
2025	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2026	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2027	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2028	16.60	90.66	137.65	0.52	40.22	4.20	44.42	0.72	3.87	4.59	0.00	43,255.22	43,255.22	1.17	0.00	43,279.74
2029	16.67	91.00	138.18	0.53	40.37	4.21	44.59	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2030	14.70	83.81	119.45	0.53	40.37	4.02	44.40	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2031	14.70	83.81	119.45	0.53	40.37	4.02	44.40	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2032	14.76	84.13	119.90	0.53	40.53	4.04	44.57	0.72	3.72	4.44	0.00	42,670.04	42,670.04	1.03	0.00	42,691.60
2033	14.64	83.49	118.99	0.53	40.22	4.01	44.23	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2034	14.64	83.49	118.99	0.53	40.22	4.01	44.23	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2035	13.39	81.02	108.68	0.53	40.37	3.93	44.30	0.72	3.62	4.34	0.00	42,043.47	42,043.47	0.93	0.00	42,063.02
2036	13.44	81.33	109.10	0.53	40.53	3.94	44.47	0.72	3.64	4.36	0.00	42,204.56	42,204.56	0.93	0.00	42,224.18
2037	7.93	48.01	64.76	0.31	23.68	2.32	25.99	0.42	2.14	2.56	0.00	24,794.45	24,794.45	0.55	0.00	24,806.05
2038	0.21	1.25	2.53	0.00	0.02	0.04	0.06	0.00	0.04	0.04	0.00	358.33	358.33	0.02	0.00	358.68

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2039	285.12	1.22	10.37	0.04	5.02	0.22	5.23	0.08	0.20	0.28	0.00	3,033.13	3,033.13	0.10	0.00	3,035.30
2040	339.92	0.99	10.67	0.05	5.98	0.24	6.22	0.09	0.23	0.32	0.00	3,461.91	3,461.91	0.11	0.00	3,464.21
Total	**1,054.78**	**2,391.66**	**3,671.70**	**12.45**	**965.99**	**107.28**	**1,073.32**	**22.54**	**99.21**	**121.78**	**0.00**	**1,037,454.28**	**1,037,454.28**	**31.14**	**0.00**	**1,038,108.29**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.47	11.93	6.83	0.01	4.77	0.61	5.38	2.27	0.61	2.88	0.00	996.06	996.06	0.12	0.00	998.58
2012	1.65	13.57	7.38	0.01	2.64	0.65	3.30	1.10	0.65	1.75	0.00	1,308.72	1,308.72	0.13	0.00	1,311.54
2013	1.56	12.73	7.07	0.01	2.64	0.60	3.24	1.10	0.60	1.70	0.00	1,308.22	1,308.22	0.13	0.00	1,310.88
2014	22.23	122.56	202.80	0.40	4.19	4.85	9.05	1.64	4.50	6.14	0.00	36,569.46	36,569.46	1.68	0.00	36,604.77
2015	26.83	146.32	244.80	0.53	2.05	5.86	7.91	0.72	5.41	6.13	0.00	47,239.71	47,239.71	2.02	0.00	47,282.03
2016	25.11	136.38	226.96	0.53	2.05	5.54	7.59	0.72	5.13	5.85	0.00	46,669.36	46,669.36	1.88	0.00	46,708.80
2017	23.43	127.23	209.94	0.52	2.04	5.24	7.28	0.72	4.85	5.57	0.00	45,964.72	45,964.72	1.74	0.00	46,001.27
2018	22.10	120.04	196.26	0.53	2.05	5.03	7.08	0.72	4.65	5.37	0.00	45,648.36	45,648.36	1.63	0.00	45,682.65
2019	20.94	113.51	184.05	0.53	2.05	4.82	6.87	0.72	4.46	5.18	0.00	45,201.83	45,201.83	1.54	0.00	45,234.08
2020	20.08	108.34	174.55	0.53	2.06	4.67	6.72	0.72	4.31	5.03	0.00	44,962.63	44,962.63	1.46	0.00	44,993.20
2021	19.23	103.34	166.24	0.53	2.05	4.54	6.59	0.72	4.20	4.92	0.00	44,624.39	44,624.39	1.39	0.00	44,653.65

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	18.42	99.06	157.41	0.52	2.04	4.42	6.46	0.72	4.08	4.80	0.00	44,109.60	44,109.60	1.32	0.00	44,137.36
2023	17.74	95.75	149.92	0.52	2.04	4.33	6.37	0.72	4.00	4.72	0.00	43,794.65	43,794.65	1.27	0.00	43,821.24
2024	17.26	93.69	144.23	0.53	2.06	4.29	6.34	0.72	3.96	4.69	0.00	43,846.14	43,846.14	1.23	0.00	43,871.94
2025	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2026	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2027	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2028	16.60	90.66	137.65	0.52	2.04	4.20	6.24	0.72	3.87	4.59	0.00	43,255.22	43,255.22	1.17	0.00	43,279.74
2029	16.67	91.00	138.18	0.53	2.05	4.21	6.26	0.72	3.89	4.61	0.00	43,421.58	43,421.58	1.17	0.00	43,446.20
2030	14.70	83.81	119.45	0.53	2.05	4.02	6.07	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2031	14.70	83.81	119.45	0.53	2.05	4.02	6.07	0.72	3.70	4.43	0.00	42,507.18	42,507.18	1.02	0.00	42,528.65
2032	14.76	84.13	119.90	0.53	2.06	4.04	6.10	0.72	3.72	4.44	0.00	42,670.04	42,670.04	1.03	0.00	42,691.60
2033	14.64	83.49	118.99	0.53	2.04	4.01	6.05	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2034	14.64	83.49	118.99	0.53	2.04	4.01	6.05	0.72	3.69	4.41	0.00	42,344.32	42,344.32	1.02	0.00	42,365.71
2035	13.39	81.02	108.68	0.53	2.05	3.93	5.98	0.72	3.62	4.34	0.00	42,043.47	42,043.47	0.93	0.00	42,063.02
2036	13.44	81.33	109.10	0.53	2.06	3.94	6.00	0.72	3.64	4.36	0.00	42,204.56	42,204.56	0.93	0.00	42,224.18
2037	7.93	48.01	64.76	0.31	1.20	2.32	3.52	0.42	2.14	2.56	0.00	24,794.45	24,794.45	0.55	0.00	24,806.05
2038	0.21	1.25	2.53	0.00	0.00	0.04	0.04	0.00	0.04	0.04	0.00	358.33	358.33	0.02	0.00	358.68
2039	285.12	1.22	10.37	0.04	0.21	0.22	0.43	0.08	0.20	0.28	0.00	3,033.13	3,033.13	0.10	0.00	3,035.30
2040	339.92	0.99	10.67	0.05	0.26	0.24	0.50	0.09	0.23	0.32	0.00	3,461.91	3,461.91	0.11	0.00	3,464.21
Total	**1,054.78**	**2,391.66**	**3,671.70**	**12.45**	**60.99**	**107.28**	**168.27**	**22.54**	**99.21**	**121.78**	**0.00**	**1,037,454.28**	**1,037,454.28**	**31.14**	**0.00**	**1,038,108.29**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Energy	3.53	31.50	22.54	0.19		0.00	2.44		0.00	2.44	0.00	181,153.37	181,153.37	6.10	2.70	182,118.63
Mobile	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Waste						0.00	0.00		0.00	0.00	234,450.53	0.00	234,450.53	13,855.63	0.00	525,418.74
Water						0.00	0.00		0.00	0.00	0.00	466,504.56	466,504.56	3,042.51	81.58	555,687.40
Total	**1,535.08**	**686.17**	**4,287.41**	**6.81**	**625.02**	**34.57**	**827.30**	**9.99**	**33.33**	**211.01**	**250,024.43**	**1,135,412.59**	**1,385,437.02**	**16,940.38**	**85.74**	**1,767,766.41**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Energy	3.53	31.50	22.54	0.19		0.00	2.44		0.00	2.44	0.00	181,153.37	181,153.37	6.10	2.70	182,118.63
Mobile	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Waste						0.00	0.00		0.00	0.00	234,450.53	0.00	234,450.53	13,855.63	0.00	525,418.74
Water						0.00	0.00		0.00	0.00	0.00	373,203.65	373,203.65	2,434.00	65.27	444,549.92
Total	**1,535.08**	**686.17**	**4,287.41**	**6.81**	**625.02**	**34.57**	**827.30**	**9.99**	**33.33**	**211.01**	**250,024.43**	**1,042,111.68**	**1,292,136.11**	**16,331.87**	**69.43**	**1,656,628.93**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.13	0.00	2.13	1.17	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.30	10.59	5.95	0.01		0.54	0.54		0.54	0.54	0.00	855.90	855.90	0.11	0.00	858.12
Total	**1.30**	**10.59**	**5.95**	**0.01**	**2.13**	**0.54**	**2.67**	**1.17**	**0.54**	**1.71**	**0.00**	**855.90**	**855.90**	**0.11**	**0.00**	**858.12**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.17	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	19.77	19.77	0.00	0.00	19.80
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**19.77**	**19.77**	**0.00**	**0.00**	**19.80**

3.2 Site Preparation - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.13	0.00	2.13	1.17	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.30	10.59	5.95	0.01		0.54	0.54		0.54	0.54	0.00	855.90	855.90	0.11	0.00	858.12
Total	**1.30**	**10.59**	**5.95**	**0.01**	**2.13**	**0.54**	**2.67**	**1.17**	**0.54**	**1.71**	**0.00**	**855.90**	**855.90**	**0.11**	**0.00**	**858.12**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.77	19.77	0.00	0.00	19.80
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.77**	**19.77**	**0.00**	**0.00**	**19.80**

3.3 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.33	0.69	0.00		0.07	0.07		0.07	0.07	0.00	118.16	118.16	0.01	0.00	118.43
Total	**0.16**	**1.33**	**0.69**	**0.00**	**2.64**	**0.07**	**2.71**	**1.10**	**0.07**	**1.17**	**0.00**	**118.16**	**118.16**	**0.01**	**0.00**	**118.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.23	0.00	0.00	2.24
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.23**	**2.23**	**0.00**	**0.00**	**2.24**

3.3 Grading - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.33	0.69	0.00		0.07	0.07		0.07	0.07	0.00	118.16	118.16	0.01	0.00	118.43
Total	**0.16**	**1.33**	**0.69**	**0.00**	**2.64**	**0.07**	**2.71**	**1.10**	**0.07**	**1.17**	**0.00**	**118.16**	**118.16**	**0.01**	**0.00**	**118.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.23	2.23	0.00	0.00	2.24
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.23**	**2.23**	**0.00**	**0.00**	**2.24**

3.3 Grading - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.63	13.55	7.19	0.01		0.65	0.65		0.65	0.65	0.00	1,284.94	1,284.94	0.13	0.00	1,287.73
Total	**1.63**	**13.55**	**7.19**	**0.01**	**2.64**	**0.65**	**3.29**	**1.10**	**0.65**	**1.75**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.73**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	23.77	23.77	0.00	0.00	23.81
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**23.77**	**23.77**	**0.00**	**0.00**	**23.81**

3.3 Grading - 2012

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.63	13.55	7.19	0.01		0.65	0.65		0.65	0.65	0.00	1,284.94	1,284.94	0.13	0.00	1,287.73
Total	**1.63**	**13.55**	**7.19**	**0.01**	**2.64**	**0.65**	**3.29**	**1.10**	**0.65**	**1.75**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.73**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.77	23.77	0.00	0.00	23.81
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**23.77**	**23.77**	**0.00**	**0.00**	**23.81**

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.64**	**0.60**	**3.24**	**1.10**	**0.60**	**1.70**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.17	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	23.27	23.27	0.00	0.00	23.30
Total	**0.02**	**0.02**	**0.17**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**23.27**	**23.27**	**0.00**	**0.00**	**23.30**

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	1.55	12.72	6.89	0.01		0.60	0.60		0.60	0.60	0.00	1,284.94	1,284.94	0.13	0.00	1,287.58
Total	**1.55**	**12.72**	**6.89**	**0.01**	**2.64**	**0.60**	**3.24**	**1.10**	**0.60**	**1.70**	**0.00**	**1,284.94**	**1,284.94**	**0.13**	**0.00**	**1,287.58**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.02	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.27	23.27	0.00	0.00	23.30
Total	**0.02**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**23.27**	**23.27**	**0.00**	**0.00**	**23.30**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.35	2.85	1.60	0.00		0.13	0.13		0.13	0.13	0.00	310.16	310.16	0.03	0.00	310.76
Total	**0.35**	**2.85**	**1.60**	**0.00**	**2.64**	**0.13**	**2.77**	**1.10**	**0.13**	**1.23**	**0.00**	**310.16**	**310.16**	**0.03**	**0.00**	**310.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.50	5.50	0.00	0.00	5.51
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.50**	**5.50**	**0.00**	**0.00**	**5.51**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.64	0.00	2.64	1.10	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.35	2.85	1.60	0.00		0.13	0.13		0.13	0.13	0.00	310.16	310.16	0.03	0.00	310.76
Total	**0.35**	**2.85**	**1.60**	**0.00**	**2.64**	**0.13**	**2.77**	**1.10**	**0.13**	**1.23**	**0.00**	**310.16**	**310.16**	**0.03**	**0.00**	**310.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50	5.50	0.00	0.00	5.51
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.50**	**5.50**	**0.00**	**0.00**	**5.51**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.47	3.17	2.30	0.00		0.20	0.20		0.20	0.20	0.00	362.79	362.79	0.04	0.00	363.59
Total	**0.47**	**3.17**	**2.30**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**362.79**	**362.79**	**0.04**	**0.00**	**363.59**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.34	103.01	66.17	0.18	5.44	3.52	8.96	0.16	3.24	3.40	0.00	16,604.60	16,604.60	0.42	0.00	16,613.38
Worker	12.07	13.51	132.70	0.22	25.19	1.00	26.19	0.39	0.93	1.32	0.00	19,286.40	19,286.40	1.20	0.00	19,311.53
Total	**21.41**	**116.52**	**198.87**	**0.40**	**30.63**	**4.52**	**35.15**	**0.55**	**4.17**	**4.72**	**0.00**	**35,891.00**	**35,891.00**	**1.62**	**0.00**	**35,924.91**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.47	3.17	2.30	0.00		0.20	0.20		0.20	0.20	0.00	362.79	362.79	0.04	0.00	363.59
Total	**0.47**	**3.17**	**2.30**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**362.79**	**362.79**	**0.04**	**0.00**	**363.59**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.34	103.01	66.17	0.18	0.48	3.52	4.00	0.16	3.24	3.40	0.00	16,604.60	16,604.60	0.42	0.00	16,613.38
Worker	12.07	13.51	132.70	0.22	1.08	1.00	2.08	0.39	0.93	1.32	0.00	19,286.40	19,286.40	1.20	0.00	19,311.53
Total	**21.41**	**116.52**	**198.87**	**0.40**	**1.56**	**4.52**	**6.08**	**0.55**	**4.17**	**4.72**	**0.00**	**35,891.00**	**35,891.00**	**1.62**	**0.00**	**35,924.91**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	11.39	126.17	80.83	0.23	7.17	4.30	11.46	0.21	3.95	4.16	0.00	21,918.16	21,918.16	0.51	0.00	21,928.85
Worker	14.88	16.35	160.98	0.29	33.20	1.33	34.53	0.51	1.22	1.74	0.00	24,843.32	24,843.32	1.46	0.00	24,873.97
Total	**26.27**	**142.52**	**241.81**	**0.52**	**40.37**	**5.63**	**45.99**	**0.72**	**5.17**	**5.90**	**0.00**	**46,761.48**	**46,761.48**	**1.97**	**0.00**	**46,802.82**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.57	3.80	3.00	0.01		0.23	0.23		0.23	0.23	0.00	478.23	478.23	0.05	0.00	479.20
Total	**0.57**	**3.80**	**3.00**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	11.39	126.17	80.83	0.23	0.63	4.30	4.92	0.21	3.95	4.16	0.00	21,918.16	21,918.16	0.51	0.00	21,928.85
Worker	14.88	16.35	160.98	0.29	1.42	1.33	2.75	0.51	1.22	1.74	0.00	24,843.32	24,843.32	1.46	0.00	24,873.97
Total	**26.27**	**142.52**	**241.81**	**0.52**	**2.05**	**5.63**	**7.67**	**0.72**	**5.17**	**5.90**	**0.00**	**46,761.48**	**46,761.48**	**1.97**	**0.00**	**46,802.82**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	10.62	117.86	75.44	0.23	7.17	4.01	11.17	0.21	3.69	3.90	0.00	21,947.04	21,947.04	0.47	0.00	21,956.99
Worker	13.96	15.06	148.54	0.29	33.20	1.33	34.53	0.51	1.23	1.74	0.00	24,244.09	24,244.09	1.36	0.00	24,272.70
Total	**24.58**	**132.92**	**223.98**	**0.52**	**40.37**	**5.34**	**45.70**	**0.72**	**4.92**	**5.64**	**0.00**	**46,191.13**	**46,191.13**	**1.83**	**0.00**	**46,229.69**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.52	3.46	2.97	0.01		0.21	0.21		0.21	0.21	0.00	478.23	478.23	0.04	0.00	479.11
Total	**0.52**	**3.46**	**2.97**	**0.01**		**0.21**	**0.21**		**0.21**	**0.21**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**479.11**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	10.62	117.86	75.44	0.23	0.63	4.01	4.63	0.21	3.69	3.90	0.00	21,947.04	21,947.04	0.47	0.00	21,956.99
Worker	13.96	15.06	148.54	0.29	1.42	1.33	2.75	0.51	1.23	1.74	0.00	24,244.09	24,244.09	1.36	0.00	24,272.70
Total	**24.58**	**132.92**	**223.98**	**0.52**	**2.05**	**5.34**	**7.38**	**0.72**	**4.92**	**5.64**	**0.00**	**46,191.13**	**46,191.13**	**1.83**	**0.00**	**46,229.69**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.91	110.27	70.61	0.23	7.14	3.74	10.88	0.21	3.44	3.65	0.00	21,888.36	21,888.36	0.44	0.00	21,897.63
Worker	13.05	13.83	136.39	0.29	33.08	1.32	34.40	0.51	1.23	1.74	0.00	23,599.96	23,599.96	1.26	0.00	23,626.44
Total	**22.96**	**124.10**	**207.00**	**0.52**	**40.22**	**5.06**	**45.28**	**0.72**	**4.67**	**5.39**	**0.00**	**45,488.32**	**45,488.32**	**1.70**	**0.00**	**45,524.07**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.48	3.13	2.94	0.01		0.18	0.18		0.18	0.18	0.00	476.40	476.40	0.04	0.00	477.20
Total	**0.48**	**3.13**	**2.94**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**476.40**	**476.40**	**0.04**	**0.00**	**477.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.91	110.27	70.61	0.23	0.62	3.74	4.37	0.21	3.44	3.65	0.00	21,888.36	21,888.36	0.44	0.00	21,897.63
Worker	13.05	13.83	136.39	0.29	1.42	1.32	2.74	0.51	1.23	1.74	0.00	23,599.96	23,599.96	1.26	0.00	23,626.44
Total	**22.96**	**124.10**	**207.00**	**0.52**	**2.04**	**5.06**	**7.11**	**0.72**	**4.67**	**5.39**	**0.00**	**45,488.32**	**45,488.32**	**1.70**	**0.00**	**45,524.07**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.35	104.41	66.88	0.23	7.17	3.55	10.71	0.21	3.26	3.47	0.00	21,995.44	21,995.44	0.41	0.00	22,004.16
Worker	12.31	12.79	126.45	0.29	33.20	1.33	34.53	0.51	1.23	1.74	0.00	23,174.69	23,174.69	1.18	0.00	23,199.53
Total	**21.66**	**117.20**	**193.33**	**0.52**	**40.37**	**4.88**	**45.24**	**0.72**	**4.49**	**5.21**	**0.00**	**45,170.13**	**45,170.13**	**1.59**	**0.00**	**45,203.69**

3.4 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.84	2.93	0.01		0.16	0.16		0.16	0.16	0.00	478.23	478.23	0.04	0.00	478.97
Total	**0.44**	**2.84**	**2.93**	**0.01**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**478.23**	**478.23**	**0.04**	**0.00**	**478.97**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	9.35	104.41	66.88	0.23	0.63	3.55	4.17	0.21	3.26	3.47	0.00	21,995.44	21,995.44	0.41	0.00	22,004.16
Worker	12.31	12.79	126.45	0.29	1.42	1.33	2.75	0.51	1.23	1.74	0.00	23,174.69	23,174.69	1.18	0.00	23,199.53
Total	**21.66**	**117.20**	**193.33**	**0.52**	**2.05**	**4.88**	**6.92**	**0.72**	**4.49**	**5.21**	**0.00**	**45,170.13**	**45,170.13**	**1.59**	**0.00**	**45,203.69**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.83	99.04	63.07	0.23	7.17	3.36	10.53	0.21	3.09	3.30	0.00	22,020.15	22,020.15	0.39	0.00	22,028.36
Worker	11.72	11.89	118.06	0.29	33.20	1.32	34.53	0.51	1.23	1.74	0.00	22,703.45	22,703.45	1.11	0.00	22,726.82
Total	**20.55**	**110.93**	**181.13**	**0.52**	**40.37**	**4.68**	**45.06**	**0.72**	**4.32**	**5.04**	**0.00**	**44,723.60**	**44,723.60**	**1.50**	**0.00**	**44,755.18**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.40	2.57	2.92	0.01		0.13	0.13		0.13	0.13	0.00	478.23	478.23	0.03	0.00	478.91
Total	**0.40**	**2.57**	**2.92**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.91**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.83	99.04	63.07	0.23	0.63	3.36	3.99	0.21	3.09	3.30	0.00	22,020.15	22,020.15	0.39	0.00	22,028.36
Worker	11.72	11.89	118.06	0.29	1.42	1.32	2.75	0.51	1.23	1.74	0.00	22,703.45	22,703.45	1.11	0.00	22,726.82
Total	**20.55**	**110.93**	**181.13**	**0.52**	**2.05**	**4.68**	**6.74**	**0.72**	**4.32**	**5.04**	**0.00**	**44,723.60**	**44,723.60**	**1.50**	**0.00**	**44,755.18**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.43	94.86	60.37	0.23	7.20	3.22	10.42	0.21	2.96	3.17	0.00	22,125.34	22,125.34	0.37	0.00	22,133.14
Worker	11.29	11.14	111.27	0.29	33.33	1.33	34.66	0.51	1.23	1.74	0.00	22,357.23	22,357.23	1.05	0.00	22,379.37
Total	**19.72**	**106.00**	**171.64**	**0.52**	**40.53**	**4.55**	**45.08**	**0.72**	**4.19**	**4.91**	**0.00**	**44,482.57**	**44,482.57**	**1.42**	**0.00**	**44,512.51**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.37	2.34	2.91	0.01		0.11	0.11		0.11	0.11	0.00	480.06	480.06	0.03	0.00	480.68
Total	**0.37**	**2.34**	**2.91**	**0.01**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**480.06**	**480.06**	**0.03**	**0.00**	**480.68**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.43	94.86	60.37	0.23	0.63	3.22	3.85	0.21	2.96	3.17	0.00	22,125.34	22,125.34	0.37	0.00	22,133.14
Worker	11.29	11.14	111.27	0.29	1.43	1.33	2.76	0.51	1.23	1.74	0.00	22,357.23	22,357.23	1.05	0.00	22,379.37
Total	**19.72**	**106.00**	**171.64**	**0.52**	**2.06**	**4.55**	**6.61**	**0.72**	**4.19**	**4.91**	**0.00**	**44,482.57**	**44,482.57**	**1.42**	**0.00**	**44,512.51**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.01	90.82	57.23	0.23	7.17	3.09	10.26	0.21	2.84	3.05	0.00	22,060.57	22,060.57	0.35	0.00	22,067.96
Worker	10.88	10.43	106.12	0.29	33.20	1.36	34.56	0.51	1.26	1.77	0.00	22,085.59	22,085.59	1.01	0.00	22,106.89
Total	**18.89**	**101.25**	**163.35**	**0.52**	**40.37**	**4.45**	**44.82**	**0.72**	**4.10**	**4.82**	**0.00**	**44,146.16**	**44,146.16**	**1.36**	**0.00**	**44,174.85**

3.4 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.10	2.88	0.01		0.10	0.10		0.10	0.10	0.00	478.23	478.23	0.03	0.00	478.79
Total	**0.33**	**2.10**	**2.88**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**478.23**	**478.23**	**0.03**	**0.00**	**478.79**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	8.01	90.82	57.23	0.23	0.63	3.09	3.72	0.21	2.84	3.05	0.00	22,060.57	22,060.57	0.35	0.00	22,067.96
Worker	10.88	10.43	106.12	0.29	1.42	1.36	2.78	0.51	1.26	1.77	0.00	22,085.59	22,085.59	1.01	0.00	22,106.89
Total	**18.89**	**101.25**	**163.35**	**0.52**	**2.05**	**4.45**	**6.50**	**0.72**	**4.10**	**4.82**	**0.00**	**44,146.16**	**44,146.16**	**1.36**	**0.00**	**44,174.85**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.66	87.39	54.56	0.23	7.14	2.99	10.13	0.21	2.75	2.95	0.00	21,993.60	21,993.60	0.34	0.00	22,000.64
Worker	10.45	9.78	99.99	0.29	33.08	1.35	34.43	0.51	1.25	1.76	0.00	21,639.60	21,639.60	0.96	0.00	21,659.81
Total	**18.11**	**97.17**	**154.55**	**0.52**	**40.22**	**4.34**	**44.56**	**0.72**	**4.00**	**4.71**	**0.00**	**43,633.20**	**43,633.20**	**1.30**	**0.00**	**43,660.45**

3.4 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.31	1.89	2.86	0.01		0.08	0.08		0.08	0.08	0.00	476.40	476.40	0.02	0.00	476.92
Total	**0.31**	**1.89**	**2.86**	**0.01**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.92**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.66	87.39	54.56	0.23	0.63	2.99	3.61	0.21	2.75	2.95	0.00	21,993.60	21,993.60	0.34	0.00	22,000.64
Worker	10.45	9.78	99.99	0.29	1.42	1.35	2.77	0.51	1.25	1.76	0.00	21,639.60	21,639.60	0.96	0.00	21,659.81
Total	**18.11**	**97.17**	**154.55**	**0.52**	**2.05**	**4.34**	**6.38**	**0.72**	**4.00**	**4.71**	**0.00**	**43,633.20**	**43,633.20**	**1.30**	**0.00**	**43,660.45**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.40	84.85	52.54	0.23	7.14	2.91	10.05	0.21	2.67	2.88	0.00	22,009.60	22,009.60	0.32	0.00	22,016.37
Worker	10.05	9.18	94.52	0.29	33.08	1.35	34.43	0.51	1.26	1.77	0.00	21,308.66	21,308.66	0.92	0.00	21,327.99
Total	**17.45**	**94.03**	**147.06**	**0.52**	**40.22**	**4.26**	**44.48**	**0.72**	**3.93**	**4.65**	**0.00**	**43,318.26**	**43,318.26**	**1.24**	**0.00**	**43,344.36**

3.4 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.29	1.72	2.86	0.01		0.07	0.07		0.07	0.07	0.00	476.40	476.40	0.02	0.00	476.89
Total	**0.29**	**1.72**	**2.86**	**0.01**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.40	84.85	52.54	0.23	0.63	2.91	3.53	0.21	2.67	2.88	0.00	22,009.60	22,009.60	0.32	0.00	22,016.37
Worker	10.05	9.18	94.52	0.29	1.42	1.35	2.77	0.51	1.26	1.77	0.00	21,308.66	21,308.66	0.92	0.00	21,327.99
Total	**17.45**	**94.03**	**147.06**	**0.52**	**2.05**	**4.26**	**6.30**	**0.72**	**3.93**	**4.65**	**0.00**	**43,318.26**	**43,318.26**	**1.24**	**0.00**	**43,344.36**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.21	83.38	50.77	0.23	7.20	2.87	10.06	0.21	2.64	2.84	0.00	22,195.44	22,195.44	0.31	0.00	22,202.04
Worker	9.78	8.73	90.58	0.29	33.33	1.36	34.70	0.51	1.27	1.78	0.00	21,170.64	21,170.64	0.89	0.00	21,189.37
Total	**16.99**	**92.11**	**141.35**	**0.52**	**40.53**	**4.23**	**44.76**	**0.72**	**3.91**	**4.62**	**0.00**	**43,366.08**	**43,366.08**	**1.20**	**0.00**	**43,391.41**

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.58	2.87	0.01		0.06	0.06		0.06	0.06	0.00	480.06	480.06	0.02	0.00	480.53
Total	**0.28**	**1.58**	**2.87**	**0.01**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.53**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.21	83.38	50.77	0.23	0.63	2.87	3.50	0.21	2.64	2.84	0.00	22,195.44	22,195.44	0.31	0.00	22,202.04
Worker	9.78	8.73	90.58	0.29	1.43	1.36	2.79	0.51	1.27	1.78	0.00	21,170.64	21,170.64	0.89	0.00	21,189.37
Total	**16.99**	**92.11**	**141.35**	**0.52**	**2.06**	**4.23**	**6.29**	**0.72**	**3.91**	**4.62**	**0.00**	**43,366.08**	**43,366.08**	**1.20**	**0.00**	**43,391.41**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.97	81.01	48.92	0.23	7.14	2.79	9.93	0.21	2.56	2.77	0.00	22,037.79	22,037.79	0.30	0.00	22,044.15
Worker	9.38	8.21	85.88	0.29	33.08	1.36	34.44	0.51	1.26	1.77	0.00	20,741.03	20,741.03	0.84	0.00	20,758.77
Total	**16.35**	**89.22**	**134.80**	**0.52**	**40.22**	**4.15**	**44.37**	**0.72**	**3.82**	**4.54**	**0.00**	**42,778.82**	**42,778.82**	**1.14**	**0.00**	**42,802.92**

3.4 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.85	0.01		0.05	0.05		0.05	0.05	0.00	476.40	476.40	0.02	0.00	476.83
Total	**0.26**	**1.44**	**2.85**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.83**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.97	81.01	48.92	0.23	0.63	2.79	3.41	0.21	2.56	2.77	0.00	22,037.79	22,037.79	0.30	0.00	22,044.15
Worker	9.38	8.21	85.88	0.29	1.42	1.36	2.77	0.51	1.26	1.77	0.00	20,741.03	20,741.03	0.84	0.00	20,758.77
Total	**16.35**	**89.22**	**134.80**	**0.52**	**2.05**	**4.15**	**6.18**	**0.72**	**3.82**	**4.54**	**0.00**	**42,778.82**	**42,778.82**	**1.14**	**0.00**	**42,802.92**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	7.17	2.80	9.97	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**40.37**	**4.16**	**44.54**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.26	1.44	2.86	0.01		0.05	0.05		0.05	0.05	0.00	478.23	478.23	0.02	0.00	478.66
Total	**0.26**	**1.44**	**2.86**	**0.01**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.66**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	7.00	81.32	49.11	0.23	0.63	2.80	3.43	0.21	2.57	2.78	0.00	22,122.55	22,122.55	0.30	0.00	22,128.93
Worker	9.41	8.25	86.21	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	20,820.80	20,820.80	0.85	0.00	20,838.61
Total	**16.41**	**89.57**	**135.32**	**0.52**	**2.05**	**4.16**	**6.22**	**0.72**	**3.83**	**4.56**	**0.00**	**42,943.35**	**42,943.35**	**1.15**	**0.00**	**42,967.54**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	7.17	2.63	9.80	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	33.20	1.37	34.58	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**40.37**	**4.00**	**44.38**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	0.63	2.63	3.26	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	1.42	1.37	2.79	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**2.05**	**4.00**	**6.05**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	7.17	2.63	9.80	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	33.20	1.37	34.58	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**40.37**	**4.00**	**44.38**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.85	0.01		0.02	0.02		0.02	0.02	0.00	478.23	478.23	0.02	0.00	478.60
Total	**0.22**	**1.05**	**2.85**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.42	76.19	44.54	0.23	0.63	2.63	3.26	0.21	2.42	2.63	0.00	22,165.51	22,165.51	0.28	0.00	22,171.32
Worker	8.06	6.57	72.06	0.29	1.42	1.37	2.79	0.51	1.26	1.78	0.00	19,863.44	19,863.44	0.73	0.00	19,878.74
Total	**14.48**	**82.76**	**116.60**	**0.52**	**2.05**	**4.00**	**6.05**	**0.72**	**3.68**	**4.41**	**0.00**	**42,028.95**	**42,028.95**	**1.01**	**0.00**	**42,050.06**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.86	0.01		0.02	0.02		0.02	0.02	0.00	480.06	480.06	0.02	0.00	480.43
Total	**0.22**	**1.05**	**2.86**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.44	76.48	44.71	0.23	7.20	2.64	9.83	0.21	2.43	2.64	0.00	22,250.44	22,250.44	0.28	0.00	22,256.27
Worker	8.09	6.60	72.34	0.29	33.33	1.38	34.71	0.51	1.27	1.78	0.00	19,939.55	19,939.55	0.73	0.00	19,954.90
Total	**14.53**	**83.08**	**117.05**	**0.52**	**40.53**	**4.02**	**44.54**	**0.72**	**3.70**	**4.42**	**0.00**	**42,189.99**	**42,189.99**	**1.01**	**0.00**	**42,211.17**

3.4 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.86	0.01		0.02	0.02		0.02	0.02	0.00	480.06	480.06	0.02	0.00	480.43
Total	**0.22**	**1.05**	**2.86**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.44	76.48	44.71	0.23	0.63	2.64	3.27	0.21	2.43	2.64	0.00	22,250.44	22,250.44	0.28	0.00	22,256.27
Worker	8.09	6.60	72.34	0.29	1.43	1.38	2.80	0.51	1.27	1.78	0.00	19,939.55	19,939.55	0.73	0.00	19,954.90
Total	**14.53**	**83.08**	**117.05**	**0.52**	**2.06**	**4.02**	**6.07**	**0.72**	**3.70**	**4.42**	**0.00**	**42,189.99**	**42,189.99**	**1.01**	**0.00**	**42,211.17**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	7.14	2.62	9.76	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	33.08	1.37	34.44	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**40.22**	**3.99**	**44.20**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	0.63	2.62	3.24	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	1.42	1.37	2.78	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**2.05**	**3.99**	**6.02**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	7.14	2.62	9.76	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	33.08	1.37	34.44	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**40.22**	**3.99**	**44.20**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.22	1.05	2.84	0.01		0.02	0.02		0.02	0.02	0.00	476.40	476.40	0.02	0.00	476.76
Total	**0.22**	**1.05**	**2.84**	**0.01**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**476.40**	**476.40**	**0.02**	**0.00**	**476.76**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.40	75.90	44.37	0.23	0.63	2.62	3.24	0.21	2.41	2.62	0.00	22,080.58	22,080.58	0.28	0.00	22,086.37
Worker	8.03	6.55	71.78	0.29	1.42	1.37	2.78	0.51	1.26	1.77	0.00	19,787.34	19,787.34	0.73	0.00	19,802.57
Total	**14.43**	**82.45**	**116.15**	**0.52**	**2.05**	**3.99**	**6.02**	**0.72**	**3.67**	**4.39**	**0.00**	**41,867.92**	**41,867.92**	**1.01**	**0.00**	**41,888.94**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.91	2.84	0.01		0.01	0.01		0.01	0.01	0.00	478.23	478.23	0.02	0.00	478.57
Total	**0.20**	**0.91**	**2.84**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.13	74.52	42.38	0.23	7.17	2.55	9.72	0.21	2.34	2.55	0.00	22,212.05	22,212.05	0.26	0.00	22,217.57
Worker	7.05	5.59	63.46	0.29	33.20	1.36	34.57	0.51	1.26	1.78	0.00	19,353.20	19,353.20	0.65	0.00	19,366.88
Total	**13.18**	**80.11**	**105.84**	**0.52**	**40.37**	**3.91**	**44.29**	**0.72**	**3.60**	**4.33**	**0.00**	**41,565.25**	**41,565.25**	**0.91**	**0.00**	**41,584.45**

3.4 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.91	2.84	0.01		0.01	0.01		0.01	0.01	0.00	478.23	478.23	0.02	0.00	478.57
Total	**0.20**	**0.91**	**2.84**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**478.23**	**478.23**	**0.02**	**0.00**	**478.57**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.13	74.52	42.38	0.23	0.63	2.55	3.18	0.21	2.34	2.55	0.00	22,212.05	22,212.05	0.26	0.00	22,217.57
Worker	7.05	5.59	63.46	0.29	1.42	1.36	2.79	0.51	1.26	1.78	0.00	19,353.20	19,353.20	0.65	0.00	19,366.88
Total	**13.18**	**80.11**	**105.84**	**0.52**	**2.05**	**3.91**	**5.97**	**0.72**	**3.60**	**4.33**	**0.00**	**41,565.25**	**41,565.25**	**0.91**	**0.00**	**41,584.45**

3.4 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.92	2.85	0.01		0.01	0.01		0.01	0.01	0.00	480.06	480.06	0.02	0.00	480.40
Total	**0.20**	**0.92**	**2.85**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.40**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.16	74.81	42.54	0.24	7.20	2.56	9.75	0.21	2.35	2.56	0.00	22,297.15	22,297.15	0.26	0.00	22,302.70
Worker	7.08	5.61	63.71	0.29	33.33	1.37	34.70	0.51	1.27	1.78	0.00	19,427.35	19,427.35	0.65	0.00	19,441.08
Total	**13.24**	**80.42**	**106.25**	**0.53**	**40.53**	**3.93**	**44.45**	**0.72**	**3.62**	**4.34**	**0.00**	**41,724.50**	**41,724.50**	**0.91**	**0.00**	**41,743.78**

3.4 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	0.92	2.85	0.01		0.01	0.01		0.01	0.01	0.00	480.06	480.06	0.02	0.00	480.40
Total	**0.20**	**0.92**	**2.85**	**0.01**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**480.06**	**480.06**	**0.02**	**0.00**	**480.40**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	6.16	74.81	42.54	0.24	0.63	2.56	3.19	0.21	2.35	2.56	0.00	22,297.15	22,297.15	0.26	0.00	22,302.70
Worker	7.08	5.61	63.71	0.29	1.43	1.37	2.80	0.51	1.27	1.78	0.00	19,427.35	19,427.35	0.65	0.00	19,441.08
Total	**13.24**	**80.42**	**106.25**	**0.53**	**2.06**	**3.93**	**5.99**	**0.72**	**3.62**	**4.34**	**0.00**	**41,724.50**	**41,724.50**	**0.91**	**0.00**	**41,743.78**

3.4 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.53	1.66	0.00		0.01	0.01		0.01	0.01	0.00	280.34	280.34	0.01	0.00	280.54
Total	**0.12**	**0.53**	**1.66**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**280.34**	**280.34**	**0.01**	**0.00**	**280.54**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	3.60	43.68	24.84	0.14	4.20	1.49	5.70	0.12	1.37	1.50	0.00	13,020.86	13,020.86	0.15	0.00	13,024.09
Worker	4.13	3.28	37.20	0.17	19.46	0.80	20.26	0.30	0.74	1.04	0.00	11,344.98	11,344.98	0.38	0.00	11,353.00
Total	**7.73**	**46.96**	**62.04**	**0.31**	**23.66**	**2.29**	**25.96**	**0.42**	**2.11**	**2.54**	**0.00**	**24,365.84**	**24,365.84**	**0.53**	**0.00**	**24,377.09**

3.4 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.53	1.66	0.00		0.01	0.01		0.01	0.01	0.00	280.34	280.34	0.01	0.00	280.54
Total	**0.12**	**0.53**	**1.66**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**280.34**	**280.34**	**0.01**	**0.00**	**280.54**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	3.60	43.68	24.84	0.14	0.37	1.49	1.86	0.12	1.37	1.50	0.00	13,020.86	13,020.86	0.15	0.00	13,024.09
Worker	4.13	3.28	37.20	0.17	0.83	0.80	1.63	0.30	0.74	1.04	0.00	11,344.98	11,344.98	0.38	0.00	11,353.00
Total	**7.73**	**46.96**	**62.04**	**0.31**	**1.20**	**2.29**	**3.49**	**0.42**	**2.11**	**2.54**	**0.00**	**24,365.84**	**24,365.84**	**0.53**	**0.00**	**24,377.09**

3.5 Paving - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.52	1.03	0.00		0.02	0.02		0.02	0.02	0.00	142.89	142.89	0.01	0.00	143.04
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.52**	**1.03**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**142.89**	**142.89**	**0.01**	**0.00**	**143.04**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.38	5.38	0.00	0.00	5.39
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.38**	**5.38**	**0.00**	**0.00**	**5.39**

3.5 Paving - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.09	0.52	1.03	0.00		0.02	0.02		0.02	0.02	0.00	142.89	142.89	0.01	0.00	143.04
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.52**	**1.03**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**142.89**	**142.89**	**0.01**	**0.00**	**143.04**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.38	5.38	0.00	0.00	5.39
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.38**	**5.38**	**0.00**	**0.00**	**5.39**

3.5 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	1.25	2.49	0.00		0.04	0.04		0.04	0.04	0.00	345.32	345.32	0.02	0.00	345.67
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**1.25**	**2.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**345.32**	**345.32**	**0.02**	**0.00**	**345.67**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.01	13.01	0.00	0.00	13.02
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**13.01**	**13.01**	**0.00**	**0.00**	**13.02**

3.5 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.21	1.25	2.49	0.00		0.04	0.04		0.04	0.04	0.00	345.32	345.32	0.02	0.00	345.67
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**1.25**	**2.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**345.32**	**345.32**	**0.02**	**0.00**	**345.67**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.01	13.01	0.00	0.00	13.02
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.01**	**13.01**	**0.00**	**0.00**	**13.02**

3.5 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.30	0.60	0.00		0.01	0.01		0.01	0.01	0.00	83.35	83.35	0.00	0.00	83.44
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.30**	**0.60**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**83.35**	**83.35**	**0.00**	**0.00**	**83.44**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.5 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.05	0.30	0.60	0.00		0.01	0.01		0.01	0.01	0.00	83.35	83.35	0.00	0.00	83.44
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.30**	**0.60**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**83.35**	**83.35**	**0.00**	**0.00**	**83.44**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	3.14	0.00	0.00	3.14
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.6 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	283.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.18	0.00		0.00	0.00		0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**284.00**	**0.07**	**0.18**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**25.12**	**25.12**	**0.00**	**0.00**	**25.14**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.06	0.84	9.58	0.04	5.01	0.21	5.22	0.08	0.19	0.27	0.00	2,921.52	2,921.52	0.10	0.00	2,923.58
Total	**1.06**	**0.84**	**9.58**	**0.04**	**5.01**	**0.21**	**5.22**	**0.08**	**0.19**	**0.27**	**0.00**	**2,921.52**	**2,921.52**	**0.10**	**0.00**	**2,923.58**

3.6 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	283.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.18	0.00		0.00	0.00		0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**284.00**	**0.07**	**0.18**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**25.12**	**25.12**	**0.00**	**0.00**	**25.14**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.06	0.84	9.58	0.04	0.21	0.21	0.42	0.08	0.19	0.27	0.00	2,921.52	2,921.52	0.10	0.00	2,923.58
Total	**1.06**	**0.84**	**9.58**	**0.04**	**0.21**	**0.21**	**0.42**	**0.08**	**0.19**	**0.27**	**0.00**	**2,921.52**	**2,921.52**	**0.10**	**0.00**	**2,923.58**

3.6 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	338.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.21	0.00		0.00	0.00		0.00	0.00	0.00	29.97	29.97	0.00	0.00	29.99
Total	**338.78**	**0.09**	**0.21**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**29.97**	**29.97**	**0.00**	**0.00**	**29.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.14	0.90	10.46	0.05	5.98	0.24	6.22	0.09	0.23	0.32	0.00	3,431.94	3,431.94	0.11	0.00	3,434.22
Total	**1.14**	**0.90**	**10.46**	**0.05**	**5.98**	**0.24**	**6.22**	**0.09**	**0.23**	**0.32**	**0.00**	**3,431.94**	**3,431.94**	**0.11**	**0.00**	**3,434.22**

3.6 Architectural Coating - 2040

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	338.77					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.21	0.00		0.00	0.00		0.00	0.00	0.00	29.97	29.97	0.00	0.00	29.99
Total	**338.78**	**0.09**	**0.21**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**29.97**	**29.97**	**0.00**	**0.00**	**29.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	1.14	0.90	10.46	0.05	0.26	0.24	0.50	0.09	0.23	0.32	0.00	3,431.94	3,431.94	0.11	0.00	3,434.22
Total	**1.14**	**0.90**	**10.46**	**0.05**	**0.26**	**0.24**	**0.50**	**0.09**	**0.23**	**0.32**	**0.00**	**3,431.94**	**3,431.94**	**0.11**	**0.00**	**3,434.22**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Unmitigated	330.84	640.53	2,985.85	6.16	625.02	34.57	659.59	9.99	33.33	43.32	0.00	467,975.31	467,975.31	21.34	0.00	468,423.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	107,160.00	107,160.00	107160.00	305,974,308	305,974,308
City Park	6,559.80	6,559.80	6559.80	14,004,207	14,004,207
General Light Industry	178,951.45	178,951.45	178951.45	522,450,751	522,450,751
Government Office Building	64,900.04	64,900.04	64900.04	111,295,816	111,295,816
Single Family Housing	14,784.78	14,784.78	14784.78	42,215,032	42,215,032
Strip Mall	125,316.36	125,316.36	125316.36	192,991,340	192,991,340
Total	497,672.44	497,672.44	497,672.44	1,188,931,453	1,188,931,453

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Mid Rise	10.80	7.30	7.50	41.60	18.80	39.60
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00
Single Family Housing	10.80	7.30	7.50	41.60	18.80	39.60
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	146,201.88	146,201.88	5.43	2.06	146,954.44
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	146,201.88	146,201.88	5.43	2.06	146,954.44
NaturalGas Mitigated	3.53	31.50	22.54	0.19		0.00	2.44		0.00	2.44	0.00	34,951.49	34,951.49	0.67	0.64	35,164.20
NaturalGas Unmitigated	3.53	31.50	22.54	0.19		0.00	2.44		0.00	2.44	0.00	34,951.49	34,951.49	0.67	0.64	35,164.20
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.41182e+008	0.76	6.51	2.77	0.04		0.00	0.53		0.00	0.53	0.00	7,534.01	7,534.01	0.14	0.14	7,579.86
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	2.3008e+008	1.24	11.28	9.47	0.07		0.00	0.86		0.00	0.86	0.00	12,277.97	12,277.97	0.24	0.23	12,352.69
Government Office Building	2.15276e+008	1.16	10.55	8.86	0.06		0.00	0.80		0.00	0.80	0.00	11,487.93	11,487.93	0.22	0.21	11,557.84
Single Family Housing	6.41487e+007	0.35	2.96	1.26	0.02		0.00	0.24		0.00	0.24	0.00	3,423.22	3,423.22	0.07	0.06	3,444.05
Strip Mall	4.27937e+006	0.02	0.21	0.18	0.00		0.00	0.02		0.00	0.02	0.00	228.36	228.36	0.00	0.00	229.75
Total		**3.53**	**31.51**	**22.54**	**0.19**		**0.00**	**2.45**		**0.00**	**2.45**	**0.00**	**34,951.49**	**34,951.49**	**0.67**	**0.64**	**35,164.19**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments Mid Rise	1.41182e+008	0.76	6.51	2.77	0.04		0.00	0.53		0.00	0.53	0.00	7,534.01	7,534.01	0.14	0.14	7,579.86
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	2.3008e+008	1.24	11.28	9.47	0.07		0.00	0.86		0.00	0.86	0.00	12,277.97	12,277.97	0.24	0.23	12,352.69
Government Office Building	2.15276e+008	1.16	10.55	8.86	0.06		0.00	0.80		0.00	0.80	0.00	11,487.93	11,487.93	0.22	0.21	11,557.84
Single Family Housing	6.41487e+007	0.35	2.96	1.26	0.02		0.00	0.24		0.00	0.24	0.00	3,423.22	3,423.22	0.07	0.06	3,444.05
Strip Mall	4.27937e+006	0.02	0.21	0.18	0.00		0.00	0.02		0.00	0.02	0.00	228.36	228.36	0.00	0.00	229.75
Total		**3.53**	**31.51**	**22.54**	**0.19**		**0.00**	**2.45**		**0.00**	**2.45**	**0.00**	**34,951.49**	**34,951.49**	**0.67**	**0.64**	**35,164.19**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	4.67112e+007					16,543.25	0.61	0.23	16,628.40
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	1.75634e+008					62,202.58	2.31	0.88	62,522.76
Government Office Building	1.53447e+008					54,344.72	2.02	0.77	54,624.45
Single Family Housing	1.07841e+007					3,819.29	0.14	0.05	3,838.95
Strip Mall	2.62368e+007					9,292.05	0.35	0.13	9,339.87
Total						**146,201.89**	**5.43**	**2.06**	**146,954.43**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	4.67112e+007					16,543.25	0.61	0.23	16,628.40
City Park	0					0.00	0.00	0.00	0.00
General Light Industry	1.75634e+008					62,202.58	2.31	0.88	62,522.76
Government Office Building	1.53447e+008					54,344.72	2.02	0.77	54,624.45
Single Family Housing	1.07841e+007					3,819.29	0.14	0.05	3,838.95
Strip Mall	2.62368e+007					9,292.05	0.35	0.13	9,339.87
Total						**146,201.89**	**5.43**	**2.06**	**146,954.43**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Unmitigated	1,200.71	14.14	1,279.02	0.46		0.00	165.27		0.00	165.25	15,573.90	19,779.35	35,353.25	14.80	1.46	36,118.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	62.28					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	187.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	947.34	12.84	1,165.47	0.46		0.00	164.64		0.00	164.63	15,573.90	19,594.40	35,168.31	14.62	1.46	35,929.37
Landscaping	3.46	1.31	113.55	0.01		0.00	0.62		0.00	0.62	0.00	184.94	184.94	0.18	0.00	188.73
Total	**1,200.71**	**14.15**	**1,279.02**	**0.47**		**0.00**	**165.26**		**0.00**	**165.25**	**15,573.90**	**19,779.34**	**35,353.25**	**14.80**	**1.46**	**36,118.10**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	62.28					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	187.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	947.34	12.84	1,165.47	0.46		0.00	164.64		0.00	164.63	15,573.90	19,594.40	35,168.31	14.62	1.46	35,929.37
Landscaping	3.46	1.31	113.55	0.01		0.00	0.62		0.00	0.62	0.00	184.94	184.94	0.18	0.00	188.73
Total	**1,200.71**	**14.15**	**1,279.02**	**0.47**		**0.00**	**165.26**		**0.00**	**165.25**	**15,573.90**	**19,779.34**	**35,353.25**	**14.80**	**1.46**	**36,118.10**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					373,203.65	2,434.00	65.27	444,549.92
Unmitigated					466,504.56	3,042.51	81.58	555,687.40
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	872.738 / 550.205					6,199.34	26.87	0.75	6,995.44
City Park	0 / 172.765					679.78	0.03	0.01	683.28
General Light Industry	95953.6 / 0					443,568.26	2,945.37	78.87	529,871.00
Government Office Building	2033.6 / 1246.4					14,305.04	62.61	1.74	16,159.34
Single Family Housing	109.589 / 69.0888					778.45	3.37	0.09	878.41
Strip Mall	138.421 / 84.8386					973.70	4.26	0.12	1,099.92
Total						**466,504.57**	**3,042.51**	**81.58**	**555,687.39**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	698.191 / 440.164					4,959.47	21.50	0.60	5,596.36
City Park	0 / 138.212					543.83	0.02	0.01	546.62
General Light Industry	76762.9 / 0					354,854.61	2,356.30	63.10	423,896.80
Government Office Building	1626.88 / 997.12					11,444.03	50.08	1.39	12,927.47
Single Family Housing	87.6713 / 55.271					622.76	2.70	0.08	702.73
Strip Mall	110.737 / 67.8708					778.96	3.41	0.09	879.93
Total						**373,203.66**	**2,434.01**	**65.27**	**444,549.91**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					234,450.53	13,855.63	0.00	525,418.74
Unmitigated					234,450.53	13,855.63	0.00	525,418.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	6161.7					1,250.77	73.92	0.00	2,803.05
City Park	12.47					2.53	0.15	0.00	5.67
General Light Industry	1.13535e+006					230,466.04	13,620.15	0.00	516,489.25
Government Office Building	9520.04					1,932.48	114.21	0.00	4,330.82
Single Family Housing	1972.51					400.40	23.66	0.00	897.33
Strip Mall	1962.16					398.30	23.54	0.00	892.62
Total						**234,450.52**	**13,855.63**	**0.00**	**525,418.74**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	6161.7					1,250.77	73.92	0.00	2,803.05
City Park	12.47					2.53	0.15	0.00	5.67
General Light Industry	1.13535e+006					230,466.04	13,620.15	0.00	516,489.25
Government Office Building	9520.04					1,932.48	114.21	0.00	4,330.82
Single Family Housing	1972.51					400.40	23.66	0.00	897.33
Strip Mall	1962.16					398.30	23.54	0.00	892.62
Total						**234,450.52**	**13,855.63**	**0.00**	**525,418.74**

9.0 Vegetation

ATTACHMENT 5

GHG Emissions Reduction Calculations

THIS PAGE IS INTENTIONALLY BLANK.

	New Development BAU (2020)				New Development (2020)				% Reduction
	CO2	**CH4**	**N2O**	**CO2E**	**CO2**	**CH4**	**N2O**	**CO2E**	
Vehicles	668,536.16	30.49	0.00	669,176.49	467,975.31	21.34	0.00	468,423.54	30.0%
Energy	190,107.66	6.38	2.84	191,121.54	181,153.37	6.10	2.70	182,188.63	4.7%
Area	35,353.25	14.80	1.46	36,118.10	35,353.25	14.80	1.46	36,118.10	0.0%
Water	466,504.56	3,042.51	81.58	555,687.40	373,203.65	2,434.00	65.27	444,549.92	20.0%
Waste	234,450.53	13,855.63	0.00	525,418.74	234,450.53	13,855.63	0.00	525,418.74	0.0%
Construction	1,037,454.28	31.14	0.00	1,038,108.29	1,037,454.28	31.14	0.00	1,038,108.29	0.0%
Construction (Amortized Over 30 Years)	34,581.81	1.04	0.00	34,603.61	34,581.81	1.04	0.00	34,603.61	0.0%
TOTAL	1,629,533.97	16,950.84	85.88	**2,012,125.88**	1,326,717.92	16,332.91	69.43	**1,691,302.54**	**15.9%**