Air Quality Analysis Report
City of Barstow 2020 General Plan Update

Prepared for:
City of Barstow
Planning Department
220 East Mountain View Street, Suite A
Barstow, CA, 92311
760.255.5152

Contact: Gaither Loewenstein
Economic Development and Planning Manager

Prepared by:
FirstCarbon Solutions
621 E. Carnegie Drive
San Bernardino, CA 92408
909.884.2255

Contact: Dave Mitchell
Air Quality Services Manager

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SECTION 1: EXECUTIVE SUMMARY

1.1 - Purpose and Analysis Approach

The following air quality analysis was prepared to evaluate the impacts of implementing the 2020 General Plan Update. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.).

The City has identified 12 specific development areas with conceptual development scenarios for the 2020 General Plan Update. The development is assumed to occur by 2020 for analysis purposes. The level of detail regarding the scope and scale of development provides a basis for determining the potential impacts that would occur with the implementation of the 2020 General Plan Update. Specific development proposals will be required for each development area; however, the cumulative impacts and many of the localized impacts of the planned development are addressed by the analysis to allow tiering from the Master Environmental Impact Report (MEIR) when defined projects come forward.

The analysis is intended to provide sufficient detail regarding potential air quality impacts of development anticipated through the 2020 milestone year, and identify mitigation measures to reduce impacts. In addition, this analysis is structured to allow tiering for subsequent projects that are consistent with the 2020 General Plan Update and MEIR.

The analysis methodology follows Mojave Desert Air Quality Management District (MDAQMD) recommendations for quantification of emissions and evaluation of potential impacts to air resources. The MDAQMD adopted its California Environmental Quality Act and Federal Conformity Guidelines in 2011 (MDAQMD 2011).

The growth projected between the base year (2014) and the milestone year (2020) is the basis of the analysis. The emissions generated from development anticipated to occur during this period is compared to thresholds of significant impact. The analysis also examines air quality impacts related to the location of new development in proximity to existing sources of odors and toxic air contaminants (TAC) and provides procedures to follow when new, yet to be identified sources are proposed near existing sensitive land uses.

1.2 - Project Summary

The City of Barstow is located in western San Bernardino County (Exhibit 1). The City of Barstow General Plan Update (project) consists of an update to the City's General Plan, including the General Plan goals, policies, objectives, and scheduled programs for the preservation, improvement, and development of housing. The City, in adopting its General Plan, must consider economic, environmental, and fiscal factors, as well as community goals as set forth in the General Plan, in compliance with California Government Code Section 65580, et seq. A General Plan is the local government's long-term blueprint for development.

As stated earlier, the City of Barstow General Plan Update includes assumptions regarding the amount and location of development anticipated to occur prior to 2020 within the existing City limits. Specifically, development is anticipated to occur within 12 distinct development sites. A series of maps showing the General Plan planning area and the individual growth areas are provided in Exhibits 4 through 12. A detailed project description is provided in Section 2.

1.3 - Summary of Analysis Results

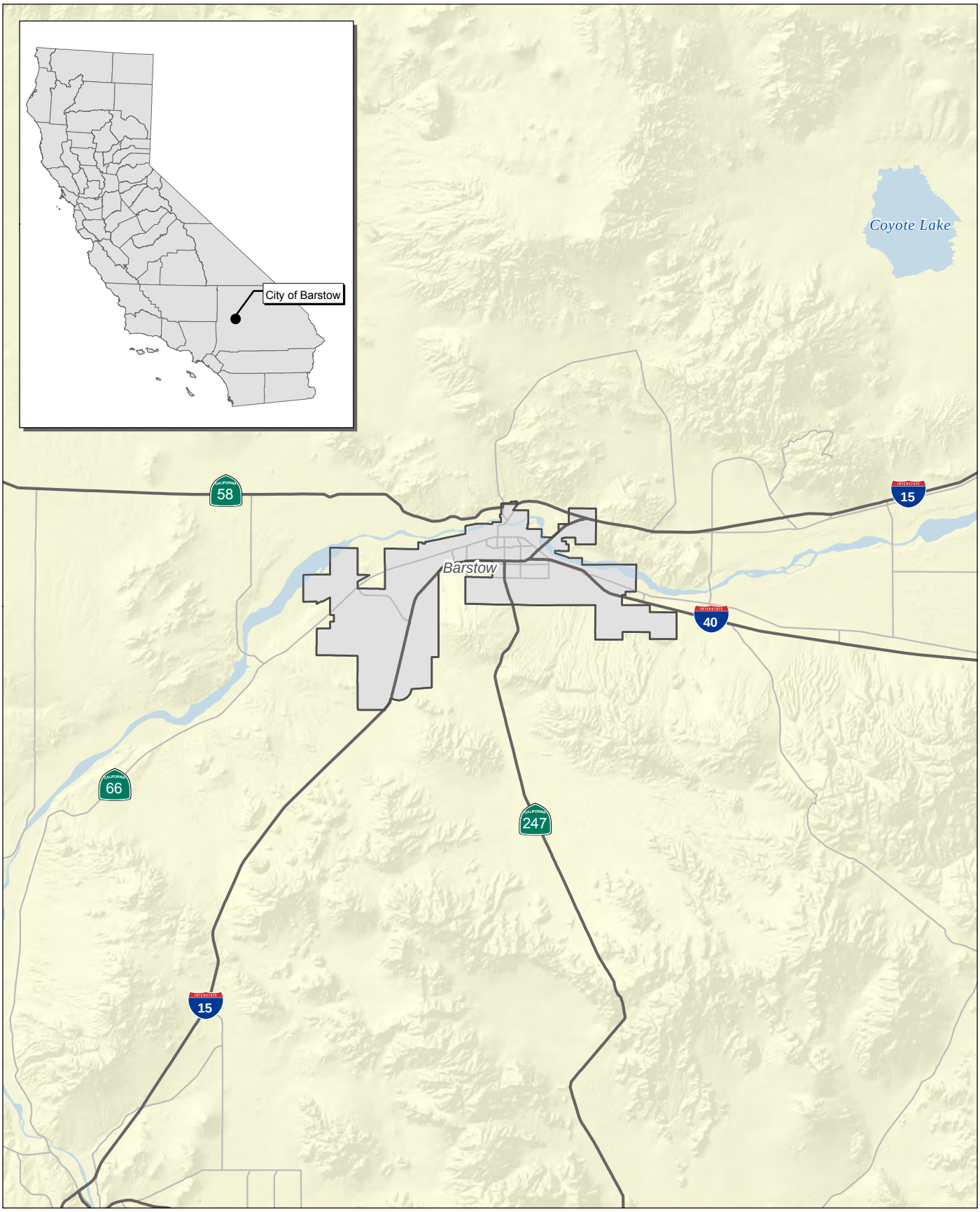
Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact**

Impact AIR-2: The project would not violate air quality standards or contribute substantially to an existing or projected air quality violation. **Less than significant impact**

Impact AIR-3: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Significant and unavoidable impact**

Impact AIR-4: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact**

Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact**



Source: Census 2000 Data, The CaSIL, ESRI

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

1.4 - Mitigation Measures Applied to the Project

Mitigation measures are applied to the project in the form of recommended General Plan Air Quality Goals and Policies. Table 1 provides an overview of the mitigation categories. Goal and policy details are provided below.

Table 1: Mitigation Measures Overview

Mitigation Category	Category Discussion
Communication, Cooperation, and Regional Coordination	Policies in this mitigation category are intended to improve coordination between multiple levels of government. All levels of government are responsible for improving air quality in the region. Often the responsibilities of one level of government overlap with another. In order to develop effective programs and reduce pollution emissions, effective communication, cooperation, and coordination are vital.
Education and Community Outreach	This mitigation category contains measures that assist in educating the general public on air quality issues and actions that individuals can take to improve air quality. Working together for a common interest can multiply the resources available to accomplish air quality goals.
Congestion Management and Transportation Control Measures	This mitigation category includes measures to support this Southern California Association of Government's strategies to increase the efficiency of transportation infrastructure and to reduce vehicle trips as identified in their transportation plans. Transportation control measures are most effective when infrastructure is in place that supports alternative transportation modes. This would include community-wide transportation improvements and on-site improvements at individual worksites and businesses.
Transportation Enhancement	Most sites in Barstow are designed to provide the most direct and convenient access by car to the exclusion of other transportation modes. Sites can be designed in ways that encourage pedestrian access and less-polluting transportation modes while still supporting access by motor vehicles.
Public Facilities and Operations	This mitigation category is focused on the City of Barstow's municipal operations. Local government should take a leadership role in reducing the emissions from its own vehicle fleet as a model for the private sector.
Environmental Assessment	This mitigation category includes consists of measures that utilize environmental assessment procedures to avoid, reduce, or otherwise address potential air quality impacts from development projects. The environmental assessment process required under CEQA is by far the most important tool for local government to communicate with other agencies and the public on the air quality impacts of development within a community. Strong and consistent application of CEQA can make a significant difference in project-level air quality impacts.

Table 1 (cont.): Mitigation Measures Overview

Mitigation Category	Category Discussion
Energy Efficiency and Conservation	Natural gas-burning appliances used for space heating, water heating, and cooking are sizable source of NO_x emissions. Consumption of electricity causes pollutant emissions when the power plant is fueled by fossil fuels. Local efforts to reduce energy consumption can improve air quality and save consumers money. Simple and cost-effective designs, technologies, and methods are available to achieve energy savings and reduce air pollutant emissions.
Air Quality, Land Use, and Transportation	The land use pattern and transportation system developed over the last 50 years has led to ever-increasing vehicle trips and vehicle miles traveled. New ways of developing the land and meeting our mobility needs are necessary to reverse this trend and to improve our air quality. Subcategories include: - Land use Pattern - Jobs/housing balance - Compact development These measures reduce motor vehicle trips and vehicle miles traveled, and increase average vehicle ridership (AVR).
Fugitive Dust and PM_{10}	The levels of PM_{10} (particulate matter less than 10 microns in diameter) exceed State and Federal health base standards. The Mojave Desert Air Quality District is designated as a moderate nonattainment area for PM_{10} and is subject to a series of Federal mandates aimed at achieving the Federal ambient air quality standards. Control efforts for sources under the jurisdiction of the City of Barstow significantly reduce these emissions.
Hazardous Emissions and Public Health	Public concern over exposure to toxic and hazardous emissions has never been greater. Past siting decisions for industrial and residential development have created conflicts where none should have existed. Providing appropriate areas for all types of development can minimize conflicts and promote economic growth.
Source: FCS 2014	

1.4.1 - Communication, Cooperation, and Regional Coordination

- **Goal 1:** Ensure effective communication, cooperation, and coordination in developing and operating community and regional air quality programs.
- **Policy 1.1:** Consult with the Mojave Desert Air Quality Management District (MDAQMD) during CEQA review for all discretionary projects meeting or exceeding District size thresholds and previously reviewed by the District.
- **Policy 1.2:** Coordinate with other jurisdictions in the MDAQMD to establish parallel air quality programs and implementation measures.
- **Policy 1.3:** Notify and request comments from neighboring jurisdictions and affected agencies during review of any General Plan amendment and other significant discretionary projects.
- **Policy 1.4:** Work with regional and local transit agencies to assess development project impacts on long-range transit plans and transit facilities during the planning stages of land use projects and ensure that potential impacts are avoided.

- **Policy 1.5:** Work with regional and local transit agencies to coordinate the City's transportation demand management (TDM) programs with regional transportation plans.
- **Policy 1.6:** Work with the MDAQMD, the Southern California Association of Governments (SCAG), and transit providers to implement the regional Air Quality Attainment Plans.
- **Goal 2:** Ensure planning for transportation infrastructure and public services are integrated with plans to improve air quality and reduce greenhouse gas emissions
- **Policy 2.1:** Review transportation infrastructure projects required for the mobility of future residents for consistency with air quality and greenhouse gas emission policies.
- **Policy 2.2:** Support the investment in cost-effective modeling and geographic information system (GIS) technology.

1.4.2 - Education and Community Outreach

- **Goal 3:** To increase awareness of community actions to improve air quality and reduce greenhouse gas emissions.
- **Policy 3.1:** Support and participate in the air quality education programs of the District.
- **Policy 3.2:** Educate residents on the linkage between land use, transportation, water and energy use and air pollution. Efforts should include measures that can be taken and resources that are available to improve air quality and reduce potential climate change impacts.
- **Policy 3.3:** Cooperate with public agencies and other jurisdictions to promote local and regional public transit service in Barstow.

1.4.3 - Congestion Management and Transportation Control Measures

- **Goal 4:** Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs.
- **Policy 4.1:** Utilize Transportation Demand Management (TDM) strategies as an integral component of the City's transportation program to reduce total vehicle trips on Barstow roadways and reduce the corresponding vehicle emissions.
  - Strategies to incentivize drivers to reduce solo driving:
  - Increase carpooling and vanpooling
  - Increase the use of transit, bicycling, and walking
  - Redistribute vehicle trips from peak periods to non-peak periods by shifting work times/days/locations
  - Encourage greater use of telecommuting
  - Other "first mile/last mile" strategies to allow travelers to easily connect to and from transit service at their origin and destination. These strategies include the development of mobility hubs around major transit stations, the integration of bicycling and transit through folding-bikes-on-buses programs, triple bike racks on buses, and dedicated racks on light and heavy rail vehicles
- **Policy 4.2:** Work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives and to provide facilities and programs that increase the effectiveness of transportation demand management (TDM) strategies and transportation control measures (TCMs) (e.g., employer-based trip reduction programs and transit programs).

- **Goal 5:** Invest in more efficient and effective transportation infrastructure, and support for trip reduction programs to reduce traffic congestion, vehicle trips and the need for costly new or expanded roadways.
- **Policy 5.1:** Vigorously pursue and use State and Federal funds earmarked for bicycle and transit improvements.
- **Policy 5.2:** Provide transportation and alternative transit infrastructure that allows the efficient local and regional movement of people, raw materials, and goods.
- **Policy 5.3:** Consider transportation system management strategies to increase the capacity of the existing road network prior to constructing more capacity (e.g., maximize the capacity of existing lanes before adding new lanes).
  Transportation system management (TSM) strategies increase the efficiency of the existing transportation system and reduce the need for costly system expansion. TSM strategies often use intelligent transportation system (ITS) technologies. These measures include signal synchronization, ramp metering, "at-speed" truck scales, and 5-1-1 traveler information systems. Strategic application of ITS technology on our transportation system can increase system productivity by as much as 5 percent.
- **Goal 6:** Construct infrastructure and facilities that support and encourages the use of alternative modes of travel, including a safe and comprehensive bicycle and pedestrian system that connects all parts of the City.
- **Policy 6.1:** Require dedication of land for bus turnouts and shelters at sites deemed appropriate and necessary by the City and the transit providers.
- **Policy 6.2:** Design arterial and collector streets to allow the efficient operation of public transit.
- **Policy 6.3:** Ensure that a comprehensive system of bikeways and pedestrian paths is planned and constructed in accordance with the General Plan.
- **Policy 6.4:** Ensure that upgrades to existing roads include bicycle and pedestrian improvements, consistent with General Plan policy.
- **Policy 6.5:** Require developers to provide bicycle racks, or enclosed and locked bicycle storage, at major activity centers, offices, and commercial establishments to serve patrons and employees.
- **Policy 6.6:** Provide information to encourage the use of transportation modes that minimize motor vehicle use and resulting air pollution and greenhouse gas emissions
- **Policy 6.7:** Work with Caltrans and transit providers to identify and implement park and ride lots with convenient access to public transit.
- **Policy 6.8:** Work with Caltrans and other appropriate agencies to improve bicycle and pedestrian mobility and safety at freeway crossings.

1.4.4 - Public Facilities and Operations

- **Goal 7:** Ensure City public facilities and operations provide leadership by example for implementing clean air and energy efficiency technologies in buildings and fleet
- **Policy 7.1:** City fleet vehicle operators shall develop and maintain a fiscally sound vehicle fleet inventory and prioritize replacement or conversion of existing conventional fuel vehicles with

clean fuel vehicles or hybrids as new vehicles are purchased and existing vehicles are retired from service.

1.4.5 - Environmental Assessment

- **Goal 8:** Ensure that projects subject to environmental review are thoroughly assessed using best available air quality modeling techniques and implement feasible mitigation measures to reduce significant environmental effects.
- **Policy 8.1:** Minimize air quality and climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land use projects and transportation system projects needed to accommodate expected City population growth.
- **Policy 8.2:** Analyze the air quality and climate change impacts of discretionary projects using applicable regulatory guidance; for example, the MDAQMD adopted CEQA and Federal Conformity Guidelines. When the new methodologies and thresholds are adopted by the MDAQMD, the City of Barstow will review and implement them as appropriate for specific projects.
- **Policy 8.3:** Require a health risk screening analysis for all projects that are subject to CEQA review and which have a potential to expose existing or planned sensitive receptor land uses to toxic air contaminants. Require a Health Risk Analysis for all projects for which the health risk screening analysis identifies the exposure as potentially significant.
- **Policy 8.4:** Use the City's environmental review process to impose appropriate mitigation measures on new development to reduce air quality and greenhouse gas emissions impacts.
- **Policy 8.5:** Identify the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year.
- **Policy 8.6:** Encourage developers to propose innovative measures to reduce air quality impacts, such as bike path and trail systems to facilitate non-vehicular transportation.

1.4.6 - Energy Efficiency and Conservation

- **Goal 9:** Minimize air emissions related to energy consumption and area sources in government operations and the community.
- **Policy 9.1:** Increase the use of energy conservation features, renewable sources of energy and low-emission equipment in new and existing development projects within the City.
- **Policy 9.2:** Encourage the use of solar-ready roofs into residential and commercial development. New residential development should include proper solar orientation (south-facing roof area sloped at 20° to 55° from the horizontal), clear access on the south sloped roof (no chimneys, heating vents, plumbing vents, etc.), electrical conduit installed for solar electric system wiring, plumbing installed for solar hot water systems, and space provided for a solar hot water storage tank. Roofs for commercial development should be designed to maximize potential area available for solar panels and provide electrical conduit to support future installation
- **Policy 9.3:** Promote urban forestry projects that shade buildings, homes, streets, pedestrian walkways, and urban core areas to reduce surface and ambient temperatures and reduce energy required for cooling.

- **Policy 9.4:** Initiate and sustain on-going efforts with local water agencies, utility providers and developers to establish and implement voluntary incentive-based programs to encourage the use of energy and water efficient designs and equipment in new and existing development projects within the City.
- **Policy 9.5:** Reduce water use and related energy use by using reclaimed water for landscaping where appropriate, financially feasible, and allowed by water quality regulations. Require new development areas that will be served with recycled water to be plumbed with a "purple pipe" system to facilitate the future use of recycled water.
- **Policy 9.6:** Work with local energy providers on voluntary incentive-based programs to encourage developers to use energy efficient designs and equipment beyond the requirements of Title 24.
- **Policy 9.7:** Work with local water and energy utilities and the building industry to develop or revise City design standards relating to solar orientation, water use, landscaping, use of cool paving surfaces, parking lot shading and such other measures oriented towards reducing energy demand
- **Policy 9.8:** Cooperate with the local building industry, utilities, and the District to develop enhanced energy conservation and sustainable building standards for new construction.
- **Policy 9.9:** Provide recycling programs for construction and demolition debris, and for commercial and/or community recycling of plastic, paper, green waste, and food waste to reduce energy consumption and greenhouse gas emissions.
- **Policy 9.10:** Require new developments to reduce air quality impacts from residential area sources.

1.4.7 - Integrated Land Use and Transportation

- **Goal 10:** Improve air quality and reduce greenhouse gas emissions by integrating air quality, land use, and transportation planning that incorporates appropriate project location, design, and application of best available technologies.
- **Policy 10.1:** Make air quality greenhouse gas generation and mobility prime considerations when reviewing any proposed change to the land use pattern in the Barstow Planning Area.
- **Policy 10.2:** Support projects that propose pedestrian- or transit-oriented designs at suitable locations.
- **Policy 10.3:** Encourage higher housing densities in areas served by the full range of urban services.
- **Policy 10.4:** Encourage mixed-use developments that provide commercial services such as day-care centers, restaurants, banks, and stores near employment centers.
- **Policy 10.5:** Encourage shared parking facilities and parking reductions for compatible land uses that encourages alternative transportation and reductions in vehicle miles traveled.
- **Policy 10.6:** Promote downtown Barstow as the primary pedestrian-oriented, commercial, and financial center in the City.
- **Policy 10.7:** Support and encourage projects proposing infill, and mixed use development that creates walkable neighborhoods and communities and increases access to transit. Direct development growth to infill sites in the downtown district and throughout the built-up sections of the City.

- **Policy 10.8:** Ensure that adequate neighborhood commercial shopping areas are provided to serve new residential developments.
- **Policy 10.9:** Encourage subdivision designs that provide neighborhood parks in proximity to activity centers such as schools, libraries, and community centers. Policy VIII.2.9: Require park-and-ride lots at appropriate locations to serve long distance commuters.
- **Goal 11:** Maintain a good balance of jobs to housing in the City of Barstow.
- **Policy 11.1:** Work with public and private organizations (e.g., the Chamber of Commerce, Barstow Community College) to attract employers to the community to provide sufficient jobs to maintain a healthy jobs/housing balance.
- **Policy 11.2:** Provide planning liaison services to potential employers to identify appropriate sites, assist in the environmental review process, and streamline the permit process.
- **Goal 12:** Encourage Compact Development
- **Policy 12.1:** Discourage discontinuous development by: (1) supporting projects that infill vacant areas contiguous on at least one side to a developed area; (2) not considering projects "contiguous" when they are only adjacent to vacant urban designated land; (3) encouraging growth in and around activity centers, transportation nodes, underutilized infrastructure systems, and redevelopment areas; and (4) accommodating infill development within existing urban areas as a priority over urban expansion.
- **Policy 12.2:** Adopt an urban limit line, and commit to providing public services only within the urban area.
- **Policy 12.3:** Designate water and sewer service areas that closely correspond to the land use plan.
- **Policy 12.4:** Expand public services incrementally to serve contiguous development, and discourage the development of small sewer and water districts serving fringe development.
- **Goal 13:** Improve project site designs to encourage walking, bicycling, and transit use.
- **Policy 13.1:** Require developers to design project sites to increase the convenience, safety, and comfort of transit users, pedestrians, and bicyclists.
- **Policy 13.2:** Require developers of projects that generate emissions in excess of District CEQA significance thresholds to submit a project air quality transportation design analysis that reduces air emission, prepared by a civil engineer, architect, or urban designer familiar with design measures. Such an analysis shall be submitted prior to the City accepting the project application. The City of Barstow will review the subject analysis and see that appropriate measures are implemented.
- **Policy 13.3:** Require all subdivision street and lot designs, commercial site plans, and multifamily site plans for projects exceeding District size thresholds to include design features that reduce trips and vehicle miles traveled, as recommended by the City.

1.4.8 - Fugitive Dust and Particulate Matter

- **Goal 14:** Reduce fugitive dust emissions from earth-disturbing activities and open-sources.
- **Policy 14.1:** Require construction, grading and excavation, and demolition activities to incorporate appropriate best management practices (BPMs) to reduce fugitive dust emissions. BMPs for earth-disturbing activities may include:

- Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- Limit traffic speeds on unpaved roads to 15 miles per hour (mph);
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
- All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- Install wheel washers for all exciting trucks, or wash off all trucks and equipment leaving the site.
- Install wind breaks at the windward side(s) of construction areas;
- Suspend excavation and grading activity when winds exceed 20 mph. Regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.
- Construction equipment shall be properly maintained according to manufacturer specifications.
- Onsite electrical hook ups to the power grid shall be provided for electric construction tools including saws, drills and compressors, where feasible, to reduce the need for diesel-powered electric generators.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All roadways, driveways, and sidewalks shall be paved as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours of a complaint or issue notification. The Mojave Desert Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

- **Policy 14.2:** Encourage property owners and managers within the city to limit fugitive dust emissions from open areas through use of dust control measures such as preventing vehicle access, use of soil sealants, or re-vegetation.
- **Goal 15:** Reduce particulate matter from construction equipment exhaust.
- **Policy 15.1:** Encourage project developers and construction managers to employ cleaner than average construction equipment fleets. Specifically encourage the use of Tier 3 and Tier 4 engines, and diesel particulate filters where appropriate.
- **Goal 16:** Reduce particulate matter from operational heavy-duty truck exhaust.
- **Policy 16.1:** Encourage industrial and commercial land use developers to implement the following measures to reduce emissions from onsite heavy-duty trucks:

a) Post signs informing truck drivers about the health effects of diesel particulates, the California Air Resources Board diesel idling regulations, and the importance of being a good neighbor by not parking in residential areas.
b) Post signs in all dock and delivery areas containing the following: truck drivers shall turn off engines when not in use; trucks shall not idle for more than 5 minutes; telephone numbers of the building facilities manager and the California Air Resources Board to report violations.
c) Tenants should maintain records on its fleet equipment and vehicle engine maintenance to ensure that equipment and vehicles serving the project uses within the project are in good condition and in proper tune pursuant to manufacturer's specifications. The records should be maintained onsite and be made available for inspection by the County.
d) Prior to issuance of occupancy permits, signs should be installed at each exit driveway, providing directional information to the County's truck route. Text on the sign shall read "To Truck Route" with a directional arrow. Truck routes shall be clearly marked pursuant to the City code.

- **Goal 17:** Reduce particulate matter emissions from woodburning sources within the City.
- **Policy 17.1:** Prohibit new woodburning stoves or woodburning fireplaces in all new residential development.
  Wood smoke released from fireplaces and wood stoves contains carbon monoxide, nitrogen dioxide, volatile organic compounds, and inhalable particulate matter (PM_{10}).
- **Policy 17.2:** Encourage residents to remove existing woodburning stoves or woodburning fireplaces or replace the units with cleaner, EPA Phase-2 certified units, gas or propane-fueled units.

1.4.9 - Hazardous Emissions and Public Health

- **Goal 18:** Minimize exposure of the public to toxic air pollutant emissions and noxious odors from freeways, major arterial roadways, industrial, manufacturing, processing, and commercial facilities.
- **Policy 18.1:** Require new air pollution point sources such as, but not limited to, industrial, manufacturing, and processing facilities, to be located an adequate distance from existing and planned residential areas and sensitive receptors.
- **Policy 18.2:** Require projects on ARB's Land Use Air Quality Handbook list of toxic air contaminant sources of concern to prepare a screening analysis or health risk assessment when proposed within the distance criteria listed in the Handbook from residents or other sensitive land uses. Require mitigation measures to reduce significant impacts with toxic best available control technology.
- **Policy 18.3:** Locate air pollution sensitive land uses (e.g., hospitals, convalescent homes, residences, schools) away from existing and planned industrial sites and other potential sources of hazardous emissions.
  Common hazardous emission sources include freeways and high traffic roads, distribution centers, dry cleaners, gasoline stations, diesel engines, and auto body shops.

- **Policy 18.4:** Evaluate potential handling, storage, and transport of hazardous materials in new commercial and industrial developments to minimize public exposure to hazardous air pollutants.
  Development projects that will handle, store, and transport hazardous materials require special consideration and evaluation to ensure that potential accidental releases will not impact the public.

SECTION 2: PROJECT DESCRIPTION

California Government Code Section 65300, et seq. mandates that each city shall adopt a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries that in the planning agency's judgment bears relation to its planning. Government Code Section 65302 lists seven mandatory elements that Cities must include in their general plans: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. Air quality is an optional general plan element.

2.1.1 - Project Location and Setting

Location

The project is located in the City of Barstow, San Bernardino County, California (Exhibit 1). The City of Barstow is located in western San Bernardino County and is surrounded by undeveloped rural desert land (Exhibit 2). The Mojave River is located along the north side of the City. State Routes (SRs) 66, 58, and 247, and Interstate 15 (I-15) and I-40 provide regional access to the City.

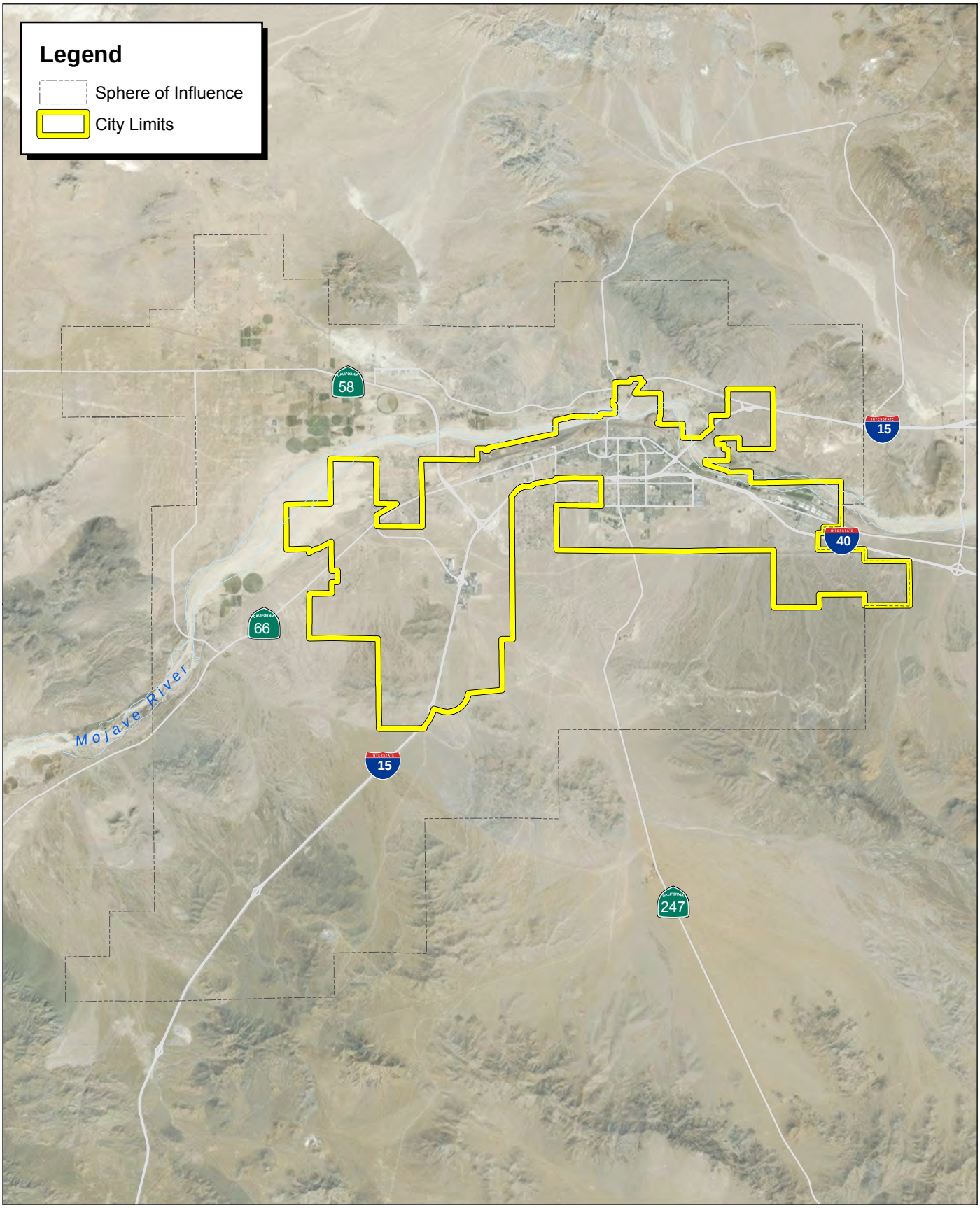
Existing Conditions

The City encompasses over 41 square miles of land. Developed land within the City contains a wide range of residential, commercial, industrial, public, and open space land uses. Residential areas vary from rural to urban neighborhoods. Barstow's population in 2012 was 23,019 with 8,142 households. Total employment in 2012 was 13,460 (SCAG 2013). The jobs to housing ratio is 1.4. The City's Sphere of Influence contains primarily open space and rural residential development.

2.1.2 - Project Characteristics

The 2020 General Plan Update is a revision to City's General Plan, originally adopted in 1997. In addition, the 2020 General Plan Update identifies 12 locations, or "development areas", where development is projected to occur. This analysis document includes assumptions regarding the amount and location of development anticipated to occur prior to 2020. A description of each development area is provided in Table 2. The land use and development size anticipated to occur within each development area is provided in Table 3.

Exhibit 3 shows the location of each development area within the City. Exhibits 4 through 12 provide a more detailed view of each development area.

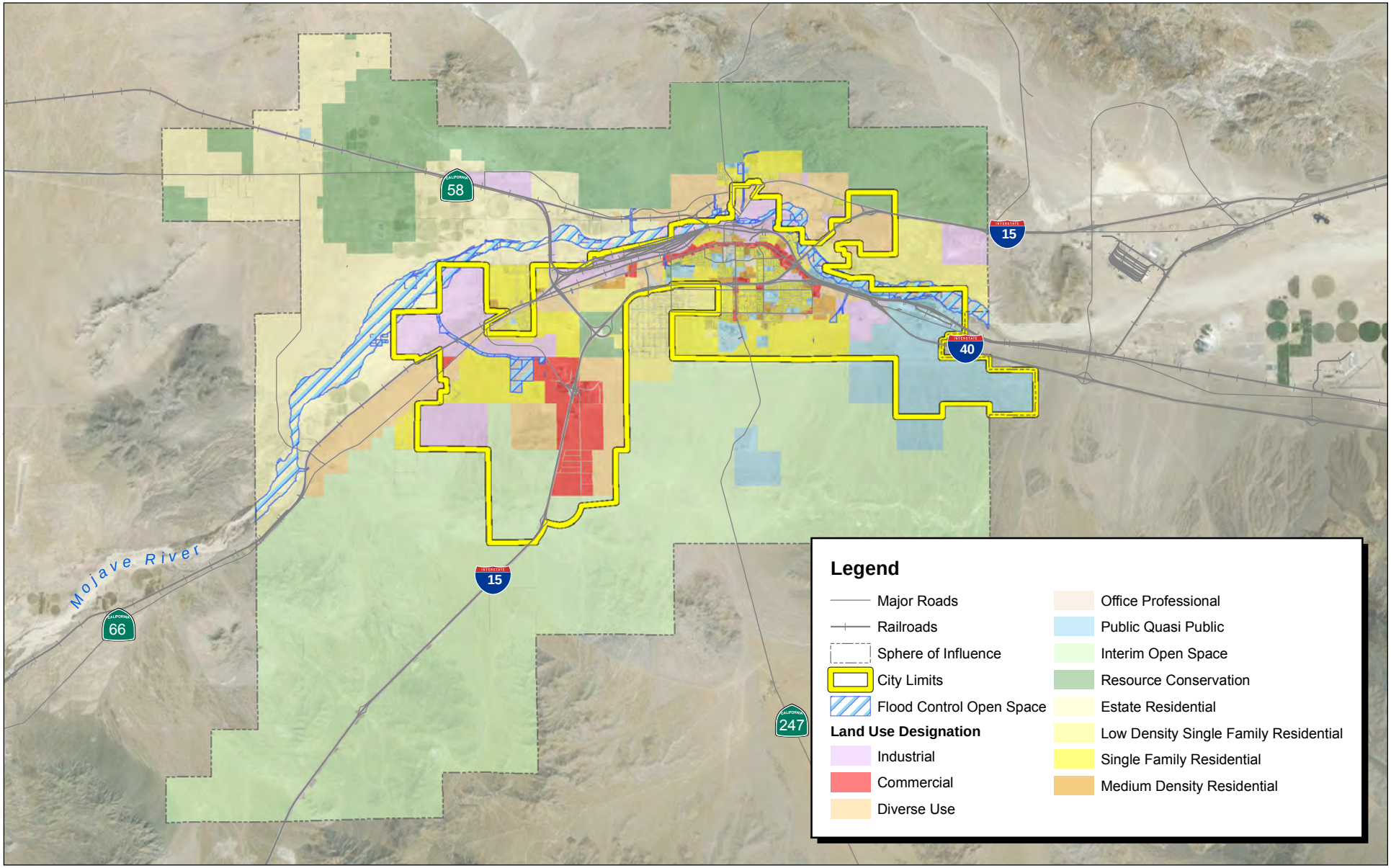


Source: ESRI Imagery, City of Barstow

FirstCarbon SOLUTIONS

3 1.5 0 3 Miles

Exhibit 2
Local Vicinity Map
Aerial Base

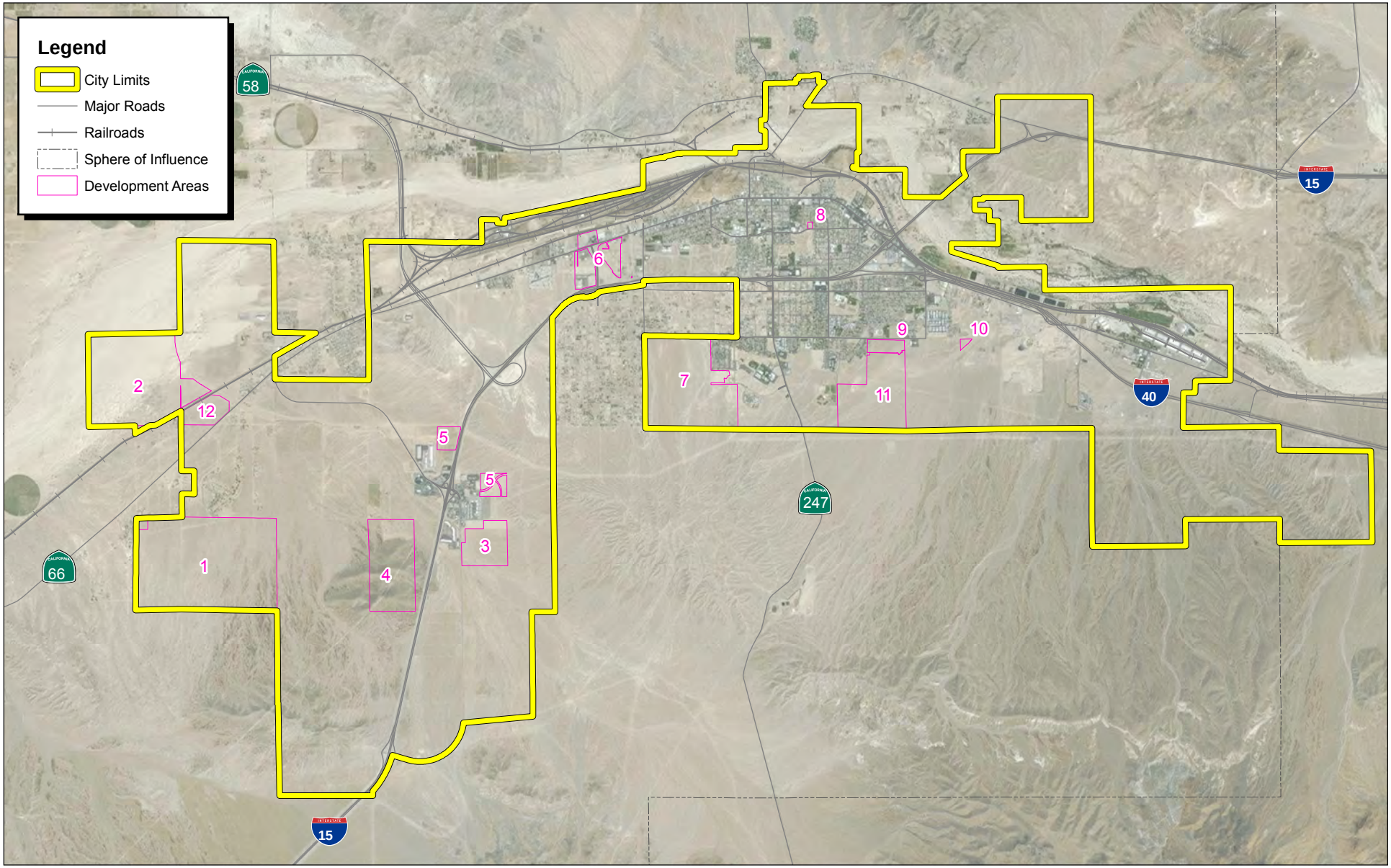


Source: ESRI, City of Barstow

FirstCarbon SOLUTIONS

3 1.5 0 3 Miles

Exhibit 3
General Plan Land Use Designations

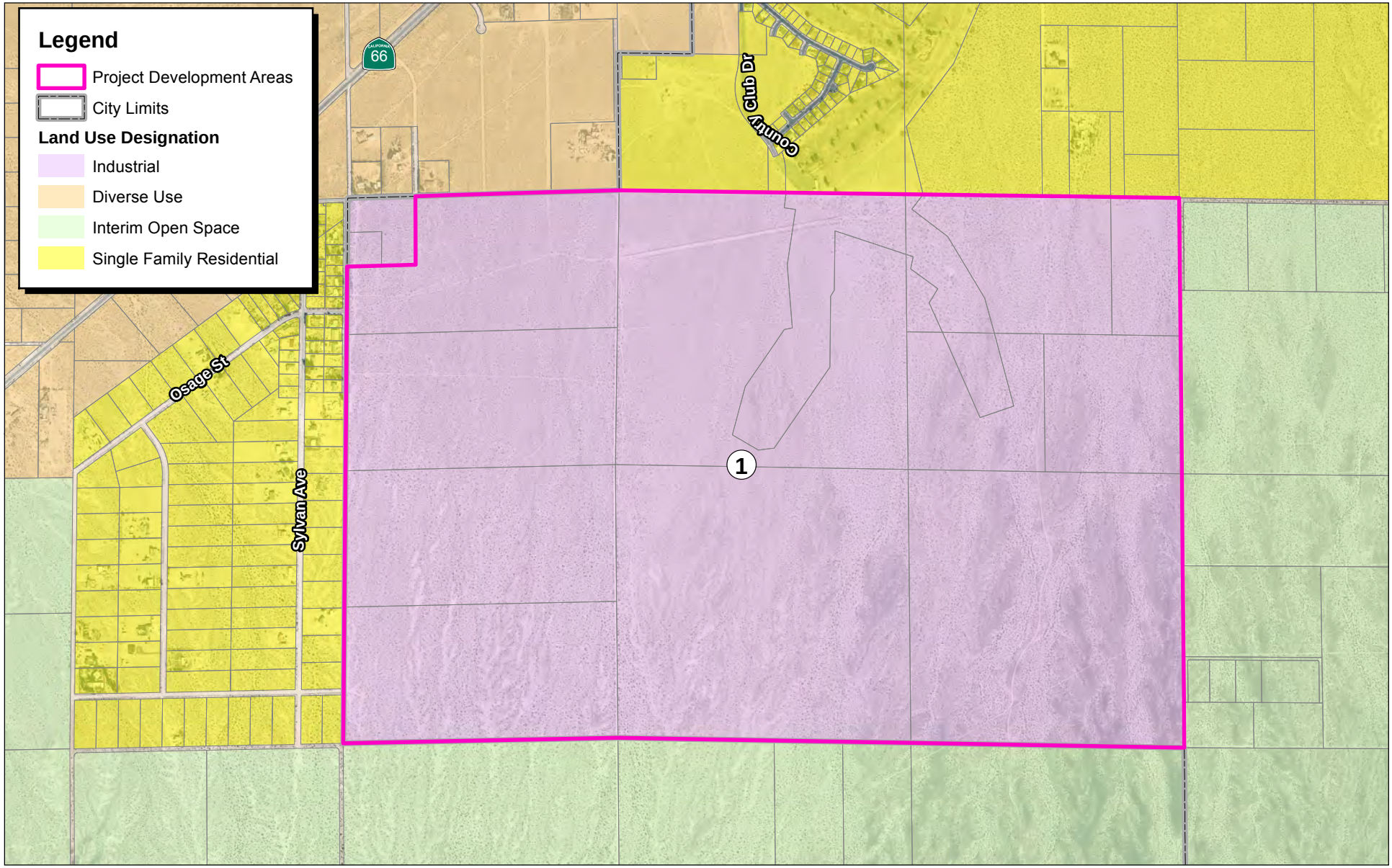


Source: ESRI, City of Barstow

FirstCarbon SOLUTIONS

1.5 0.75 0 1.5 Miles

Exhibit 4
Project Development Areas

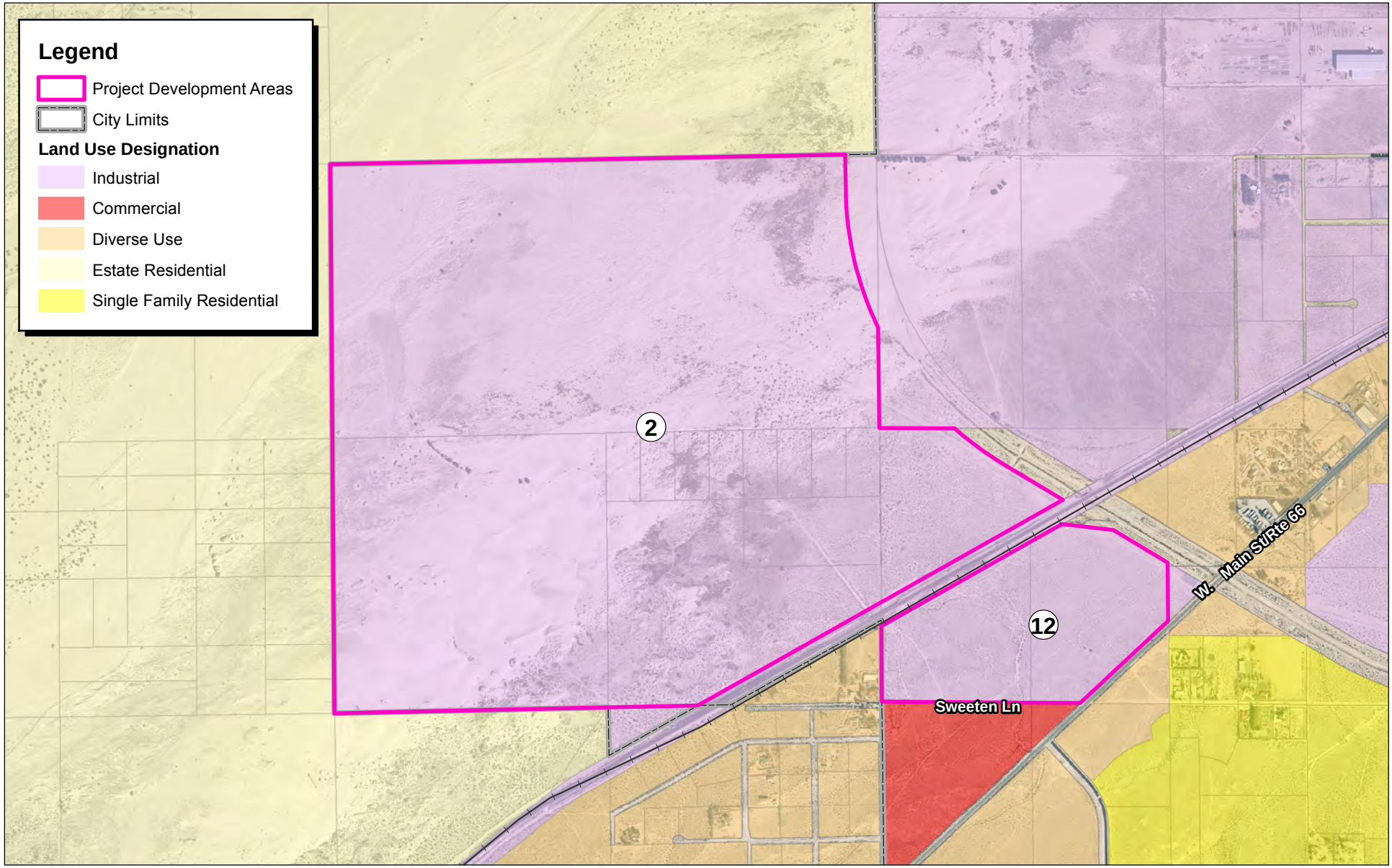


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,300 650 0 1,300 Feet

Exhibit 5
Project Development Area 1

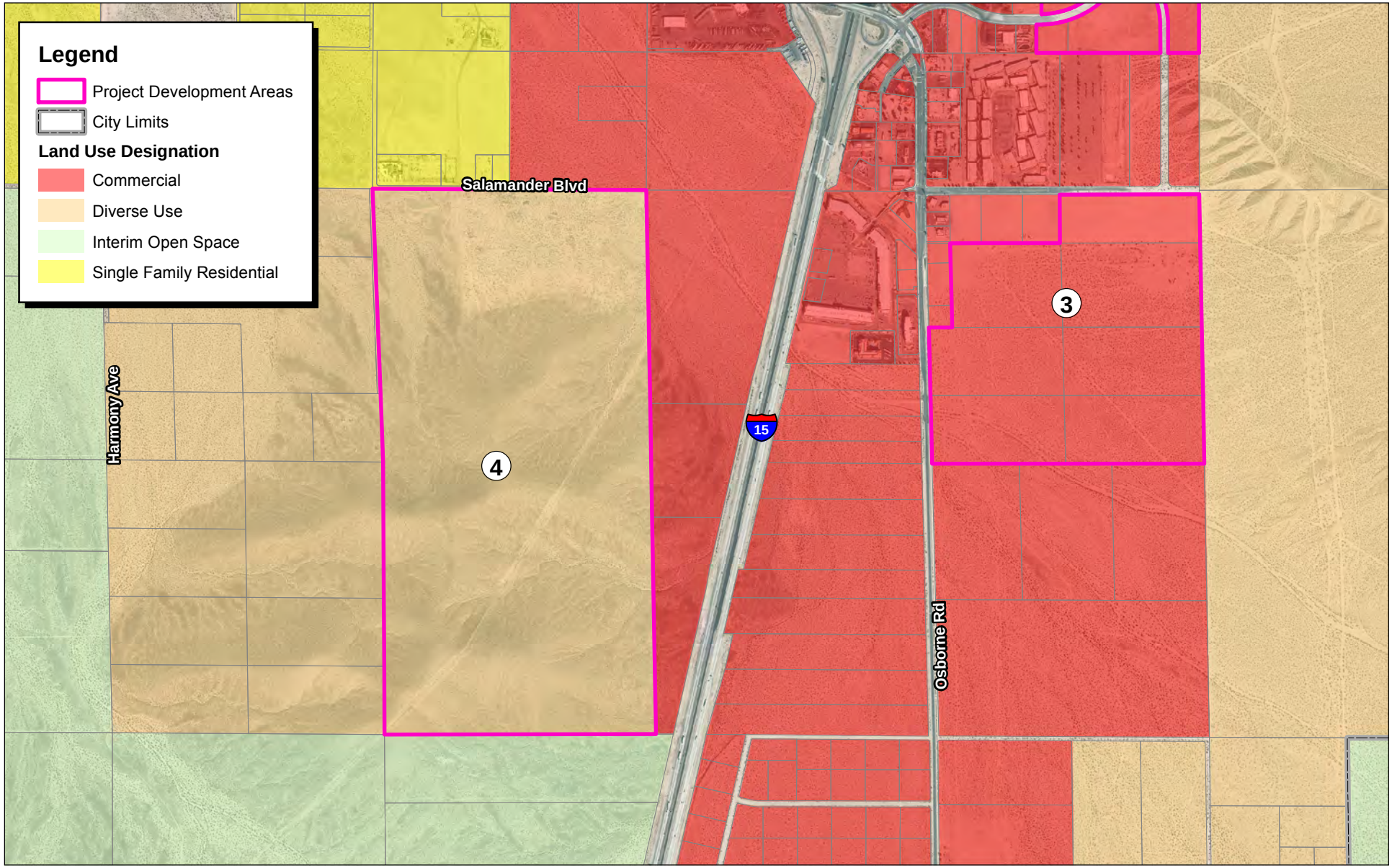


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,300 650 0 1,300 Feet

Exhibit 6
Project Development Areas 2 and 12



Source: City of Barstow, San Bernardino County

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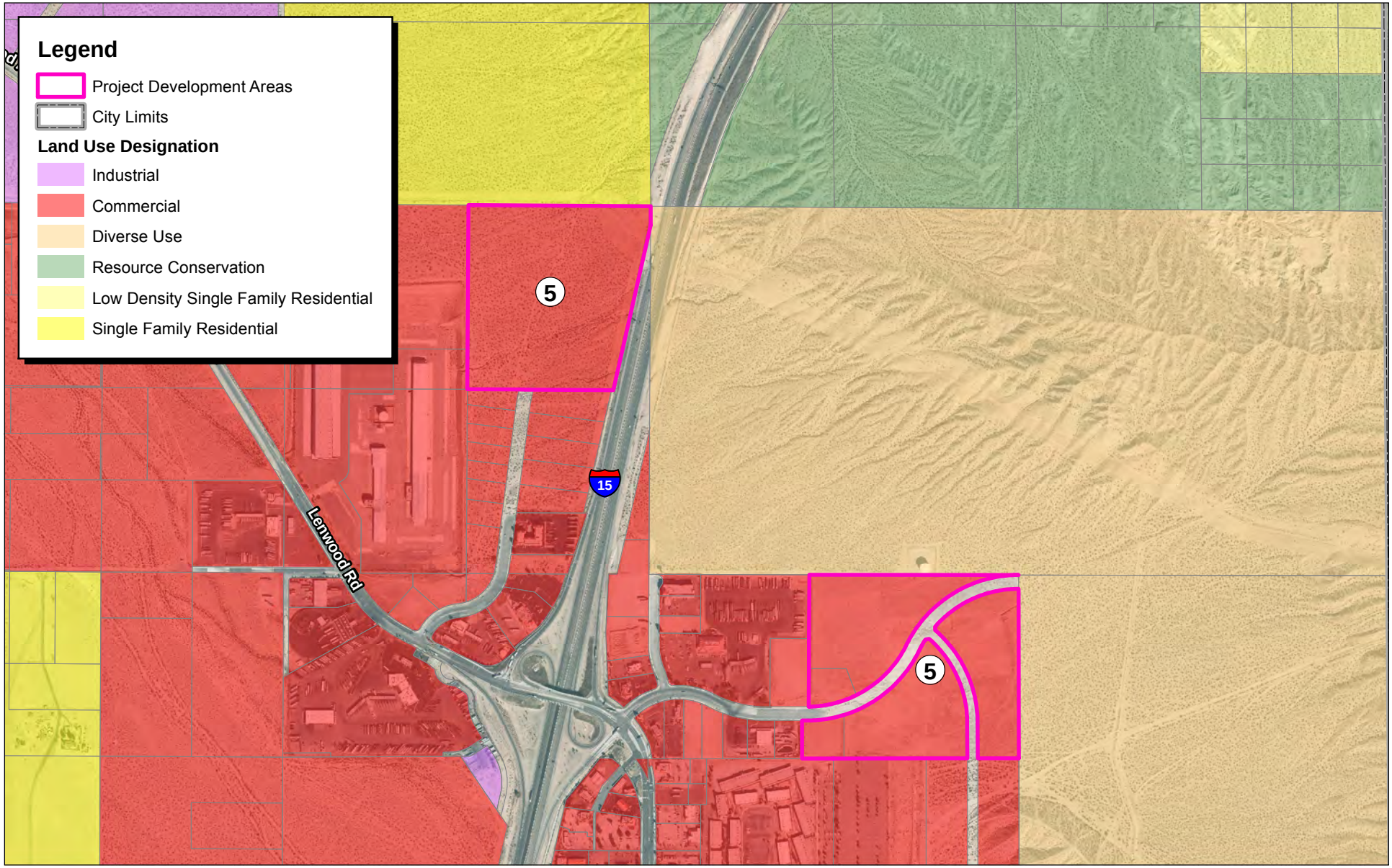
Exhibit 7
Project Development Areas 3 and 4

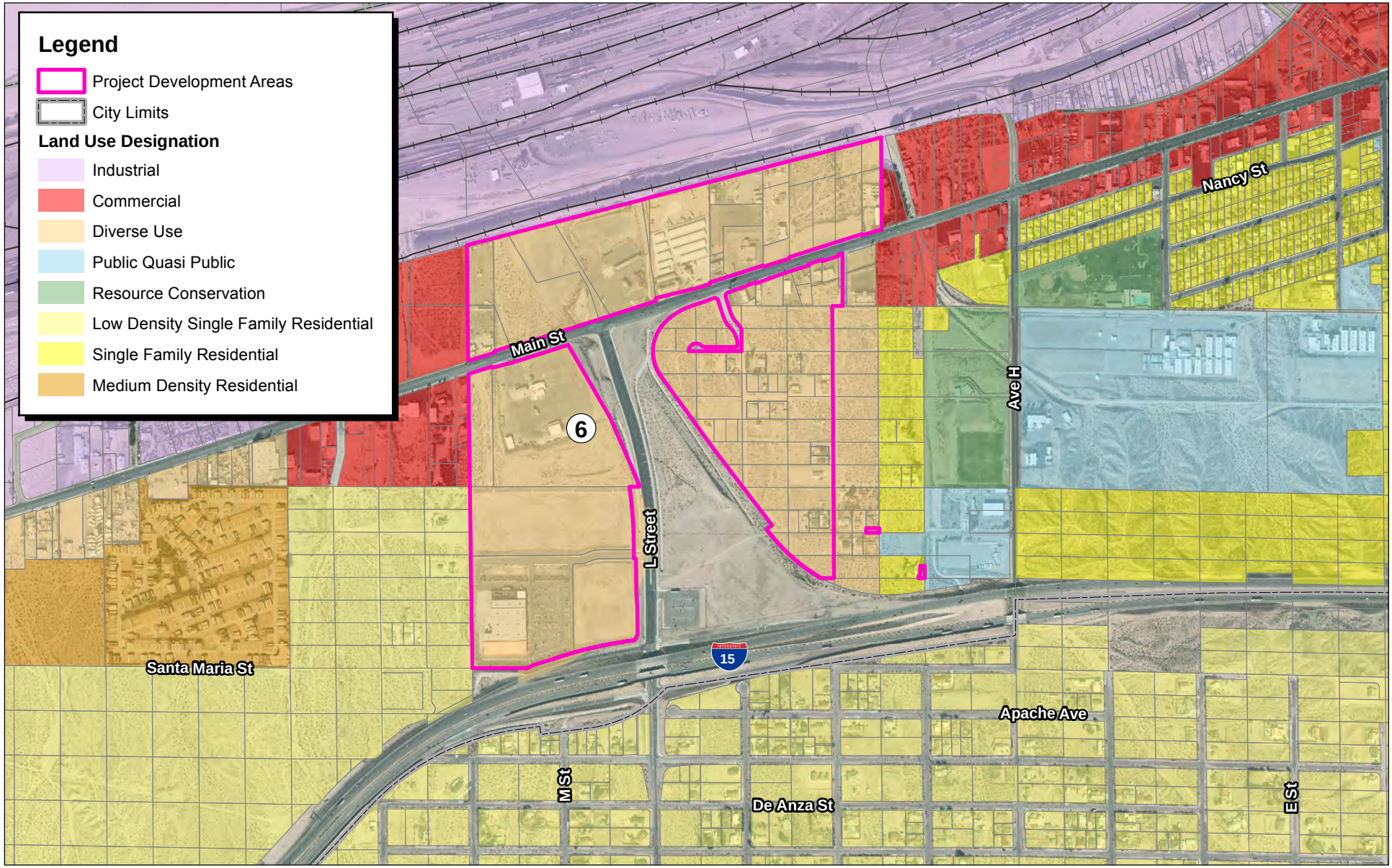


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,000 500 0 1,000
Feet

Exhibit 8
Project Development Area 5

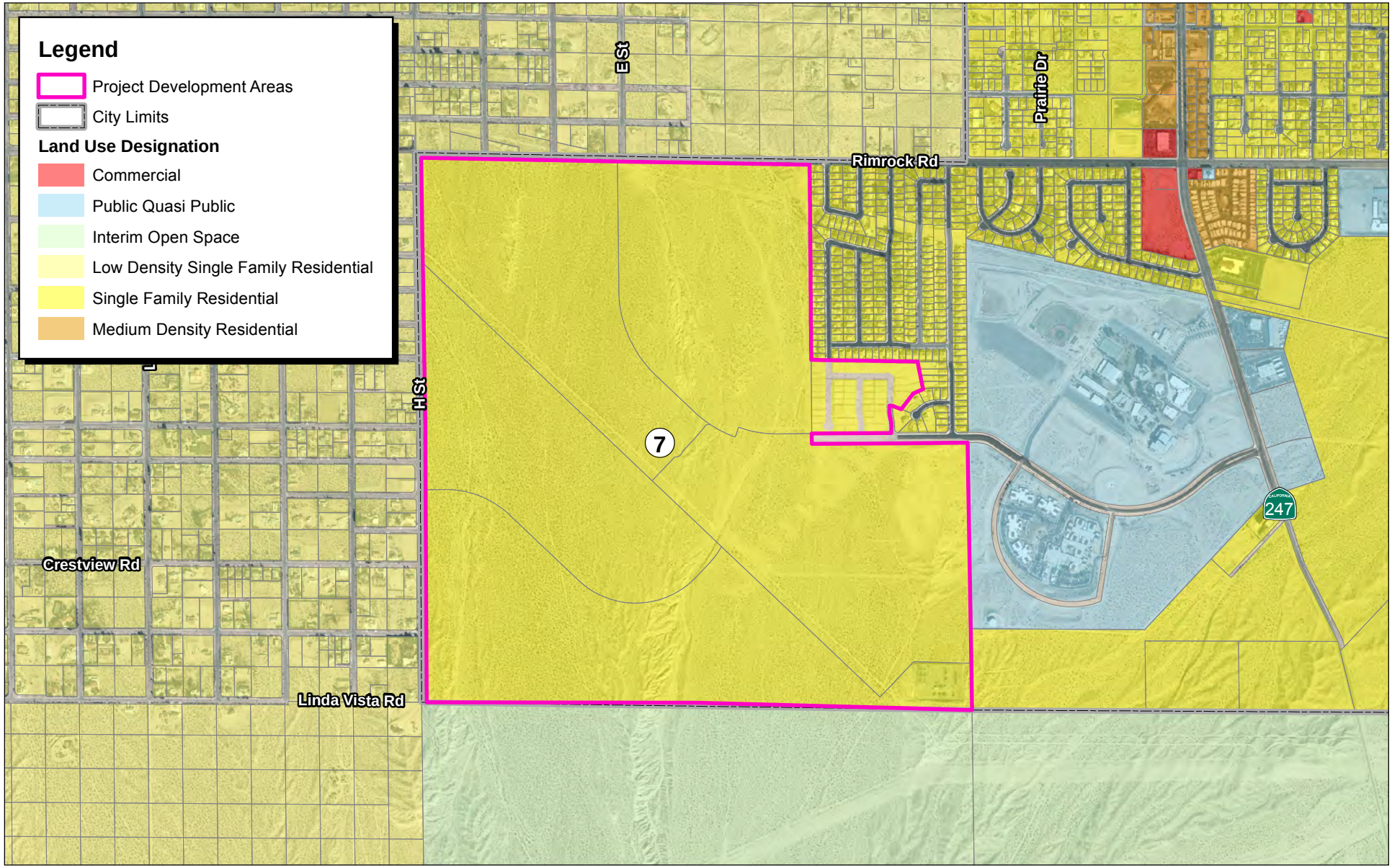


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,000 500 0 1,000 Feet

Exhibit 9
Project Development Area 6

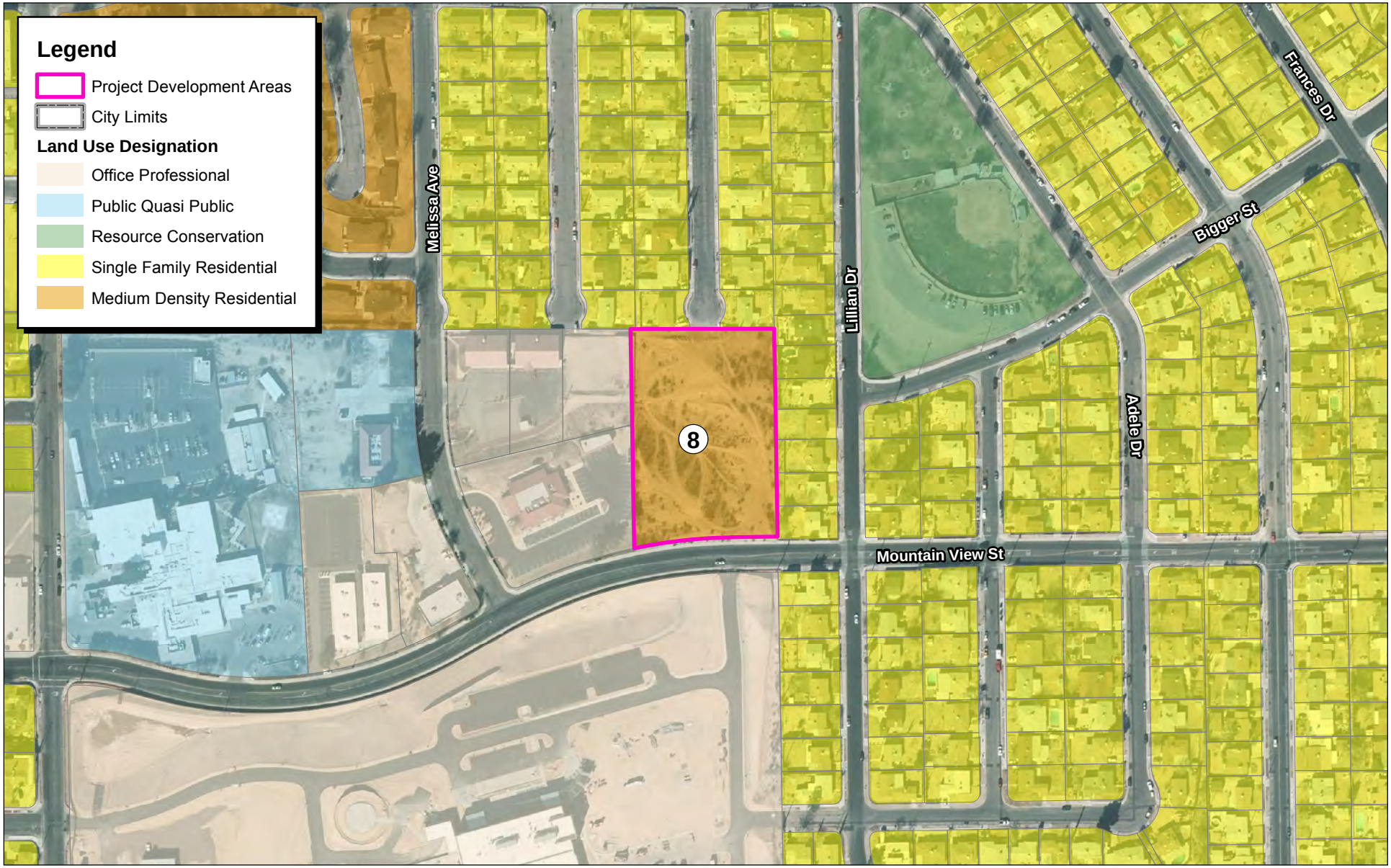


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,300 650 0 1,300 Feet

Exhibit 10
Project Development Area 7

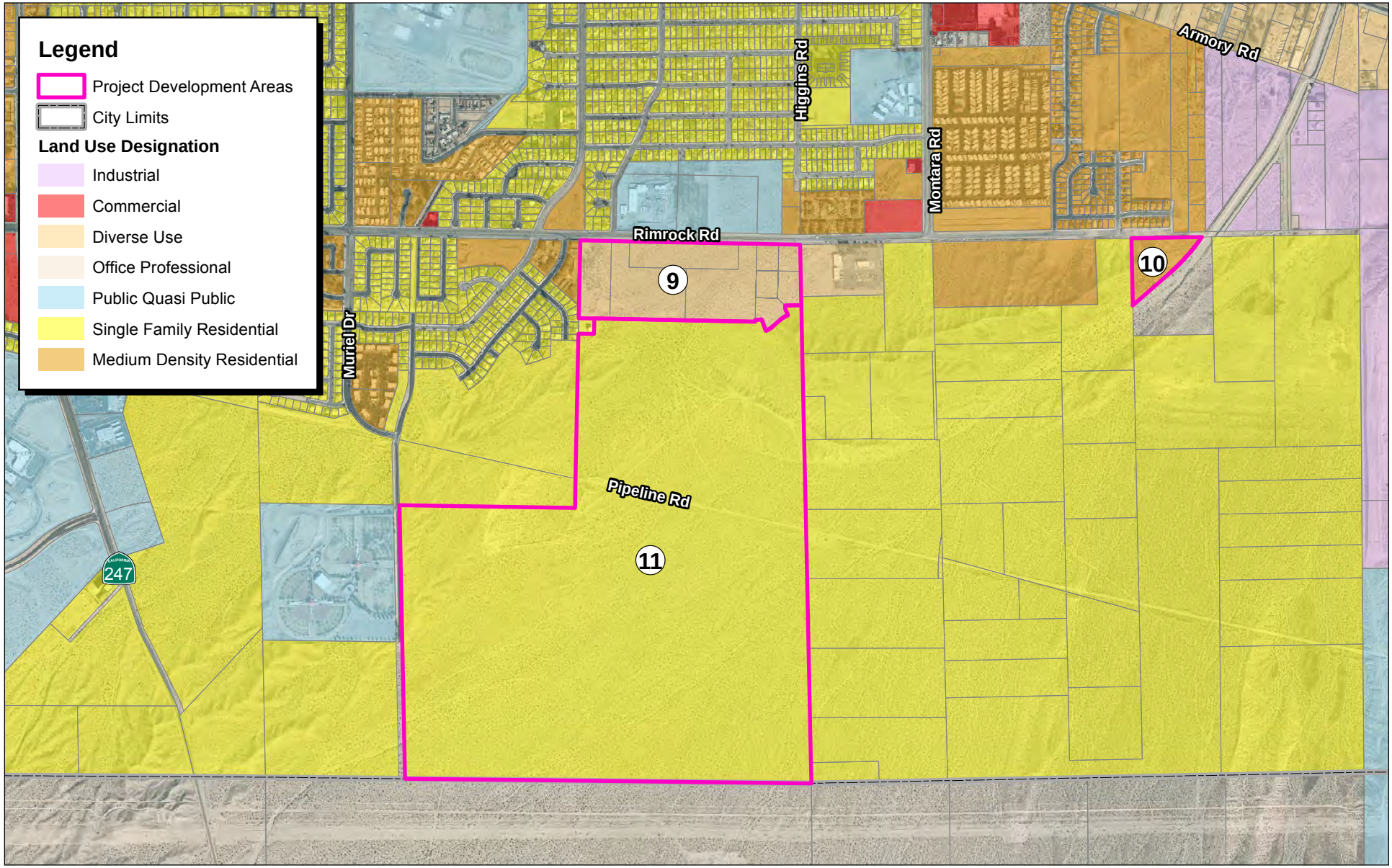


Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

250 125 0 250
Feet

Exhibit 11
Project Development Area 8



Source: City of Barstow, San Bernardino County

FirstCarbon SOLUTIONS

1,300 650 0 1,300 Feet

Exhibit 12
Project Development Areas 9, 10, and 11

Table 2: Projected Development Area – Existing Conditions

Development Area	Corresponding Specific Plan	APN(s)	Total Acreage	General Plan Designation	Current Land Use	Proposed Land Use(s)
1	—	042-107-132 to -135, 042-109-101, 042-109-108, 042-109-112, 042-109-116, 042-109-120 to -126	966.97	Industrial	Vacant	General Heavy Industry
2	Barstow Industrial Park Specific Plan	042-101-133, 042-101-153 to -156, 042-101-174, 042-101-175, 048-813-103, 048-813-110, 048-813-114 to -117, 048-813-119 to -124, 049-713-132, 049-713-135	650.74	Industrial and Estate Residential	Vacant	General Light Industry
3	Lenwood Specific Plan	042-817-154 to -157, 042-817-168, 042-817-173, 042-835-104	168.63	Commercial	Vacant	Casino Full Service Resort
4	Lenwood Specific Plan	042-11-101	314.06	Diverse Use	Vacant	Single Family Residential
5	Lenwood Specific Plan	042-131-302, 042-821-152 to -154, 042-821-156, 042-821-157	77.10	Commercial	Vacant	Highway Commercial
6	Spanish Trail Specific Plan	018-220-105 to -108, 018-220-131, 018-220-134, 018-220-139, 018-220-140, 018-220-142, 018-221-203, 018-221-204, 018-221-213, 018-221-214, 018-221-217 to -223, 018-221-230, 018-221-231, 018-221-233 to -241, 018-221-248 to -258, 018-221-265 to -278, 018-222-104, 018-223-138 to -140, 018-224-101, 018-224-102, 018-224-112 to -116, 018-224-130, 018-224-140, 018-224-141, 042-708-102, 042-708-143, 042-737-137, 042-737-147, 042-737-148	117.92	Diverse use	Vacant, Commercial Uses, Residential Uses	Big Box Retail, Fitness/Entertainment, Health & Wellness, Market and Storage, Gas and Fast Food, Hotel, and Medium Density Residential
7	Rimrock Specific Plan	042-802-117 to -121, 042-836-182	547.27	Single Family Residential	Vacant	Single Family Residential
8	—	018-112-205	2.27	Medium Density Residential	Vacant	Medium Density Residential
9	—	018-171-206 to -214, 042-413-201, 042-413-202	41.30	Diverse Use	Vacant	Single Family Residential

Table 2 (cont.): Projected Development Area — Existing Conditions

Development Area	Corresponding Specific Plan	APN(s)	Total Acreage	General Plan Designation	Current Land Use	Proposed Land Use(s)
10	—	042-413-270	5.45	Medium Density Residential	Vacant	Medium Density Residential
11	—	018-171-205, 041-701-104, 042-413-202 to -204, 042-413-223, 042-413-229, 042-413-261, 042-413-262, 042-413-268	327.75	Single Family Residential and Interim Open Space	Vacant	Single Family Residential
12	—	042-115-102, 042-116-101, 049-713-169	78.79	Industrial	Vacant	Medium Density Residential and General Office
Total	—	—	3,268.24	—	—	—
Source: City of Barstow						

Table 3: Projected Development Areas Land Uses

Development Area	Development Node Type	Projected Development Areas	
		Proposed Land Use	Development Size
1	General Industry	General Heavy Industry	725,000 sf
2	General Industry	General Light Industry	500,000 sf
3	Casino Full Service Resort	Gaming Floor	88,500 sf
		Hotel (Resort)	160 Rms
		2 Restaurants (full service)	20,000 sf
		1 Restaurant (drive thru)	4,000 sf
		1 Buffet (sit down)	5,000 sf
		1 Coffee Shop (sit down)	2,000 sf
		Retail Shops (3 shops) Department Stores	4,500 sf
4	Residential	Single Family Residential "Active Seniors Housing"	1,575 DU
5	Commercial	Restaurants 3 (sit down)	30,000 sf
		Restaurants 2 (w/drive thru)	20,000 sf
		Hotel (300,000 sf)	100 Rms
		Retail Shops (shopping center)	100,000 sf
6	Big Box Retail	Major Retailer	275,000 sf
		Retail Pads	32,000 sf
		Shops	34,000 sf
		Bank	5,000 sf
	Fitness/ Entertainment	Fitness Center	35,000 sf
		Sporting Goods Store	30,000 sf
		Movie Theater	11,000 sf
		Shopping	19,000 sf
		Bank	5,000 sf
		Restaurant	11,000 sf
		Fast Food	4,000 sf
		Visitor Center	2 employees

Table 3 (cont.): Projected Development Areas Land Uses

Development Area	Development Node Type	Projected Development Areas	
6 (*cont.*)	Health and Wellness	Wellness Center	50,000 sf
		Daycare	23,000 sf
		Drug Store	11,000 sf
		Shopping Pad	40,000 sf
	Market and Storage	Supermarket	50,000 sf
		Shopping	19,000 sf
		Restaurant	10,000 sf
		Fast Food	12,000 sf
		Gas Station	12 fueling stations
		Office	5,000 sf
	Gas & Fast Food	Shopping	7,000 sf
		Gas Station	24 fueling stations
		Fast Food	13,800 sf
		Restaurant	84,000 sf
	Hotel	Hotel (E of L St; S of Main); 200,000 sf	100 Rms
	Residential	Medium Density Residential	20 DU
7	Residential	Single Family Residential	400 DU
8	Residential	Medium Density Residential	30 DU
9	Residential	Single Family Residential	140 DU
10	Residential	Medium Density Residential (Condo/Townhouses)	20 DU
11	Residential	Single Family Residential	500 DU
	TBD	Diverse Use	75,000 sf
		Diverse Use	75,000 sf
12	Residential	Medium Density Residential (Apartments)	60 DU
	General Office	General Office Buildings	20,000 sf

Notes:
Sf = square feet DU = Dwelling Units Rms = Rooms

SECTION 3: ENVIRONMENTAL AND REGULATORY SETTING

3.1 - Environmental Setting

The project is located in the Mojave Desert Air Basin (MDAB) portion of San Bernardino County. The southwestern-most portion of the County, south of the project area, is located within the adjacent South Coast Air Basin. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, season, and transport of air pollutants from adjacent air basins. The following section describes these conditions as they pertain to the MDAB.

3.1.1 - Air Basin

The proposed project is located in the San Bernardino County portion of the MDAB. The MDAB covers most of California's high desert. The San Gabriel and San Bernardino mountains lie to the south, separating the MDAB from the South Coast Air Basin. The Tehachapi Mountains are to the northwest separate the MDAB from the San Joaquin Valley Air Basin. Local air quality in the MDAB is affected by transport of pollutants from other air basins. Its terrain and geographical location determine the distinctive climate of the MDAB, as the area is a high desert bounded by mountains on each side.

The following four air pollution control districts have all or portions of their jurisdictions within the MDAB: The Kern County Air Pollution Control District, the South Coast Air Quality Management District (SCAQMD), the Antelope Valley Air Quality Management District, and the MDAQMD. The local agency with jurisdiction over air quality in the San Bernardino County portion of the MDAB is the MDAQMD.

Transport

The MDAB is downwind of the South Coast Air Basin and, to a lesser extent, is downwind of the San Joaquin Valley Air Basin. Prevailing winds transport ozone and ozone precursors from both regions into and through the MDAB during the summer ozone season. These transport couplings have been officially recognized by the California Air Resources Board (ARB).

3.1.2 - Air Pollutants

For reasons described below in the Regulatory Setting, the criteria pollutants of greatest concern for the project area are ozone, PM_{10}, and $PM_{2.5}$. PM is particulate matter in the air that includes a mixture of solids and liquid droplets. Some particles are emitted directly; others are formed in the atmosphere when other pollutants react. Small particles can get deep into the lungs, potentially causing serious health problems. PM_{10} is 10 microns and smaller in diameter, smaller than the width of a human hair. $PM_{2.5}$ is 2.5 microns and smaller in diameter and consists of "fine" particles. Some of these fine particles are so small they can be detected only with an electron microscope. $PM_{2.5}$ is a subset of PM_{10}. Sources of fine particles include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes.

Carbon monoxide is of less concern in the MDAB because it is classified as an attainment area. Table 4 summarizes the most relevant effects from exposure, the properties, and the sources of the pollutants. Also shown are national and California ambient air quality standards.

Toxic Air Contaminants

In addition to the criteria pollutants, discussed below, TACs, also known as hazardous air pollutants (HAPs), are another group of pollutants of concern. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM) from diesel-fueled engines.

Diesel Particulate Matter

The ARB identified PM emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. The State of California, after a 10-year research program, determined in 1998 that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic (long-term) health risk. The California Office of Environmental Health Hazard Assessment (OEHHA) recommends using a 70-year exposure duration for determining residential cancer risks. DPM is emitted from both mobile and stationary sources. According to ARB's 2009 Almanac, on-road diesel-fueled vehicles contribute approximately 38 percent of the statewide total inventory, with an additional 60 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. The remaining DPM inventory was generated by stationary point sources and aggregated stationary sources.

Asbestos

Asbestos is listed as a TAC by ARB and as a HAP by the United States Environmental Protection Agency (EPA). Naturally occurring asbestos areas are identified by the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Crushing or breaking these rocks, through construction or other means, can release asbestos from fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and, with time, may be linked to such diseases as asbestosis, lung cancer, and mesothelioma.

According to the California Division of Mines and Geology, naturally occurring asbestos has been found in scattered locations within the San Bernardino County; however, the nearest known location

of naturally occurring asbestos is farther than one mile from the City limits. Based on the age of buildings within the City, asbestos-containing material may be present in the building materials. The disturbance of these structures for future development could release hazardous materials during construction activities, which could pose a risk to human health and the environment.

Table 4: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_x, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.075 ppm			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides - NO_x (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_x is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_x can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO_x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_x emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility-reducing particles	8 Hour	See note below[d]				

Table 4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no State or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Table 4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	

Notes:
ppm = parts per million (concentration)$\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011, and 2012a; National Toxicology Program 2011a and 2011b.
Source of standards: California Air Resources Board 2014.

3.1.3 - Local Air Quality

The existing local air quality can be characterized by reviewing relevant air pollution concentration data near the project area. ARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors. Monitoring sites are usually chosen to be representative of emission in a community.

The Barstow monitoring station, located at 200 E. Buena Vista in Barstow monitors the pollutants of most concern for the City of Barstow. The nearest $PM_{2.5}$ monitoring station is located in Victorville. Table 5 summarizes 2010 through 2012 published air monitoring data, which is the most recent 3-year period available. The amount over the standards and the number of days each year that standards were exceeded provide a good indicator of severity of the air quality problems in the local area.

The City of Barstow monitoring station recorded 15 days in violation of the federal 8-hour ozone standard in 2012 and 36 days for the more stringent state 8-hour ozone standard. Barstow recorded one violation of the state $PM_{2.5}$ standard between 2010 and 2012 and no violations of state or federal PM_{10} standards during that period.

Table 5: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	Year		
			2010	2011	2012
Ozone[1]	1 Hour	Max 1 Hour (ppm)	0.097	0.093	0.090
		Days > State Standard (0.09 ppm)	1	0	0
	8 Hour	Max 8 Hour (ppm)	0.078	0.084	0.085
		Days > State Standard (0.07 ppm)	7	35	36
		Days > National Standard (0.075 ppm)	1	9	15
Carbon monoxide[1]	8 Hour	Max 8 Hour (ppm)	0.89	1.35	0.66
		Days > State Standard (9.0 ppm)	0	0	0
		Days > National Standard (9 ppm)	0	0	0
Nitrogen dioxide (NO_2) [1]	Annual	Annual Average (ppm)	0.017	0.017	0.017
	1 Hour	Max 1 Hour (ppm)	0.062	0.077	0.146
		Days > Federal Standard (0.100 ppm)	0	0	7
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur Dioxide	24 Hour	98th Percentile of 1-hour Average (ppm)	0.003	0.006	0.003
		Days > Standard (0.04 ppm)	0	0	0
Hydrogen Sulfide	1 Hour	1 hour (ppm)	0.077	0.073	0.078
		Days > State Standard (0.03 ppm)	0	0	0

Table 5 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	Year		
			2010	2011	2012
Inhalable coarse particles (PM_{10}) [1]	Annual	Annual Average (µg/m^3)	18.8	21.3	20.4
	24 Hour	24 Hour (µg/m^3)	38.0	98.0	42.0
		Days > State Standard (50 µg/m^3)	0	2	0
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$) [2]	Annual	Annual Average (µg/m^3)	7.6	ID	ID
	24 Hour	24 Hour (µg/m^3)	20.0	16.0	12.0
		Days > National Standard (35 µg/m^3)	0	0	0

Notes and Abbreviations:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Data from Barstow Air Monitoring Station at 200 E. Buena Vista
[2] Data from Victorville Air Monitoring Station
Source: California Air Resources Board, 2014a.

3.1.4 - Local Sources of Air Pollutants

Exhaust emissions from motor vehicles traveling on area roadways constitute a major source of ambient air pollutants within the City. The largest sources of vehicle generated air pollution include two interstate highways, I-15 and I-40, that transect the City and local roads serving residences and businesses in the City. Also important are SR-58 and SR-247 that are located within the City.

In addition to motor vehicles, locomotives using the BNSF rail line through the City, and the BNSF Barstow Railyard located within the northern portion of the City are large criteria pollutant emission sources. There are also several stationary sources located within and near the City. These include the City of Barstow Wastewater Treatment Plant (WWTP), the BNSF Barstow Railyard, Calnev Pipeline, the Marine Corps Logistics Base, and the Barstow Sanitary Landfill.

The primary sources of impact from TAC emissions in the City of Barstow are the BNSF Barstow Railyard and the freeways that cross the City. Limited monitoring data is available regarding TAC emissions for the MDAB and for Barstow. The most comprehensive study of TAC emissions was conducted by the ARB as part of its study of TAC emission impacts of railyards. The BNSF Barstow Railyard study included an assessment of TAC emissions from locomotives and other equipment at the railyard and diesel trucks traveling on freeways serving the community.

Other sources of air pollutants are generated by homes and businesses such as natural gas combustion for space heating and cooking, wood burning fireplaces and heaters, use of consumer products containing volatile organic compounds such as solvents and cleaners, and operation of gasoline powered landscape maintenance equipment.

3.1.5 - Sensitive Receptors

Some population groups such as children, the elderly, and persons with pre-existing respiratory or cardiovascular illness are more sensitive to air pollution than others. MDAQMD defines sensitive receptor as residential areas, hospitals and long-term health care facilities, rehabilitation centers, convalescent centers and retirement homes, elementary schools, daycare centers, playgrounds, athletic facilities and parks. Residential areas are considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. The project would construct sensitive receptors (residences) within the City. In addition, the project may result in development activity near existing sensitive receptors.

Attainment Status

Air basins where federal or state ambient air quality standards are exceeded are referred to as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are considered severe, serious, or moderate as a function of deviation from standards.

As previously stated, the MDAB receives transported air pollution from the South Coast Air Basin and, to a lesser extent, the San Joaquin Valley Air Basin. Specifically, ozone and ozone precursors is transported into and through the MDAB during the summer ozone season. Local emissions contribute to exceedances of both the federal and state air quality standards for ozone, but the MDAB would be in attainment of both standards without the influence of this transported air pollution from upwind regions (MDAQMD 2004). Communities in the MDAB closest to the South Coast Air Basin, such as the City of Barstow, have the highest pollution levels due to transport and are expected to be the last to achieve the standards.

For ozone planning purposes, the EPA combined the eastern portion of Los Angeles County and San Bernardino County and designated them the "Western Mojave 8-Hour Ozone Nonattainment Area". The Nonattainment Area includes the northeast portion of Los Angeles County and the southwest portion of San Bernardino County, both of which are in the MDAB. These two areas are managed by two separate jurisdictions. The Antelope Valley Air Quality Management District has jurisdiction over the Los Angeles County portion of the Nonattainment Area, while the MDAQMD has jurisdiction over the San Bernardino County portion of the Nonattainment Area. The City of Barstow is located within the Western Mojave 8-hour Ozone Nonattainment Area.

As shown in Table 6 the project area is designated as nonattainment for the state and federal ozone and $PM_{2.5}$ standards and the PM_{10} state standards.

Table 6: San Bernardino County Attainment Status

Pollutant	Designation	
	Federal	State
Ozone –1-hour	No Federal Standard	Nonattainment
Ozone – 8-hour	Nonattainment (Mojave 8-Hour Ozone Nonattainment Area) Attainment (Remaining Portion of the County)	Nonattainment
PM_{10}	Nonattainment – Moderate (*MDAB*) Attainment (South Coast Air Basin)	Nonattainment
$PM_{2.5}$	Attainment (*MDAB*) Nonattainment (South Coast Air Basin)	Nonattainment (Western Mojave 8-Hour Ozone Nonattainment Area) Unclassified (Remaining portion of County)
Carbon monoxide	Attainment/Attainment	Attainment
Nitrogen dioxide	Attainment/Unclassified	Attainment
Sulfur dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen sulfide	No Federal Standard	Nonattainment (*Searles Valley*) Unclassified (Remaining portion of County)
Sulfates	No Federal Standard	Attainment
Visibility-reducing particles	No Federal Standard	Unclassified[2]
Vinyl chloride	No Federal Standard	Attainment

Note:
MDAB = Mojave Desert Air Basin
Source: California Air Resources Board 2013b and Environmental Protection Agency 2014.

3.2 - Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The EPA regulates at the national level. The ARB regulates at the state level. The MDAQMD regulates at the regional level.

3.2.1 - Federal and State

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards. There are federal standards for the following criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970:

- Ozone
- Nitrogen dioxide
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2013b).

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts—air district prepares their federal attainment plan, which sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The ARB also administers California Ambient Air Quality Standards (state standards) for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The federal and state ambient air quality standards, the most relevant effects, the properties, and sources of the pollutants were previously summarized in Table 4.

Several pollutants listed in Table 4 are not addressed in this analysis. Analysis of lead is not included in this report because no new sources of lead emissions are anticipated with the General Plan Update. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. No specific projects are identified in the General Plan Update that would result

vinyl chloride or hydrogen sulfide emissions in any substantial quantity. Projects proposing substantial emissions of these pollutants would require their own environmental review.

California Regulations

Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan (SIP). In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments include more stringent emission standards for both criteria pollutants and greenhouse gases for new passenger vehicles (ARB 2012a).

On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013c).

ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and

engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, but no demolition is associated with this project. However, asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxics Control Measure for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. The Department of Conservation Maps show the presence of asbestos mines in San Bernardino County.

Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels as stated on page 1 of the plan. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010 and 85 percent by 2020 (ARB 2000).

3.2.2 - Southern California Association of Governments

Southern California Association of Governments (SCAG) is responsible for the regional transportation strategy, which is in its adopted 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2011 Federal Transportation Improvement Program. Included in the RTP/SCS are regional transportation strategy and transportation control measures including the following: active transportation (non-motorized transportation - biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods movement; aviation and airport ground access; highways; arterials; and operations and maintenance.

Transportation plans within the MDAB are statutorily required to conform to air quality plans in the region, as established by the 1990 Federal Clean Air Act and reinforced by other Acts. The region must demonstrate that its transportation plans and programs conform to the mandate to meet the federal ambient air quality standards in a timely manner. The Regional Transportation Plan, prepared by SCAG, is developed every 4 years with a 20-year planning horizon to meet the long-term transportation planning requirements for emission reductions from on-road mobile sources within the basin. The biennial Regional Transportation Improvement Program requires that the short-term implementation requirements of the Transportation Conformity Rule be met by SCAG. The first 2 years of the program are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called Transportation Control Measures. In general, Transportation Control Measures are those projects that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. Strategies are grouped into three categories: high occupancy vehicle strategy, transit and systems management, and information-based technology (traveling during a less congested time of day). SCAG approved the transportation measures in the Regional Transportation Plan.

3.2.3 - Mojave Desert Air Quality Management District

The MDAQMD has jurisdiction over the desert portion of San Bernardino County and the far eastern end of Riverside County. This region includes the incorporated communities of Adelanto, Apple Valley, Barstow, Blythe, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region also includes the National Training Center at Fort Irwin, the Marine Corps Air Ground Combat Center, the Marine Corps Logistics Base, the eastern portion of Edwards Air Force Base, and a portion of the China Lake Naval Air Weapons Station.

The MDAQMD is responsible for developing, updating, and implementing the Air Quality Management Plan for the area, in coordination with the Southern California Association of Governments. The MDAQMD also has roles under CEQA as an expert commenting agency for land use development projects and as a responsible agency or lead agency for projects where the MDAQMD issues air quality permits.

Current Air Quality Plans

The MDAB has adopted several plans to attain state and federal standards for ozone and particulate matter. The plans are described below.

Ozone Plans

The MDAB was designated as Severe-17 for the one-hour federal standard and a Moderate nonattainment area for the 1-hour state ozone standard (MDAQMD 2004). The MDAB has attained the one-hour federal standard. The MDAB is expected to attain the federal 8-hour ozone standard by the 2020 deadline required for Severe-17 nonattainment areas (MDAQMD 2008). On June 9, 2008, the MDAQMD adopted a Federal 8-Hour Ozone Attainment Plan (Ozone Plan) for the Western Mojave Desert non-attainment area. The Western Mojave Desert non-attainment area includes part of the San Bernardino County portion of the MDAQMD as well as the Antelope Valley portion of Los Angeles County. The area was designated as non-attainment on April 15, 2004. The Ozone Plan (1) demonstrates that the MDAQMD will meet the primary required Federal ozone planning milestones,

attainment of the 8-hour ozone national ambient air quality standard by June 2021; (2) presents the progress the MDAQMD will make towards meeting all required ozone planning milestones; and (3) discusses the newest 0.075 part per million 8-hour ozone national ambient air quality standard, preparatory to an expected non-attainment designation for the new more stringent national ambient air quality standard.

The nonattainment plans for the MDAB establishes a program of rules and regulations administered by MDAQMD to obtain attainment of the state and national air quality standards. The MDAQMD develops rules to reduce emissions, many of which would apply to sources within the City.

Note that even though there is an ozone State ambient air quality standard (0.070 parts per million), the Plan does not address it. State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal attainment deadlines and control measure requirements.

Particulate Matter Plans

The MDAB was designated nonattainment of state and federal health-based air quality standards for PM_{10}. On July 31, 1995, the MDAQMD adopted a Federal PM_{10} Attainment Plan (PM_{10} Plan) for the Mojave Desert Planning Area. The air quality of the MDAB is impacted by both fugitive dust from local sources and occasionally by region-wide, wind-blown fugitive dust during moderate to high wind episodes. This region-wide or "regional" event includes contributions from both local and distant dust sources, which frequently result in violations of the national ambient air quality standards that are multi-district and interstate in scope. The PM_{10} Plan indicates that local sources will be controlled with a strategy that focuses on unpaved road travel, construction, and local disturbed areas in the populated areas, and certain stationary sources operating in the rural Lucerne Valley. It is not feasible, however, to implement control measures to reduce dust from regional wind events.

The MDAB is also designated nonattainment of state standards for $PM_{2.5}$. Compliance with state and federal regulations and actions by upwind air districts are expected to allow the MDAB to attain the $PM_{2.5}$ standards. No plan is required for the state $PM_{2.5}$ standards.

Applicable MDAQMD Rules

The MDAQMD rules and regulations that apply to this project include but are not limited to the following:

- Regulation 2 – Permits. Regulation 2 includes a series of rules addressing the permitting process for new and modified stationary sources.
- Rule 1000 – National Emissions Standards for Hazardous Air Pollutants. The purpose of the rule is to incorporate the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I,

Subchapter C, Title 40, Code of Federal Regulations to protect the health and safety of the public from hazardous air pollutants, such as asbestos.

- Rule 402 – Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. Odors from agricultural sources are exempt from the Nuisance rule.
- Rule 403.2 – Fugitive Dust Control for the Mojave Desert Planning Area. Rule 403.2 is designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, trackout, unpaved roads, etc.

CEQA

Under CEQA, the MDAQMD is an expert commenting agency on air quality and related matters within its jurisdiction or impacting its jurisdiction. The MDAQMD reviews projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. The MDAQMD has prepared CEQA Guidelines that are intended to assist persons preparing environmental analysis or review documents for any project within the jurisdiction of the MDAQMD by providing background information and thresholds of significance for air quality impacts.

The MDAQMD has three roles under CEQA:

1. Lead Agency: responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the MDAQMD where the MDAQMD has primary approval authority over the project.
2. Responsible Agency: When another agency has the primary approval authority for a project for which the MDAQMD also must approve a discretionary permit, the MDAQMD is considered a Responsible Agency.
3. Commenting Agency: the MDAQMD reviews and comments on air quality analyses prepared by other public agencies (such as the proposed project).

3.2.4 - City of Barstow

The City's influence over the density and design of land use projects and the local transportation system allow for reductions in transportation-related emissions. The City also has substantial influence over the energy use from new development through conditions of approval based on proportional impacts and established regulation, CEQA mitigation measures, design standards, green building standards, and incentive programs. The City can reduce emissions from government operations by incorporating green building techniques, and energy efficiency into City capital improvement projects and purchasing decisions.

The General Plan is the City's primary policy document for actions that improve air quality. Specific policies and implementation measures that reduce air quality impacts are listed in the analysis section.

SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1 - Modeling Guidance

The air quality analysis follows the guidance and threshold recommendations provided by MDAQMD where applicable. Protocols and procedures recommended by other agencies and organizations such as the California Air Pollution Control Officers Association are used for impacts not specifically addressed by the MDAQMD CEQA Guidelines.

4.2 - Regional Air Quality Emissions

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors represent the emission rate of a pollutant given the activity over time; for example, grams of NO_x per horsepower per hour or over distance in grams per mile traveled. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The emission model applied in this assessment was the California Emissions Estimator Model (CalEEMod) version 2013.2.1. The SCAQMD in cooperation with other air districts throughout the state developed the CalEEMod model. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas emissions associated with construction and operation from a variety of land uses.

4.2.1 - Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

The project analyzed in this report includes the General Plan Update and projected development within 12 development areas. Although this document assumes all 12 development areas would be fully constructed by 2020, no detailed land use plans are available at the time of this writing. In addition, there is no schedule for submittal of any detailed plans. Because of the programmatic nature of the project, quantifying specific construction emissions, which are dependent on the quantity of earth being disturbed and equipment in operation at any one time, would be speculative. Future development activities that occur within the City would be subject to project-level environmental review. However, the general magnitude of construction emissions are assessed qualitatively within the respective impact sections.

In general, construction projects can mitigate their fugitive dust related impacts by implementing best management practices (BMPs) for dust control. Large construction projects adjacent to existing development may cause a localized exceedance of air quality standards for $PM_{2.5}$ and nitrogen dioxide (NO_2) due to the operation of diesel construction equipment. Screening procedures developed by the SCAQMD or another air district may be used to identify projects requiring mitigation measures to reduce construction equipment exhaust impacts.

4.2.2 - Operation

Operational emissions are those emissions that occur once the project commences operation. The major operational emission sources are summarized below.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site. The emissions were estimated using CalEEMod. The emissions for the criteria air pollutant analysis used emission factors for the operational year 2020.

The operational trip generation rates are shown in Table 7. The trip generation rates are from the Traffic Study prepared by Advantec Consulting Engineers (Advantec 2014). In addition, Table 7 provides the corresponding CalEEMod land use label used in the emissions modeling. The rates contained in the table incorporate the internal trip capture reductions and trip reduction from alternative transit, as contained within the Traffic Study.

Table 7: Land Use and Trip Generation Rates for Modeling Input

Area Number	Development Node Type	Projected Development			CalEEMod Land Use Equivalent	Trip Rate[1]		
		Proposed Land Use	Size	Units		Weekday	Saturday	Sunday
1	General Industry	General Heavy Industry	725.0	ksf	General Heavy Industry	1.2	1.2	1.2
2	General Industry	General Light Industry	500.0	ksf	General Light Industry	5.58	1.06	0.54
3	Casino Full Service Resort	Gaming Floor	88.5	ksf	User-Defined Commercial	22.53	27.04	27.04
		Hotel (Resort)	160	Rms	Hotel	2.25	2.70	2.70
		2 Restaurants (full service)	20.0	ksf	User-Defined Recreational	12.72	15.84	13.18
		1 Restaurant (drive thru)	4.0	ksf	Fast Food Restaurant with Drive Thru	49.61	72.20	54.27
		1 Buffet (sit down)	5.0	ksf	High Turnover (Sit Down Restaurant)	12.72	15.84	13.18
		1 Coffee Shop (sit down)	2.0	ksf	Fast Food Restaurant W/o Drive Thru	12.06	12.06	12.06
		Retail Shops (3 shops) Department Stores	4.5	ksf	Strip Mall	2.14	25.40	25.40
4	Residential	Single Family Residential "Active Seniors Housing"	1,575	DU	Retirement Community	3.68	2.73	2.32
5	Commercial	Restaurants 3 (sit down)	30.0	ksf	High Turnover (Sit Down Restaurant)	127.15	158.37	131.84
		Restaurants 2 (w/drive thru)	20.0	ksf	Fast Food Restaurant with Drive Thru	496.12	722.03	542.72
		Hotel (300,000 sf)	100	Rms	Hotel	8.92	12.27	8.92
		Retail Shops (shopping center)	100.0	ksf	Regional Shopping Center	38.43	44.97	22.72
6	Big Box Retail	Major Retailer	275.0	ksf	Free-Standing Discount Superstore	45.79	56.86	45.09
		Retail Pads	32.0	ksf	Strip Mall	34.16	39.98	20.75
		Shops	34.0	ksf	Regional Shopping Center	34.16	39.98	20.19
		Bank	5.0	ksf	Bank with Drive-Through	24.75	69.06	25.52

Table 7 (cont.): Land Use and Trip Generation Rates for Modeling Input

Area Number	Development Node Type	Projected Development			CalEEMod Land Use Equivalent	Trip Rate[1]		
		Proposed Land Use	Size	Units		Weekday	Saturday	Sunday
	Fitness/ Entertainment	Fitness Center	35.0	ksf	Health Club	26.34	16.70	21.38
		Sporting Goods Store	30.0	ksf	Free-Standing Discount Store	33.44	43.00	26.94
		Movie Theater	11.0	ksf	Movie Theater (No Matinee)	16.41	79.98	65.52
		Shopping	19.0	ksf	Regional Shopping Center	34.16	39.98	20.19
		Bank	5.0 sf	ksf	Bank (with Drive-Through)	118.52	69.06	25.52
		Restaurant	11.0 sf	ksf	High Turnover (Sit Down Restaurant)	101.72	126.70	105.47
		Fast Food	4.0 sf	ksf	Fast Food Restaurant with Drive Thru	396.90	577.62	434.18
		Visitor Center	2	employees	User Defined Commercial	6.44	34.53	38.10
	Health and Wellness	Wellness Center	50.0	ksf	Medical Office Building	6.41	10.83	19.28
		Daycare	23.0	ksf	Day-Care Center	59.25	4.97	4.66
		Drug Store	11.0	ksf	Pharmacy/Drugstore w/o Drive Thru	77.53	77.53	77.53
		Shopping Pad	40.0	ksf	Regional Shopping Center	34.16	39.98	20.19
	Market and Storage	Supermarket	50.0	ksf	Supermarket	81.79	142.07	133.15
		Shopping	19.0	ksf	Regional Shopping Center	34.16	39.98	20.19
		Restaurant	10.0	ksf	High Turnover (Sit Down Restaurant)	101.72	126.70	105.47
		Fast Food	12.0	ksf	Fast Food Restaurant with drive Thru	396.90	577.62	434.18
		Gas Station	12	fueling stations	Gasoline/Service Station	130.22	130.22	130.22
		Office	5.0	ksf	General Office Building	3.32	2.46	1.05
	Gas & Fast Food	Shopping	7.0	ksf	Regional Shopping Center	34.16	39.98	20.19

Table 7 (cont.): Land Use and Trip Generation Rates for Modeling Input

Area Number	Development Node Type	Projected Development			CalEEMod Land Use Equivalent	Trip Rate[1]		
		Proposed Land Use	Size	Units		Weekday	Saturday	Sunday
		Gas Station	24	fueling stations	Gasoline/Service Station	130.22	130.22	130.22
		Fast Food	13.8	ksf	Fast Food Restaurant with Drive Thru	396.90	577.62	434.18
		Restaurant	84.0	ksf	High Turnover (Sit Down Restaurant)	101.72	126.70	105.47
	Hotel	Hotel (E of L St; S of Main); 200,000 sf	100	Rms	Hotel	6.97	12.27	8.92
	Residential	Medium Density Residential	20	DU	Apartments Low Rise	6.65	6.39	5.86
7	Residential	Single Family Residential	400	DU	Single Family Housing	9.52	9.91	8.62
8	Residential	Medium Density Residential	30	DU	Condo/Townhouse	3.44	2.61	2.84
9	Residential	Single Family Residential	140	DU	Single Family Residential	9.52	9.91	8.62
10	Residential	Medium Density Residential (Condo/Townhouses)	20	DU	Condo/Townhouse	5.81	5.67	4.84
11	Residential	Single Family Residential	500	DU	Single Family Housing	7.62	7.93	6.90
	?	Diverse Use	75.0	ksf	User Defined Recreational	1.10	1.10	1.10
		Diverse Use	75.0	ksf	User Defined Retail	7.52	7.52	7.52
12	Residential	Medium Density Residential (Apartments)	60	DU	Apartments Low-Rise	6.65	6.39	5.86
	General Office	General Office Buildings	20.0	ksf	General Office Building	3.32	2.46	1.05

Notes and Abbreviations:
[1] Trip rate incorporates trip reductions associated with internal capture and alternative transit use.
ksf = thousand square feet DU = Dwelling Units Rms = Rooms
Source: Advantec Consulting Engineers 2014.

Architectural Coatings (Painting)

Paints release VOC emissions. The buildings in the project would be repainted on occasion. CalEEMod defaults were used for this purpose.

Landscape Equipment

The landscaping equipment emissions were calculated in CalEEMod using the default assumptions in the model.

Natural Gas

There would be emissions from the combustion of natural gas used for the project (water heaters, heat, etc.). CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. The project's estimated natural gas consumption was estimated using CalEEMod defaults.

4.3 - Toxic Air Contaminant Assessment Methodology

The General Plan Update does not propose specific projects that would include TAC emissions. However, during buildout of the General Plan certain industrial and commercial projects that generate TAC emissions are likely to be constructed. In addition, projects containing sensitive receptors such as residences and schools will likely be constructed near to existing sources of TAC emissions.

Because of the lack of specifics needed to assess impacts for comparison to a quantitative threshold, the TAC analysis for the update provides criteria for determining the types of projects and the proximity to sensitive use that can be applied when projects are proposed. No project-specific air quality modeling of TAC impacts has been prepared for this assessment. Instead, this assessment utilizes existing TACs data and siting recommendations to determine the project's potential significance. Existing data and recommendations are as follows:

- **ARB's Land Use Handbook:** ARB's Land Use Handbook offers advisory recommendations for locating sensitive receptors near uses associated with TACs, such as freeways and high traffic roads, commercial distribution centers, rail yards, ports, refineries, chrome platers, dry cleaners, gasoline stations, and other industrial facilities, to reduce exposure of sensitive populations.
- **Health Risk Assessment for the BNSF Railway Barstow Railyard:** The ARB, as part of its study of TAC emission impacts for railyards, prepared a comprehensive Health Risk Assessment for the BNSF Barstow Railyard in 2008. The BNSF Barstow Railyard study included an assessment of TAC emissions from diesel trucks traveling on freeways serving the community. The study shows that impacts from existing sources of TAC emissions exceed the 100 in a million cancer risk cumulative impact threshold in areas near freeways and up to a mile downwind from the railyard.

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section analyzes the expected air quality impacts from construction and operation of the project as a necessary requisite for assessing the potential significance of project emissions on a regional and localized level.

5.1 - CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, MDAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable MDAQMD thresholds and methodologies are contained under each impact statement below.

5.2 - Impact Analysis

Air Quality Plan

Impact AIR-1:	**The project would not conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the proposed project would conflict with or obstruct implementation of the applicable air quality plan. The MDAQMD CEQA

Guidelines does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the MDAQMD for Regional and Local Air Pollutants.

2. Will the project conform to the assumptions in the AQPs?

3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the MDAQMD's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.
- AQP emissions inventories and attainment modeling are based on growth assumptions for the area within the air district's jurisdiction.
- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the MDAB can reach attainment for the ambient air quality standards. In order to show attainment of the standards, the MDAQMD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and future emissions controls. The MDAQMD then formulates a control strategy to reach attainment.

The MDAQMD Federal 8-hour Ozone Attainment Plan (Ozone Plan) adopted June 9, 2008 is the applicable plan for ozone precursors ROG and NO_x. The Ozone Plan demonstrates attainment by 2017 with the State control program committed to by the ARB. No new controls at the air district level were required. The Western Mojave Air Basin is impacted by transport from upwind areas. Transport and air quality analyses support a link between the South Coast and Western Mojave Desert, as well as the San Joaquin Valley and Western Mojave Desert, with respect to ozone air quality. ROG and NO_x emissions in the upwind areas are 5 to 10 times the level of those in the Western Mojave Desert. Furthermore, the transport impact from the upwind areas is overwhelming on some days. Modeling analyses show that attainment in the Western Mojave Desert will be dependent on emissions reductions in the upwind areas.

According to the Mojave Desert Planning Area, Federal Particulate Matter (PM_{10}) Attainment Plan, on-road mobile sources are not a significant contributor to PM_{10} violations in the nonattainment area. The MDAQMD's PM_{10} problem is a localized problem caused by desert soils, not automobile tailpipe emissions. The MDAQMD proposed to ARB and EPA that SCAG should not be required to apply the federal transportation conformity requirements to transportation plans, programs or projects within the PM_{10} nonattainment area; however, the conformity analysis prepared for the SCAG 2012 RTP includes emission budgets for PM_{10} for the MDAB.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQP's assumptions is determining consistency with the applicable General Plan to ensure that the project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and designates locations for land uses to regulate growth. SCAG uses the growth projections and land use information in adopted general plans, among other sources, to estimate future average daily trips and then vehicle miles traveled, which are then provided to the MDAQMD to estimate future emissions in the AQPs. To satisfy Transportation Conformity requirements, land use, population, employment, and other network-based travel model assumptions must be documented and based on the best available information. All land use, population, households, employment, and network based model assumptions were updated for 2012 RTP and documented in 2012 RTP Growth Forecast Report and this Conformity. The City of Barstow General Plan Update assumes growth rates consistent with the 2012 RTP Growth Forecast; therefore, the project is consistent with the assumptions of the AQP and would not obstruct the implementation of the applicable AQPs. This is a less than significant impact.

Control Measures

The AQP contains control measures, which are enforceable requirements through the adoption of rules and regulations. No new local control measures were required to demonstrate attainment of the federal air quality standards. Regulations committed to by the ARB were found to be sufficient for the MDAB to reach attainment. A detailed description of rules and regulations that apply to this project is provided in Section 2.2, Regulatory Setting. The project will comply with all of the MDAQMD's applicable rules and regulations and the vehicles and equipment operating in the City will be subject to the applicable ARB regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Potential for Air Quality Standard Violation

Impact AIR-2:	**The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

This impact relates to localized criteria pollutant impacts, also known as "hotspots." Hotspots can be generated by project construction or operation. Regional construction and operational impacts are not addressed in this section, but are discussed in Impact AIR-3, below.

Contribution to Air Quality Violations

The MDAB currently violates ozone and $PM_{2.5}$ standards. Ozone is formed in photochemical reactions among ozone precursors ROG and NO_x. Emissions from individual projects would not result in measurable changes in ozone concentrations; however, the cumulative impacts of projects throughout the region may slow progress toward attainment. Therefore, the potential for the General Plan Update to contribute substantially to the existing violation is addressed in Impact AIR-3, which defines a significant cumulative contribution in relation to MDAQMD quantitative thresholds. $PM_{2.5}$ and PM_{10} impacts are the result of both direct emissions of particles and from the formation of particles in the atmosphere during chemical reactions. The regional impacts of PM_{10} and $PM_{2.5}$ are also addressed under Impact AIR-3; however, localized impacts of these pollutants are addressed in this section.

Two criteria are used to assess the significance of this impact: (1) localized fugitive dust (PM_{10}) from construction analysis and (2) the operational CO hot spot analysis. However, the MDAQMD has not adopted specific local significance thresholds for NO_2, $PM_{10,}$ $PM_{2.5}$, or CO. For localized fugitive dust PM_{10}, a significant impact would occur if the project does not incorporate BMPs for the control of fugitive dust during construction activities. For NO_2, $PM_{2.5}$, and CO, a significant impact would occur if the project would significantly contribute to an existing or project violation as demonstrated through analysis using screening tools or air models.

For pollutants where the air basin is classified as nonattainment under either the federal or state ambient air quality standards for PM_{10} and $PM_{2.5}$, the significance approach accepted by local, state, and federal air agencies is to identify a significant impact level (SIL) based on a level of increase determined to be *de minimis* by the EPA. CEQA case law (*Kings County Farm Bureau v. the City of Hanford*) established that the threshold in this case is not one additional molecule (or particle), which would require an EIR for any new development while the area was in nonattainment. The ruling stated, "The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin." Therefore, for purposes of this assessment, the EPA significant impact levels contained in Title 40, Part 51, (51.165(b)(2)) of the Code of Federal

Regulations were adopted to assess the significance of the change in particulate matter impacts from the project. Significant impact levels are used to determine whether a proposed source's emissions will have a significant impact on air quality. If an individual project's impacts are less than the corresponding significant impact levels, its impact is said to be *de minimis*. Significant impact levels are also used to determine whether a proposed source's impact on an existing violation of a standard is significant enough that it is considered to "cause or contribute to" the violation. The PM_{10} and $PM_{2.5}$ SILs are summarized in Table 8. For PM_{10} and $PM_{2.5}$, a significant impact would occur if the net change in PM_{10} or $PM_{2.5}$ exceeds the SILs.

Table 8: Criteria Pollutant Concentration-Based Significance Threshold Summary

Pollutant	Air Concentration Threshold	Regulatory Authority
CO	20 ppm (1-hour) 9 ppm (8-hour)	State Standard State/National Standard
NO_2	0.10 ppm (3-year average of the 98th percentile of maximum daily 1-hour average). 0.18 ppm (1-hour) 0.03 ppm (annual)	National Standard State Standard State Standard
PM_{10}	5 µg/m^3 (24-hour) 1 µg/m^3 (annual)	EPA 40 CFR Parts 51 and 52 (SIL) EPA 40 CFR Parts 51 and 52 (SIL)
$PM_{2.5}$	1.2 µg/m^3 (24-hour) 0.3 µg/m^3 (annual)	EPA 40 CFR Parts 51 and 52 (SIL) EPA 40 CFR Parts 51 and 52 (SIL)

Localized Fugitive Dust from Construction

Construction activities associated with development activities contemplated by the project would include grading, demolition, building construction, and paving. Generally, the most substantial air pollutant emissions would be dust generated from demolition and site grading. In addition, most fugitive dust would be deposited close to the source of the emissions. However, these emissions could lead to both health and nuisance impacts if uncontrolled. Construction activities would also temporarily create emissions of equipment exhaust. The potential impact from equipment exhaust is assessed separately in Impact AIR-3, below.

MDAQMD's significance thresholds do not differentiate between fugitive dust emissions and other sources of PM_{10}. The Bay Area Air Quality Management District and San Joaquin Valley Air Pollution Control District recommend incorporation of fugitive dust control BMPs to reduce the potential effect of construction-generated fugitive dust to less than significant.

Policy 14.1 is proposed requiring implementation of BMPs to control fugitive dust from construction and other earth-disturbing activities. The implementation of this mitigation measure would reduce this impact to a level of less than significant.

Localized Impacts from $PM_{2.5}$

Emissions generated at construction sites with large concentrations of diesel construction equipment operating simultaneously have the potential to exceed the federal 24-hour $PM_{2.5}$ standard of 35

$\mu g/m^3$ at nearby receptor locations. The project contribution SIL of 1.2 $\mu g/m^3$ (24-hour) or 0.3 $\mu g/m^3$ (annual) would apply when there is an existing violation of the standard. No detailed construction information is available to determine whether development within the Plan Area would result in localized $PM_{2.5}$ impacts. Compliance with Policies 8.2, 8.3, and 18.2 would ensure that projects with the potential to cause or contribute to a $PM_{2.5}$ exceedance are identified and mitigated to less than significant levels, if needed. Note that the diesel exhaust component of PM_{10} is nearly all smaller than $PM_{2.5}$ and would be addressed by assessing $PM_{2.5}$.

Localized Impacts from NO_2

Diesel powered construction equipment is the primary source of NO_2 emissions at construction sites. Large construction sites with sensitive receptors nearby have the potential to cause a localized violation of hourly NO_2 standard of 0.100 parts per million (ppm). No detailed construction information is available to determine whether development within the Plan Area would result in localized NO_2 impacts. Compliance with Policy 15.1 would ensure that projects with the potential to cause or contribute to an NO_2 exceedance are identified and mitigated to less than significant levels, if needed.

CO Hot Spot Analysis

CO "hot spot" thresholds ensure that emissions of CO associated with traffic impacts from a project in combination with CO emissions from existing and forecasted regional traffic do not exceed state or federal standards for CO at any traffic intersection impacted by the project. Project concentrations may be considered significant if a CO hot spot intersection analysis determines that project generated CO concentrations cause a localized violation of the state CO 1-hour standard of 20 ppm, state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

A CO hot spot is a localized concentration of CO that is above the state or federal 1-hour or 8-hour CO ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. To provide a worst-case scenario, CO concentrations are estimated at project-impacted intersections, where the concentrations would be the greatest.

This analysis follows guidelines recommended by the CO Protocol (University of California, Davis 1997). According to the CO Protocol, intersections with Level of Service (LOS) E or F require detailed analysis. In addition, intersections that operate under LOS D conditions in areas that experience meteorological conditions favorable to CO accumulation require a detailed analysis.

As detailed in the Traffic Study prepared by Advantec Consulting Engineers, all study intersections would operate at a LOS C or better at year 2020 with the developments or without the developments. Therefore, the project would not exceed the CO Protocol's screening criteria and additional CO hotspot analysis is not warranted. The project would not significantly affect the LOS of intersections in the project area. Therefore, the project would not significantly contribute to a CO hotspot.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Policy 14.1: Fugitive Dust Control Measures during Construction

Level of Significance After Mitigation

Less than significant impact.

Cumulative Impacts

Impact AIR-3:	**The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Impact Analysis

This impact is related to regional air pollutant impacts. Sulfur dioxide and CO are not included in the regional analysis because these pollutants are in attainment. Additionally, only minimal amounts of sulfur dioxide are emitted during construction and operation, as shown in the modeling output files contained in Appendix A.

The cumulative air quality analysis prepared for the project follows guidance from MDAQMD, the State CEQA Guidelines, and existing case law. In general, to result in a less than significant impact, the following must be true:

1. *Regional emissions analysis*: emissions of nonattainment pollutants must be below the MDAQMD's project level significance thresholds. This is an approach recommended by the MDAQMD in its 2011 CEQA Guidelines.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.
3. *Cumulative health impacts*: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Step 1: Regional Emissions Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The San Bernardino portion of the MDAB is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for the ozone

precursors NO_x or VOC, then it follows that the project would contribute to a cumulatively considerable impact for ozone.

Regional emissions include those generated from all onsite and offsite activities. Regional significance thresholds have been established by the MDAQMD because emissions from projects in the MDAB can potentially contribute to the existing emission burden and possibly slow progress toward the attainment of ambient air quality standards or result in a new exceedance of an air quality standard. Projects within the MDAB region with regional emissions in excess of any of the applicable thresholds are considered to have a significant regional air quality impact.

Construction Regional Emissions

For the assumptions used in generating the emissions, please refer to Section 4 of this report. The project includes a General Plan Update and projected development within 12 development areas. Although this document assumes all 12 development areas would be fully constructed by 2020, no detailed land use plans are available at the time of this writing. In addition, there is no schedule for submittal of any detailed plans. Because of the programmatic nature of the project, evaluating project-specific construction emissions, which are dependent on the quantity of earth being disturbed and equipment in operation at any one time, would be speculative.

Construction of individual development areas associated with implementation of the General Plan Update is assumed to occur from the present to 2020. Construction of multiple development areas could occur simultaneously. Construction of the development areas would result in temporary emissions of criteria pollutants. Individual development areas are subject to subsequent project-level environmental review at which time a more detailed analysis of construction related emissions would be undertaken to evaluate the need for additional mitigation to reduce air emissions. If construction of any individual development area would result in emissions that exceed MDAQMD thresholds of significance for criteria pollutants, then Goals 14 and 15 and Policies 14.1 and 15.1 would be implemented to minimize impacts. However, depending on the combination of construction activities, MDAQMD daily air emissions thresholds may be exceeded resulting in a significant and unavoidable impact

Operational Regional Emissions

Operational emissions from emission sources generated both onsite and offsite were estimated for three emissions scenarios: winter season, summer season, and annual total. The application of the annual MDAQMD thresholds is most appropriate for determining potential significance for the regional air quality emission. Annual emissions as calculated using CalEEMod and the methodology in Section 4 are provided in Table 9. As shown in Table 9, although many development areas would individually be less than the MDAQMD's regional thresholds, the development areas would cumulatively exceed the MDAQMD's regional thresholds for all pollutants except oxides of sulfur (SO_X). Application of Policies 4.1 and 4.2 would encourage employer based trip reduction programs. Policies 5.1 through 5.3 and 6.1 through 6.8 encourage alternative transportation modes. Policies 10.1 through 10.9 provide guidance on site designs that reduce trip generation. Policies 11.1 and 11.2 encourage a healthy jobs housing balance in the City. Policies 12.1 through 12.4 encourage compact development to minimize vehicle miles traveled. Policies 13.1 through 13.1 require site designs that specifically encourage transit, pedestrian, and bicycle transportation. Policies 17.1 and

17.2 would reduce emissions from fireplaces and woodburning stoves. These policies would reduce the operational emissions from the project. However, mitigated operational emissions would remain above MDAQMD ton per year thresholds and impacts are considered significant and unavoidable. Mitigated operational emissions are shown in Table 10.

Table 9: Operational Emissions

Emissions Source	Emissions (Tons per year)					
	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
Dev. Area 1: Heavy Industry	4.40	2.81	9.67	0.02	1.08	0.37
Dev. Area 2: Light Industry	4.10	5.07	21.94	0.04	2.47	0.75
Dev. Area 3: Casino Resort	3.48	6.18	28.85	0.05	2.97	0.90
Dev. Area 4: Active Seniors Housing	111.63	13.36	186.63	0.14	23.16	18.97
Dev. Area 5: Highway Commercial	13.26	22.61	132.78	0.15	9.12	2.72
Dev. Area 6: Big Box	10.87	20.38	116.24	0.15	9.56	2.78
Dev. Area 6: Fitness/Entertainment	4.19	7.64	44.47	0.05	3.28	0.97
Dev. Area 6: Health and Wellness	2.75	4.62	26.76	0.03	2.11	0.61
Dev. Area 6: Market and Storage	7.80	13.78	86.75	0.09	5.39	1.59
Dev. Area 6: Gas and Fast Food	10.57	19.30	118.10	0.12	7.20	2.16
Dev. Area 6: Hotel	1.56	1.65	6.93	0.01	0.63	0.21
Dev. Area 6: Medium-density Residential	1.46	0.29	3.00	0.00	0.36	0.26
Dev. Area 7: Single Family Residential	14.78	8.32	51.72	0.07	5.80	2.80
Dev. Area 8: Senior Housing Attached	2.12	0.25	3.52	0.00	0.44	0.36
Dev. Area 9: Single Family Residential	11.14	2.99	25.14	0.03	3.02	1.97
Dev. Area 10: Condominiums	1.45	0.26	2.83	0.00	0.35	0.26
Dev. Area11: Single Family Residential	39.13	8.76	80.37	0.08	9.72	6.72
Dev. Area 11: Diverse use	10.57	19.30	118.10	0.12	7.20	2.16
Dev. Area 12: Medium Density Residential	4.38	0.88	8.99	0.01	1.09	0.78
Dev. Area 12: Office	0.14	0.10	0.53	0.00	0.05	0.02
Total	250.42	140.43	961.24	1.07	88.45	45.37
Significance Threshold (tons/year)	25	25	100	25	15	15
Significant Impact?	Yes	Yes	Yes	No	Yes	Yes

Notes:
Dev. = development
VOC = volatile organic compounds NO_x = nitrogen oxides CO = carbon monoxide
SO_X = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix A: CalEEMod Output.
Source of thresholds: Mojave Desert Air Quality Management District 2011.

Table 10: Mitigated Operational Emissions

Emissions Source	Emissions (Tons per year)					
	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
Dev. Area 1: Heavy Industry	4.40	2.81	9.67	0.02	1.08	0.37
Dev. Area 2: Light Industry	4.10	5.07	21.94	0.04	2.47	0.75
Dev. Area 3: Casino Resort	3.48	6.18	28.85	0.05	2.97	0.90
Dev. Area 4: Active Seniors Housing	12.56	11.88	53.16	0.10	6.06	1.88
Dev. Area 5: Highway Commercial	13.26	22.61	132.78	0.15	9.12	2.72
Dev. Area 6: Big Box	10.87	20.38	116.24	0.15	9.56	2.77
Dev. Area 6: Fitness/Entertainment	4.19	7.64	44.47	0.05	3.28	0.97
Dev. Area 6: Health and Wellness	2.75	4.62	26.76	0.03	2.11	0.61
Dev. Area 6: Market and Storage	7.80	13.78	86.75	0.09	5.39	1.59
Dev. Area 6: Gas and Fast Food	10.57	19.30	118.10	0.12	7.20	2.16
Dev. Area 6: Hotel	1.56	1.65	6.93	0.01	0.63	0.21
Dev. Area 6: Medium-density Residential	0.21	0.28	1.45	0.00	0.15	0.04
Dev. Area 7: Single Family Residential	6.01	8.20	40.90	0.07	4.28	1.28
Dev. Area 8: Senior Housing Attached	0.24	0.22	1.20	0.00	0.11	0.04
Dev. Area 9: Single Family Residential	2.37	2.87	14.32	0.02	1.50	0.45
Dev. Area 10: Condominiums	0.20	0.25	1.28	0.00	0.13	0.04
Dev. Area11: Single Family Residential	7.79	8.33	41.72	0.07	4.32	1.32
Dev. Area 11: Diverse use	1.19	1.19	6.03	0.01	0.63	0.18
Dev. Area 12: Medium Density Residential	0.62	0.83	4.35	0.01	0.44	0.13
Dev. Area 12: Office	0.14	0.10	0.53	0.01	0.05	0.02
Total	94.31	138.18	757.43	1.00	61.52	18.44
Significance Threshold (tons/year	25	25	100	25	15	15
Significant Impact?	Yes	Yes	Yes	No	Yes	Yes

Notes:
Dev. = development
VOC = volatile organic compounds NO_x = nitrogen oxides CO = carbon monoxide
SO_X = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix A: CalEEMod Output.
Source of thresholds: Mojave Desert Air Quality Management District 2011.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. This analysis is based on the Federal PM_{10} Attainment Plan for the Mojave Desert Planning Area and the 2004 Ozone Attainment Plan. The MDAB is in nonattainment for ozone, and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants at least one monitoring station in the air basin. The monitoring data presented in Table 5, show that the City of Barstow monitoring station only exceeded the PM_{10} state 24 hour PM_{10} standard on two days in three years and no exceedances of the state or federal $PM_{2.5}$ 24 hour standard during this period. The state 8-hour ozone standard was exceeded on 36 days in 2012 and the federal 8-hour ozone standard was exceeded on 15 days. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the respective ambient air quality standard, then those sensitive to air pollution (i.e., children, elderly, sick) could experience health effects such as decrease of pulmonary function and localized lung edema in humans and animals, increased mortality risk, and risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans.

Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The AQMPs describe and evaluate the future projected emissions sources in the MDAB and sets forth a strategy to meet both state and federal Clean Air Act planning requirements and federal ambient air quality standards. Therefore, the AQMPs are the relevant plans for a CEQA cumulative impacts analysis. The 2004 Ozone Attainment Plan updates the attainment demonstration for the federal and standards for ozone. The 2008 Ozone Attainment Plan focuses on the 8-hour ozone standard. The 2008 plan replaces all previously submitted ozone plans. It incorporates significant new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling.

The geographic scope for cumulative criteria pollution from air quality impacts is the western Mojave nonattainment area, because that is the area in which the project is located. The MDAQMD is required to prepare and maintain an AQMP and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. The MDAQMD 2008 Ozone Attainment Plan does not require any local measures to demonstrate

attainment by the 2021 attainment year. No actions by local land use agencies are included in the plan. The MDAQMD evaluated the Western Mojave Desert Non-attainment Area when it developed the AQMP.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), 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 approved plan or mitigation program. As identified in Impact AIR-1, there are no local control measures in the AQMPs and all of the MDAQMD's applicable rules and regulations continue to apply. However, because the project identifies growth that exceeds the MDAQMD's CEQA significance thresholds and the increase in emissions could exceed the growth forecasts used in the attainment modeling for the Barstow area, the project may not be consistent with the most recent AQMP and State Implementation Plan without mitigation. Therefore, the project presents a potentially significant impact according to this criterion. Mitigation with policies designed to reduce operational emissions from the project are included to reduce this impact; however, because of uncertainty regarding whether the rate of growth would exceed forecasted amounts in the AQMP, this impact would be considered significant and unavoidable.

Step 3: Cumulative Health Impacts

The Western Mojave Desert Non-attainment Area is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as the elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 4. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis indicates that without mitigation, the project would exceed the MDAQMD regional significance thresholds for VOC and NO_x (ozone precursors). Because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Project emissions of VOC and NO_x may contribute to the background concentration of ozone and cumulatively cause health effects. Impacts may include the following: irrigation to respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage. Children who live in high ozone communities and who participate in multiple sports have been observed to have a higher asthma risk. This is a significant cumulative health impact associated with ground-level ozone concentrations.

Determining the amount of increase in ambient ozone concentration due to the increase in project level ozone precursor emissions is not currently feasible. Ozone concentrations are determined

using atmospheric models that account for variations in meteorology, atmospheric chemistry, and the location of emission sources in a regional grid. The attainment modeling conducted for air quality plans provides this level of detail, but is not feasible to use in determining sensitivity of concentrations from individual project contributions. The model is insensitive to increases in emissions in amounts that exceed the MDAQMD thresholds and the time and expense to conduct the modeling would be prohibitive. The most used measure for determining if regional emissions would interfere with attainment is through the use of emission budgets that are set a levels that have been modeled to demonstrate attainment of air quality standards at all locations within an air basin. As long as the emissions in the basin are predicted to stay below the emission budgets in the attainment year and thereafter accounting for growth from all sources, it can be safely assumed that health based standards will be achieved. Therefore, although emissions are increasing in areas with new development, the emission reductions from the control program are sufficient to offset the increase on a regional basis and ultimately eliminate this health impact.

Additionally, the project could result in a significance cumulative contribution to $PM_{2.5}$ and PM_{10}. Sensitive individuals may experience health impacts when concentrations of those pollutants exceed the ambient air quality standards. Health impacts from particulate matter may include the following:

- Short-term exposure (hours/days): irrigation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias.
- Long-term exposure: reduced lung function; chronic bronchitis; death.

The project could result in a significant impact to nitrogen dioxide. The potential effects from nitrogen dioxide may include the following:

- Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups;
- Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and/or
- Contribution to atmospheric discoloration.

Although CO would exceed the regional significance thresholds during operation (100 tons per year), there would not be significant health effects because the main source of CO is from motor vehicles that spread emissions over a wide area thereby limiting concentrations at any one location. CO can accumulate at project impacted intersections with significant traffic congestion. However, according to the CO hotspot discussion in Impact AIR-2, the project would not result in an exceedance of the CO ambient air quality standard at most impacted intersections in the City. The standards are set to protect the health of sensitive individuals. Therefore, the project would not result in health effects from CO exposure.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- Policies 4.2 and 4.2 Transportation Demand Management/Employer Based Programs
- Policies 5.1 through 5.3: Transportation Infrastructure Improvements
- Policies 6.1 through 6.8: Infrastructure and Facilities to Support Alternative Transportation
- Policies 10.1 through 10.9: Planning and Site Design Measures
- Policies 11.1 and 11.2: Maintain Healthy Jobs Housing Balance
- Policies 12.1 through 12.2: Encourage Compact Development
- Policies 13.1 through 13.3: Site Designs to Encourage Walking, Bicycling, and Transit
- Policy14.1: Fugitive Dust Control Measures
- Policy 15.1: Low Emission Construction Equipment
- Policies 17.1 and 17.2: Reduce Emissions from Woodburning Fireplaces and Stoves

Level of Significance After Mitigation

Significant and unavoidable cumulative impact.

Sensitive Receptors

Impact AIR-4:	**The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

This discussion addresses whether the project would expose sensitive receptors to substantial pollutant concentrations of CO, DPM, or other TACs of concern, and valley fever. A health risk is the probability that exposure to a given TAC under a given set of conditions will result in an adverse health effect. The health risk is affected by several factors, such as the amount, toxicity, and concentration of the contaminant; meteorological conditions; distance from the emission sources to people; the distance between the emission sources; the age, health, and lifestyle of the people living or working at a location; and the length of exposure to the TAC. A list of existing sensitive receptors located near the project is provided in the section on Local Air Quality.

Two scenarios have the potential for exposing sensitive receptors to TACs. The first is when a project includes a new or modified source of TACs and would be located near an existing or proposed sensitive receptor. The second scenario involves a residential or other sensitive receptor development locating near an existing or planned source of TACs.

CO Hotspot

A CO hot spot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project. The

CO hot spot analysis demonstrated that emissions of CO during operation would not result in an exceedance of the most stringent ambient air quality standards for CO. The standards are set to protect the health of sensitive individuals. If the standards are not exceeded, then the sensitive individuals would not be significantly impacted. Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact.

Asbestos During Demolition

Asbestos-containing material may be present at the buildings that would be demolished, and could be potentially significant before mitigation. Demolition of existing buildings and structures would be subject to ARB ATCM and MDAQMD Rule 1000 National Emission Standards for Hazardous Air Pollutants (NESHAP). Asbestos surveys are required prior to renovation and demolition. Asbestos must be removed prior to activities that may disturb it. All asbestos must be removed prior to demolition. Compliance with this regulation would result in a less than significant impact.

Construction: Toxic Air Contaminants

Although construction of the project would involve the use of diesel-fueled vehicles, construction risks were not analyzed because the schedule and activity would be speculative at this time. While operational emissions are ongoing, the construction phase emissions are short-term. The California Office of Environmental Health Hazard Assessment (OEHHA) provides exposure variants for 9-, 30-, and 70-year exposures its Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2003). These exposures are chosen to coincide with the EPA's estimates of the average (9 years), high-end estimates (30 years) of residence time, and a typical lifetime (70 years). OEHHA states its support for the use of cancer potency factors for estimating cancer risk for these exposure durations. However, as the exposure duration decreases, the uncertainties introduced by applying cancer potency factors derived from very-long-term studies increases. Short-term high exposures are not necessarily equivalent to longer-term lower exposures even when the total dose is the same. OEHHA therefore does not support the use of current cancer potency factor to evaluate cancer risk for exposures of less than 9 years (refer to page 8-4 of OEHHA 2003).

Construction phase risks would be considered acute health risks as opposed to cancer risks, which are long-term. OEHHA has yet to define acute risk factors for diesel particulates that would allow the calculation of a hazards risk index; thus, evaluation of this impact would be speculative and no further discussion is necessary.

Operation: Toxic Air Contaminants

In accordance with the thresholds contained within the MDAQMD CEQA Guidelines, the following project-level significance health risk thresholds were applied:

- A cancer risk level of 10 new cases in a population of one million
- A non-cancer hazard index of 1.0

A project that contributes a cancer risk in excess of 10 new cases in a population of million persons or a non-cancer hazard index of greater than 1.0 would be considered to have a significant project-level impact.

The MDAQMD has not adopted a threshold of significance or analysis procedure for determining a project's cumulative health risk from toxic air contaminants. The City of Barstow, through its own assessment of substantial evidence, has determined the following thresholds were identified for the analysis of cumulative toxic emissions:

- **Cancer Risk to Maximally Exposed Individual**. Cumulative sources (including the proposed project, existing sources and reasonably foreseeable future sources) would be subject to a significance threshold of 100 in one million within the zone of influence from the location of the new source being evaluated.
- **Non-Cancer Risk to Maximally Exposed Individual**. Cumulative sources of risks or hazards would be subject to a significance threshold of a chronic or acute Hazard Index of greater than 10.0 within the zone of influence from the location of the new source being evaluated. Siting of new receptors would be subject to the chronic or acute Hazard Index threshold of greater than 10.0 relative to all cumulative sources within the zone of influence of the new receptor location.

These thresholds are based on the review of data and analysis regarding the extent of existing impacts in the region compiled by state and federal agencies responsible for regulating these pollutants. The threshold approaches and analysis methods considered in here were developed by regional air pollution control districts that are expert commenting agencies with regulatory responsibility for toxic emissions at the local level. The cancer risk levels selected to constitute a significant cumulative contribution (100 in a million increase in cancer risk) and a significant cumulative contribution in areas that already experience a cumulative impact (10 in a million) are supported by substantial evidence as presented and referenced in this document.

As quantified in the BNSF Railyard Study (Railyard Study), the entire city experiences an increased cancer risk from TAC emissions that exceeds 100 in a million from the railyard and from area freeways. The Railyard Study reported that the residences closest to the railyard have risks of 611 in a million in million while residents near Interstate 15 experience increased cancer risk of over 250 in a million. Although these risk estimates are much lower than other California urban areas, there is no level of TAC emissions that is considered to have no health impacts. This situation requires a policy decision to determine an acceptable level of risk for projects and cumulatively from all TAC sources that impact the City.

The MDAQMD has adopted a threshold for TAC impacts from individual projects of an increased cancer risk of 10 in a million. This threshold is based on AB 2588 Hot Spot regulations for stationary sources of TAC emissions subject to air district permitting and regulation. Most air districts around the state, including MDAQMD, have adopted a 10 in a million threshold for application to development projects that generate TAC emissions. No air district has adopted a cumulative TAC emission threshold with the exception of the Bay Area Air Quality Management District. The BAAQMD cumulative threshold is a cancer risk of 100 in a million from sources within 1,000 feet of a project. The EPA considers 100 in a million to be an acceptable risk from TAC emissions in a community. With the existing risk from cumulative TAC sources in the entire City of Barstow exceeding 100 in a million, the existing health risk from TACs exceeds the EPA's acceptable risk level.

The project may generate a TAC impact by:

- Locating new sensitive receptors close to existing sources of TACs, or
- Locating new sources of TACs close to existing sensitive receptors.

The TAC emitted by the project that has the greatest potential to cause a health risk to the surrounding community is DPM from the operation of diesel-powered trucks. The health effects of DPM were described earlier in Table 4. The potential sources of TACs and sensitive receptors in the projected development areas is provided in Table 11. As shown in Table 11, sensitive land uses would be constructed in Development Areas 4, 6, 7, 8, 9, 10, 11, and 12. Specifically, residential land uses and a day care are contemplated in those development areas. In addition, the potential sources of TACS are projected to be constructed in Development Areas 1, 2,and 6. Industrial land uses, large retailers, and supermarkets typically generate heavy duty truck trips, which are sources of DPM. In addition, refueling at gasoline dispensing facilities releases benzene into the air. Benzene is a potent carcinogen and is one of the highest risk air pollutants regulated by ARB.

Table 11: TACs Sources and Sensitive Receptors within the Projected Development Areas

Development Area	Development Node Type	Projected Development Areas		
		Proposed Land Use	Source of TACs?	Location of Sensitive Receptors?
1	General Industry	General Heavy Industry	Yes	No
2	General Industry	General Light Industry	Yes	No
3	Casino Full Service Resort	Gaming Floor	No	No
		Hotel (Resort)	No	No
		2 Restaurants (full service)	No	No
		1 Restaurant (drive thru)	No	No
		1 Buffet (sit down)	No	No
		1 Coffee Shop (sit down)	No	No
		Retail Shops (3 shops) Department Stores	No	No
4	Residential	Single Family Residential “Active Seniors Housing”	No	Yes
5	Commercial	Restaurants 3 (sit down)	No	No
		Restaurants 2 (w/drive thru)	No	No
		Hotel (300,000 sf)	No	No
		Retail Shops (shopping center)	No	No

Table 11 (cont.): TACs Sources and Sensitive Receptors within the Projected Development Areas

Development Area	Development Node Type	Projected Development Areas		
		Proposed Land Use	Source of TACs?	Location of Sensitive Receptors?
6	Big Box Retail	Major Retailer	Potential	No
		Retail Pads	No	No
		Shops	No	No
		Bank	No	No
	Fitness/ Entertainment	Fitness Center	No	No
		Sporting Goods Store	No	No
		Movie Theater	No	No
		Shopping	No	No
		Bank	No	No
		Restaurant	No	No
		Fast Food	No	No
		Visitor Center	No	No
	Health and Wellness	Wellness Center	No	Potential
		Daycare	No	Yes
		Drug Store	No	No
		Shopping Pad	No	No
	Market and Storage	Supermarket	Yes	No
		Shopping	No	No
		Restaurant	No	No
		Fast Food	No	No
		Gas Station	Yes	No
		Office	No	No
	Gas & Fast Food	Shopping	No	No
		Gas Station	Yes	No
		Fast Food	No	No
		Restaurant	No	No
	Hotel	Hotel (E of L St; S of Main); 200,000 sf	No	No
	Residential	Medium Density Residential	No	Yes

Table 11 (cont.): TACs Sources and Sensitive Receptors within the Projected Development Areas

Development Area	Development Node Type	Projected Development Areas		
		Proposed Land Use	Source of TACs?	Location of Sensitive Receptors?
7	Residential	Single Family Residential	No	Yes
8	Residential	Medium Density Residential	No	Yes
9	Residential	Single Family Residential	No	Yes
10	Residential	Medium Density Residential (Condo/Townhouses)	No	Yes
11	Residential	Single Family Residential	No	Yes
	TBD	Diverse Use	No	No
		Diverse Use	No	No
12	Residential	Medium Density Residential (Apartments)	No	Yes
	General Office	General Office Buildings	No	No

Note:
TBD = to be determined
Sf = square feet DU = Dwelling Units Rms = Rooms

Risk to Sensitive Receptors within Development Areas.

The ARB's Land Use Handbook and the BNSF Railyard Study are utilized to assess the potential health risks to sensitive receptors that would be located within the projected development areas.

ARB's Land Use Handbook

The ARB's recommendations address the issue of siting sensitive land uses near specific sources of air pollution. The ARB's recommendations are provided in Table 12.

Table 12: ARB's Land Use Handbook Recommendations for Siting Sensitive Receptors

Toxic Air Contaminant Source Category	Advisory Recommendation
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).

Table 12 (cont.): ARB's Land Use Handbook Recommendations for Siting Sensitive Receptors

Toxic Air Contaminant Source Category	Advisory Recommendation
	Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.
	Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Note:
These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
Source: ARB 2006

Exhibit 13a shows the location of the projected development areas respective to freeways, the BNSF Railyard, gasoline stations and drycleaners. As shown in Exhibit 13b, portions of Development Area 6 would be located within 1,000 feet of the BNSF Railyard. In addition, Exhibit 13c shows portions of Development Area 4 would be located within 500 feet of I-15. However, that portion of I-15 is estimated to facilitate 71,000 average annual daily in 2012 (Caltrans 2013). Therefore, in accordance with the ARB's siting guidance, residential land uses within Development Area 6 may be located in an area with a significant TAC risk.

In addition, potential sources of TACS are projected to be constructed in Development Areas 1, 2, and 6. Development Areas 1 and 2 would be located within 1,000 feet of existing residences (siting guidance for distribution centers). Development Area 6 would be located within 50 feet of existing residential areas. Therefore, development projected to occur within Development Areas 1, 2, and 6 would result in a potentially significant impact.

BNSF Railyard Study

The ARB conducted a health risk assessment study to evaluate the health impacts associated with toxic air contaminants emitted in and around the BNSF Barstow Railyard. The BNSF Barstow Railyard is located at 200 Avenue H in Barstow on the northern edge of the City of Barstow in a commercial and residential area. The railyard is approximately 5 miles in length, is oriented in an east-west direction, and covers an area of about 600 acres.

The study focused on the railyard property emissions from locomotives, on-road trucks, and off-road vehicles and equipment used to move bulk cargo such as forklifts. The operational areas that were evaluated in the analysis included:

i. Locomotive Maintenance Area
ii. Arrival Tracks
iii. Departure Tracks
iv. Hump Yard
v. Classification Yard
vi. Adjacent Main Line

Exhibit 14 shows the near-source cancer risk isopleths associated with the BNSF Barstow Railyard. As shown in Exhibit 14, the area with the greatest impact has an estimated potential cancer risk of over 250 chances in a million, occurring in an area, 200 yards north and south of the railyard fence line. At about 400 yards, outside of the BNSF Barstow Railyard boundary, the estimated cancer risks are lowered to about 150 chances in a million. At about a half-mile from the BNSF Barstow Railyard boundaries, the estimated cancer risk is about 100 in a million, and within a mile of the railyard boundary the estimated cancer risks are lowered further to about 50 in a million. At about 1.5 miles from the BNSF Barstow Railyard, the estimated cancer risks are lowered to about 10 in a million. The estimated regional cancer risks are shown in Exhibit 15 and Exhibit 16.

The existing residential areas near the BNSF Barstow Railyard are located primarily to the north and south east of the railyard. Areas located to the west are predominately open desert land or industrial areas. Based on the 2000 U. S. Census Bureau's data, the zone of impact with the estimated cancer risk over 10 chances in a million encompasses approximately 25,500 acres and about 22,060 residents. Table 13 presents the exposed population and area coverage for various impacted zones of cancer risks.

Table 13: Estimated Impacted Areas and Exposed Population Associated with Different Cancer Risk Levels Caused by BNSF Barstow Railyard DPM

Estimated Risk (chances per million)	Impacted Area[1] (Acres)	Estimated Population Exposed
> 250	650	860
100 - 250	2,650	3,600
50 - 100	4,300	5,000
25 - 50	6,900	6,500
10 - 25	11,000	6,100
>10	25,500	22,060

Note:
[1] The impacted area is the land surrounding the railyard that is exposed to emissions from the railyard.
Source: ARB 2008

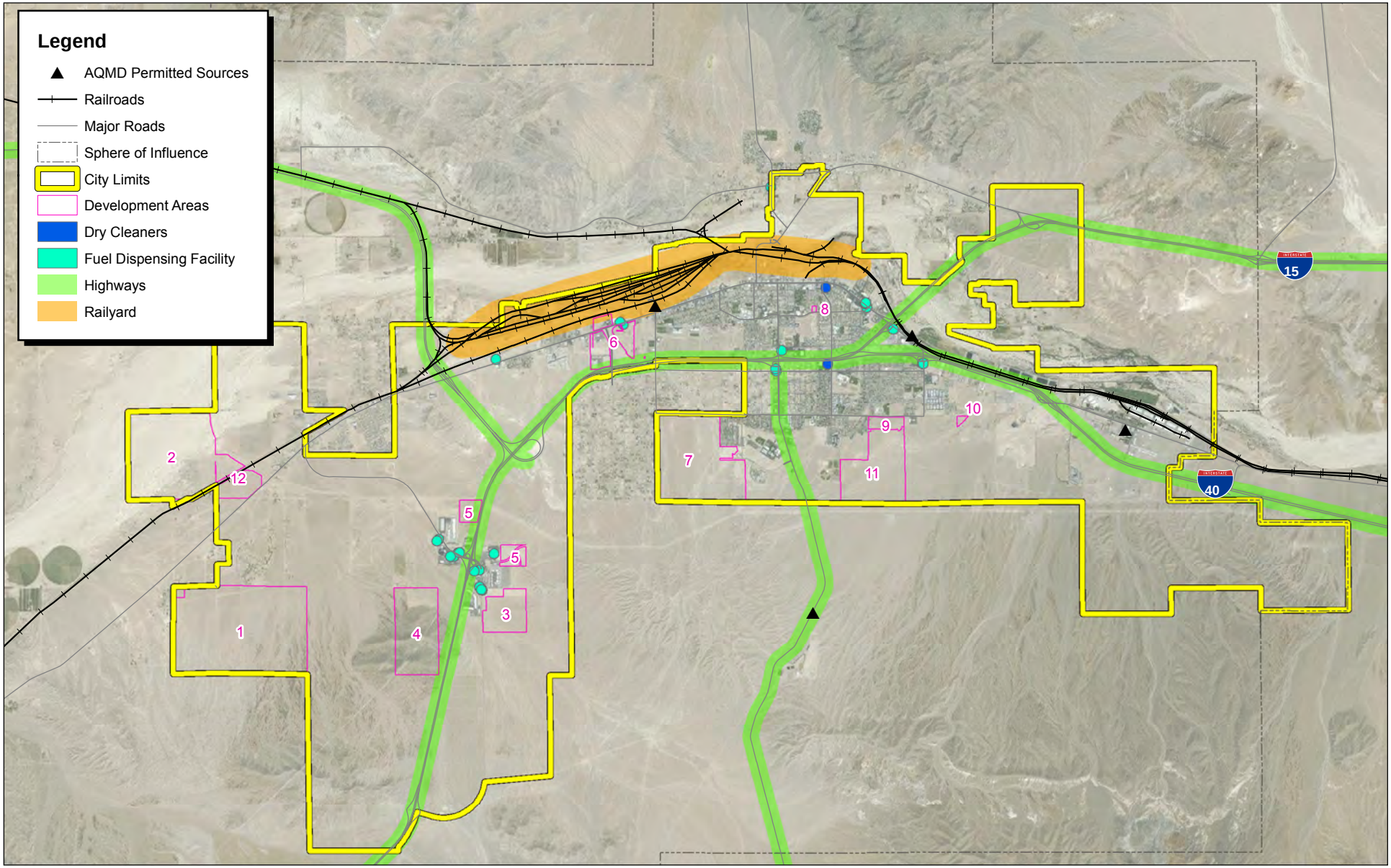
The potential non-cancer chronic health Hazard Index from the estimated DPM emissions at the BNSF Barstow Railyard is estimated to range from 0.02 to 0.20, which is well below the MDAQMD threshold of significance.

The proposed development areas would only place new sensitive receptors close to the railyard in Development Area 6 – Spanish Trails. The ARB's Diesel Risk Reduction Plan is expected to reduce cancer risk from DPM emissions by 80 percent below year 2000 levels by 2020. In addition, emissions from locomotives are expected to decrease as newer locomotives are placed into service. To ensure new development proposed in areas impacted by existing and new sources of TAC emissions, Goal 8 and Policy 8.3 have been included in the General Plan Update. The policy requires screening and health risk assessment, if indicated, to identify projects that would expose sensitive receptors to significant TAC impacts. Mitigation measures are available to reduce impacts in projects found to be significant. Goal 15 and Policy 15.1 would reduce DPM from construction equipment. Goal 16 and Policy 16.1 would reduce DPM from diesel truck loading areas. Finally, Goal 18 and Policies 18.1 through 18.4 guide location decisions to ensure exposure to TACs is minimized. Under Policy 18.2, the City would use the distance screening criteria of the ARB's Land Use Air Quality Handbook to identify projects with potential TAC impacts that would require additional analysis. Therefore, impacts from TAC emissions due to the project are considered less than significant with mitigation.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis (C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

Valley fever spores have been found in the Mojave Desert. According to a NASA Dryden Center article, reported Valley fever cases in the high desert portions of Los Angeles County known as the Antelope Valley increased 545 percent when comparing 2000–2003 (49 cases) to 2008–2011 (316 cases), according to Ramon E. Guevara, Ph.D., epidemiologist with the County of Los Angeles Department of Public Health (NASA 2013).

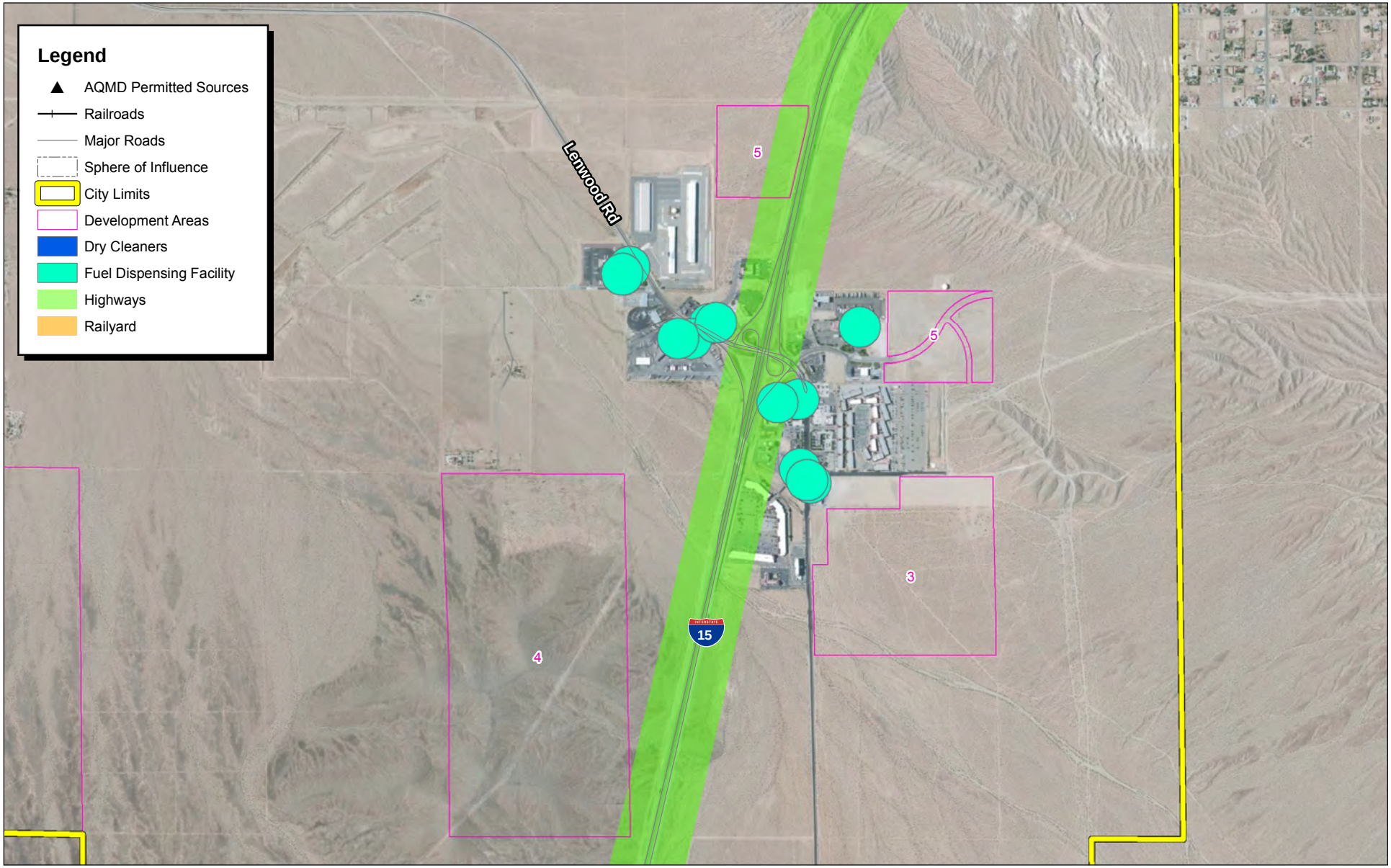


Source: ESRI, City of Barstow

FirstCarbon SOLUTIONS

1.5 0.75 0 1.5
Miles

Exhibit 13a
Air Quality Overlay Zones

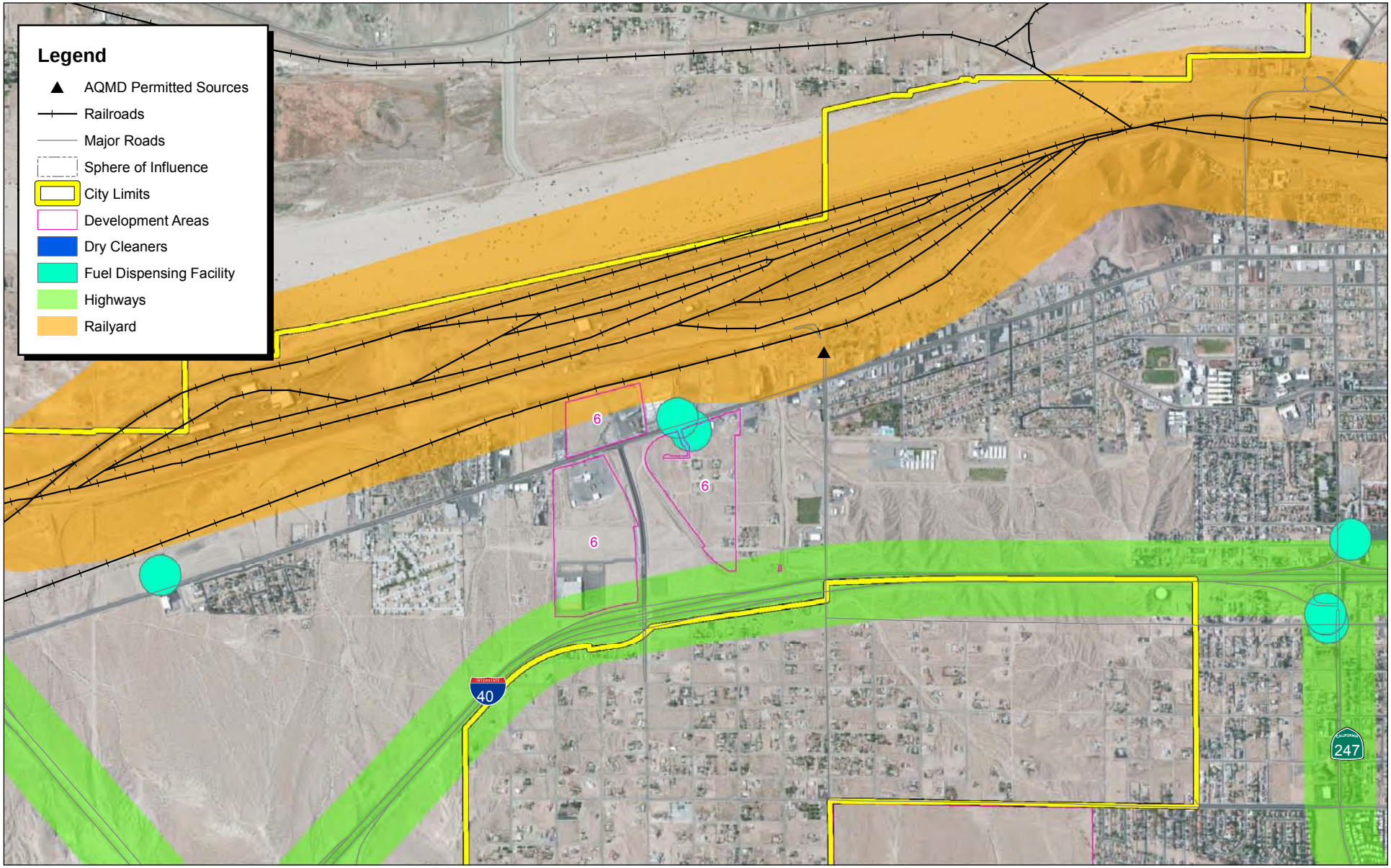


Source: ESRI, City of Barstow

FirstCarbon SOLUTIONS

0.4 0.2 0 0.4 Miles

Exhibit 13b
Air Quality Overlay Zones in Development Areas 3, 4, and 5



Source: ESRI, City of Barstow

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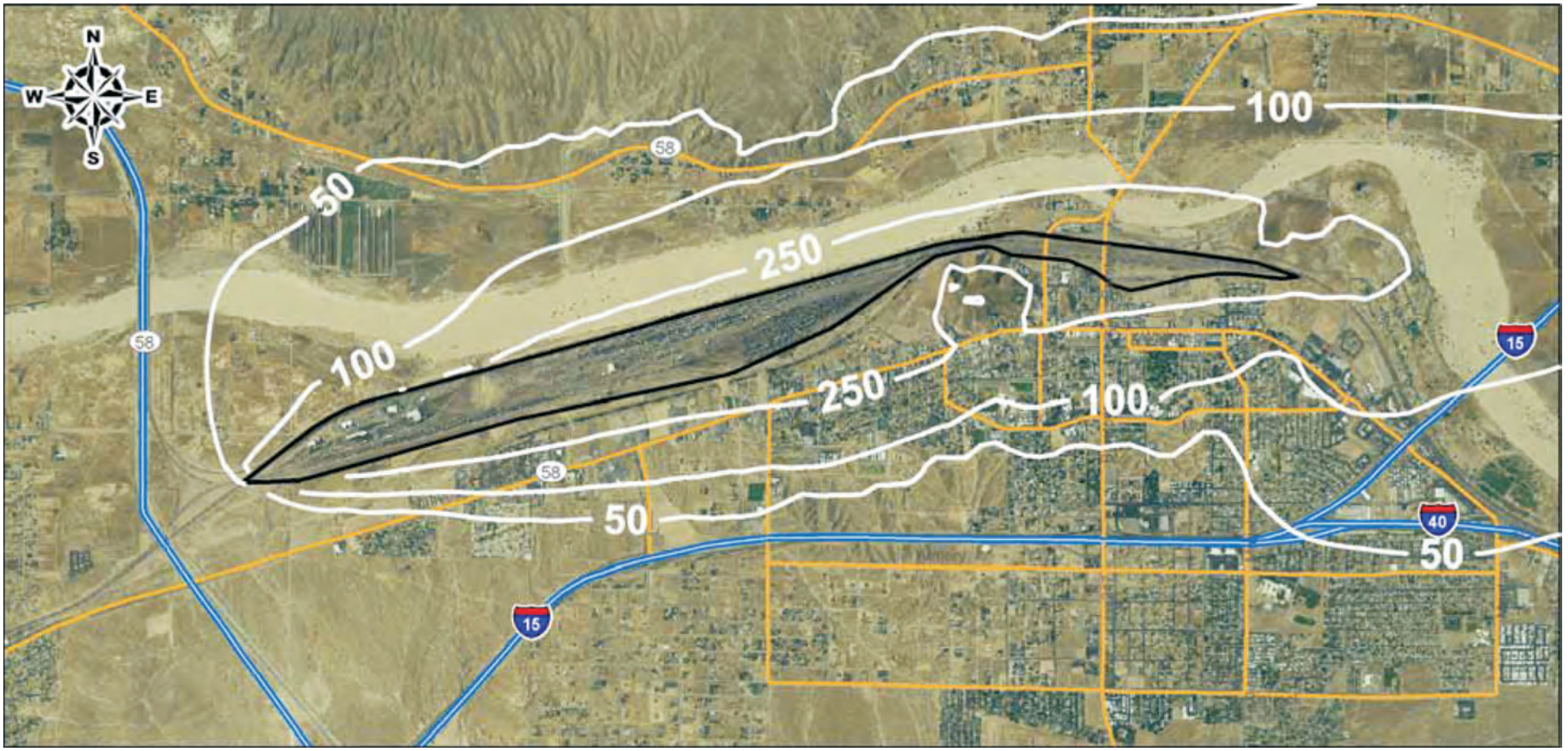
0.4 0.2 0 0.4
Miles

Exhibit 13c
Air Quality Overlay Zones in Development Area 6



Source: California Air Resources Board

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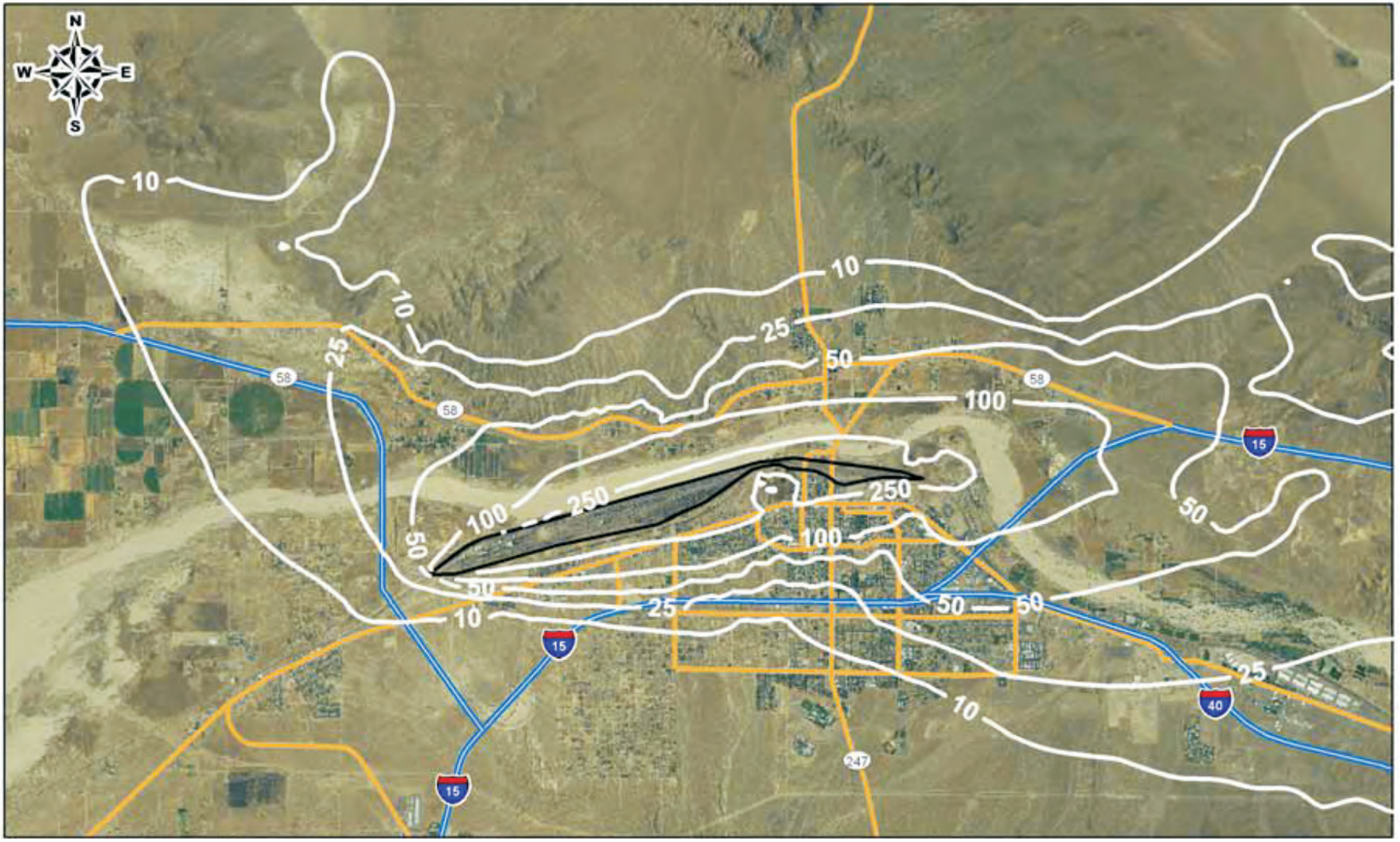
Exhibit 14
Estimated Near-Source Cancer Risks (case per million people) from the BNSF Barstow Railyard



Source: California Air Resources Board

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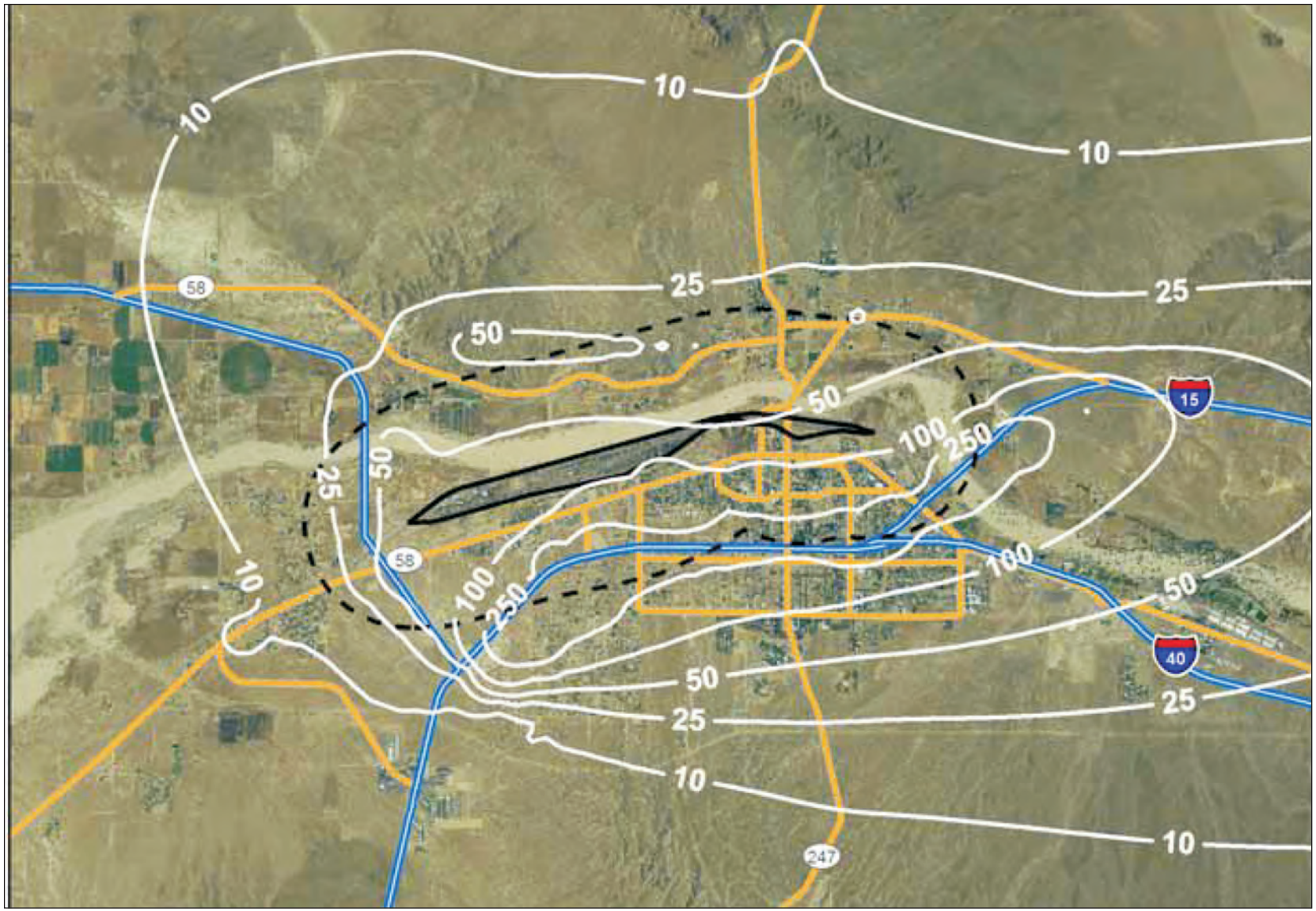
Exhibit 15
Estimated Regional Cancer Risks (case per million people) from the BNSF Barstow Railyard



Source: California Air Resources Board

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Exhibit 16
Estimated Cancer Risks Levels
from Off-site Diesel PM Emissions

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 cm of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well aerated soil with relatively high water holding capacities

Sites within endemic areas less favorable for the occurrence of C. immitis include:

1) Cultivated fields
2) Heavily vegetated areas (e.g., grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g., ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete)or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the MDAQMD's Rule 403. Therefore, this regulation would reduce valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- Policy 8.3 Health Risk Screening of New Projects
- Policy 15.1 Construction Equipment Mitigation
- Policy 16.1 Onsite Heavy Duty Truck Mitigation
- Policies 18.1 through 18.4 Siting Guidance for Sources of Toxics and Odors

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AIR-5: **The project would not create objectionable odors affecting a substantial number of people.**

Impact Analysis

Thresholds of Significance

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc., warrant the closest scrutiny, but consideration could also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. Although the MDAQMD has not adopted odor thresholds, several other Air Districts, including the San Joaquin Valley Air Pollution Control District have identified distance screening criteria for common land use types that are known to produce odors. These types are shown in Table 14.

Table 14: Screening Levels for Potential Odor Sources

Odor Generator	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Source:, SJVAPCD 2002.	

When projects include potential odor sources on this list with receptors within the distances listed in Table 14, the City may require an Odor Impact Assessment. The project developers with these sources would develop an Odor Impact Minimization Plan that includes BMPs for preventing odors from occurring and appropriate control technologies where available to reduce odorous emissions. Management practices include, but are not limited to:

- Frequent clean-up of spills
- Removal of odorous material quickly
- Non-acceptances of odorous materials
- Indoor processing of materials
- Covering of materials
- Avoid accumulation of standing water in processing areas

Odor control technologies include, but are not limited to:

- Incinerators/afterburners to combust odor containing gases
- Paint booths with air filtration systems for painting operations
- Biofilters to remove odorous compounds
- Use of covered anaerobic digesters to process waste water.

In some cases, the developer may provide air dispersion modeling that demonstrates that concentrations of odorous compounds generated by their project will not exceed detection levels at the nearest receptor, eliminating the need for installation of controls.

If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 14 than the recommended distances, a more detailed analysis including a review of MDAQMD odor complaint records is recommended. The detailed analysis would involve contacting the MDAQMD's Compliance Division for information regarding odor complaints. For a project locating near an existing source of odors, the project should be identified as having a significant odor impact if it is proposed for a site that is closer to an existing odor source than any location where there have been:

- More than one *confirmed* complaint per year averaged over a three-year period, or
- Three *unconfirmed* complaints per year averaged over a three-year period.

Project Analysis

Types of land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The projects identified within the twelve development areas do not propose to construct any of these facilities.

During construction, the various diesel-powered vehicles and equipment in use onsite would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant.

During project operations, certain industrial and commercial projects could produce odors as a result of refuse/waste storage and collection, and from cooking exhaust at restaurants. Refuse storage and collection areas would be constructed to City standards to accommodate solid waste generation by the proposed facilities. All collection areas and containers will be enclosed to minimize generation of odors. Regardless, the scale and size of these activities would not meet any recognized standard as a source of substantial odors. Therefore, the odor impacts associated with refuse storage and collection as well as cooking exhaust would be less than significant.

Development Areas identified in the General Plan Update containing residential land uses are not located within the 2 mile screening distance of the City's Wastewater Treatment Plant (Exhibit 17). There are no solid waste facilities or other major odor generating sources (as listed in Table 14) within 1 mile of the residential Development Areas, and no petroleum refineries or wastewater treatment facilities exist within 2 miles of the Residential Development Areas. The railyard is a source of diesel emissions that is sometimes considered an objectionable odor. Emissions at the railyard are expected to decline as locomotives are replaced with cleaner models and offroad equipment complies with ARB regulations that requires retrofits with particulate filters and new equipment must comply with increasingly stringent off-road engine standards. Therefore, existing and proposed uses would not cause substantial odor impacts to the project.

Level of Significance Before Mitigation

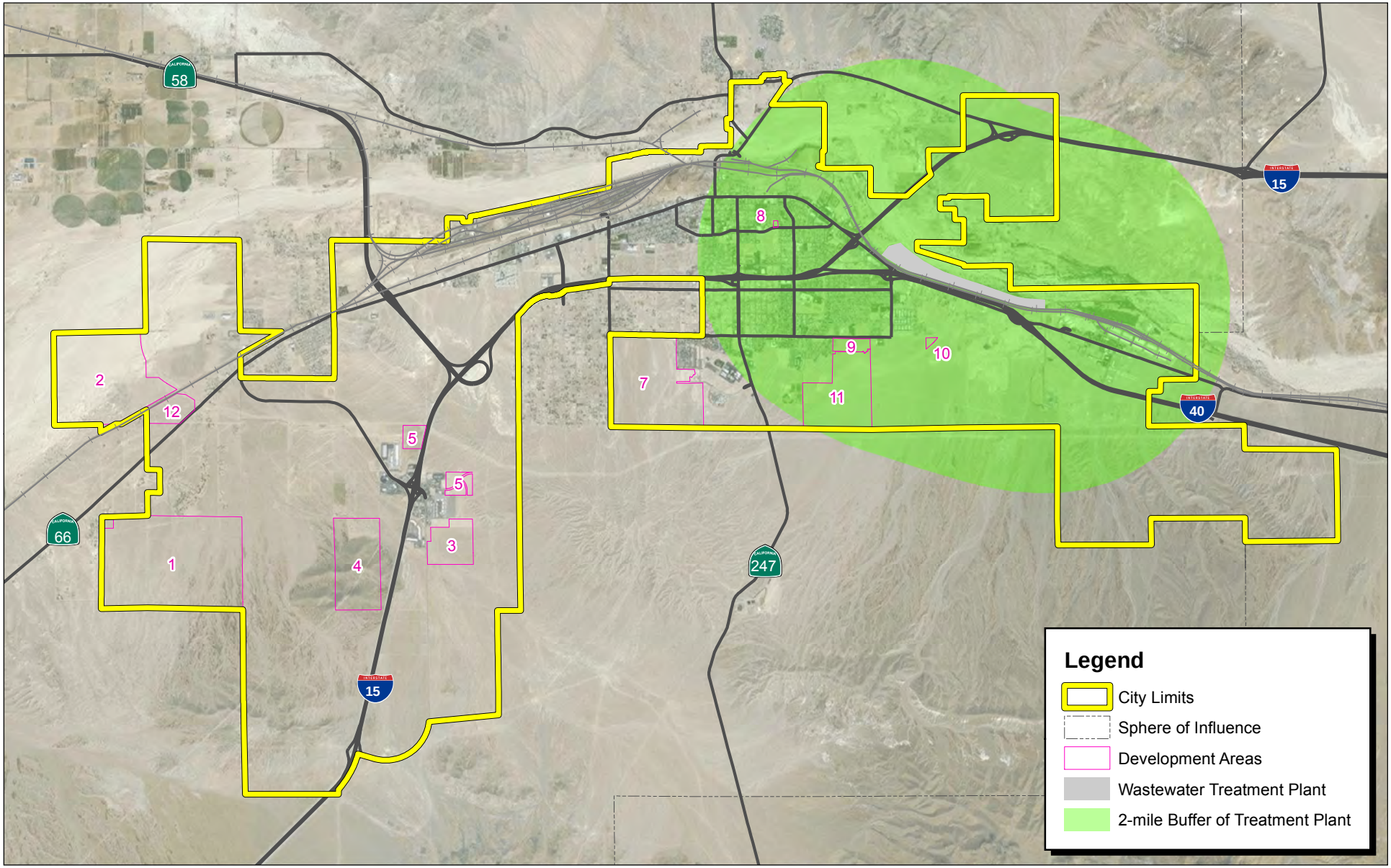
Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.



Source:ESRI, City of Barstow

FirstCarbon SOLUTIONS

1.5 0.75 0 1.5
Miles

Exhibit 17
Odor Overlay Zones

SECTION 6: ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AQP	Air Quality Plan
ARB	California Air Resources Board
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
DPM	diesel particulate matter
EPA	United States Environmental Protection Agency
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
NO_x	nitrogen oxides
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
ppt	parts per trillion
ROG	reactive organic gases
SB	Senate Bill
SCAG	Southern California Association of Governments
SO_x	sulfur oxides
VOC	volatile organic compounds

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Appendix A:
Air Quality Modeling Results

Barstow - Dev Site 1 - Gen Hvy Ind

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	725.00	1000sqft	16.64	725,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.50	1.20
tblVehicleTrips	SU_TR	1.50	1.20
tblVehicleTrips	WD_TR	1.50	1.20

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Energy	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	2,810.9539	2,810.9539	0.0987	0.0371	2,824.5121
Mobile	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064
Waste						0.0000	0.0000		0.0000	0.0000	182.4889	0.0000	182.4889	10.7848	0.0000	408.9693
Water						0.0000	0.0000		0.0000	0.0000	42.5517	401.4968	444.0485	4.3881	0.1070	569.3737
Total	**4.3980**	**2.8149**	**9.6703**	**0.0210**	**0.9650**	**0.1104**	**1.0754**	**0.2581**	**0.1078**	**0.3658**	**225.0406**	**4,283.5461**	**4,508.5867**	**15.3108**	**0.1441**	**4,874.7752**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064
Unmitigated	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	870.00	870.00	870.00	2,539,975	2,539,975
Total	870.00	870.00	870.00	2,539,975	2,539,975

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,710.5682	1,710.5682	0.0776	0.0169	1,717.4296
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,845.0735	1,845.0735	0.0837	0.0182	1,852.4745
NaturalGas Mitigated	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	1,100.3857	1,100.3857	0.0211	0.0202	1,107.0825
NaturalGas Unmitigated	0.1301	1.1831	0.9938	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	1,287.9489	1,287.9489	0.0247	0.0236	1,295.7871

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/yr	tons/yr										MT/yr					
General Heavy Industry	2.06205e+007	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	1,100.3857	1,100.3857	0.0211	0.0202	1,107.0825
Total		**0.1112**	**1.0108**	**0.8491**	**6.0600e-003**		**0.0768**	**0.0768**		**0.0768**	**0.0768**	**0.0000**	**1,100.3857**	**1,100.3857**	**0.0211**	**0.0202**	**1,107.0825**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	7.44068e+006	1,710.5682	0.0776	0.0169	1,717.4296
Total		**1,710.5682**	**0.0776**	**0.0169**	**1,717.4296**

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	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Unmitigated	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137

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	0.8401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Total	**3.6722**	**6.0000e-005**	**6.7000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0137**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	444.0485	4.3881	0.1070	569.3737
Unmitigated	555.0606	5.4859	0.1340	711.7870

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	134.125 / 0	444.0485	4.3881	0.1070	569.3737
Total		**444.0485**	**4.3881**	**0.1070**	**569.3737**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	182.4889	10.7848	0.0000	408.9693
Unmitigated	182.4889	10.7848	0.0000	408.9693

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	899	182.4889	10.7848	0.0000	408.9693
Total		**182.4889**	**10.7848**	**0.0000**	**408.9693**

Barstow - Dev Site 2 - Gen Light Ind

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	500.00	1000sqft	11.48	500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.32	1.06
tblVehicleTrips	SU_TR	0.68	0.54
tblVehicleTrips	WD_TR	6.97	5.58

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Energy	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	1,938.5889	1,938.5889	0.0681	0.0256	1,947.9394
Mobile	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607
Waste						0.0000	0.0000		0.0000	0.0000	125.8544	0.0000	125.8544	7.4378	0.0000	282.0478
Water						0.0000	0.0000		0.0000	0.0000	29.3460	276.8944	306.2404	3.0262	0.0738	392.6715
Total	**4.0977**	**5.0666**	**21.9389**	**0.0405**	**2.3371**	**0.1344**	**2.4715**	**0.6250**	**0.1279**	**0.7529**	**155.2004**	**4,809.6573**	**4,964.8577**	**10.6272**	**0.0994**	**5,218.8289**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607
Unmitigated	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	2,790.00	530.00	270.00	6,151,827	6,151,827
Total	2,790.00	530.00	270.00	6,151,827	6,151,827

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,179.7022	1,179.7022	0.0535	0.0116	1,184.4342
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,272.4645	1,272.4645	0.0577	0.0126	1,277.5686
NaturalGas Mitigated	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	758.8867	758.8867	0.0146	0.0139	763.5052
NaturalGas Unmitigated	0.0898	0.8159	0.6854	4.9000e-003		0.0620	0.0620		0.0620	0.0620	0.0000	888.2406	888.2406	0.0170	0.0163	893.6463

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/yr	tons/yr										MT/yr					
General Light Industry	1.4221e+007	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	758.8867	758.8867	0.0146	0.0139	763.5052
Total		**0.0767**	**0.6971**	**0.5856**	**4.1800e-003**		**0.0530**	**0.0530**		**0.0530**	**0.0530**	**0.0000**	**758.8867**	**758.8867**	**0.0146**	**0.0139**	**763.5052**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
General Light Industry	5.1315e+006	1,179.7022	0.0535	0.0116	1,184.4342
Total		**1,179.7022**	**0.0535**	**0.0116**	**1,184.4342**

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	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Unmitigated	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003

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	0.5794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9528					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Total	**2.5326**	**4.0000e-005**	**4.6200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**8.9300e-003**	**8.9300e-003**	**2.0000e-005**	**0.0000**	**9.4400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	306.2404	3.0262	0.0738	392.6715
Unmitigated	382.8004	3.7834	0.0924	490.8876

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	92.5 / 0	306.2404	3.0262	0.0738	392.6715

Total		**306.2404**	**3.0262**	**0.0738**	**392.6715**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	125.8544	7.4378	0.0000	282.0478
Unmitigated	125.8544	7.4378	0.0000	282.0478

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	620	125.8544	7.4378	0.0000	282.0478
Total		**125.8544**	**7.4378**	**0.0000**	**282.0478**

Barstow - Dev Site 3 - Casino Resort

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	4.50	1000sqft	0.10	4,500.00	0
Fast Food Restaurant w/o Drive Thru	2.00	1000sqft	0.05	2,000.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.11	5,000.00	0
Fast Food Restaurant with Drive Thru	4.00	1000sqft	0.09	4,000.00	0
Hotel	160.00	Room	5.33	232,320.00	0
User Defined Recreational	20.00	User Defined Unit	0.00	20,000.00	0
User Defined Commercial	88.50	User Defined Unit	0.00	88.50	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	88.50
tblLandUse	LandUseSquareFeet	0.00	20,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TTP	0.00	79.50
tblVehicleTrips	CC_TTP	0.00	79.50
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CW_TTP	0.00	1.50
tblVehicleTrips	CW_TTP	0.00	1.50
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	696.00	12.06
tblVehicleTrips	ST_TR	722.03	72.20
tblVehicleTrips	ST_TR	158.37	15.84
tblVehicleTrips	ST_TR	8.19	2.70
tblVehicleTrips	ST_TR	42.04	25.40
tblVehicleTrips	ST_TR	0.00	27.04
tblVehicleTrips	ST_TR	0.00	15.84
tblVehicleTrips	SU_TR	500.00	12.06
tblVehicleTrips	SU_TR	542.72	54.27
tblVehicleTrips	SU_TR	131.84	13.18
tblVehicleTrips	SU_TR	5.95	2.70
tblVehicleTrips	SU_TR	20.43	25.40
tblVehicleTrips	SU_TR	0.00	27.04
tblVehicleTrips	SU_TR	0.00	13.18
tblVehicleTrips	WD_TR	716.00	12.06

tblVehicleTrips	WD_TR	496.12	49.61
tblVehicleTrips	WD_TR	127.15	12.72
tblVehicleTrips	WD_TR	8.17	2.25
tblVehicleTrips	WD_TR	44.32	2.14
tblVehicleTrips	WD_TR	0.00	22.53
tblVehicleTrips	WD_TR	0.00	12.72

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Energy	0.0720	0.6548	0.5501	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	1,804.2092	1,804.2092	0.0632	0.0238	1,812.9252
Mobile	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260
Waste						0.0000	0.0000		0.0000	0.0000	44.8509	0.0000	44.8509	2.6506	0.0000	100.5137
Water						0.0000	0.0000		0.0000	0.0000	1.9621	20.5963	22.5584	0.2024	4.9600e-003	28.3457
Total	**3.4818**	**6.1764**	**28.8534**	**0.0481**	**2.8237**	**0.1490**	**2.9727**	**0.7551**	**0.1412**	**0.8963**	**46.8130**	**4,981.0691**	**5,027.8821**	**3.0337**	**0.0288**	**5,100.5159**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260
Unmitigated	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	24.12	24.12	24.12	38,895	38,895
Fast Food Restaurant with Drive Thru	198.44	288.80	217.08	199,956	199,956
High Turnover (Sit Down Restaurant)	63.60	79.20	65.90	76,760	76,760
Hotel	360.00	432.00	432.00	723,059	723,059
Strip Mall	9.63	114.30	114.30	60,886	60,886
User Defined Commercial	1,993.91	2,393.04	2393.04	5,626,548	5,626,548
User Defined Recreational	254.40	316.80	263.60	706,350	706,350
Total	2,904.10	3,648.26	3,510.04	7,432,455	7,432,455

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant w/o Drive Thru	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
User Defined Commercial	9.50	7.30	7.30	1.50	79.50	19.00	100	0	0
User Defined Recreational	9.50	7.30	7.30	1.50	79.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,091.3566	1,091.3566	0.0495	0.0108	1,095.7343
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,231.3126	1,231.3126	0.0559	0.0122	1,236.2517
NaturalGas Mitigated	0.0720	0.6548	0.5501	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	712.8526	712.8526	0.0137	0.0131	717.1909
NaturalGas Unmitigated	0.0953	0.8665	0.7278	5.2000e-003		0.0659	0.0659		0.0659	0.0659	0.0000	943.2575	943.2575	0.0181	0.0173	948.9980

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/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	1.01195e+006	5.4600e-003	0.0496	0.0417	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	54.0016	54.0016	1.0400e-003	9.9000e-004	54.3303
High Turnover (Sit Down Restaurant)	1.26494e+006	6.8200e-003	0.0620	0.0521	3.7000e-004		4.7100e-003	4.7100e-003		4.7100e-003	4.7100e-003	0.0000	67.5020	67.5020	1.2900e-003	1.2400e-003	67.9128
Hotel	1.05678e+007	0.0570	0.5180	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394	0.0000	563.9366	563.9366	0.0108	0.0103	567.3686
Strip Mall	7713	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4116	0.4116	1.0000e-005	1.0000e-005	0.4141
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	505976	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0008	27.0008	5.2000e-004	5.0000e-004	27.1651
Total		**0.0720**	**0.6548**	**0.5501**	**3.9300e-003**		**0.0498**	**0.0498**		**0.0498**	**0.0498**	**0.0000**	**712.8526**	**712.8526**	**0.0137**	**0.0131**	**717.1909**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant w/o Drive Thru	95722	22.0059	1.0000e-003	2.2000e-004	22.0942
Fast Food Restaurant with Drive Thru	191444	44.0119	2.0000e-003	4.3000e-004	44.1884
High Turnover (Sit Down Restaurant)	239305	55.0148	2.5000e-003	5.4000e-004	55.2355
Hotel	4.15783e+006	955.8613	0.0434	9.4300e-003	959.6955
Strip Mall	62910	14.4627	6.6000e-004	1.4000e-004	14.5207
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,091.3566**	**0.0495**	**0.0108**	**1,095.7343**

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	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Unmitigated	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003

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	0.3104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5000e-004	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Total	**1.3570**	**2.0000e-005**	**2.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.0700e-003**	**5.0700e-003**	**1.0000e-005**	**0.0000**	**5.3600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.5584	0.2024	4.9600e-003	28.3457
Unmitigated	27.8126	0.2531	6.2000e-003	35.0484

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant w/o Drive Thru	0.485654 / 0.0363853	1.7008	0.0159	3.9000e-004	2.1550
Fast Food Restaurant with Drive Thru	0.971308 / 0.0727706	3.4016	0.0318	7.8000e-004	4.3099
High Turnover (Sit Down Restaurant)	1.21413 / 0.0909632	4.2520	0.0397	9.7000e-004	5.3874
Hotel	3.24695 / 0.423456	11.8313	0.1063	2.6000e-003	14.8695
Strip Mall	0.266661 / 0.191835	1.3728	8.7500e-003	2.2000e-004	1.6239
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**22.5584**	**0.2024**	**4.9600e-003**	**28.3457**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	44.8509	2.6506	0.0000	100.5137
Mitigated	44.8509	2.6506	0.0000	100.5137

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant w/o Drive-Thru	23.04	4.6769	0.2764	0.0000	10.4813
Fast Food Restaurant with Drive-Thru	46.08	9.3538	0.5528	0.0000	20.9625
High Turnover (Sit Down Restaurant)	59.5	12.0780	0.7138	0.0000	27.0675
Hotel	87.6	17.7820	1.0509	0.0000	39.8506
Strip Mall	4.73	0.9602	0.0567	0.0000	2.1518
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**44.8509**	**2.6506**	**0.0000**	**100.5137**

Barstow - Dev Site 4 - Active Seniors Housing

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Retirement Community	1,575.00	Dwelling Unit	315.00	1,575,000.00	4505

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O
Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow
Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses
Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	2.81	2.73
tblVehicleTrips	SU_TR	2.81	2.32
tblVehicleTrips	WD_TR	2.81	3.68

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	107.7975	1.4765	133.4755	0.0482		17.1686	17.1686		17.1680	17.1680	1,626.9084	701.4045	2,328.3129	1.5200	0.1280	2,399.9030
Energy	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	3,058.7464	3,058.7464	0.1031	0.0417	3,073.8390
Mobile	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244
Waste						0.0000	0.0000		0.0000	0.0000	147.0670	0.0000	147.0670	8.6914	0.0000	329.5865
Water						0.0000	0.0000		0.0000	0.0000	26.0447	400.9011	426.9458	2.6928	0.0670	504.2761
Total	**111.6270**	**13.3582**	**186.6316**	**0.1442**	**5.6930**	**17.4620**	**23.1550**	**1.5224**	**17.4458**	**18.9682**	**1,800.0200**	**10,485.9005**	**12,285.9205**	**13.2396**	**0.2367**	**12,637.3290**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244
Unmitigated	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Retirement Community	5,796.00	4,299.75	3654.00	14,985,183	14,985,183
Total	5,796.00	4,299.75	3,654.00	14,985,183	14,985,183

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Retirement Community	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,697.8498	1,697.8498	0.0771	0.0168	1,704.6602
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,765.6997	1,765.6997	0.0801	0.0174	1,772.7823
NaturalGas Mitigated	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	1,360.8966	1,360.8966	0.0261	0.0250	1,369.1788
NaturalGas Unmitigated	0.1750	1.4954	0.6364	9.5500e-003		0.1209	0.1209		0.1209	0.1209	0.0000	1,731.8535	1,731.8535	0.0332	0.0318	1,742.3933

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/yr	tons/yr										MT/yr					
Retirement Community	2.55022e+007	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	1,360.8966	1,360.8966	0.0261	0.0250	1,369.1788
Total		**0.1375**	**1.1751**	**0.5000**	**7.5000e-003**		**0.0950**	**0.0950**		**0.0950**	**0.0950**	**0.0000**	**1,360.8966**	**1,360.8966**	**0.0261**	**0.0250**	**1,369.1788**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Retirement Community	7.38535e+006	1,697.8498	0.0771	0.0168	1,704.6602
Total		**1,697.8498**	**0.0771**	**0.0168**	**1,704.6602**

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	107.7975	1.4765	133.4755	0.0482		17.1686	17.1686		17.1680	17.1680	1,626.9084	701.4045	2,328.3129	1.5200	0.1280	2,399.9030
Unmitigated	107.7975	1.4765	133.4755	0.0482		17.1686	17.1686		17.1680	17.1680	1,626.9084	701.4045	2,328.3129	1.5200	0.1280	2,399.9030

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	2.4638					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.1512					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	98.8253	1.3408	121.7421	0.0476		17.1040	17.1040		17.1035	17.1035	1,626.9084	682.3017	2,309.2100	1.5014	0.1280	2,380.4090
Landscaping	0.3573	0.1357	11.7334	6.2000e-004		0.0645	0.0645		0.0645	0.0645	0.0000	19.1029	19.1029	0.0186	0.0000	19.4940
Total	**107.7975**	**1.4765**	**133.4755**	**0.0482**		**17.1686**	**17.1686**		**17.1681**	**17.1681**	**1,626.9084**	**701.4045**	**2,328.3129**	**1.5200**	**0.1280**	**2,399.9030**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	426.9458	2.6928	0.0670	504.2761
Unmitigated	504.9725	3.3652	0.0836	601.5630

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Retirement Community	82.0941 / 60.7474	426.9458	2.6928	0.0670	504.2761
Total		**426.9458**	**2.6928**	**0.0670**	**504.2761**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	147.0670	8.6914	0.0000	329.5865
Unmitigated	147.0670	8.6914	0.0000	329.5865

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Retirement Community	724.5	147.0670	8.6914	0.0000	329.5865
Total		**147.0670**	**8.6914**	**0.0000**	**329.5865**

Barstow - Dev Site 5 - Hwy Commercial

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High Turnover (Sit Down Restaurant)	30.00	1000sqft	0.69	30,000.00	0
Fast Food Restaurant with Drive Thru	20.00	1000sqft	0.46	20,000.00	0
Hotel	100.00	Room	3.33	300,000.00	0
Regional Shopping Center	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	145,200.00	300,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023

tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	8.19	12.27
tblVehicleTrips	ST_TR	49.97	44.97
tblVehicleTrips	SU_TR	5.95	8.92
tblVehicleTrips	SU_TR	25.24	22.72
tblVehicleTrips	WD_TR	8.17	8.92
tblVehicleTrips	WD_TR	42.94	38.43

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Energy	0.1427	1.2974	1.0898	7.7800e-003		0.0986	0.0986		0.0986	0.0986	0.0000	3,518.2561	3,518.2561	0.1226	0.0467	3,535.2988
Mobile	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693
Waste						0.0000	0.0000		0.0000	0.0000	151.6606	0.0000	151.6606	8.9629	0.0000	339.8813
Water						0.0000	0.0000		0.0000	0.0000	6.3757	74.0454	80.4211	0.6581	0.0162	99.2548
Total	**13.2613**	**22.6115**	**132.7765**	**0.1499**	**8.6986**	**0.4208**	**9.1194**	**2.3262**	**0.3953**	**2.7215**	**158.0363**	**13,707.0737**	**13,865.1100**	**10.1533**	**0.0628**	**14,097.8089**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693
Unmitigated	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	9,922.40	14,440.60	10854.40	9,998,212	9,998,212
High Turnover (Sit Down Restaurant)	3,814.50	4,751.10	3955.20	4,604,394	4,604,394
Hotel	892.00	1,227.00	892.00	1,785,663	1,785,663
Regional Shopping Center	3,843.00	4,497.00	2272.00	6,508,268	6,508,268
Total	18,471.90	24,915.70	17,973.60	22,896,537	22,896,537

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	2,105.8656	2,105.8656	0.0956	0.0208	2,114.3126
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,360.3240	2,360.3240	0.1071	0.0233	2,369.7917
NaturalGas Mitigated	0.1427	1.2974	1.0898	7.7800e-003		0.0986	0.0986		0.0986	0.0986	0.0000	1,412.3906	1,412.3906	0.0271	0.0259	1,420.9862
NaturalGas Unmitigated	0.1778	1.6165	1.3579	9.7000e-003		0.1229	0.1229		0.1229	0.1229	0.0000	1,759.8050	1,759.8050	0.0337	0.0323	1,770.5149

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/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	7.58964e+006	0.0409	0.3720	0.3125	2.2300e-003		0.0283	0.0283		0.0283	0.0283	0.0000	405.0121	405.0121	7.7600e-003	7.4300e-003	407.4769
Hotel	1.36464e+007	0.0736	0.6689	0.5619	4.0100e-003		0.0508	0.0508		0.0508	0.0508	0.0000	728.2239	728.2239	0.0140	0.0134	732.6557
Regional Shopping Center	171400	9.2000e-004	8.4000e-003	7.0600e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	9.1466	9.1466	1.8000e-004	1.7000e-004	9.2022
Fast Food Restaurant with Drive Thru	5.05976e+006	0.0273	0.2480	0.2083	1.4900e-003		0.0189	0.0189		0.0189	0.0189	0.0000	270.0081	270.0081	5.1800e-003	4.9500e-003	271.6513
Total		**0.1427**	**1.2974**	**1.0898**	**7.7800e-003**		**0.0986**	**0.0986**		**0.0986**	**0.0986**	**0.0000**	**1,412.3906**	**1,412.3906**	**0.0271**	**0.0259**	**1,420.9862**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	957220	220.0594	9.9900e-003	2.1700e-003	220.9421
High Turnover (Sit Down Restaurant)	1.43583e+006	330.0890	0.0150	3.2600e-003	331.4131
Hotel	5.3691e+006	1,234.3251	0.0560	0.0122	1,239.2762
Regional Shopping Center	1.398e+006	321.3921	0.0146	3.1700e-003	322.6813
Total		**2,105.8656**	**0.0956**	**0.0208**	**2,114.3126**

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	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Unmitigated	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003

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	0.5214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Total	**2.2791**	**2.0000e-005**	**2.3100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4700e-003**	**4.4700e-003**	**1.0000e-005**	**0.0000**	**4.7200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	80.4211	0.6581	0.0162	99.2548
Unmitigated	97.9567	0.8226	0.0202	121.4989

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.85654 / 0.363853	17.0079	0.1589	3.8800e-003	21.5495
High Turnover (Sit Down Restaurant)	7.28481 / 0.545779	25.5119	0.2384	5.8300e-003	32.3243
Hotel	2.02934 / 0.26466	7.3945	0.0664	1.6300e-003	9.2934
Regional Shopping Center	5.9258 / 4.26299	30.5068	0.1944	4.8400e-003	36.0875
Total		**80.4211**	**0.6581**	**0.0162**	**99.2548**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	151.6606	8.9629	0.0000	339.8813
Mitigated	151.6606	8.9629	0.0000	339.8813

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	230.38	46.7651	2.7637	0.0000	104.8035
High Turnover (Sit Down Restaurant)	357	72.4678	4.2827	0.0000	162.4050
Hotel	54.75	11.1138	0.6568	0.0000	24.9066
Regional Shopping Center	105	21.3141	1.2596	0.0000	47.7662
Total		**151.6606**	**8.9629**	**0.0000**	**339.8813**

Barstow - Dev Site 6 ST - Big Box

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Free-Standing Discount Superstore	275.00	1000sqft	6.31	275,000.00	0
Regional Shopping Center	34.00	1000sqft	0.78	34,000.00	0
Strip Mall	32.00	1000sqft	0.73	32,000.00	0
Bank (with Drive-Through)	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Both Pad and Shop fit profile of Regional Shopping Center.

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83

tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TTP	64.40	64.70
tblVehicleTrips	CW_TTP	16.60	16.30
tblVehicleTrips	DV_TP	40.00	35.00
tblVehicleTrips	PB_TP	15.00	11.00
tblVehicleTrips	PR_TP	45.00	54.00
tblVehicleTrips	ST_TR	86.32	69.06
tblVehicleTrips	ST_TR	64.07	56.86
tblVehicleTrips	ST_TR	42.04	39.98
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	SU_TR	31.90	25.52
tblVehicleTrips	SU_TR	56.12	45.09
tblVehicleTrips	SU_TR	20.43	20.19
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	WD_TR	148.15	24.75
tblVehicleTrips	WD_TR	53.13	45.79
tblVehicleTrips	WD_TR	44.32	34.16
tblVehicleTrips	WD_TR	42.94	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Energy	3.9200e-003	0.0356	0.0299	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	1,146.5228	1,146.5228	0.0510	0.0116	1,151.2022
Mobile	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192
Waste						0.0000	0.0000		0.0000	0.0000	255.0906	0.0000	255.0906	15.0754	0.0000	571.6745
Water						0.0000	0.0000		0.0000	0.0000	6.4610	98.3831	104.8442	0.6680	0.0166	124.0236
Total	**10.8716**	**20.3750**	**116.2389**	**0.1478**	**9.2284**	**0.3358**	**9.5642**	**2.4678**	**0.3095**	**2.7773**	**261.5517**	**11,768.9341**	**12,030.4857**	**16.2038**	**0.0283**	**12,379.5260**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192
Unmitigated	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	123.75	345.30	127.60	144,250	144,250
Free-Standing Discount Superstore	12,592.25	15,636.50	12399.75	20,328,530	20,328,530
Strip Mall	1,093.12	1,279.36	646.08	1,851,249	1,851,249
Regional Shopping Center	1,161.44	1,359.32	686.46	1,966,953	1,966,953
Total	14,970.56	18,620.48	13,859.89	24,290,982	24,290,982

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	27	26	47
Free-Standing Discount	9.50	7.30	7.30	13.20	67.80	19.00	47.5	35.5	17
Strip Mall	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,107.7442	1,107.7442	0.0503	0.0109	1,112.1875
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,240.3736	1,240.3736	0.0563	0.0122	1,245.3490
NaturalGas Mitigated	3.9200e-003	0.0356	0.0299	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.7786	38.7786	7.4000e-004	7.1000e-004	39.0146
NaturalGas Unmitigated	5.1600e-003	0.0469	0.0394	2.8000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	51.0996	51.0996	9.8000e-004	9.4000e-004	51.4106

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/yr	tons/yr										MT/yr					
Free-Standing Discount Superstore	471350	2.5400e-003	0.0231	0.0194	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003	0.0000	25.1530	25.1530	4.8000e-004	4.6000e-004	25.3061
Regional Shopping Center	58276	3.1000e-004	2.8600e-003	2.4000e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.1098	3.1098	6.0000e-005	6.0000e-005	3.1288
Strip Mall	54848	3.0000e-004	2.6900e-003	2.2600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	2.9269	2.9269	6.0000e-005	5.0000e-005	2.9447
Bank (with Drive-Through)	142210	7.7000e-004	6.9700e-003	5.8600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5889	7.5889	1.5000e-004	1.4000e-004	7.6351
Total		**3.9200e-003**	**0.0356**	**0.0299**	**2.2000e-004**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**38.7786**	**38.7786**	**7.5000e-004**	**7.1000e-004**	**39.0146**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	51315	11.7970	5.4000e-004	1.2000e-004	11.8443
Free-Standing Discount Superstore	3.8445e+006	883.8283	0.0401	8.7200e-003	887.3736
Regional Shopping Center	475320	109.2733	4.9600e-003	1.0800e-003	109.7116
Strip Mall	447360	102.8455	4.6700e-003	1.0100e-003	103.2580
Total		**1,107.7442**	**0.0503**	**0.0109**	**1,112.1875**

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	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Unmitigated	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003

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	0.4009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Total	**1.7525**	**3.0000e-005**	**3.2000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.1800e-003**	**6.1800e-003**	**2.0000e-005**	**0.0000**	**6.5300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	104.8442	0.6680	0.0166	124.0236
Unmitigated	124.1311	0.8348	0.0207	148.0882

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.158492 / 0.114018	0.8159	5.2000e-003	1.3000e-004	0.9652
Free-Standing Discount Superstore	16.296 / 11.7232	83.8937	0.5345	0.0133	99.2406
Regional Shopping Center	2.01477 / 1.44942	10.3723	0.0661	1.6400e-003	12.2698
Strip Mall	1.89626 / 1.36416	9.7622	0.0622	1.5500e-003	11.5480
Total		**104.8442**	**0.6680**	**0.0166**	**124.0236**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	255.0906	15.0754	0.0000	571.6745
Mitigated	255.0906	15.0754	0.0000	571.6745

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	4.67	0.9480	0.0560	0.0000	2.1245
Free-Standing Discount Superstore	1182.69	240.0754	14.1881	0.0000	538.0244
Regional Shopping Center	35.7	7.2468	0.4283	0.0000	16.2405
Strip Mall	33.6	6.8205	0.4031	0.0000	15.2852
Total		**255.0906**	**15.0754**	**0.0000**	**571.6745**

Barstow - Dev Site 6 ST - Fitness Entertainment

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Movie Theater (No Matinee)	11.00	1000sqft	0.25	11,000.00	0
High Turnover (Sit Down Restaurant)	11.00	1000sqft	0.25	11,000.00	0
Fast Food Restaurant with Drive Thru	4.00	1000sqft	0.09	4,000.00	0
Bank (with Drive-Through)	5.00	1000sqft	0.11	5,000.00	0
Health Club	35.00	1000sqft	0.80	35,000.00	0
Regional Shopping Center	19.00	1000sqft	0.44	19,000.00	0
Free-Standing Discount Store	30.00	1000sqft	0.69	30,000.00	0
User Defined Commercial	2.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Visitors Center given the same trip profile as Regional Shopping Center.

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TTP	0.00	64.70
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CW_TTP	0.00	16.30
tblVehicleTrips	DV_TP	0.00	35.00
tblVehicleTrips	PB_TP	0.00	11.00
tblVehicleTrips	PR_TP	0.00	54.00
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	86.32	69.06
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	ST_TR	71.07	43.00
tblVehicleTrips	ST_TR	20.87	16.70
tblVehicleTrips	ST_TR	80.00	79.98
tblVehicleTrips	ST_TR	0.00	34.53
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	31.90	25.52
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	SU_TR	56.36	26.94
tblVehicleTrips	SU_TR	26.73	21.38
tblVehicleTrips	SU_TR	80.00	65.52
tblVehicleTrips	SU_TR	0.00	38.10
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	148.15	118.52

tblVehicleTrips	WD_TR	42.94	34.16
tblVehicleTrips	WD_TR	57.24	33.44
tblVehicleTrips	WD_TR	32.93	26.34
tblVehicleTrips	WD_TR	80.00	16.41
tblVehicleTrips	WD_TR	0.00	6.44

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.5825	1.0000e-005	1.0800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0900e-003	2.0900e-003	1.0000e-005	0.0000	2.2100e-003
Energy	0.0287	0.2612	0.2194	1.5700e-003		0.0199	0.0199		0.0199	0.0199	0.0000	727.2506	727.2506	0.0256	9.5800e-003	730.7577
Mobile	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520
Waste						0.0000	0.0000		0.0000	0.0000	120.3371	0.0000	120.3371	7.1117	0.0000	269.6832
Water						0.0000	0.0000		0.0000	0.0000	3.7736	45.6485	49.4222	0.3896	9.5900e-003	60.5767
Total	**4.1893**	**7.6436**	**44.4740**	**0.0525**	**3.1459**	**0.1351**	**3.2810**	**0.8413**	**0.1260**	**0.9673**	**124.1107**	**4,401.3181**	**4,525.4288**	**7.6714**	**0.0192**	**4,692.4718**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520
Unmitigated	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	1,587.60	2,310.48	1736.72	1,599,725	1,599,725
High Turnover (Sit Down Restaurant)	1,118.92	1,393.70	1160.17	1,350,626	1,350,626
Bank (with Drive-Through)	592.60	345.30	127.60	454,018	454,018
Regional Shopping Center	649.04	759.62	383.61	1,099,179	1,099,179
Free-Standing Discount Store	1,003.20	1,290.00	808.20	1,584,700	1,584,700
Health Club	921.90	584.50	748.30	1,466,616	1,466,616
Movie Theater (No Matinee)	180.51	879.78	720.72	673,319	673,319
User Defined Commercial	12.88	69.06	76.20	52,514	52,514
Total	6,066.65	7,632.44	5,761.52	8,280,697	8,280,697

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	27	26	47
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
User Defined Commercial	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	442.8563	442.8563	0.0201	4.3700e-003	444.6327
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	486.8953	486.8953	0.0221	4.8000e-003	488.8483
NaturalGas Mitigated	0.0287	0.2612	0.2194	1.5700e-003		0.0199	0.0199		0.0199	0.0199	0.0000	284.3943	284.3943	5.4500e-003	5.2100e-003	286.1251
NaturalGas Unmitigated	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	318.8018	318.8018	6.1100e-003	5.8400e-003	320.7420

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/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	1.01195e+006	5.4600e-003	0.0496	0.0417	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	54.0016	54.0016	1.0400e-003	9.9000e-004	54.3303
Free-Standing Discount Store	51420	2.8000e-004	2.5200e-003	2.1200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7440	2.7440	5.0000e-005	5.0000e-005	2.7607
Health Club	995470	5.3700e-003	0.0488	0.0410	2.9000e-004		3.7100e-003	3.7100e-003		3.7100e-003	3.7100e-003	0.0000	53.1221	53.1221	1.0200e-003	9.7000e-004	53.4454
High Turnover (Sit Down Restaurant)	2.78287e+006	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	148.5044	148.5044	2.8500e-003	2.7200e-003	149.4082
Movie Theater (No Matinee)	312862	1.6900e-003	0.0153	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.6955	16.6955	3.2000e-004	3.1000e-004	16.7971
Regional Shopping Center	32566	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7379	1.7379	3.0000e-005	3.0000e-005	1.7484
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Bank (with Drive-Through)	142210	7.7000e-004	6.9700e-003	5.8600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5889	7.5889	1.5000e-004	1.4000e-004	7.6351
Total		**0.0288**	**0.2613**	**0.2195**	**1.5700e-003**		**0.0199**	**0.0199**		**0.0199**	**0.0199**	**0.0000**	**284.3943**	**284.3943**	**5.4600e-003**	**5.2100e-003**	**286.1251**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	51315	11.7970	5.4000e-004	1.2000e-004	11.8443
Fast Food Restaurant with Drive-Thru	191444	44.0119	2.0000e-003	4.3000e-004	44.1884
Free-Standing Discount Store	419400	96.4176	4.3800e-003	9.5000e-004	96.8044
Health Club	359205	82.5792	3.7500e-003	8.1000e-004	82.9104
High Turnover (Sit Down Restaurant)	526471	121.0326	5.4900e-003	1.1900e-003	121.5181
Movie Theater (No Matinee)	112893	25.9535	1.1800e-003	2.6000e-004	26.0576
Regional Shopping Center	265620	61.0645	2.7700e-003	6.0000e-004	61.3095
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**442.8563**	**0.0201**	**4.3600e-003**	**444.6327**

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	0.5825	1.0000e-005	1.0800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0900e-003	2.0900e-003	1.0000e-005	0.0000	2.2100e-003
Unmitigated	0.5825	1.0000e-005	1.0800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0900e-003	2.0900e-003	1.0000e-005	0.0000	2.2100e-003

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	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4491					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0900e-003	2.0900e-003	1.0000e-005	0.0000	2.2100e-003
Total	**0.5825**	**1.0000e-005**	**1.0800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0900e-003**	**2.0900e-003**	**1.0000e-005**	**0.0000**	**2.2100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	49.4222	0.3896	9.5900e-003	60.5767
Unmitigated	59.9195	0.4870	0.0120	73.8614

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.158492 / 0.114018	0.8159	5.2000e-003	1.3000e-004	0.9652
Fast Food Restaurant with Drive-Thru	0.971308 / 0.0727706	3.4016	0.0318	7.8000e-004	4.3099
Free-Standing Discount Store	1.77774 / 1.2789	9.1520	0.0583	1.4500e-003	10.8263
Health Club	1.65601 / 1.19132	8.5254	0.0543	1.3500e-003	10.0849
High Turnover (Sit Down Restaurant)	2.6711 / 0.200119	9.3544	0.0874	2.1400e-003	11.8522
Movie Theater (No Matinee)	3.53409 / 0.264775	12.3766	0.1157	2.8300e-003	15.6816
Regional Shopping Center	1.1259 / 0.809969	5.7963	0.0369	9.2000e-004	6.8566
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**49.4222**	**0.3896**	**9.6000e-003**	**60.5767**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	120.3371	7.1117	0.0000	269.6832
Mitigated	120.3371	7.1117	0.0000	269.6832

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	4.67	0.9480	0.0560	0.0000	2.1245
Fast Food Restaurant with Drive Thru	46.08	9.3538	0.5528	0.0000	20.9625
Free-Standing Discount Store	129.02	26.1899	1.5478	0.0000	58.6932
Health Club	199.5	40.4967	2.3933	0.0000	90.7557
High Turnover (Sit Down Restaurant)	130.9	26.5715	1.5703	0.0000	59.5485
Movie Theater (No Matinee)	62.7	12.7275	0.7522	0.0000	28.5232
Regional Shopping Center	19.95	4.0497	0.2393	0.0000	9.0756
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**120.3371**	**7.1117**	**0.0000**	**269.6832**

Barstow - Dev Site 6 ST - Health Wellness

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	50.00	1000sqft	1.15	50,000.00	0
Day-Care Center	23.00	1000sqft	0.53	23,000.00	0
Pharmacy/Drugstore w/o Drive Thru	11.00	1000sqft	0.25	11,000.00	0
Regional Shopping Center	40.00	1000sqft	0.92	40,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	6.21	4.97
tblVehicleTrips	ST_TR	8.96	10.83
tblVehicleTrips	ST_TR	90.06	77.53
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	SU_TR	5.83	4.66
tblVehicleTrips	SU_TR	1.55	19.28
tblVehicleTrips	SU_TR	90.06	77.53
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	WD_TR	79.26	59.25
tblVehicleTrips	WD_TR	36.13	6.41
tblVehicleTrips	WD_TR	90.06	77.53
tblVehicleTrips	WD_TR	42.94	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.6281	1.0000e-005	1.1500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2200e-003	2.2200e-003	1.0000e-005	0.0000	2.3400e-003
Energy	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	336.5127	336.5127	0.0148	3.4900e-003	337.9040
Mobile	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053
Waste						0.0000	0.0000		0.0000	0.0000	130.9251	0.0000	130.9251	7.7375	0.0000	293.4116
Water						0.0000	0.0000		0.0000	0.0000	2.7914	40.7825	43.5739	0.2885	7.1600e-003	51.8532
Total	**2.7521**	**4.6156**	**26.7571**	**0.0329**	**2.0392**	**0.0754**	**2.1146**	**0.5453**	**0.0695**	**0.6149**	**133.7165**	**2,712.1791**	**2,845.8956**	**8.1323**	**0.0107**	**3,019.9765**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053
Unmitigated	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	1,362.75	114.31	107.18	1,183,558	1,183,558
Medical Office Building	320.50	541.50	964.00	869,019	869,019
Pharmacy/Drugstore w/o Drive Thru	852.83	852.83	852.83	1,001,041	1,001,041
Regional Shopping Center	1,366.40	1,599.20	807.60	2,314,062	2,314,062
Total	3,902.48	3,107.84	2,731.61	5,367,679	5,367,679

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Pharmacy/Drugstore w/o Drive Thru	9.50	7.30	7.30	7.40	73.60	19.00	41	6	53
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	316.5276	316.5276	0.0144	3.1200e-003	317.7972
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	354.5498	354.5498	0.0161	3.5000e-003	355.9719
NaturalGas Mitigated	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	19.9852	19.9852	3.8000e-004	3.7000e-004	20.1068
NaturalGas Unmitigated	2.7500e-003	0.0250	0.0210	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2588	27.2588	5.2000e-004	5.0000e-004	27.4247

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/yr	tons/yr										MT/yr					
Medical Office Building	127750	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	6.8172	6.8172	1.3000e-004	1.2000e-004	6.8587
Pharmacy/Drugstore w/o Drive Thru	18854	1.0000e-004	9.2000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0061	1.0061	2.0000e-005	2.0000e-005	1.0122
Regional Shopping Center	68560	3.7000e-004	3.3600e-003	2.8200e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.6586	3.6586	7.0000e-005	7.0000e-005	3.6809
Day-Care Center	159344	8.6000e-004	7.8100e-003	6.5600e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.5032	8.5032	1.6000e-004	1.6000e-004	8.5550
Total		**2.0200e-003**	**0.0184**	**0.0154**	**1.2000e-004**		**1.4000e-003**	**1.4000e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**19.9852**	**19.9852**	**3.8000e-004**	**3.7000e-004**	**20.1068**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Day-Care Center	185610	42.6707	1.9400e-003	4.2000e-004	42.8418
Medical Office Building	478250	109.9469	4.9900e-003	1.0800e-003	110.3879
Pharmacy/Drugstore w/o Drive Thru	153780	35.3531	1.6000e-003	3.5000e-004	35.4949
Regional Shopping Center	559200	128.5569	5.8300e-003	1.2700e-003	129.0725
Total		**316.5276**	**0.0144**	**3.1200e-003**	**317.7972**

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	0.6281	1.0000e-005	1.1500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2200e-003	2.2200e-003	1.0000e-005	0.0000	2.3400e-003
Unmitigated	0.6281	1.0000e-005	1.1500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2200e-003	2.2200e-003	1.0000e-005	0.0000	2.3400e-003

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	0.1437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2200e-003	2.2200e-003	1.0000e-005	0.0000	2.3400e-003
Total	**0.6281**	**1.0000e-005**	**1.1500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2200e-003**	**2.2200e-003**	**1.0000e-005**	**0.0000**	**2.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	43.5739	0.2885	7.1600e-003	51.8532
Unmitigated	51.7946	0.3606	8.9400e-003	62.1376

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Day-Care Center	0.789168 / 2.38188	8.6963	0.0261	6.9000e-004	9.4581
Medical Office Building	5.01922 / 1.12215	19.4833	0.1643	4.0300e-003	24.1847
Pharmacy/Drugstore w/o Drive Thru	0.619938 / 0.445981	3.1915	0.0203	5.1000e-004	3.7754
Regional Shopping Center	2.37032 / 1.7052	12.2027	0.0778	1.9300e-003	14.4350
Total		**43.5739**	**0.2885**	**7.1600e-003**	**51.8532**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	130.9251	7.7375	0.0000	293.4116
Mitigated	130.9251	7.7375	0.0000	293.4116

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	29.9	6.0694	0.3587	0.0000	13.6020
Medical Office Building	540	109.6151	6.4781	0.0000	245.6546
Pharmacy/Drugstore w/o Drive Thru	33.08	6.7149	0.3968	0.0000	15.0486
Regional Shopping Center	42	8.5256	0.5039	0.0000	19.1065
Total		**130.9251**	**7.7375**	**0.0000**	**293.4116**

Barstow - Dev Site 6 ST - Market Storage

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Supermarket	50.00	1000sqft	1.15	50,000.00	0
Regional Shopping Center	19.00	1000sqft	0.44	19,000.00	0
High Turnover (Sit Down Restaurant)	10.00	1000sqft	0.23	10,000.00	0
Fast Food Restaurant with Drive Thru	12.00	1000sqft	0.28	12,000.00	0
Gasoline/Service Station	12.00	Pump	0.04	1,694.10	0
General Office Building	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	162.78	130.22
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	177.59	142.07
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	162.78	130.22
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	166.44	133.15
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	162.78	130.22
tblVehicleTrips	WD_TR	11.01	3.32
tblVehicleTrips	WD_TR	42.94	34.16
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	102.24	81.79

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.4948	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9300e-003	1.9300e-003	1.0000e-005	0.0000	2.0400e-003
Energy	0.0348	0.3165	0.2658	1.9000e-003		0.0241	0.0241		0.0241	0.0241	0.0000	1,089.2322	1,089.2322	0.0404	0.0137	1,094.3161
Mobile	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047
Waste						0.0000	0.0000		0.0000	0.0000	115.7658	0.0000	115.7658	6.8416	0.0000	259.4385
Water						0.0000	0.0000		0.0000	0.0000	3.8823	41.7204	45.6028	0.4006	9.8100e-003	57.0576
Total	**7.8049**	**13.7836**	**86.7532**	**0.0875**	**5.1742**	**0.2187**	**5.3929**	**1.3837**	**0.2033**	**1.5870**	**119.6481**	**7,219.2594**	**7,338.9075**	**7.5349**	**0.0235**	**7,504.4189**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047
Unmitigated	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	4,762.80	6,931.44	5210.16	4,799,174	4,799,174
Gasoline/Service Station	1,562.64	1,562.64	1562.64	900,344	900,344
General Office Building	16.60	12.30	5.25	34,327	34,327
Regional Shopping Center	649.04	759.62	383.61	1,099,179	1,099,179
High Turnover (Sit Down Restaurant)	1,017.20	1,267.00	1054.70	1,227,842	1,227,842
Supermarket	4,089.50	7,103.50	6657.50	5,558,606	5,558,606
Total	12,097.78	17,636.50	14,873.86	13,619,471	13,619,471

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	744.7363	744.7363	0.0338	7.3500e-003	747.7235
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	802.2259	802.2259	0.0364	7.9100e-003	805.4438
NaturalGas Mitigated	0.0348	0.3165	0.2658	1.9000e-003		0.0241	0.0241		0.0241	0.0241	0.0000	344.4960	344.4960	6.6000e-003	6.3200e-003	346.5925
NaturalGas Unmitigated	0.0389	0.3539	0.2973	2.1200e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.2839	385.2839	7.3800e-003	7.0600e-003	387.6286

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/yr	tons/yr										MT/yr					
Gasoline/Service Station	48183.6	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5713	2.5713	5.0000e-005	5.0000e-005	2.5869
General Office Building	12775	7.0000e-005	6.3000e-004	5.3000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6817	0.6817	1.0000e-005	1.0000e-005	0.6859
High Turnover (Sit Down Restaurant)	2.52988e+006	0.0136	0.1240	0.1042	7.4000e-004		9.4300e-003	9.4300e-003		9.4300e-003	9.4300e-003	0.0000	135.0040	135.0040	2.5900e-003	2.4800e-003	135.8256
Regional Shopping Center	32566	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7379	1.7379	3.0000e-005	3.0000e-005	1.7484
Supermarket	796350	4.2900e-003	0.0390	0.0328	2.3000e-004		2.9700e-003	2.9700e-003		2.9700e-003	2.9700e-003	0.0000	42.4963	42.4963	8.1000e-004	7.8000e-004	42.7549
Fast Food Restaurant with Drive Thru	3.03586e+006	0.0164	0.1488	0.1250	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.0048	162.0048	3.1100e-003	2.9700e-003	162.9908
Total		**0.0348**	**0.3165**	**0.2658**	**1.8800e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**	**0.0000**	**344.4960**	**344.4960**	**6.6000e-003**	**6.3200e-003**	**346.5925**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	574332	132.0356	5.9900e-003	1.3000e-003	132.5652
Gasoline/Service Station	17386.5	3.9971	1.8000e-004	4.0000e-005	4.0131
General Office Building	47825	10.9947	5.0000e-004	1.1000e-004	11.0388
High Turnover (Sit Down Restaurant)	478610	110.0297	4.9900e-003	1.0900e-003	110.4710
Regional Shopping Center	265620	61.0645	2.7700e-003	6.0000e-004	61.3095
Supermarket	1.8557e+006	426.6147	0.0194	4.2100e-003	428.3260
Total		**744.7363**	**0.0338**	**7.3500e-003**	**747.7235**

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	0.4948	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9300e-003	1.9300e-003	1.0000e-005	0.0000	2.0400e-003
Unmitigated	0.4948	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9300e-003	1.9300e-003	1.0000e-005	0.0000	2.0400e-003

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	0.1132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	1.0000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9300e-003	1.9300e-003	1.0000e-005	0.0000	2.0400e-003
Total	**0.4948**	**1.0000e-005**	**1.0000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9300e-003**	**1.9300e-003**	**1.0000e-005**	**0.0000**	**2.0400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	45.6028	0.4006	9.8100e-003	57.0576
Unmitigated	56.0618	0.5008	0.0123	70.3829

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	2.91392 / 0.218312	10.2047	0.0954	2.3300e-003	12.9297
Gasoline/Service Station	0.127506 / 0.0917273	0.6564	4.1800e-003	1.0000e-004	0.7765
General Office Building	0.710935 / 0.511443	3.6600	0.0233	5.8000e-004	4.3295
High Turnover (Sit Down Restaurant)	2.42827 / 0.181926	8.5040	0.0795	1.9400e-003	10.7748
Regional Shopping Center	1.1259 / 0.809969	5.7963	0.0369	9.2000e-004	6.8566
Supermarket	4.93073 / 0.178993	16.7814	0.1613	3.9400e-003	21.3904
Total		**45.6028**	**0.4006**	**9.8100e-003**	**57.0576**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	115.7658	6.8416	0.0000	259.4385
Mitigated	115.7658	6.8416	0.0000	259.4385

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	138.23	28.0594	1.6583	0.0000	62.8830
Gasoline/Service Station	6.47	1.3134	0.0776	0.0000	2.9433
General Office Building	4.65	0.9439	0.0558	0.0000	2.1154
High Turnover (Sit Down Restaurant)	119	24.1559	1.4276	0.0000	54.1350
Regional Shopping Center	19.95	4.0497	0.2393	0.0000	9.0756
Supermarket	282	57.2435	3.3830	0.0000	128.2863
Total		**115.7657**	**6.8416**	**0.0000**	**259.4385**

Barstow - Dev Site 6 ST - Gas and FF

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant with Drive Thru	13.80	1000sqft	0.32	13,800.00	0
High Turnover (Sit Down Restaurant)	84.00	1000sqft	1.93	84,000.00	0
Gasoline/Service Station	24.00	Pump	0.08	3,388.20	0
Regional Shopping Center	7.00	1000sqft	0.16	7,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	162.78	130.22
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	162.78	130.22
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	162.78	130.22
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	42.94	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Energy	0.1340	1.2182	1.0233	7.3100e-003		0.0926	0.0926		0.0926	0.0926	0.0000	2,432.7040	2,432.7040	0.0756	0.0352	2,445.2133
Mobile	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102
Waste						0.0000	0.0000		0.0000	0.0000	239.2939	0.0000	239.2939	14.1419	0.0000	536.2730
Water						0.0000	0.0000		0.0000	0.0000	7.7468	78.8702	86.6170	0.7991	0.0195	109.4564
Total	**10.5746**	**19.2998**	**118.1032**	**0.1210**	**6.8530**	**0.3513**	**7.2043**	**1.8326**	**0.3309**	**2.1635**	**247.0407**	**10,597.6102**	**10,844.6509**	**15.3536**	**0.0548**	**11,184.0552**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102
Unmitigated	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,477.22	7,971.16	5991.68	5,519,050	5,519,050
Gasoline/Service Station	3,125.28	3,125.28	3125.28	1,800,687	1,800,687
High Turnover (Sit Down Restaurant)	8,544.48	10,642.80	8859.48	10,313,870	10,313,870
Regional Shopping Center	239.12	279.86	141.33	404,961	404,961
Total	17,386.10	22,019.10	18,117.77	18,038,568	18,038,568

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,106.5818	1,106.5818	0.0502	0.0109	1,111.0205
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,211.9672	1,211.9672	0.0550	0.0120	1,216.8287
NaturalGas Mitigated	0.1340	1.2182	1.0233	7.3100e-003		0.0926	0.0926		0.0926	0.0926	0.0000	1,326.1222	1,326.1222	0.0254	0.0243	1,334.1928
NaturalGas Unmitigated	0.1470	1.3367	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016	0.0000	1,455.2050	1,455.2050	0.0279	0.0267	1,464.0611

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/yr	tons/yr										MT/yr					
Gasoline/Service Station	96367.2	5.2000e-004	4.7200e-003	3.9700e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	5.1425	5.1425	1.0000e-004	9.0000e-005	5.1738
High Turnover (Sit Down Restaurant)	2.1251e+007	0.1146	1.0417	0.8750	6.2500e-003		0.0792	0.0792		0.0792	0.0792	0.0000	1,134.0339	1,134.0339	0.0217	0.0208	1,140.9354
Regional Shopping Center	11998	6.0000e-005	5.9000e-004	4.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6403	0.6403	1.0000e-005	1.0000e-005	0.6442
Fast Food Restaurant with Drive Thru	3.49123e+006	0.0188	0.1711	0.1438	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	186.3056	186.3056	3.5700e-003	3.4200e-003	187.4394
Total		**0.1340**	**1.2182**	**1.0233**	**7.3100e-003**		**0.0926**	**0.0926**		**0.0926**	**0.0926**	**0.0000**	**1,326.1222**	**1,326.1222**	**0.0254**	**0.0243**	**1,334.1928**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	660482	151.8410	6.8900e-003	1.5000e-003	152.4500
Gasoline/Service Station	34773.1	7.9941	3.6000e-004	8.0000e-005	8.0262
High Turnover (Sit Down Restaurant)	4.02032e+006	924.2493	0.0419	9.1200e-003	927.9566
Regional Shopping Center	97860	22.4975	1.0200e-003	2.2000e-004	22.5877
Total		**1,106.5818**	**0.0502**	**0.0109**	**1,111.0205**

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	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Unmitigated	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003

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	0.1254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Total	**0.5480**	**1.0000e-005**	**1.1900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**1.0000e-005**	**0.0000**	**2.4300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	86.6170	0.7991	0.0195	109.4564
Unmitigated	107.2026	0.9990	0.0245	135.7603

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	3.35101 / 0.251059	11.7355	0.1097	2.6800e-003	14.8692
Gasoline/Service Station	0.255012 / 0.183455	1.3128	8.3600e-003	2.1000e-004	1.5530
High Turnover (Sit Down Restaurant)	20.3975 / 1.52818	71.4332	0.6675	0.0163	90.5081
Regional Shopping Center	0.414806 / 0.29841	2.1355	0.0136	3.4000e-004	2.5261
Total		**86.6170**	**0.7991**	**0.0195**	**109.4564**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	239.2939	14.1419	0.0000	536.2730
Mitigated	239.2939	14.1419	0.0000	536.2730

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.96	32.2674	1.9070	0.0000	72.3134
Gasoline/Service Station	12.93	2.6247	0.1551	0.0000	5.8821
High Turnover (Sit Down Restaurant)	999.6	202.9098	11.9916	0.0000	454.7339
Regional Shopping Center	7.35	1.4920	0.0882	0.0000	3.3436
Total		**239.2939**	**14.1419**	**0.0000**	**536.2730**

Barstow - Dev Site 6 ST - Hotel

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	100.00	Room	3.33	200,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O
Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow
Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land
Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	145,200.00	200,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	8.19	12.27
tblVehicleTrips	SU_TR	5.95	8.92
tblVehicleTrips	WD_TR	8.17	6.97

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Energy	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	1,308.3660	1,308.3660	0.0467	0.0170	1,314.6213
Mobile	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181
Waste						0.0000	0.0000		0.0000	0.0000	11.1138	0.0000	11.1138	0.6568	0.0000	24.9066
Water						0.0000	0.0000		0.0000	0.0000	0.6438	6.7507	7.3945	0.0664	1.6300e-003	9.2934
Total	**1.5591**	**1.6493**	**6.9260**	**0.0118**	**0.5779**	**0.0545**	**0.6323**	**0.1545**	**0.0529**	**0.2074**	**11.7576**	**1,967.7145**	**1,979.4721**	**0.7947**	**0.0187**	**2,001.9413**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181
Unmitigated	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	697.00	1,227.00	892.00	1,521,030	1,521,030
Total	697.00	1,227.00	892.00	1,521,030	1,521,030

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	822.8834	822.8834	0.0373	8.1200e-003	826.1841
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	931.9912	931.9912	0.0423	9.1900e-003	935.7296
NaturalGas Mitigated	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	485.4826	485.4826	9.3100e-003	8.9000e-003	488.4372
NaturalGas Unmitigated	0.0678	0.6167	0.5180	3.7000e-003		0.0469	0.0469		0.0469	0.0469	0.0000	671.3167	671.3167	0.0129	0.0123	675.4022

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/yr	tons/yr										MT/yr					
Hotel	9.0976e+006	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	485.4826	485.4826	9.3100e-003	8.9000e-003	488.4372
Total		**0.0491**	**0.4460**	**0.3746**	**2.6800e-003**		**0.0339**	**0.0339**		**0.0339**	**0.0339**	**0.0000**	**485.4826**	**485.4826**	**9.3100e-003**	**8.9000e-003**	**488.4372**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	3.5794e+006	822.8834	0.0373	8.1200e-003	826.1841
Total		**822.8834**	**0.0373**	**8.1200e-003**	**826.1841**

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	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Unmitigated	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003

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	0.2318					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Total	**1.0129**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.8900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.3945	0.0664	1.6300e-003	9.2934
Unmitigated	9.1181	0.0830	2.0300e-003	11.4923

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.02934 / 0.26466	7.3945	0.0664	1.6300e-003	9.2934
Total		**7.3945**	**0.0664**	**1.6300e-003**	**9.2934**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.1138	0.6568	0.0000	24.9066
Unmitigated	11.1138	0.6568	0.0000	24.9066

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	54.75	11.1138	0.6568	0.0000	24.9066
Total		**11.1138**	**0.6568**	**0.0000**	**24.9066**

Barstow - Dev Site 6 ST - MDR

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	20.00	Dwelling Unit	1.25	20,000.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750
Energy	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	29.6682	29.6682	1.0400e-003	3.9000e-004	29.8113
Mobile	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563
Waste						0.0000	0.0000		0.0000	0.0000	1.8675	0.0000	1.8675	0.1104	0.0000	4.1852
Water						0.0000	0.0000		0.0000	0.0000	0.3307	5.0908	5.4215	0.0342	8.5000e-004	6.4035
Total	**1.4610**	**0.2926**	**2.9966**	**2.8500e-003**	**0.1403**	**0.2237**	**0.3640**	**0.0375**	**0.2233**	**0.2608**	**22.8574**	**199.5018**	**222.3592**	**0.1706**	**2.8600e-003**	**226.8313**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563
Unmitigated	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	133.00	127.80	117.20	369,216	369,216
Total	133.00	127.80	117.20	369,216	369,216

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	18.0176	18.0176	8.2000e-004	1.8000e-004	18.0899
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.7494	18.7494	8.5000e-004	1.8000e-004	18.8246
NaturalGas Mitigated	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.6506	11.6506	2.2000e-004	2.1000e-004	11.7215
NaturalGas Unmitigated	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6454	14.6454	2.8000e-004	2.7000e-004	14.7345

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/yr	tons/yr										MT/yr					
Apartments Low Rise	218323	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.6506	11.6506	2.2000e-004	2.1000e-004	11.7215
Total		**1.1800e-003**	**0.0101**	**4.2800e-003**	**6.0000e-005**		**8.1000e-004**	**8.1000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**11.6506**	**11.6506**	**2.2000e-004**	**2.1000e-004**	**11.7215**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	78373.5	18.0176	8.2000e-004	1.8000e-004	18.0899
Total		**18.0176**	**8.2000e-004**	**1.8000e-004**	**18.0899**

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	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750
Unmitigated	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750

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	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2549	0.0170	1.5459	6.0000e-004		0.2172	0.2172		0.2172	0.2172	20.6592	8.6642	29.3233	0.0191	1.6200e-003	30.2274
Landscaping	4.5400e-003	1.7200e-003	0.1490	1.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	0.2426	0.2426	2.4000e-004	0.0000	0.2475
Total	**1.3689**	**0.0188**	**1.6949**	**6.1000e-004**		**0.2180**	**0.2180**		**0.2180**	**0.2180**	**20.6592**	**8.9067**	**29.5659**	**0.0193**	**1.6200e-003**	**30.4750**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.4215	0.0342	8.5000e-004	6.4035
Unmitigated	6.4124	0.0427	1.0600e-003	7.6389

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.771395	5.4215	0.0342	8.5000e-004	6.4035
Total		**5.4215**	**0.0342**	**8.5000e-004**	**6.4035**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1.8675	0.1104	0.0000	4.1852
Mitigated	1.8675	0.1104	0.0000	4.1852

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	9.2	1.8675	0.1104	0.0000	4.1852
Total		**1.8675**	**0.1104**	**0.0000**	**4.1852**

Barstow - Dev Site 7 - SFR

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	400.00	Dwelling Unit	129.87	720,000.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	12.0814	0.1537	13.8014	4.3800e-003		1.5367	1.5367		1.5367	1.5367	144.6141	65.5006	210.1146	0.1382	0.0114	216.5428
Energy	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	1,255.9812	1,255.9812	0.0420	0.0172	1,262.2066
Mobile	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569
Waste						0.0000	0.0000		0.0000	0.0000	33.2905	0.0000	33.2905	1.9674	0.0000	74.6062
Water						0.0000	0.0000		0.0000	0.0000	2.3151	35.6357	37.9507	0.2394	5.9600e-003	44.8245
Total	**14.7834**	**8.3159**	**51.7241**	**0.0709**	**4.0773**	**1.7188**	**5.7962**	**1.0904**	**1.7075**	**2.7979**	**180.2197**	**5,886.9822**	**6,067.2019**	**2.5532**	**0.0346**	**6,131.5369**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569
Unmitigated	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,808.00	3,964.00	3448.00	10,732,408	10,732,408
Total	3,808.00	3,964.00	3,448.00	10,732,408	10,732,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	683.6496	683.6496	0.0310	6.7400e-003	686.3918
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	706.2019	706.2019	0.0321	6.9700e-003	709.0347
NaturalGas Mitigated	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	572.3317	572.3317	0.0110	0.0105	575.8148
NaturalGas Unmitigated	0.0728	0.6224	0.2648	3.9700e-003		0.0503	0.0503		0.0503	0.0503	0.0000	720.7726	720.7726	0.0138	0.0132	725.1591

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/yr	tons/yr										MT/yr					
Single Family Housing	1.07251e+007	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	572.3317	572.3317	0.0110	0.0105	575.8148
Total		**0.0578**	**0.4942**	**0.2103**	**3.1500e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**572.3317**	**572.3317**	**0.0110**	**0.0105**	**575.8148**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.97376e+006	683.6496	0.0310	6.7400e-003	686.3918
Total		**683.6496**	**0.0310**	**6.7400e-003**	**686.3918**

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	12.0814	0.1537	13.8014	4.3800e-003		1.5367	1.5367		1.5367	1.5367	144.6141	65.5006	210.1146	0.1382	0.0114	216.5428
Unmitigated	12.0814	0.1537	13.8014	4.3800e-003		1.5367	1.5367		1.5367	1.5367	144.6141	65.5006	210.1146	0.1382	0.0114	216.5428

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	0.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8120					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.7845	0.1192	10.8215	4.2300e-003		1.5204	1.5204		1.5203	1.5203	144.6141	60.6490	205.2631	0.1335	0.0114	211.5919
Landscaping	0.0907	0.0345	2.9799	1.6000e-004		0.0164	0.0164		0.0164	0.0164	0.0000	4.8515	4.8515	4.7300e-003	0.0000	4.9509
Total	**12.0814**	**0.1537**	**13.8014**	**4.3900e-003**		**1.5368**	**1.5368**		**1.5367**	**1.5367**	**144.6141**	**65.5006**	**210.1146**	**0.1382**	**0.0114**	**216.5428**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.9507	0.2394	5.9600e-003	44.8245
Unmitigated	44.8864	0.2991	7.4300e-003	53.4723

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.29725 / 5.39977	37.9507	0.2394	5.9600e-003	44.8245
Total		**37.9507**	**0.2394**	**5.9600e-003**	**44.8245**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.2905	1.9674	0.0000	74.6062
Unmitigated	33.2905	1.9674	0.0000	74.6062

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	164	33.2905	1.9674	0.0000	74.6062
Total		**33.2905**	**1.9674**	**0.0000**	**74.6062**

Barstow - Dev Site 8 - Sr Housing Attached

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	30.00	Dwelling Unit	1.88	30,000.00	86

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	2.61
tblVehicleTrips	SU_TR	6.07	2.84
tblVehicleTrips	WD_TR	6.59	3.44

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	2.0533	0.0281	2.5424	9.2000e-004		0.3270	0.3270		0.3270	0.3270	30.9887	13.3601	44.3488	0.0290	2.4400e-003	45.7124
Energy	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	58.2618	58.2618	1.9600e-003	7.9000e-004	58.5493
Mobile	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531
Waste						0.0000	0.0000		0.0000	0.0000	2.8013	0.0000	2.8013	0.1656	0.0000	6.2778
Water						0.0000	0.0000		0.0000	0.0000	0.4961	7.6362	8.1323	0.0513	1.2800e-003	9.6053
Total	**2.1238**	**0.2475**	**3.5207**	**2.6900e-003**	**0.1047**	**0.3325**	**0.4372**	**0.0280**	**0.3322**	**0.3602**	**34.2861**	**195.6215**	**229.9076**	**0.2520**	**4.5100e-003**	**236.5979**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531
Unmitigated	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	103.20	78.30	85.20	275,695	275,695
Total	103.20	78.30	85.20	275,695	275,695

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	32.3400	32.3400	1.4700e-003	3.2000e-004	32.4697
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	33.6324	33.6324	1.5300e-003	3.3000e-004	33.7673
NaturalGas Mitigated	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	25.9218	25.9218	5.0000e-004	4.8000e-004	26.0796
NaturalGas Unmitigated	3.3300e-003	0.0285	0.0121	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9877	32.9877	6.3000e-004	6.0000e-004	33.1884

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/yr	tons/yr										MT/yr					
Condo/Townhouse	485757	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	25.9218	25.9218	5.0000e-004	4.8000e-004	26.0796
Total		**2.6200e-003**	**0.0224**	**9.5200e-003**	**1.4000e-004**		**1.8100e-003**	**1.8100e-003**		**1.8100e-003**	**1.8100e-003**	**0.0000**	**25.9218**	**25.9218**	**5.0000e-004**	**4.8000e-004**	**26.0796**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	140673	32.3400	1.4700e-003	3.2000e-004	32.4697
Total		**32.3400**	**1.4700e-003**	**3.2000e-004**	**32.4697**

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	2.0533	0.0281	2.5424	9.2000e-004		0.3270	0.3270		0.3270	0.3270	30.9887	13.3601	44.3488	0.0290	2.4400e-003	45.7124
Unmitigated	2.0533	0.0281	2.5424	9.2000e-004		0.3270	0.3270		0.3270	0.3270	30.9887	13.3601	44.3488	0.0290	2.4400e-003	45.7124

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	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.8824	0.0255	2.3189	9.1000e-004		0.3258	0.3258		0.3258	0.3258	30.9887	12.9962	43.9850	0.0286	2.4400e-003	45.3411
Landscaping	6.8100e-003	2.5800e-003	0.2235	1.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	0.3639	0.3639	3.5000e-004	0.0000	0.3713
Total	**2.0533**	**0.0281**	**2.5424**	**9.2000e-004**		**0.3270**	**0.3270**		**0.3270**	**0.3270**	**30.9887**	**13.3601**	**44.3488**	**0.0290**	**2.4400e-003**	**45.7124**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.1323	0.0513	1.2800e-003	9.6053
Unmitigated	9.6185	0.0641	1.5900e-003	11.4583

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.5637 / 1.15709	8.1323	0.0513	1.2800e-003	9.6053
Total		**8.1323**	**0.0513**	**1.2800e-003**	**9.6053**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.8013	0.1656	0.0000	6.2778
Unmitigated	2.8013	0.1656	0.0000	6.2778

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	13.8	2.8013	0.1656	0.0000	6.2778
Total		**2.8013**	**0.1656**	**0.0000**	**6.2778**

Barstow - Dev Site 9 - SFR

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	140.00	Dwelling Unit	45.45	252,000.00	400

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	10.1946	0.1312	11.8645	4.2800e-003		1.5261	1.5261		1.5261	1.5261	144.6141	62.3471	206.9612	0.1351	0.0114	213.3247
Energy	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	439.5934	439.5934	0.0147	6.0300e-003	441.7723
Mobile	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749
Waste						0.0000	0.0000		0.0000	0.0000	33.2905	0.0000	33.2905	1.9674	0.0000	74.6062
Water						0.0000	0.0000		0.0000	0.0000	2.3151	35.6357	37.9507	0.2394	5.9600e-003	44.8245
Total	**11.1403**	**2.9880**	**25.1374**	**0.0276**	**1.4271**	**1.5898**	**3.0169**	**0.3816**	**1.5858**	**1.9675**	**180.2197**	**2,123.0288**	**2,303.2485**	**2.4148**	**0.0234**	**2,361.2027**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749
Unmitigated	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,332.80	1,387.40	1206.80	3,756,343	3,756,343
Total	1,332.80	1,387.40	1,206.80	3,756,343	3,756,343

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	239.2773	239.2773	0.0109	2.3600e-003	240.2371
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	247.1707	247.1707	0.0112	2.4400e-003	248.1621
NaturalGas Mitigated	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	200.3161	200.3161	3.8400e-003	3.6700e-003	201.5352
NaturalGas Unmitigated	0.0255	0.2178	0.0927	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	252.2704	252.2704	4.8400e-003	4.6200e-003	253.8057

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/yr	tons/yr										MT/yr					
Single Family Housing	3.75378e+006	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	200.3161	200.3161	3.8400e-003	3.6700e-003	201.5352
Total		**0.0202**	**0.1730**	**0.0736**	**1.1000e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**	**0.0000**	**200.3161**	**200.3161**	**3.8400e-003**	**3.6700e-003**	**201.5352**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.04081e+006	239.2773	0.0109	2.3600e-003	240.2371
Total		**239.2773**	**0.0109**	**2.3600e-003**	**240.2371**

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	10.1946	0.1312	11.8645	4.2800e-003		1.5261	1.5261		1.5261	1.5261	144.6141	62.3471	206.9612	0.1351	0.0114	213.3247
Unmitigated	10.1946	0.1312	11.8645	4.2800e-003		1.5261	1.5261		1.5261	1.5261	144.6141	62.3471	206.9612	0.1351	0.0114	213.3247

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	0.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.7845	0.1192	10.8215	4.2300e-003		1.5204	1.5204		1.5203	1.5203	144.6141	60.6490	205.2631	0.1335	0.0114	211.5919
Landscaping	0.0318	0.0121	1.0430	5.0000e-005		5.7300e-003	5.7300e-003		5.7300e-003	5.7300e-003	0.0000	1.6980	1.6980	1.6600e-003	0.0000	1.7328
Total	**10.1946**	**0.1312**	**11.8645**	**4.2800e-003**		**1.5261**	**1.5261**		**1.5260**	**1.5260**	**144.6141**	**62.3471**	**206.9611**	**0.1351**	**0.0114**	**213.3247**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.9507	0.2394	5.9600e-003	44.8245
Unmitigated	44.8864	0.2991	7.4300e-003	53.4723

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.29725 / 5.39977	37.9507	0.2394	5.9600e-003	44.8245
Total		**37.9507**	**0.2394**	**5.9600e-003**	**44.8245**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	33.2905	1.9674	0.0000	74.6062
Unmitigated	33.2905	1.9674	0.0000	74.6062

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	164	33.2905	1.9674	0.0000	74.6062
Total		**33.2905**	**1.9674**	**0.0000**	**74.6062**

Barstow - Dev Site 10 - Condos

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	20.00	Dwelling Unit	1.25	20,000.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	5.67
tblVehicleTrips	SU_TR	6.07	4.84
tblVehicleTrips	WD_TR	6.59	5.81

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750
Energy	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	38.8412	38.8412	1.3100e-003	5.3000e-004	39.0329
Mobile	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963
Waste						0.0000	0.0000		0.0000	0.0000	1.8675	0.0000	1.8675	0.1104	0.0000	4.1852
Water						0.0000	0.0000		0.0000	0.0000	0.3307	5.0908	5.4215	0.0342	8.5000e-004	6.4035
Total	**1.4497**	**0.2630**	**2.8293**	**2.6100e-003**	**0.1220**	**0.2235**	**0.3454**	**0.0326**	**0.2231**	**0.2558**	**22.8574**	**188.3306**	**211.1880**	**0.1701**	**3.0000e-003**	**215.6928**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963
Unmitigated	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	116.20	113.40	96.80	321,015	321,015
Total	116.20	113.40	96.80	321,015	321,015

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	21.5600	21.5600	9.8000e-004	2.1000e-004	21.6465
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.4216	22.4216	1.0200e-003	2.2000e-004	22.5115
NaturalGas Mitigated	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2812	17.2812	3.3000e-004	3.2000e-004	17.3864
NaturalGas Unmitigated	2.2200e-003	0.0190	8.0800e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9918	21.9918	4.2000e-004	4.0000e-004	22.1256

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/yr	tons/yr										MT/yr					
Condo/Townhouse	323838	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2812	17.2812	3.3000e-004	3.2000e-004	17.3864
Total		**1.7500e-003**	**0.0149**	**6.3500e-003**	**1.0000e-004**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**17.2812**	**17.2812**	**3.3000e-004**	**3.2000e-004**	**17.3864**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	93782.3	21.5600	9.8000e-004	2.1000e-004	21.6465
Total		**21.5600**	**9.8000e-004**	**2.1000e-004**	**21.6465**

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	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750
Unmitigated	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750

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	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2549	0.0170	1.5459	6.0000e-004		0.2172	0.2172		0.2172	0.2172	20.6592	8.6642	29.3233	0.0191	1.6200e-003	30.2274
Landscaping	4.5400e-003	1.7200e-003	0.1490	1.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	0.2426	0.2426	2.4000e-004	0.0000	0.2475
Total	**1.3689**	**0.0188**	**1.6949**	**6.1000e-004**		**0.2180**	**0.2180**		**0.2180**	**0.2180**	**20.6592**	**8.9067**	**29.5659**	**0.0193**	**1.6200e-003**	**30.4750**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.4215	0.0342	8.5000e-004	6.4035
Unmitigated	6.4124	0.0427	1.0600e-003	7.6389

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.771395	5.4215	0.0342	8.5000e-004	6.4035
Total		**5.4215**	**0.0342**	**8.5000e-004**	**6.4035**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1.8675	0.1104	0.0000	4.1852
Mitigated	1.8675	0.1104	0.0000	4.1852

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	9.2	1.8675	0.1104	0.0000	4.1852
Total		**1.8675**	**0.1104**	**0.0000**	**4.1852**

Barstow - Dev Site 11 - SFR

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	500.00	Dwelling Unit	162.34	900,000.00	1430

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	7.93
tblVehicleTrips	SU_TR	8.77	6.90
tblVehicleTrips	WD_TR	9.57	7.62

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	36.4094	0.4687	42.3732	0.0153		5.4503	5.4503		5.4502	5.4502	516.4789	222.6681	739.1470	0.4825	0.0406	761.8740
Energy	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	1,569.9765	1,569.9765	0.0525	0.0216	1,577.7582
Mobile	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848
Waste						0.0000	0.0000		0.0000	0.0000	119.0136	0.0000	119.0136	7.0335	0.0000	266.7172
Water						0.0000	0.0000		0.0000	0.0000	8.2682	127.2702	135.5383	0.8549	0.0213	160.0877
Total	**39.1271**	**8.7583**	**80.3669**	**0.0826**	**4.0793**	**5.6425**	**9.7218**	**1.0909**	**5.6311**	**6.7220**	**643.7606**	**6,452.0058**	**7,095.7664**	**8.5898**	**0.0835**	**7,302.0218**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848
Unmitigated	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,810.00	3,965.00	3450.00	10,737,682	10,737,682
Total	3,810.00	3,965.00	3,450.00	10,737,682	10,737,682

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	854.5619	854.5619	0.0388	8.4300e-003	857.9898
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	882.7524	882.7524	0.0401	8.7100e-003	886.2933
NaturalGas Mitigated	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.4146	715.4146	0.0137	0.0131	719.7685
NaturalGas Unmitigated	0.0910	0.7780	0.3311	4.9700e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.9657	900.9657	0.0173	0.0165	906.4489

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/yr	tons/yr										MT/yr					
Single Family Housing	1.34064e+007	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.4146	715.4146	0.0137	0.0131	719.7685
Total		**0.0723**	**0.6177**	**0.2629**	**3.9400e-003**		**0.0500**	**0.0500**		**0.0500**	**0.0500**	**0.0000**	**715.4146**	**715.4146**	**0.0137**	**0.0131**	**719.7685**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	3.7172e+006	854.5619	0.0388	8.4300e-003	857.9898
Total		**854.5619**	**0.0388**	**8.4300e-003**	**857.9898**

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	36.4094	0.4687	42.3732	0.0153		5.4503	5.4503		5.4502	5.4502	516.4789	222.6681	739.1470	0.4825	0.0406	761.8740
Unmitigated	36.4094	0.4687	42.3732	0.0153		5.4503	5.4503		5.4502	5.4502	516.4789	222.6681	739.1470	0.4825	0.0406	761.8740

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	1.4079					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5150					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	31.3731	0.4257	38.6483	0.0151		5.4299	5.4299		5.4297	5.4297	516.4789	216.6037	733.0826	0.4766	0.0406	755.6854
Landscaping	0.1134	0.0431	3.7249	2.0000e-004		0.0205	0.0205		0.0205	0.0205	0.0000	6.0644	6.0644	5.9100e-003	0.0000	6.1886
Total	**36.4094**	**0.4687**	**42.3732**	**0.0153**		**5.4503**	**5.4503**		**5.4502**	**5.4502**	**516.4789**	**222.6681**	**739.1470**	**0.4825**	**0.0406**	**761.8740**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	135.5383	0.8549	0.0213	160.0877
Unmitigated	160.3087	1.0683	0.0265	190.9724

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	26.0616 / 19.2849	135.5383	0.8549	0.0213	160.0877
Total		**135.5383**	**0.8549**	**0.0213**	**160.0877**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	119.0136	7.0335	0.0000	266.7172
Unmitigated	119.0136	7.0335	0.0000	266.7172

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	586.3	119.0136	7.0335	0.0000	266.7172
Total		**119.0136**	**7.0335**	**0.0000**	**266.7172**

Barstow - Dev Site 11 - Diverse Use

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	75.00	User Defined Unit	0.00	75,000.00	0
User Defined Retail	75.00	User Defined Unit	0.00	75,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Given same trip profile as Residential

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020

tblVehicleTrips	CC_TTP	0.00	40.20
tblVehicleTrips	CC_TTP	0.00	40.20
tblVehicleTrips	CNW_TTP	0.00	40.60
tblVehicleTrips	CNW_TTP	0.00	40.60
tblVehicleTrips	CW_TTP	0.00	19.20
tblVehicleTrips	CW_TTP	0.00	19.20
tblVehicleTrips	DV_TP	0.00	11.00
tblVehicleTrips	DV_TP	0.00	11.00
tblVehicleTrips	PB_TP	0.00	3.00
tblVehicleTrips	PB_TP	0.00	3.00
tblVehicleTrips	PR_TP	0.00	86.00
tblVehicleTrips	PR_TP	0.00	86.00
tblVehicleTrips	ST_TR	0.00	1.10
tblVehicleTrips	ST_TR	0.00	7.52
tblVehicleTrips	SU_TR	0.00	1.10
tblVehicleTrips	SU_TR	0.00	7.52
tblVehicleTrips	WD_TR	0.00	1.10
tblVehicleTrips	WD_TR	0.00	7.52

2.0 Emissions Summary

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	0.7598	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1935**	**1.1873**	**6.0278**	**9.5800e-003**	**0.6130**	**0.0215**	**0.6345**	**0.1639**	**0.0198**	**0.1837**	**0.0000**	**684.1741**	**684.1741**	**0.0254**	**0.0000**	**684.7073**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044
Unmitigated	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	82.50	82.50	82.50	205,905	205,905
User Defined Retail	564.00	564.00	564.00	1,407,639	1,407,639
Total	646.50	646.50	646.50	1,613,543	1,613,543

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	19.20	40.20	40.60	86	11	3
User Defined Retail	9.50	7.30	7.30	19.20	40.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.7598	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Unmitigated	0.7598	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003

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	0.1738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5858					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.6800e-003	2.6800e-003	1.0000e-005	0.0000	2.8300e-003
Total	**0.7598**	**1.0000e-005**	**1.3900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.6800e-003**	**2.6800e-003**	**1.0000e-005**	**0.0000**	**2.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.0000	0.0000	0.0000	0.0000
Mitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Barstow - Dev Site 12 - MDR

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	60.00	Dwelling Unit	3.75	60,000.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	4.1066	0.0563	5.0848	1.8400e-003		0.6540	0.6540		0.6540	0.6540	61.9775	26.7202	88.6976	0.0579	4.8700e-003	91.4249
Energy	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	89.0045	89.0045	3.1200e-003	1.1700e-003	89.4340
Mobile	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688
Waste						0.0000	0.0000		0.0000	0.0000	5.6026	0.0000	5.6026	0.3311	0.0000	12.5557
Water						0.0000	0.0000		0.0000	0.0000	0.9922	15.2724	16.2646	0.1026	2.5500e-003	19.2105
Total	**4.3830**	**0.8778**	**8.9898**	**8.5700e-003**	**0.4208**	**0.6712**	**1.0920**	**0.1125**	**0.6700**	**0.7825**	**68.5722**	**598.5054**	**667.0776**	**0.5119**	**8.5900e-003**	**680.4938**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688
Unmitigated	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	399.00	383.40	351.60	1,107,647	1,107,647
Total	399.00	383.40	351.60	1,107,647	1,107,647

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	54.0528	54.0528	2.4500e-003	5.3000e-004	54.2697
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.2480	56.2480	2.5500e-003	5.5000e-004	56.4737
NaturalGas Mitigated	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	34.9516	34.9516	6.7000e-004	6.4000e-004	35.1644
NaturalGas Unmitigated	4.4400e-003	0.0379	0.0161	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9361	43.9361	8.4000e-004	8.1000e-004	44.2035

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/yr	tons/yr										MT/yr					
Apartments Low Rise	654969	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	34.9516	34.9516	6.7000e-004	6.4000e-004	35.1644
Total		**3.5300e-003**	**0.0302**	**0.0128**	**1.9000e-004**		**2.4400e-003**	**2.4400e-003**		**2.4400e-003**	**2.4400e-003**	**0.0000**	**34.9516**	**34.9516**	**6.7000e-004**	**6.4000e-004**	**35.1644**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	235121	54.0528	2.4500e-003	5.3000e-004	54.2697
Total		**54.0528**	**2.4500e-003**	**5.3000e-004**	**54.2697**

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	4.1066	0.0563	5.0848	1.8400e-003		0.6540	0.6540		0.6540	0.6540	61.9775	26.7202	88.6976	0.0579	4.8700e-003	91.4249
Unmitigated	4.1066	0.0563	5.0848	1.8400e-003		0.6540	0.6540		0.6540	0.6540	61.9775	26.7202	88.6976	0.0579	4.8700e-003	91.4249

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	0.0939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2343					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.7648	0.0511	4.6378	1.8100e-003		0.6516	0.6516		0.6516	0.6516	61.9775	25.9924	87.9699	0.0572	4.8700e-003	90.6823
Landscaping	0.0136	5.1700e-003	0.4470	2.0000e-005		2.4600e-003	2.4600e-003		2.4600e-003	2.4600e-003	0.0000	0.7277	0.7277	7.1000e-004	0.0000	0.7426
Total	**4.1066**	**0.0563**	**5.0848**	**1.8300e-003**		**0.6540**	**0.6540**		**0.6540**	**0.6540**	**61.9775**	**26.7202**	**88.6976**	**0.0579**	**4.8700e-003**	**91.4249**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.2646	0.1026	2.5500e-003	19.2105
Unmitigated	19.2371	0.1282	3.1900e-003	22.9167

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.12739 / 2.31419	16.2646	0.1026	2.5500e-003	19.2105
Total		**16.2646**	**0.1026**	**2.5500e-003**	**19.2105**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.6026	0.3311	0.0000	12.5557
Unmitigated	5.6026	0.3311	0.0000	12.5557

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	27.6	5.6026	0.3311	0.0000	12.5557
Total		**5.6026**	**0.3311**	**0.0000**	**12.5557**

Barstow - Dev Site 12 - Office

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land

Water Mitigation - 2013 Green Building Standards

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	WD_TR	11.01	3.32

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	46.7057	46.7057	2.0500e-003	4.8000e-004	46.8987
Mobile	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646
Waste						0.0000	0.0000		0.0000	0.0000	3.7756	0.0000	3.7756	0.2231	0.0000	8.4614
Water						0.0000	0.0000		0.0000	0.0000	0.9022	13.7378	14.6400	0.0933	2.3200e-003	17.3181
Total	**0.1396**	**0.1046**	**0.5262**	**8.4000e-004**	**0.0522**	**2.0200e-003**	**0.0542**	**0.0140**	**1.8800e-003**	**0.0158**	**4.6778**	**118.7628**	**123.4406**	**0.3206**	**2.8000e-003**	**131.0431**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646
Unmitigated	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	66.40	49.20	21.00	137,308	137,308
Total	66.40	49.20	21.00	137,308	137,308

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	43.9788	43.9788	2.0000e-003	4.3000e-004	44.1552
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.1514	49.1514	2.2300e-003	4.8000e-004	49.3485
NaturalGas Mitigated	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7269	2.7269	5.0000e-005	5.0000e-005	2.7435
NaturalGas Unmitigated	3.9000e-004	3.5800e-003	3.0100e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8956	3.8956	7.0000e-005	7.0000e-005	3.9193

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/yr	tons/yr										MT/yr					
General Office Building	51100	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7269	2.7269	5.0000e-005	5.0000e-005	2.7435
Total		**2.8000e-004**	**2.5000e-003**	**2.1000e-003**	**2.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**2.7269**	**2.7269**	**5.0000e-005**	**5.0000e-005**	**2.7435**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	191300	43.9788	2.0000e-003	4.3000e-004	44.1552
Total		**43.9788**	**2.0000e-003**	**4.3000e-004**	**44.1552**

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	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Unmitigated	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004

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	0.0232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Total	**0.1013**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.6400	0.0933	2.3200e-003	17.3181
Unmitigated	17.3331	0.1166	2.8900e-003	20.6783

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	2.84374 / 2.04577	14.6400	0.0933	2.3200e-003	17.3181
Total		**14.6400**	**0.0933**	**2.3200e-003**	**17.3181**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.7756	0.2231	0.0000	8.4614
Unmitigated	3.7756	0.2231	0.0000	8.4614

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	18.6	3.7756	0.2231	0.0000	8.4614
Total		**3.7756**	**0.2231**	**0.0000**	**8.4614**

Barstow - Dev Site 1 - Gen Hvy Ind - Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	725.00	1000sqft	16.64	725,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.50	1.20
tblVehicleTrips	SU_TR	1.50	1.20
tblVehicleTrips	WD_TR	1.50	1.20

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Energy	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	2,694.3493	2,694.3493	0.0934	0.0359	2,707.4398
Mobile	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064
Waste						0.0000	0.0000		0.0000	0.0000	91.2444	0.0000	91.2444	5.3924	0.0000	204.4847
Water						0.0000	0.0000		0.0000	0.0000	42.5517	401.4968	444.0485	4.3881	0.1070	569.3737
Total	**4.3980**	**2.8149**	**9.6703**	**0.0210**	**0.9650**	**0.1104**	**1.0754**	**0.2581**	**0.1078**	**0.3658**	**133.7961**	**4,166.9415**	**4,300.7376**	**9.9131**	**0.1429**	**4,553.2181**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064
Unmitigated	0.6146	1.8041	8.8145	0.0150	0.9650	0.0336	0.9986	0.2581	0.0309	0.2890	0.0000	1,071.0824	1,071.0824	0.0392	0.0000	1,071.9064

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	870.00	870.00	870.00	2,539,975	2,539,975
Total	870.00	870.00	870.00	2,539,975	2,539,975

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,593.9635	1,593.9635	0.0723	0.0157	1,600.3573
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,845.0735	1,845.0735	0.0837	0.0182	1,852.4745
NaturalGas Mitigated	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	1,100.3857	1,100.3857	0.0211	0.0202	1,107.0825
NaturalGas Unmitigated	0.1301	1.1831	0.9938	7.1000e-003		0.0899	0.0899		0.0899	0.0899	0.0000	1,287.9489	1,287.9489	0.0247	0.0236	1,295.7871

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/yr	tons/yr										MT/yr					
General Heavy Industry	2.06205e+007	0.1112	1.0108	0.8491	6.0600e-003		0.0768	0.0768		0.0768	0.0768	0.0000	1,100.3857	1,100.3857	0.0211	0.0202	1,107.0825
Total		**0.1112**	**1.0108**	**0.8491**	**6.0600e-003**		**0.0768**	**0.0768**		**0.0768**	**0.0768**	**0.0000**	**1,100.3857**	**1,100.3857**	**0.0211**	**0.0202**	**1,107.0825**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	6.93347e+006	1,593.9635	0.0723	0.0157	1,600.3573
Total		**1,593.9635**	**0.0723**	**0.0157**	**1,600.3573**

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	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Unmitigated	3.6722	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137

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	0.8401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.7000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0130	0.0130	3.0000e-005	0.0000	0.0137
Total	**3.6722**	**6.0000e-005**	**6.7000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0130**	**0.0130**	**3.0000e-005**	**0.0000**	**0.0137**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	444.0485	4.3881	0.1070	569.3737
Unmitigated	555.0606	5.4859	0.1340	711.7870

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	134.125 / 0	444.0485	4.3881	0.1070	569.3737
Total		**444.0485**	**4.3881**	**0.1070**	**569.3737**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	91.2444	5.3924	0.0000	204.4847
Unmitigated	182.4889	10.7848	0.0000	408.9693

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	449.5	91.2444	5.3924	0.0000	204.4847
Total		**91.2444**	**5.3924**	**0.0000**	**204.4847**

Barstow - Dev Site 2 - Gen Light Ind Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	500.00	1000sqft	11.48	500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	1.32	1.06
tblVehicleTrips	SU_TR	0.68	0.54
tblVehicleTrips	WD_TR	6.97	5.58

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Energy	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	1,858.1719	1,858.1719	0.0644	0.0248	1,867.1998
Mobile	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607
Waste						0.0000	0.0000		0.0000	0.0000	62.9272	0.0000	62.9272	3.7189	0.0000	141.0239
Water						0.0000	0.0000		0.0000	0.0000	29.3460	276.8944	306.2404	3.0262	0.0738	392.6715
Total	**4.0977**	**5.0666**	**21.9389**	**0.0405**	**2.3371**	**0.1344**	**2.4715**	**0.6250**	**0.1279**	**0.7529**	**92.2732**	**4,729.2403**	**4,821.5135**	**6.9046**	**0.0986**	**4,997.0654**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607
Unmitigated	1.4885	4.3694	21.3488	0.0363	2.3371	0.0814	2.4185	0.6250	0.0749	0.6999	0.0000	2,594.1651	2,594.1651	0.0950	0.0000	2,596.1607

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	2,790.00	530.00	270.00	6,151,827	6,151,827
Total	2,790.00	530.00	270.00	6,151,827	6,151,827

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,099.2852	1,099.2852	0.0499	0.0108	1,103.6947
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,272.4645	1,272.4645	0.0577	0.0126	1,277.5686
NaturalGas Mitigated	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	758.8867	758.8867	0.0146	0.0139	763.5052
NaturalGas Unmitigated	0.0898	0.8159	0.6854	4.9000e-003		0.0620	0.0620		0.0620	0.0620	0.0000	888.2406	888.2406	0.0170	0.0163	893.6463

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/yr	tons/yr										MT/yr					
General Light Industry	1.4221e+007	0.0767	0.6971	0.5856	4.1800e-003		0.0530	0.0530		0.0530	0.0530	0.0000	758.8867	758.8867	0.0146	0.0139	763.5052

Total		**0.0767**	**0.6971**	**0.5856**	**4.1800e-003**		**0.0530**	**0.0530**		**0.0530**	**0.0530**	**0.0000**	**758.8867**	**758.8867**	**0.0146**	**0.0139**	**763.5052**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	4.7817e+006	1,099.2852	0.0499	0.0108	1,103.6947
Total		**1,099.2852**	**0.0499**	**0.0108**	**1,103.6947**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Unmitigated	2.5326	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003

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	0.5794					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9528					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.3000e-004	4.0000e-005	4.6200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.9300e-003	8.9300e-003	2.0000e-005	0.0000	9.4400e-003
Total	**2.5326**	**4.0000e-005**	**4.6200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**8.9300e-003**	**8.9300e-003**	**2.0000e-005**	**0.0000**	**9.4400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	306.2404	3.0262	0.0738	392.6715
Unmitigated	382.8004	3.7834	0.0924	490.8876

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	92.5 / 0	306.2404	3.0262	0.0738	392.6715
Total		**306.2404**	**3.0262**	**0.0738**	**392.6715**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	62.9272	3.7189	0.0000	141.0239
Unmitigated	125.8544	7.4378	0.0000	282.0478

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	310	62.9272	3.7189	0.0000	141.0239
Total		**62.9272**	**3.7189**	**0.0000**	**141.0239**

Barstow - Dev Site 3 - Casino Resort Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	88.50	User Defined Unit	0.00	88.50	0
Fast Food Restaurant w/o Drive Thru	2.00	1000sqft	0.05	2,000.00	0
Fast Food Restaurant with Drive Thru	4.00	1000sqft	0.09	4,000.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.11	5,000.00	0
Hotel	160.00	Room	5.33	232,320.00	0
User Defined Recreational	20.00	User Defined Unit	0.00	20,000.00	0
Strip Mall	4.50	1000sqft	0.10	4,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics
Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow
Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.
Water Mitigation - 2013 Green Building Standards
Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	88.50
tblLandUse	LandUseSquareFeet	0.00	20,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TTP	0.00	79.50
tblVehicleTrips	CC_TTP	0.00	79.50
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CW_TTP	0.00	1.50
tblVehicleTrips	CW_TTP	0.00	1.50
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	696.00	12.06
tblVehicleTrips	ST_TR	722.03	72.20
tblVehicleTrips	ST_TR	158.37	15.84
tblVehicleTrips	ST_TR	8.19	2.70
tblVehicleTrips	ST_TR	42.04	25.40
tblVehicleTrips	ST_TR	0.00	27.04
tblVehicleTrips	ST_TR	0.00	15.84
tblVehicleTrips	SU_TR	500.00	12.06
tblVehicleTrips	SU_TR	542.72	54.27
tblVehicleTrips	SU_TR	131.84	13.18
tblVehicleTrips	SU_TR	5.95	2.70
tblVehicleTrips	SU_TR	20.43	25.40
tblVehicleTrips	SU_TR	0.00	27.04
tblVehicleTrips	SU_TR	0.00	13.18
tblVehicleTrips	WD_TR	716.00	12.06

tblVehicleTrips	WD_TR	496.12	49.61
tblVehicleTrips	WD_TR	127.15	12.72
tblVehicleTrips	WD_TR	8.17	2.25
tblVehicleTrips	WD_TR	44.32	2.14
tblVehicleTrips	WD_TR	0.00	22.53
tblVehicleTrips	WD_TR	0.00	12.72

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Energy	0.0720	0.6548	0.5501	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	1,738.1152	1,738.1152	0.0602	0.0232	1,746.5660
Mobile	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260
Waste						0.0000	0.0000		0.0000	0.0000	22.4254	0.0000	22.4254	1.3253	0.0000	50.2568
Water						0.0000	0.0000		0.0000	0.0000	1.9621	20.5963	22.5584	0.2024	4.9600e-003	28.3457
Total	**3.4818**	**6.1764**	**28.8534**	**0.0481**	**2.8237**	**0.1490**	**2.9727**	**0.7551**	**0.1412**	**0.8963**	**24.3876**	**4,914.9751**	**4,939.3627**	**1.7054**	**0.0281**	**4,983.8999**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260
Unmitigated	2.0528	5.5216	28.3007	0.0442	2.8237	0.0992	2.9229	0.7551	0.0914	0.8465	0.0000	3,156.2586	3,156.2586	0.1175	0.0000	3,158.7260

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant w/o Drive Thru	24.12	24.12	24.12	38,895	38,895
Fast Food Restaurant with Drive Thru	198.44	288.80	217.08	199,956	199,956
High Turnover (Sit Down Restaurant)	63.60	79.20	65.90	76,760	76,760
Hotel	360.00	432.00	432.00	723,059	723,059
Strip Mall	9.63	114.30	114.30	60,886	60,886
User Defined Commercial	1,993.91	2,393.04	2393.04	5,626,548	5,626,548
User Defined Recreational	254.40	316.80	263.60	706,350	706,350
Total	2,904.10	3,648.26	3,510.04	7,432,455	7,432,455

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
User Defined Commercial	9.50	7.30	7.30	1.50	79.50	19.00	100	0	0
User Defined Recreational	9.50	7.30	7.30	1.50	79.50	19.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,025.2626	1,025.2626	0.0465	0.0101	1,029.3751
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,231.3126	1,231.3126	0.0559	0.0122	1,236.2517
NaturalGas Mitigated	0.0720	0.6548	0.5501	3.9300e-003		0.0498	0.0498		0.0498	0.0498	0.0000	712.8526	712.8526	0.0137	0.0131	717.1909
NaturalGas Unmitigated	0.0953	0.8665	0.7278	5.2000e-003		0.0659	0.0659		0.0659	0.0659	0.0000	943.2575	943.2575	0.0181	0.0173	948.9980

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/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	1.01195e+006	5.4600e-003	0.0496	0.0417	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	54.0016	54.0016	1.0400e-003	9.9000e-004	54.3303
High Turnover (Sit Down Restaurant)	1.26494e+006	6.8200e-003	0.0620	0.0521	3.7000e-004		4.7100e-003	4.7100e-003		4.7100e-003	4.7100e-003	0.0000	67.5020	67.5020	1.2900e-003	1.2400e-003	67.9128
Hotel	1.05678e+007	0.0570	0.5180	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394	0.0000	563.9366	563.9366	0.0108	0.0103	567.3686
Strip Mall	7713	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4116	0.4116	1.0000e-005	1.0000e-005	0.4141
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	505976	2.7300e-003	0.0248	0.0208	1.5000e-004		1.8900e-003	1.8900e-003		1.8900e-003	1.8900e-003	0.0000	27.0008	27.0008	5.2000e-004	5.0000e-004	27.1651
Total		**0.0720**	**0.6548**	**0.5501**	**3.9300e-003**		**0.0498**	**0.0498**		**0.0498**	**0.0498**	**0.0000**	**712.8526**	**712.8526**	**0.0137**	**0.0131**	**717.1909**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant w/o Drive Thru	92909.2	21.3593	9.7000e-004	2.1000e-004	21.4450
Fast Food Restaurant with Drive Thru	185818	42.7186	1.9400e-003	4.2000e-004	42.8899
High Turnover (Sit Down Restaurant)	232273	53.3982	2.4200e-003	5.3000e-004	53.6124
Hotel	3.89129e+006	894.5852	0.0406	8.8300e-003	898.1735
Strip Mall	57423.6	13.2014	6.0000e-004	1.3000e-004	13.2543
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**1,025.2626**	**0.0465**	**0.0101**	**1,029.3751**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Unmitigated	1.3570	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003

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	0.3104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5000e-004	2.0000e-005	2.6300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.0700e-003	5.0700e-003	1.0000e-005	0.0000	5.3600e-003
Total	**1.3570**	**2.0000e-005**	**2.6300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.0700e-003**	**5.0700e-003**	**1.0000e-005**	**0.0000**	**5.3600e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.5584	0.2024	4.9600e-003	28.3457
Unmitigated	27.8126	0.2531	6.2000e-003	35.0484

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant w/o Drive Thru	0.485654 / 0.0363853	1.7008	0.0159	3.9000e-004	2.1550
Fast Food Restaurant with Drive Thru	0.971308 / 0.0727706	3.4016	0.0318	7.8000e-004	4.3099
High Turnover (Sit Down Restaurant)	1.21413 / 0.0909632	4.2520	0.0397	9.7000e-004	5.3874
Hotel	3.24695 / 0.423456	11.8313	0.1063	2.6000e-003	14.8695
Strip Mall	0.266661 / 0.191835	1.3728	8.7500e-003	2.2000e-004	1.6239
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**22.5584**	**0.2024**	**4.9600e-003**	**28.3457**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	44.8509	2.6506	0.0000	100.5137
Mitigated	22.4254	1.3253	0.0000	50.2568

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant w/o Drive Thru	11.52	2.3385	0.1382	0.0000	5.2406
Fast Food Restaurant with Drive Thru	23.04	4.6769	0.2764	0.0000	10.4813
High Turnover (Sit Down Restaurant)	29.75	6.0390	0.3569	0.0000	13.5338
Hotel	43.8	8.8910	0.5254	0.0000	19.9253
Strip Mall	2.365	0.4801	0.0284	0.0000	1.0759
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**22.4254**	**1.3253**	**0.0000**	**50.2568**

Barstow - Dev Site 4 - Active Seniors Housing Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Retirement Community	1,575.00	Dwelling Unit	315.00	1,575,000.00	4505

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	2.81	2.73
tblVehicleTrips	SU_TR	2.81	2.32
tblVehicleTrips	WD_TR	2.81	3.68

2.0 Emissions Summary

2.1 Overall Construction

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	8.7278	1.0000e-005	6.1500e-003	0.0000		0.0780	0.0780		0.0771	0.0771	0.0000	1,116.4936	1,116.4936	0.0214	0.0205	1,123.2884
Energy	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	3,336.5312	3,336.5312	0.1169	0.0437	3,352.5451
Mobile	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244
Waste						0.0000	0.0000		0.0000	0.0000	73.5335	0.0000	73.5335	4.3457	0.0000	164.7933
Water						0.0000	0.0000		0.0000	0.0000	26.0447	499.0322	525.0769	2.6975	0.0678	602.7447
Total	**12.5572**	**11.8817**	**53.1622**	**0.0960**	**5.6930**	**0.3714**	**6.0644**	**1.5224**	**0.3549**	**1.8773**	**99.5781**	**11,276.9056**	**11,376.4838**	**7.4137**	**0.1320**	**11,573.0959**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244
Unmitigated	3.6920	10.7066	52.6561	0.0885	5.6930	0.1985	5.8915	1.5224	0.1827	1.7052	0.0000	6,324.8486	6,324.8486	0.2322	0.0000	6,329.7244

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Retirement Community	5,796.00	4,299.75	3654.00	14,985,183	14,985,183
Total	5,796.00	4,299.75	3,654.00	14,985,183	14,985,183

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Retirement Community	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,975.6347	1,975.6347	0.0908	0.0188	1,983.3663
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,197.9012	2,197.9012	0.1010	0.0209	2,206.5028
NaturalGas Mitigated	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	1,360.8966	1,360.8966	0.0261	0.0250	1,369.1788
NaturalGas Unmitigated	0.1750	1.4954	0.6364	9.5500e-003		0.1209	0.1209		0.1209	0.1209	0.0000	1,731.8535	1,731.8535	0.0332	0.0318	1,742.3933

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/yr	tons/yr										MT/yr					
Retirement Community	2.55022e+007	0.1375	1.1751	0.5000	7.5000e-003		0.0950	0.0950		0.0950	0.0950	0.0000	1,360.8966	1,360.8966	0.0261	0.0250	1,369.1788
Total		**0.1375**	**1.1751**	**0.5000**	**7.5000e-003**		**0.0950**	**0.0950**		**0.0950**	**0.0950**	**0.0000**	**1,360.8966**	**1,360.8966**	**0.0261**	**0.0250**	**1,369.1788**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Retirement Community	6.90378e+006	1,975.6347	0.0908	0.0188	1,983.3663
Total		**1,975.6347**	**0.0908**	**0.0188**	**1,983.3663**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	8.7278	1.0000e-005	6.1500e-003	0.0000		0.0780	0.0780		0.0771	0.0771	0.0000	1,116.4936	1,116.4936	0.0214	0.0205	1,123.2884
Unmitigated	107.4402	1.3408	121.7421	0.0476		17.1040	17.1040		17.1035	17.1035	1,626.9084	682.3017	2,309.2100	1.5014	0.1280	2,380.4090

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	2.4638					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.1512					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1128	1.0000e-005	6.1500e-003	0.0000		0.0780	0.0780		0.0771	0.0771	0.0000	1,116.4936	1,116.4936	0.0214	0.0205	1,123.2884
Landscaping						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7278**	**1.0000e-005**	**6.1500e-003**	**0.0000**		**0.0780**	**0.0780**		**0.0771**	**0.0771**	**0.0000**	**1,116.4936**	**1,116.4936**	**0.0214**	**0.0205**	**1,123.2884**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	525.0769	2.6975	0.0678	602.7447
Unmitigated	620.6089	3.3708	0.0846	717.6058

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Retirement Community	82.0941 / 60.7474	525.0769	2.6975	0.0678	602.7447
Total		**525.0769**	**2.6975**	**0.0678**	**602.7447**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	73.5335	4.3457	0.0000	164.7933
Unmitigated	147.0670	8.6914	0.0000	329.5865

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Retirement Community	362.25	73.5335	4.3457	0.0000	164.7933
Total		**73.5335**	**4.3457**	**0.0000**	**164.7933**

Barstow - Dev Site 5 - Hwy Commercial Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant with Drive Thru	20.00	1000sqft	0.46	20,000.00	0
High Turnover (Sit Down Restaurant)	30.00	1000sqft	0.69	30,000.00	0
Hotel	100.00	Room	3.33	300,000.00	0
Regional Shopping Center	100.00	1000sqft	2.30	100,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	145,200.00	300,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	8.19	12.27
tblVehicleTrips	ST_TR	49.97	44.97
tblVehicleTrips	SU_TR	5.95	8.92
tblVehicleTrips	SU_TR	25.24	22.72
tblVehicleTrips	WD_TR	8.17	8.92
tblVehicleTrips	WD_TR	42.94	38.43

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Energy	0.1427	1.2974	1.0898	7.7800e-003		0.0986	0.0986		0.0986	0.0986	0.0000	3,406.4172	3,406.4172	0.1176	0.0456	3,423.0112
Mobile	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693
Waste						0.0000	0.0000		0.0000	0.0000	75.8303	0.0000	75.8303	4.4814	0.0000	169.9406
Water						0.0000	0.0000		0.0000	0.0000	6.3757	74.0454	80.4211	0.6581	0.0162	99.2548
Total	**13.2613**	**22.6115**	**132.7765**	**0.1499**	**8.6986**	**0.4208**	**9.1194**	**2.3262**	**0.3953**	**2.7215**	**82.2060**	**13,595.2348**	**13,677.4408**	**5.6667**	**0.0617**	**13,815.5807**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693
Unmitigated	10.8394	21.3141	131.6844	0.1421	8.6986	0.3222	9.0208	2.3262	0.2967	2.6228	0.0000	10,114.7677	10,114.7677	0.4096	0.0000	10,123.3693

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	9,922.40	14,440.60	10854.40	9,998,212	9,998,212
High Turnover (Sit Down Restaurant)	3,814.50	4,751.10	3955.20	4,604,394	4,604,394
Hotel	892.00	1,227.00	892.00	1,785,663	1,785,663
Regional Shopping Center	3,843.00	4,497.00	2272.00	6,508,268	6,508,268
Total	18,471.90	24,915.70	17,973.60	22,896,537	22,896,537

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Th	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
High Turnover (Sit Down Restaura	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,994.0266	1,994.0266	0.0905	0.0197	2,002.0251
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,360.3240	2,360.3240	0.1071	0.0233	2,369.7917
NaturalGas Mitigated	0.1427	1.2974	1.0898	7.7800e-003		0.0986	0.0986		0.0986	0.0986	0.0000	1,412.3906	1,412.3906	0.0271	0.0259	1,420.9862
NaturalGas Unmitigated	0.1778	1.6165	1.3579	9.7000e-003		0.1229	0.1229		0.1229	0.1229	0.0000	1,759.8050	1,759.8050	0.0337	0.0323	1,770.5149

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/yr	tons/yr										MT/yr					
High Turnover (Sit Down Restaurant)	7.58964e+006	0.0409	0.3720	0.3125	2.2300e-003		0.0283	0.0283		0.0283	0.0283	0.0000	405.0121	405.0121	7.7600e-003	7.4300e-003	407.4769
Hotel	1.36464e+007	0.0736	0.6689	0.5619	4.0100e-003		0.0508	0.0508		0.0508	0.0508	0.0000	728.2239	728.2239	0.0140	0.0134	732.6557
Regional Shopping Center	171400	9.2000e-004	8.4000e-003	7.0600e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	9.1466	9.1466	1.8000e-004	1.7000e-004	9.2022
Fast Food Restaurant with Drive Thru	5.05976e+006	0.0273	0.2480	0.2083	1.4900e-003		0.0189	0.0189		0.0189	0.0189	0.0000	270.0081	270.0081	5.1800e-003	4.9500e-003	271.6513
Total		**0.1427**	**1.2974**	**1.0898**	**7.7800e-003**		**0.0986**	**0.0986**		**0.0986**	**0.0986**	**0.0000**	**1,412.3906**	**1,412.3906**	**0.0271**	**0.0259**	**1,420.9862**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	929092	213.5929	9.6900e-003	2.1100e-003	214.4497
High Turnover (Sit Down Restaurant)	1.39364e+006	320.3893	0.0145	3.1600e-003	321.6745
Hotel	5.07486e+006	1,166.6810	0.0529	0.0115	1,171.3608
Regional Shopping Center	1.27608e+006	293.3634	0.0133	2.8900e-003	294.5402
Total		**1,994.0266**	**0.0905**	**0.0197**	**2,002.0251**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Unmitigated	2.2791	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003

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	0.5214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4700e-003	4.4700e-003	1.0000e-005	0.0000	4.7200e-003
Total	**2.2791**	**2.0000e-005**	**2.3100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4700e-003**	**4.4700e-003**	**1.0000e-005**	**0.0000**	**4.7200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	80.4211	0.6581	0.0162	99.2548
Unmitigated	97.9567	0.8226	0.0202	121.4989

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.85654 / 0.363853	17.0079	0.1589	3.8800e-003	21.5495
High Turnover (Sit Down Restaurant)	7.28481 / 0.545779	25.5119	0.2384	5.8300e-003	32.3243
Hotel	2.02934 / 0.26466	7.3945	0.0664	1.6300e-003	9.2934
Regional Shopping Center	5.9258 / 4.26299	30.5068	0.1944	4.8400e-003	36.0875
Total		**80.4211**	**0.6581**	**0.0162**	**99.2548**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	151.6606	8.9629	0.0000	339.8813
Mitigated	75.8303	4.4814	0.0000	169.9406

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	115.19	23.3825	1.3819	0.0000	52.4018
High Turnover (Sit Down Restaurant)	178.5	36.2339	2.1414	0.0000	81.2025
Hotel	27.375	5.5569	0.3284	0.0000	12.4533
Regional Shopping Center	52.5	10.6570	0.6298	0.0000	23.8831
Total		**75.8303**	**4.4814**	**0.0000**	**169.9406**

Barstow - Dev Site 6 ST - Big Box Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	5.00	1000sqft	0.11	5,000.00	0
Free-Standing Discount Superstore	275.00	1000sqft	6.31	275,000.00	0
Regional Shopping Center	34.00	1000sqft	0.78	34,000.00	0
Strip Mall	32.00	1000sqft	0.73	32,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Both Pad and Shop fit profile of Regional Shopping Center.

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TTP	64.40	64.70
tblVehicleTrips	CW_TTP	16.60	16.30
tblVehicleTrips	DV_TP	40.00	35.00
tblVehicleTrips	PB_TP	15.00	11.00
tblVehicleTrips	PR_TP	45.00	54.00
tblVehicleTrips	ST_TR	86.32	69.06
tblVehicleTrips	ST_TR	64.07	56.86
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	ST_TR	42.04	39.98
tblVehicleTrips	SU_TR	31.90	25.52
tblVehicleTrips	SU_TR	56.12	45.09
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	SU_TR	20.43	20.19
tblVehicleTrips	WD_TR	148.15	24.75
tblVehicleTrips	WD_TR	53.13	45.79
tblVehicleTrips	WD_TR	42.94	34.16
tblVehicleTrips	WD_TR	44.32	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Energy	3.9200e-003	0.0356	0.0299	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	1,049.6000	1,049.6000	0.0466	0.0107	1,053.8906
Mobile	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192
Waste						0.0000	0.0000		0.0000	0.0000	127.5453	0.0000	127.5453	7.5377	0.0000	285.8373
Water						0.0000	0.0000		0.0000	0.0000	6.4610	98.3831	104.8442	0.6680	0.0166	124.0236
Total	**10.8716**	**20.3750**	**116.2389**	**0.1478**	**9.2284**	**0.3358**	**9.5642**	**2.4678**	**0.3095**	**2.7773**	**134.0063**	**11,672.0113**	**11,806.0177**	**8.6617**	**0.0273**	**11,996.3772**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192
Unmitigated	9.1151	20.3393	116.2058	0.1476	9.2284	0.3331	9.5615	2.4678	0.3067	2.7746	0.0000	10,524.0220	10,524.0220	0.4094	0.0000	10,532.6192

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	123.75	345.30	127.60	144,250	144,250
Free-Standing Discount Superstore	12,592.25	15,636.50	12399.75	20,328,530	20,328,530
Regional Shopping Center	1,161.44	1,359.32	686.46	1,966,953	1,966,953
Strip Mall	1,093.12	1,279.36	646.08	1,851,249	1,851,249
Total	14,970.56	18,620.48	13,859.89	24,290,982	24,290,982

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	27	26	47
Free-Standing Discount	9.50	7.30	7.30	13.20	67.80	19.00	47.5	35.5	17
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Strip Mall	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,010.8214	1,010.8214	0.0459	9.9700e-003	1,014.8760
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,240.3736	1,240.3736	0.0563	0.0122	1,245.3490
NaturalGas Mitigated	3.9200e-003	0.0356	0.0299	2.1000e-004		2.7100e-003	2.7100e-003		2.7100e-003	2.7100e-003	0.0000	38.7786	38.7786	7.4000e-004	7.1000e-004	39.0146
NaturalGas Unmitigated	5.1600e-003	0.0469	0.0394	2.8000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	51.0996	51.0996	9.8000e-004	9.4000e-004	51.4106

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/yr	tons/yr										MT/yr					
Free-Standing Discount Superstore	471350	2.5400e-003	0.0231	0.0194	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003	0.0000	25.1530	25.1530	4.8000e-004	4.6000e-004	25.3061
Regional Shopping Center	58276	3.1000e-004	2.8600e-003	2.4000e-003	2.0000e-005		2.2000e-004	2.2000e-004		2.2000e-004	2.2000e-004	0.0000	3.1098	3.1098	6.0000e-005	6.0000e-005	3.1288
Strip Mall	54848	3.0000e-004	2.6900e-003	2.2600e-003	2.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	2.9269	2.9269	6.0000e-005	5.0000e-005	2.9447
Bank (with Drive-Through)	142210	7.7000e-004	6.9700e-003	5.8600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5889	7.5889	1.5000e-004	1.4000e-004	7.6351
Total		**3.9200e-003**	**0.0356**	**0.0299**	**2.2000e-004**		**2.7100e-003**	**2.7100e-003**		**2.7100e-003**	**2.7100e-003**	**0.0000**	**38.7786**	**38.7786**	**7.5000e-004**	**7.1000e-004**	**39.0146**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	48627	11.1791	5.1000e-004	1.1000e-004	11.2239
Free-Standing Discount Superstore	3.50922e+006	806.7494	0.0366	7.9600e-003	809.9854
Regional Shopping Center	430705	99.0166	4.4900e-003	9.8000e-004	99.4138
Strip Mall	408346	93.8763	4.2600e-003	9.3000e-004	94.2529
Total		**1,010.8214**	**0.0459**	**9.9800e-003**	**1,014.8760**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Unmitigated	1.7525	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003

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	0.4009					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3513					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-004	3.0000e-005	3.2000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1800e-003	6.1800e-003	2.0000e-005	0.0000	6.5300e-003
Total	**1.7525**	**3.0000e-005**	**3.2000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.1800e-003**	**6.1800e-003**	**2.0000e-005**	**0.0000**	**6.5300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	104.8442	0.6680	0.0166	124.0236
Unmitigated	124.1311	0.8348	0.0207	148.0882

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.158492 / 0.114018	0.8159	5.2000e-003	1.3000e-004	0.9652
Free-Standing Discount Superstore	16.296 / 11.7232	83.8937	0.5345	0.0133	99.2406
Regional Shopping Center	2.01477 / 1.44942	10.3723	0.0661	1.6400e-003	12.2698
Strip Mall	1.89626 / 1.36416	9.7622	0.0622	1.5500e-003	11.5480
Total		**104.8442**	**0.6680**	**0.0166**	**124.0236**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	255.0906	15.0754	0.0000	571.6745
Mitigated	127.5453	7.5377	0.0000	285.8373

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	2.335	0.4740	0.0280	0.0000	1.0622
Free-Standing Discount Superstore	591.345	120.0377	7.0940	0.0000	269.0122
Regional Shopping Center	17.85	3.6234	0.2141	0.0000	8.1203
Strip Mall	16.8	3.4103	0.2015	0.0000	7.6426
Total		**127.5453**	**7.5377**	**0.0000**	**285.8373**

Barstow - Dev Site 6 ST - Fitness Entertainment Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	5.00	1000sqft	0.11	5,000.00	0
User Defined Commercial	2.00	User Defined Unit	0.00	0.00	0
Fast Food Restaurant with Drive Thru	4.00	1000sqft	0.09	4,000.00	0
Health Club	35.00	1000sqft	0.80	35,000.00	0
High Turnover (Sit Down Restaurant)	11.00	1000sqft	0.25	11,000.00	0
Movie Theater (No Matinee)	11.00	1000sqft	0.25	11,000.00	0
Free-Standing Discount Store	30.00	1000sqft	0.69	30,000.00	0
Regional Shopping Center	19.00	1000sqft	0.44	19,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O
Land Use - Site Specifics
Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Visitors Center given the same trip profile as Regional Shopping Center.
Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances
Water Mitigation - 2013 Green Building Standards
Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	CC_TTP	0.00	64.70
tblVehicleTrips	CNW_TTP	0.00	19.00
tblVehicleTrips	CW_TTP	0.00	16.30
tblVehicleTrips	DV_TP	0.00	35.00
tblVehicleTrips	PB_TP	0.00	11.00
tblVehicleTrips	PR_TP	0.00	54.00
tblVehicleTrips	ST_TR	86.32	69.06
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	71.07	43.00
tblVehicleTrips	ST_TR	20.87	16.70
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	80.00	79.98
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	ST_TR	0.00	34.53
tblVehicleTrips	SU_TR	31.90	25.52
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	56.36	26.94
tblVehicleTrips	SU_TR	26.73	21.38
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	80.00	65.52
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	SU_TR	0.00	38.10
tblVehicleTrips	WD_TR	148.15	118.52
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	57.24	33.44
tblVehicleTrips	WD_TR	32.93	26.34
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	80.00	16.41
tblVehicleTrips	WD_TR	42.94	34.16
tblVehicleTrips	WD_TR	0.00	6.44

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.5824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0287	0.2612	0.2194	1.5700e-003		0.0199	0.0199		0.0199	0.0199	0.0000	804.6725	804.6725	0.0294	0.0102	808.4394
Mobile	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520
Waste						0.0000	0.0000		0.0000	0.0000	60.1686	0.0000	60.1686	3.5559	0.0000	134.8416
Water						0.0000	0.0000		0.0000	0.0000	3.7736	56.8222	60.5958	0.3901	9.6800e-003	71.7886
Total	**4.1892**	**7.6436**	**44.4729**	**0.0525**	**3.1459**	**0.1351**	**3.2810**	**0.8413**	**0.1260**	**0.9673**	**63.9422**	**4,489.9116**	**4,553.8538**	**4.1199**	**0.0198**	**4,646.5215**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520
Unmitigated	3.5781	7.3823	44.2535	0.0509	3.1459	0.1153	3.2612	0.8413	0.1062	0.9474	0.0000	3,628.4169	3,628.4169	0.1445	0.0000	3,631.4520

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	592.60	345.30	127.60	454,018	454,018
Fast Food Restaurant with Drive Thru	1,587.60	2,310.48	1736.72	1,599,725	1,599,725
Free-Standing Discount Store	1,003.20	1,290.00	808.20	1,584,700	1,584,700
Health Club	921.90	584.50	748.30	1,466,616	1,466,616
High Turnover (Sit Down Restaurant)	1,118.92	1,393.70	1160.17	1,350,626	1,350,626
Movie Theater (No Matinee)	180.51	879.78	720.72	673,319	673,319
Regional Shopping Center	649.04	759.62	383.61	1,099,179	1,099,179
User Defined Commercial	12.88	69.06	76.20	52,514	52,514
Total	6,066.65	7,632.44	5,761.52	8,280,697	8,280,697

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	27	26	47
Fast Food Restaurant with Drive	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Movie Theater (No Matinee)	9.50	7.30	7.30	1.80	79.20	19.00	66	17	17
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
User Defined Commercial	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	520.2782	520.2782	0.0239	4.9500e-003	522.3143
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	606.0757	606.0757	0.0279	5.7600e-003	608.4476
NaturalGas Mitigated	0.0287	0.2612	0.2194	1.5700e-003		0.0199	0.0199		0.0199	0.0199	0.0000	284.3943	284.3943	5.4500e-003	5.2100e-003	286.1251
NaturalGas Unmitigated	0.0322	0.2929	0.2460	1.7600e-003		0.0223	0.0223		0.0223	0.0223	0.0000	318.8018	318.8018	6.1100e-003	5.8400e-003	320.7420

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/yr	tons/yr										MT/yr					
Fast Food Restaurant with Drive Thru	1.01195e+006	5.4600e-003	0.0496	0.0417	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	54.0016	54.0016	1.0400e-003	9.9000e-004	54.3303
Free-Standing Discount Store	51420	2.8000e-004	2.5200e-003	2.1200e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7440	2.7440	5.0000e-005	5.0000e-005	2.7607
Health Club	995470	5.3700e-003	0.0488	0.0410	2.9000e-004		3.7100e-003	3.7100e-003		3.7100e-003	3.7100e-003	0.0000	53.1221	53.1221	1.0200e-003	9.7000e-004	53.4454
High Turnover (Sit Down Restaurant)	2.78287e+006	0.0150	0.1364	0.1146	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	148.5044	148.5044	2.8500e-003	2.7200e-003	149.4082
Movie Theater (No Matinee)	312862	1.6900e-003	0.0153	0.0129	9.0000e-005		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	16.6955	16.6955	3.2000e-004	3.1000e-004	16.7971
Regional Shopping Center	32566	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7379	1.7379	3.0000e-005	3.0000e-005	1.7484
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Bank (with Drive-Through)	142210	7.7000e-004	6.9700e-003	5.8600e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	7.5889	7.5889	1.5000e-004	1.4000e-004	7.6351
Total		**0.0288**	**0.2613**	**0.2195**	**1.5700e-003**		**0.0199**	**0.0199**		**0.0199**	**0.0199**	**0.0000**	**284.3943**	**284.3943**	**5.4600e-003**	**5.2100e-003**	**286.1251**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	48627	13.9154	6.4000e-004	1.3000e-004	13.9699
Fast Food Restaurant with Drive-Thru	185818	53.1751	2.4400e-003	5.1000e-004	53.3832
Free-Standing Discount Store	382824	109.5516	5.0400e-003	1.0400e-003	109.9803
Health Club	340389	97.4081	4.4800e-003	9.3000e-004	97.7893
High Turnover (Sit Down Restaurant)	511001	146.2315	6.7200e-003	1.3900e-003	146.8037
Movie Theater (No Matinee)	106979	30.6140	1.4100e-003	2.9000e-004	30.7338
Regional Shopping Center	242455	69.3827	3.1900e-003	6.6000e-004	69.6542
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**520.2782**	**0.0239**	**4.9500e-003**	**522.3143**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.5824					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4491					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5824**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet
Install Low Flow Shower
Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	60.5958	0.3901	9.6800e-003	71.7886
Unmitigated	73.4317	0.4876	0.0121	87.4211

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.158492 / 0.114018	1.0034	5.2100e-003	1.3000e-004	1.1533
Fast Food Restaurant with Drive Thru	0.971308 / 0.0727706	4.1588	0.0318	7.8000e-004	5.0697
Free-Standing Discount Store	1.77774 / 1.2789	11.2542	0.0584	1.4700e-003	12.9356
Health Club	1.65601 / 1.19132	10.4836	0.0544	1.3700e-003	12.0499
High Turnover (Sit Down Restaurant)	2.6711 / 0.200119	11.4366	0.0875	2.1500e-003	13.9416
Movie Theater (No Matinee)	3.53409 / 0.264775	15.1317	0.1158	2.8500e-003	18.4460
Regional Shopping Center	1.1259 / 0.809969	7.1277	0.0370	9.3000e-004	8.1926
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**60.5958**	**0.3901**	**9.6800e-003**	**71.7886**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	120.3371	7.1117	0.0000	269.6832
Mitigated	60.1686	3.5559	0.0000	134.8416

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	2.335	0.4740	0.0280	0.0000	1.0622
Fast Food Restaurant with Drive-Thru	23.04	4.6769	0.2764	0.0000	10.4813
Free-Standing Discount Store	64.51	13.0950	0.7739	0.0000	29.3466
Health Club	99.75	20.2484	1.1966	0.0000	45.3779
High Turnover (Sit Down Restaurant)	65.45	13.2858	0.7852	0.0000	29.7742
Movie Theater (No Matinee)	31.35	6.3638	0.3761	0.0000	14.2616
Regional Shopping Center	9.975	2.0248	0.1197	0.0000	4.5378
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**60.1686**	**3.5559**	**0.0000**	**134.8416**

Barstow - Dev Site 6 ST - Health Wellness Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	50.00	1000sqft	1.15	50,000.00	0
Pharmacy/Drugstore w/o Drive Thru	11.00	1000sqft	0.25	11,000.00	0
Day-Care Center	23.00	1000sqft	0.53	23,000.00	0
Regional Shopping Center	40.00	1000sqft	0.92	40,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	6.21	4.97
tblVehicleTrips	ST_TR	8.96	10.83
tblVehicleTrips	ST_TR	90.06	77.53
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	SU_TR	5.83	4.66
tblVehicleTrips	SU_TR	1.55	19.28
tblVehicleTrips	SU_TR	90.06	77.53
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	WD_TR	79.26	59.25
tblVehicleTrips	WD_TR	36.13	6.41
tblVehicleTrips	WD_TR	90.06	77.53
tblVehicleTrips	WD_TR	42.94	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.6280					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	381.2093	381.2093	0.0170	3.8000e-003	382.7446
Mobile	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053
Waste						0.0000	0.0000		0.0000	0.0000	65.4626	0.0000	65.4626	3.8687	0.0000	146.7058
Water						0.0000	0.0000		0.0000	0.0000	2.7914	50.7650	53.5564	0.2890	7.2400e-003	61.8701
Total	**2.7520**	**4.6156**	**26.7560**	**0.0329**	**2.0392**	**0.0754**	**2.1146**	**0.5453**	**0.0695**	**0.6149**	**68.2540**	**2,766.8560**	**2,835.1100**	**4.2663**	**0.0110**	**2,928.1258**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053
Unmitigated	2.1220	4.5972	26.7405	0.0328	2.0392	0.0740	2.1132	0.5453	0.0681	0.6135	0.0000	2,334.8817	2,334.8817	0.0916	0.0000	2,336.8053

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	1,362.75	114.31	107.18	1,183,558	1,183,558
Medical Office Building	320.50	541.50	964.00	869,019	869,019
Pharmacy/Drugstore w/o Drive Thru	852.83	852.83	852.83	1,001,041	1,001,041
Regional Shopping Center	1,366.40	1,599.20	807.60	2,314,062	2,314,062
Total	3,902.48	3,107.84	2,731.61	5,367,679	5,367,679

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Pharmacy/Drugstore w/o Drive Thru	9.50	7.30	7.30	7.40	73.60	19.00	41	6	53
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	361.2241	361.2241	0.0166	3.4400e-003	362.6378
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	441.3352	441.3352	0.0203	4.2000e-003	443.0623
NaturalGas Mitigated	2.0200e-003	0.0184	0.0154	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	19.9852	19.9852	3.8000e-004	3.7000e-004	20.1068
NaturalGas Unmitigated	2.7500e-003	0.0250	0.0210	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2588	27.2588	5.2000e-004	5.0000e-004	27.4247

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/yr	tons/yr										MT/yr					
Medical Office Building	127750	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	6.8172	6.8172	1.3000e-004	1.2000e-004	6.8587
Pharmacy/Drugstore w/o Drive Thru	18854	1.0000e-004	9.2000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0061	1.0061	2.0000e-005	2.0000e-005	1.0122
Regional Shopping Center	68560	3.7000e-004	3.3600e-003	2.8200e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.6586	3.6586	7.0000e-005	7.0000e-005	3.6809
Day-Care Center	159344	8.6000e-004	7.8100e-003	6.5600e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.5032	8.5032	1.6000e-004	1.6000e-004	8.5550
Total		**2.0200e-003**	**0.0184**	**0.0154**	**1.2000e-004**		**1.4000e-003**	**1.4000e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**19.9852**	**19.9852**	**3.8000e-004**	**3.7000e-004**	**20.1068**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Day-Care Center	170154	48.6924	2.2400e-003	4.6000e-004	48.8830
Medical Office Building	445050	127.3586	5.8500e-003	1.2100e-003	127.8570
Pharmacy/Drugstore w/o Drive Thru	140369	40.1689	1.8500e-003	3.8000e-004	40.3261
Regional Shopping Center	506712	145.0042	6.6700e-003	1.3800e-003	145.5717
Total		**361.2241**	**0.0166**	**3.4300e-003**	**362.6378**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.6280					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.6280					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1437					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4843					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.6280**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	53.5564	0.2890	7.2400e-003	61.8701
Unmitigated	63.6186	0.3611	9.0300e-003	74.0032

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Day-Care Center	0.789168 / 2.38188	10.7637	0.0262	7.1000e-004	11.5327
Medical Office Building	5.01922 / 1.12215	23.8626	0.1646	4.0700e-003	28.5789
Pharmacy/Drugstore w/o Drive Thru	0.619938 / 0.445981	3.9246	0.0204	5.1000e-004	4.5110
Regional Shopping Center	2.37032 / 1.7052	15.0056	0.0779	1.9600e-003	17.2475
Total		**53.5564**	**0.2890**	**7.2500e-003**	**61.8701**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	130.9251	7.7375	0.0000	293.4116
Mitigated	65.4626	3.8687	0.0000	146.7058

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	14.95	3.0347	0.1794	0.0000	6.8010
Medical Office Building	270	54.8076	3.2390	0.0000	122.8273
Pharmacy/Drugstore w/o Drive Thru	16.54	3.3575	0.1984	0.0000	7.5243
Regional Shopping Center	21	4.2628	0.2519	0.0000	9.5532
Total		**65.4626**	**3.8687**	**0.0000**	**146.7058**

Barstow - Dev Site 6 ST - Market Storage Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.00	1000sqft	0.11	5,000.00	0
Fast Food Restaurant with Drive Thru	12.00	1000sqft	0.28	12,000.00	0
High Turnover (Sit Down Restaurant)	10.00	1000sqft	0.23	10,000.00	0
Gasoline/Service Station	12.00	Pump	0.04	1,694.10	0
Regional Shopping Center	19.00	1000sqft	0.44	19,000.00	0
Supermarket	50.00	1000sqft	1.15	50,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	162.78	130.22
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	ST_TR	177.59	142.07
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	162.78	130.22
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	SU_TR	166.44	133.15
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	162.78	130.22
tblVehicleTrips	WD_TR	11.01	3.32
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	42.94	34.16
tblVehicleTrips	WD_TR	102.24	81.79

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.4948					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0348	0.3165	0.2658	1.9000e-003		0.0241	0.0241		0.0241	0.0241	0.0000	1,233.9992	1,233.9992	0.0475	0.0148	1,239.5768
Mobile	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047
Waste						0.0000	0.0000		0.0000	0.0000	57.8829	0.0000	57.8829	3.4208	0.0000	129.7193
Water						0.0000	0.0000		0.0000	0.0000	3.8823	51.9326	55.8149	0.4011	9.8900e-003	67.3045
Total	**7.8048**	**13.7836**	**86.7522**	**0.0875**	**5.1742**	**0.2187**	**5.3929**	**1.3837**	**0.2033**	**1.5870**	**61.7652**	**7,374.2366**	**7,436.0018**	**4.1217**	**0.0247**	**7,530.2053**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047
Unmitigated	7.2753	13.4672	86.4864	0.0856	5.1742	0.1946	5.3688	1.3837	0.1793	1.5629	0.0000	6,088.3049	6,088.3049	0.2524	0.0000	6,093.6047

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	4,762.80	6,931.44	5210.16	4,799,174	4,799,174
Gasoline/Service Station	1,562.64	1,562.64	1562.64	900,344	900,344
General Office Building	16.60	12.30	5.25	34,327	34,327
High Turnover (Sit Down Restaurant)	1,017.20	1,267.00	1054.70	1,227,842	1,227,842
Regional Shopping Center	649.04	759.62	383.61	1,099,179	1,099,179
Supermarket	4,089.50	7,103.50	6657.50	5,558,606	5,558,606
Total	12,097.78	17,636.50	14,873.86	13,619,471	13,619,471

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Th	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	889.5032	889.5032	0.0409	8.4600e-003	892.9843
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	998.5919	998.5919	0.0459	9.5000e-003	1,002.4999
NaturalGas Mitigated	0.0348	0.3165	0.2658	1.9000e-003		0.0241	0.0241		0.0241	0.0241	0.0000	344.4960	344.4960	6.6000e-003	6.3200e-003	346.5925
NaturalGas Unmitigated	0.0389	0.3539	0.2973	2.1200e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.2839	385.2839	7.3800e-003	7.0600e-003	387.6286

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/yr	tons/yr										MT/yr					
Gasoline/Service Station	48183.6	2.6000e-004	2.3600e-003	1.9800e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5713	2.5713	5.0000e-005	5.0000e-005	2.5869
General Office Building	12775	7.0000e-005	6.3000e-004	5.3000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6817	0.6817	1.0000e-005	1.0000e-005	0.6859
High Turnover (Sit Down Restaurant)	2.52988e+006	0.0136	0.1240	0.1042	7.4000e-004		9.4300e-003	9.4300e-003		9.4300e-003	9.4300e-003	0.0000	135.0040	135.0040	2.5900e-003	2.4800e-003	135.8256
Regional Shopping Center	32566	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7379	1.7379	3.0000e-005	3.0000e-005	1.7484
Supermarket	796350	4.2900e-003	0.0390	0.0328	2.3000e-004		2.9700e-003	2.9700e-003		2.9700e-003	2.9700e-003	0.0000	42.4963	42.4963	8.1000e-004	7.8000e-004	42.7549
Fast Food Restaurant with Drive Thru	3.03586e+006	0.0164	0.1488	0.1250	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	162.0048	162.0048	3.1100e-003	2.9700e-003	162.9908
Total		**0.0348**	**0.3165**	**0.2658**	**1.8800e-003**		**0.0241**	**0.0241**		**0.0241**	**0.0241**	**0.0000**	**344.4960**	**344.4960**	**6.6000e-003**	**6.3200e-003**	**346.5925**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	557455	159.5252	7.3300e-003	1.5200e-003	160.1495
Gasoline/Service Station	16475.8	4.7148	2.2000e-004	4.0000e-005	4.7333
General Office Building	44505	12.7359	5.9000e-004	1.2000e-004	12.7857
High Turnover (Sit Down Restaurant)	464546	132.9377	6.1100e-003	1.2600e-003	133.4579
Regional Shopping Center	242455	69.3827	3.1900e-003	6.6000e-004	69.6542
Supermarket	1.7829e+006	510.2070	0.0235	4.8500e-003	512.2037
Total		**889.5032**	**0.0409**	**8.4500e-003**	**892.9843**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.4948					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.4948					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4947**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	55.8149	0.4011	9.8900e-003	67.3045
Unmitigated	68.5966	0.5014	0.0124	82.9617

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	2.91392 / 0.218312	12.4763	0.0955	2.3500e-003	15.2090
Gasoline/Service Station	0.127506 / 0.0917273	0.8072	4.1900e-003	1.1000e-004	0.9278
General Office Building	0.710935 / 0.511443	4.5007	0.0234	5.9000e-004	5.1731
High Turnover (Sit Down Restaurant)	2.42827 / 0.181926	10.3970	0.0796	1.9600e-003	12.6742
Regional Shopping Center	1.1259 / 0.809969	7.1277	0.0370	9.3000e-004	8.1926
Supermarket	4.93073 / 0.178993	20.5062	0.1615	3.9700e-003	25.1279
Total		**55.8150**	**0.4011**	**9.9100e-003**	**67.3045**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	115.7658	6.8416	0.0000	259.4385
Mitigated	57.8829	3.4208	0.0000	129.7193

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	69.115	14.0297	0.8291	0.0000	31.4415
Gasoline/Service Station	3.235	0.6567	0.0388	0.0000	1.4717
General Office Building	2.325	0.4720	0.0279	0.0000	1.0577
High Turnover (Sit Down Restaurant)	59.5	12.0780	0.7138	0.0000	27.0675
Regional Shopping Center	9.975	2.0248	0.1197	0.0000	4.5378
Supermarket	141	28.6217	1.6915	0.0000	64.1431
Total		**57.8829**	**3.4208**	**0.0000**	**129.7193**

Barstow - Dev Site 6 ST - Gas and FF Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant with Drive Thru	13.80	1000sqft	0.32	13,800.00	0
High Turnover (Sit Down Restaurant)	84.00	1000sqft	1.93	84,000.00	0
Gasoline/Service Station	24.00	Pump	0.08	3,388.20	0
Regional Shopping Center	7.00	1000sqft	0.16	7,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Ony Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	722.03	577.62
tblVehicleTrips	ST_TR	162.78	130.22
tblVehicleTrips	ST_TR	158.37	126.70
tblVehicleTrips	ST_TR	49.97	39.98
tblVehicleTrips	SU_TR	542.72	434.18
tblVehicleTrips	SU_TR	162.78	130.22
tblVehicleTrips	SU_TR	131.84	105.47
tblVehicleTrips	SU_TR	25.24	20.19
tblVehicleTrips	WD_TR	496.12	396.90
tblVehicleTrips	WD_TR	162.78	130.22
tblVehicleTrips	WD_TR	127.15	101.72
tblVehicleTrips	WD_TR	42.94	34.16

2.0 Emissions Summary

2.1 Overall Construction

Not Applcable

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	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Energy	0.1340	1.2182	1.0233	7.3100e-003		0.0926	0.0926		0.0926	0.0926	0.0000	2,398.7022	2,398.7022	0.0741	0.0349	2,411.0751
Mobile	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102
Waste						0.0000	0.0000		0.0000	0.0000	119.6469	0.0000	119.6469	7.0709	0.0000	268.1365
Water						0.0000	0.0000		0.0000	0.0000	7.7468	78.8702	86.6170	0.7991	0.0195	109.4564
Total	**10.5746**	**19.2998**	**118.1032**	**0.1210**	**6.8530**	**0.3513**	**7.2043**	**1.8326**	**0.3309**	**2.1635**	**127.3937**	**10,563.6085**	**10,691.0022**	**8.2811**	**0.0544**	**10,881.7806**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102
Unmitigated	9.8926	18.0816	117.0788	0.1137	6.8530	0.2587	7.1117	1.8326	0.2383	2.0709	0.0000	8,086.0338	8,086.0338	0.3370	0.0000	8,093.1102

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,477.22	7,971.16	5991.68	5,519,050	5,519,050
Gasoline/Service Station	3,125.28	3,125.28	3125.28	1,800,687	1,800,687
High Turnover (Sit Down Restaurant)	8,544.48	10,642.80	8859.48	10,313,870	10,313,870
Regional Shopping Center	239.12	279.86	141.33	404,961	404,961
Total	17,386.10	22,019.10	18,117.77	18,038,568	18,038,568

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive Thru	9.50	7.30	7.30	2.20	78.80	19.00	29	21	50
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	1,072.5800	1,072.5800	0.0487	0.0106	1,076.8824
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,211.9672	1,211.9672	0.0550	0.0120	1,216.8287
NaturalGas Mitigated	0.1340	1.2182	1.0233	7.3100e-003		0.0926	0.0926		0.0926	0.0926	0.0000	1,326.1222	1,326.1222	0.0254	0.0243	1,334.1928
NaturalGas Unmitigated	0.1470	1.3367	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016	0.0000	1,455.2050	1,455.2050	0.0279	0.0267	1,464.0611

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/yr	tons/yr										MT/yr					
Gasoline/Service Station	96367.2	5.2000e-004	4.7200e-003	3.9700e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	5.1425	5.1425	1.0000e-004	9.0000e-005	5.1738
High Turnover (Sit Down Restaurant)	2.1251e+007	0.1146	1.0417	0.8750	6.2500e-003		0.0792	0.0792		0.0792	0.0792	0.0000	1,134.0339	1,134.0339	0.0217	0.0208	1,140.9354
Regional Shopping Center	11998	6.0000e-005	5.9000e-004	4.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6403	0.6403	1.0000e-005	1.0000e-005	0.6442
Fast Food Restaurant with Drive Thru	3.49123e+006	0.0188	0.1711	0.1438	1.0300e-003		0.0130	0.0130		0.0130	0.0130	0.0000	186.3056	186.3056	3.5700e-003	3.4200e-003	187.4394
Total		**0.1340**	**1.2182**	**1.0233**	**7.3100e-003**		**0.0926**	**0.0926**		**0.0926**	**0.0926**	**0.0000**	**1,326.1222**	**1,326.1222**	**0.0254**	**0.0243**	**1,334.1928**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	641073	147.3791	6.6900e-003	1.4500e-003	147.9703
Gasoline/Service Station	32951.6	7.5754	3.4000e-004	7.0000e-005	7.6058
High Turnover (Sit Down Restaurant)	3.90219e+006	897.0901	0.0407	8.8500e-003	900.6885
Regional Shopping Center	89325.6	20.5354	9.3000e-004	2.0000e-004	20.6178
Total		**1,072.5800**	**0.0487**	**0.0106**	**1,076.8824**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Unmitigated	0.5480	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003

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	0.1254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4225					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1900e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4300e-003
Total	**0.5480**	**1.0000e-005**	**1.1900e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**1.0000e-005**	**0.0000**	**2.4300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	86.6170	0.7991	0.0195	109.4564
Unmitigated	107.2026	0.9990	0.0245	135.7603

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	3.35101 / 0.251059	11.7355	0.1097	2.6800e-003	14.8692
Gasoline/Service Station	0.255012 / 0.183455	1.3128	8.3600e-003	2.1000e-004	1.5530
High Turnover (Sit Down Restaurant)	20.3975 / 1.52818	71.4332	0.6675	0.0163	90.5081
Regional Shopping Center	0.414806 / 0.29841	2.1355	0.0136	3.4000e-004	2.5261
Total		**86.6170**	**0.7991**	**0.0195**	**109.4564**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	239.2939	14.1419	0.0000	536.2730
Mitigated	119.6469	7.0709	0.0000	268.1365

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	79.48	16.1337	0.9535	0.0000	36.1567
Gasoline/Service Station	6.465	1.3123	0.0776	0.0000	2.9410
High Turnover (Sit Down Restaurant)	499.8	101.4549	5.9958	0.0000	227.3669
Regional Shopping Center	3.675	0.7460	0.0441	0.0000	1.6718
Total		**119.6469**	**7.0709**	**0.0000**	**268.1365**

Barstow - Dev Site 6 ST - Hotel Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	100.00	Room	3.33	200,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	145,200.00	200,000.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	8.19	12.27
tblVehicleTrips	SU_TR	5.95	8.92
tblVehicleTrips	WD_TR	8.17	6.97

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Energy	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	1,255.6144	1,255.6144	0.0443	0.0165	1,261.6582
Mobile	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181
Waste						0.0000	0.0000		0.0000	0.0000	5.5569	0.0000	5.5569	0.3284	0.0000	12.4533
Water						0.0000	0.0000		0.0000	0.0000	0.6438	6.7507	7.3945	0.0664	1.6300e-003	9.2934
Total	**1.5591**	**1.6493**	**6.9260**	**0.0118**	**0.5779**	**0.0545**	**0.6323**	**0.1545**	**0.0529**	**0.2074**	**6.2007**	**1,914.9630**	**1,921.1637**	**0.4639**	**0.0181**	**1,936.5249**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181
Unmitigated	0.4971	1.2034	6.5505	9.1400e-003	0.5779	0.0206	0.5984	0.1545	0.0190	0.1735	0.0000	652.5960	652.5960	0.0249	0.0000	653.1181

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	697.00	1,227.00	892.00	1,521,030	1,521,030
Total	697.00	1,227.00	892.00	1,521,030	1,521,030

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	770.1319	770.1319	0.0350	7.6000e-003	773.2210
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	931.9912	931.9912	0.0423	9.1900e-003	935.7296
NaturalGas Mitigated	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	485.4826	485.4826	9.3100e-003	8.9000e-003	488.4372
NaturalGas Unmitigated	0.0678	0.6167	0.5180	3.7000e-003		0.0469	0.0469		0.0469	0.0469	0.0000	671.3167	671.3167	0.0129	0.0123	675.4022

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/yr	tons/yr										MT/yr					
Hotel	9.0976e+006	0.0491	0.4460	0.3746	2.6800e-003		0.0339	0.0339		0.0339	0.0339	0.0000	485.4826	485.4826	9.3100e-003	8.9000e-003	488.4372
Total		**0.0491**	**0.4460**	**0.3746**	**2.6800e-003**		**0.0339**	**0.0339**		**0.0339**	**0.0339**	**0.0000**	**485.4826**	**485.4826**	**9.3100e-003**	**8.9000e-003**	**488.4372**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	3.34994e+006	770.1319	0.0350	7.6000e-003	773.2210
Total		**770.1319**	**0.0350**	**7.6000e-003**	**773.2210**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Unmitigated	1.0129	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003

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	0.2318					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7811					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.7900e-003	1.7900e-003	0.0000	0.0000	1.8900e-003
Total	**1.0129**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.7900e-003**	**1.7900e-003**	**0.0000**	**0.0000**	**1.8900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.3945	0.0664	1.6300e-003	9.2934
Unmitigated	9.1181	0.0830	2.0300e-003	11.4923

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	2.02934 / 0.26466	7.3945	0.0664	1.6300e-003	9.2934
Total		**7.3945**	**0.0664**	**1.6300e-003**	**9.2934**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.5569	0.3284	0.0000	12.4533
Unmitigated	11.1138	0.6568	0.0000	24.9066

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	27.375	5.5569	0.3284	0.0000	12.4533
Total		**5.5569**	**0.3284**	**0.0000**	**12.4533**

Barstow - Dev Site 6 ST - MDR Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	20.00	Dwelling Unit	1.25	20,000.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances
Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.1154	1.7200e-003	0.1491	1.0000e-005		1.8100e-003	1.8100e-003		1.8000e-003	1.8000e-003	0.0000	14.4203	14.4203	5.1000e-004	2.6000e-004	14.5115
Energy	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	28.5223	28.5223	9.9000e-004	3.8000e-004	28.6608
Mobile	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563
Waste						0.0000	0.0000		0.0000	0.0000	0.9338	0.0000	0.9338	0.0552	0.0000	2.0926
Water						0.0000	0.0000		0.0000	0.0000	0.3307	5.0908	5.4215	0.0342	8.5000e-004	6.4035
Total	**0.2075**	**0.2756**	**1.4507**	**2.2500e-003**	**0.1403**	**7.5100e-003**	**0.1478**	**0.0375**	**7.1100e-003**	**0.0446**	**1.2645**	**203.8695**	**205.1339**	**0.0966**	**1.4900e-003**	**207.6247**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563
Unmitigated	0.0910	0.2638	1.2974	2.1800e-003	0.1403	4.8900e-003	0.1452	0.0375	4.5000e-003	0.0420	0.0000	155.8361	155.8361	5.7200e-003	0.0000	155.9563

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	133.00	127.80	117.20	369,216	369,216
Total	133.00	127.80	117.20	369,216	369,216

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	16.8717	16.8717	7.7000e-004	1.7000e-004	16.9394
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.7494	18.7494	8.5000e-004	1.8000e-004	18.8246
NaturalGas Mitigated	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.6506	11.6506	2.2000e-004	2.1000e-004	11.7215
NaturalGas Unmitigated	1.4800e-003	0.0127	5.3800e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6454	14.6454	2.8000e-004	2.7000e-004	14.7345

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/yr	tons/yr										MT/yr					
Apartments Low Rise	218323	1.1800e-003	0.0101	4.2800e-003	6.0000e-005		8.1000e-004	8.1000e-004		8.1000e-004	8.1000e-004	0.0000	11.6506	11.6506	2.2000e-004	2.1000e-004	11.7215
Total		**1.1800e-003**	**0.0101**	**4.2800e-003**	**6.0000e-005**		**8.1000e-004**	**8.1000e-004**		**8.1000e-004**	**8.1000e-004**	**0.0000**	**11.6506**	**11.6506**	**2.2000e-004**	**2.1000e-004**	**11.7215**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	73389	16.8717	7.7000e-004	1.7000e-004	16.9394
Total		**16.8717**	**7.7000e-004**	**1.7000e-004**	**16.9394**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1154	1.7200e-003	0.1491	1.0000e-005		1.8100e-003	1.8100e-003		1.8000e-003	1.8000e-003	0.0000	14.4203	14.4203	5.1000e-004	2.6000e-004	14.5115
Unmitigated	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750

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	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.4300e-003	0.0000	8.0000e-005	0.0000		9.9000e-004	9.9000e-004		9.8000e-004	9.8000e-004	0.0000	14.1777	14.1777	2.7000e-004	2.6000e-004	14.2640
Landscaping	4.5400e-003	1.7200e-003	0.1490	1.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	0.2426	0.2426	2.4000e-004	0.0000	0.2475
Total	**0.1154**	**1.7200e-003**	**0.1491**	**1.0000e-005**		**1.8100e-003**	**1.8100e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**14.4203**	**14.4203**	**5.1000e-004**	**2.6000e-004**	**14.5115**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.4215	0.0342	8.5000e-004	6.4035
Unmitigated	6.4124	0.0427	1.0600e-003	7.6389

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.04246 / 0.771395	5.4215	0.0342	8.5000e-004	6.4035
Total		**5.4215**	**0.0342**	**8.5000e-004**	**6.4035**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1.8675	0.1104	0.0000	4.1852
Mitigated	0.9338	0.0552	0.0000	2.0926

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	4.6	0.9338	0.0552	0.0000	2.0926
Total		**0.9338**	**0.0552**	**0.0000**	**2.0926**

Barstow - Dev Site 7 - SFR Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	400.00	Dwelling Unit	129.87	720,000.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Residential_Exterior	486000	170100
tblAreaCoating	Area_Residential_Interior	1458000	510300
tblConstructionPhase	NumDays	120.00	30.00
tblFireplaces	NumberGas	220.00	77.00
tblFireplaces	NumberNoFireplace	40.00	14.00
tblFireplaces	NumberWood	140.00	49.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	469.04	164.00
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52
tblWater	IndoorWaterUseRate	26,061,610.25	9,121,563.59
tblWater	OutdoorWaterUseRate	16,430,145.59	5,750,550.96
tblWoodstoves	NumberCatalytic	20.00	7.00
tblWoodstoves	NumberNoncatalytic	20.00	7.00

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	3.3069	0.0345	2.9805	1.6000e-004		0.0233	0.0233		0.0232	0.0232	0.0000	104.0954	104.0954	6.6300e-003	1.8200e-003	104.7987
Energy	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	1,210.9971	1,210.9971	0.0400	0.0168	1,217.0421
Mobile	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569
Waste						0.0000	0.0000		0.0000	0.0000	16.6453	0.0000	16.6453	0.9837	0.0000	37.3031
Water						0.0000	0.0000		0.0000	0.0000	2.3151	35.6357	37.9507	0.2394	5.9600e-003	44.8245
Total	**6.0090**	**8.1968**	**40.9031**	**0.0667**	**4.0773**	**0.2054**	**4.2827**	**1.0904**	**0.1941**	**1.2844**	**18.9603**	**5,880.5930**	**5,899.5533**	**1.4359**	**0.0246**	**5,937.3253**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569
Unmitigated	2.6442	7.6681	37.7123	0.0634	4.0773	0.1421	4.2195	1.0904	0.1309	1.2212	0.0000	4,529.8648	4,529.8648	0.1663	0.0000	4,533.3569

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,808.00	3,964.00	3448.00	10,732,408	10,732,408
Total	3,808.00	3,964.00	3,448.00	10,732,408	10,732,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	638.6655	638.6655	0.0290	6.3000e-003	641.2273
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	706.2019	706.2019	0.0321	6.9700e-003	709.0347
NaturalGas Mitigated	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	572.3317	572.3317	0.0110	0.0105	575.8148
NaturalGas Unmitigated	0.0728	0.6224	0.2648	3.9700e-003		0.0503	0.0503		0.0503	0.0503	0.0000	720.7726	720.7726	0.0138	0.0132	725.1591

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/yr	tons/yr										MT/yr					
Single Family Housing	1.07251e+007	0.0578	0.4942	0.2103	3.1500e-003		0.0400	0.0400		0.0400	0.0400	0.0000	572.3317	572.3317	0.0110	0.0105	575.8148
Total		**0.0578**	**0.4942**	**0.2103**	**3.1500e-003**		**0.0400**	**0.0400**		**0.0400**	**0.0400**	**0.0000**	**572.3317**	**572.3317**	**0.0110**	**0.0105**	**575.8148**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.77808e+006	638.6655	0.0290	6.3000e-003	641.2273
Total		**638.6655**	**0.0290**	**6.3000e-003**	**641.2273**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.3069	0.0345	2.9805	1.6000e-004		0.0233	0.0233		0.0232	0.0232	0.0000	104.0954	104.0954	6.6300e-003	1.8200e-003	104.7987
Unmitigated	12.0814	0.1537	13.8014	4.3800e-003		1.5367	1.5367		1.5367	1.5367	144.6141	65.5006	210.1146	0.1382	0.0114	216.5428

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	0.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8120					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0100	0.0000	5.5000e-004	0.0000		6.9300e-003	6.9300e-003		6.8600e-003	6.8600e-003	0.0000	99.2439	99.2439	1.9000e-003	1.8200e-003	99.8479
Landscaping	0.0907	0.0345	2.9799	1.6000e-004		0.0164	0.0164		0.0164	0.0164	0.0000	4.8515	4.8515	4.7300e-003	0.0000	4.9509
Total	**3.3069**	**0.0345**	**2.9805**	**1.6000e-004**		**0.0233**	**0.0233**		**0.0233**	**0.0233**	**0.0000**	**104.0954**	**104.0954**	**6.6300e-003**	**1.8200e-003**	**104.7987**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.9507	0.2394	5.9600e-003	44.8245
Unmitigated	44.8864	0.2991	7.4300e-003	53.4723

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.29725 / 5.39977	37.9507	0.2394	5.9600e-003	44.8245
Total		**37.9507**	**0.2394**	**5.9600e-003**	**44.8245**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.6453	0.9837	0.0000	37.3031
Unmitigated	33.2905	1.9674	0.0000	74.6062

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	82	16.6453	0.9837	0.0000	37.3031
Total		**16.6453**	**0.9837**	**0.0000**	**37.3031**

Barstow - Dev Site 8 - Sr Housing Attached Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	30.00	Dwelling Unit	1.88	30,000.00	86

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances
Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	2.61
tblVehicleTrips	SU_TR	6.07	2.84
tblVehicleTrips	WD_TR	6.59	3.44

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.1731	2.5900e-003	0.2236	1.0000e-005		2.7100e-003	2.7100e-003		2.7000e-003	2.7000e-003	0.0000	21.6304	21.6304	7.6000e-004	3.9000e-004	21.7673
Energy	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	56.1531	56.1531	1.8700e-003	7.7000e-004	56.4321
Mobile	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531
Waste						0.0000	0.0000		0.0000	0.0000	1.4006	0.0000	1.4006	0.0828	0.0000	3.1389
Water						0.0000	0.0000		0.0000	0.0000	0.4961	7.6362	8.1323	0.0513	1.2800e-003	9.6053
Total	**0.2436**	**0.2220**	**1.2019**	**1.7800e-003**	**0.1047**	**8.1700e-003**	**0.1129**	**0.0280**	**7.8700e-003**	**0.0359**	**1.8967**	**201.7830**	**203.6798**	**0.1410**	**2.4400e-003**	**207.3966**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531
Unmitigated	0.0679	0.1970	0.9688	1.6300e-003	0.1047	3.6500e-003	0.1084	0.0280	3.3600e-003	0.0314	0.0000	116.3633	116.3633	4.2700e-003	0.0000	116.4531

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	103.20	78.30	85.20	275,695	275,695
Total	103.20	78.30	85.20	275,695	275,695

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	30.2312	30.2312	1.3700e-003	3.0000e-004	30.3525
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	33.6324	33.6324	1.5300e-003	3.3000e-004	33.7673
NaturalGas Mitigated	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	25.9218	25.9218	5.0000e-004	4.8000e-004	26.0796
NaturalGas Unmitigated	3.3300e-003	0.0285	0.0121	1.8000e-004		2.3000e-003	2.3000e-003		2.3000e-003	2.3000e-003	0.0000	32.9877	32.9877	6.3000e-004	6.0000e-004	33.1884

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/yr	tons/yr										MT/yr					
Condo/Townhouse	485757	2.6200e-003	0.0224	9.5200e-003	1.4000e-004		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	25.9218	25.9218	5.0000e-004	4.8000e-004	26.0796
Total		**2.6200e-003**	**0.0224**	**9.5200e-003**	**1.4000e-004**		**1.8100e-003**	**1.8100e-003**		**1.8100e-003**	**1.8100e-003**	**0.0000**	**25.9218**	**25.9218**	**5.0000e-004**	**4.8000e-004**	**26.0796**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	131501	30.2312	1.3700e-003	3.0000e-004	30.3525
Total		**30.2312**	**1.3700e-003**	**3.0000e-004**	**30.3525**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1731	2.5900e-003	0.2236	1.0000e-005		2.7100e-003	2.7100e-003		2.7000e-003	2.7000e-003	0.0000	21.6304	21.6304	7.6000e-004	3.9000e-004	21.7673
Unmitigated	2.0533	0.0281	2.5424	9.2000e-004		0.3270	0.3270		0.3270	0.3270	30.9887	13.3601	44.3488	0.0290	2.4400e-003	45.7124

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	0.0469					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1172					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.1500e-003	0.0000	1.2000e-004	0.0000		1.4800e-003	1.4800e-003		1.4700e-003	1.4700e-003	0.0000	21.2665	21.2665	4.1000e-004	3.9000e-004	21.3960
Landscaping	6.8100e-003	2.5800e-003	0.2235	1.0000e-005		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	0.3639	0.3639	3.5000e-004	0.0000	0.3713
Total	**0.1731**	**2.5800e-003**	**0.2236**	**1.0000e-005**		**2.7100e-003**	**2.7100e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**21.6304**	**21.6304**	**7.6000e-004**	**3.9000e-004**	**21.7673**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.1323	0.0513	1.2800e-003	9.6053
Unmitigated	9.6185	0.0641	1.5900e-003	11.4583

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.5637 / 1.15709	8.1323	0.0513	1.2800e-003	9.6053
Total		**8.1323**	**0.0513**	**1.2800e-003**	**9.6053**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4006	0.0828	0.0000	3.1389
Unmitigated	2.8013	0.1656	0.0000	6.2778

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	6.9	1.4006	0.0828	0.0000	3.1389
Total		**1.4006**	**0.0828**	**0.0000**	**3.1389**

Barstow - Dev Site 9 - SFR Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	140.00	Dwelling Unit	45.45	252,000.00	400

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	9.91
tblVehicleTrips	SU_TR	8.77	8.62
tblVehicleTrips	WD_TR	9.57	9.52

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	1.4202	0.0121	1.0435	5.0000e-005		0.0127	0.0127		0.0126	0.0126	0.0000	100.9419	100.9419	3.5600e-003	1.8200e-003	101.5807
Energy	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	423.8490	423.8490	0.0140	5.8800e-003	425.9647
Mobile	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749
Waste						0.0000	0.0000		0.0000	0.0000	16.6453	0.0000	16.6453	0.9837	0.0000	37.3031
Water						0.0000	0.0000		0.0000	0.0000	2.3151	35.6357	37.9507	0.2394	5.9600e-003	44.8245
Total	**2.3659**	**2.8689**	**14.3164**	**0.0233**	**1.4271**	**0.0764**	**1.5035**	**0.3816**	**0.0724**	**0.4540**	**18.9603**	**2,145.8792**	**2,164.8396**	**1.2988**	**0.0137**	**2,196.3479**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749
Unmitigated	0.9255	2.6838	13.1993	0.0222	1.4271	0.0498	1.4768	0.3816	0.0458	0.4274	0.0000	1,585.4527	1,585.4527	0.0582	0.0000	1,586.6749

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,332.80	1,387.40	1206.80	3,756,343	3,756,343
Total	1,332.80	1,387.40	1,206.80	3,756,343	3,756,343

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	223.5329	223.5329	0.0101	2.2100e-003	224.4296
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	247.1707	247.1707	0.0112	2.4400e-003	248.1621
NaturalGas Mitigated	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	200.3161	200.3161	3.8400e-003	3.6700e-003	201.5352
NaturalGas Unmitigated	0.0255	0.2178	0.0927	1.3900e-003		0.0176	0.0176		0.0176	0.0176	0.0000	252.2704	252.2704	4.8400e-003	4.6200e-003	253.8057

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/yr	tons/yr										MT/yr					
Single Family Housing	3.75378e+006	0.0202	0.1730	0.0736	1.1000e-003		0.0140	0.0140		0.0140	0.0140	0.0000	200.3161	200.3161	3.8400e-003	3.6700e-003	201.5352
Total		**0.0202**	**0.1730**	**0.0736**	**1.1000e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**	**0.0000**	**200.3161**	**200.3161**	**3.8400e-003**	**3.6700e-003**	**201.5352**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	972329	223.5329	0.0101	2.2100e-003	224.4296
Total		**223.5329**	**0.0101**	**2.2100e-003**	**224.4296**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.4202	0.0121	1.0435	5.0000e-005		0.0127	0.0127		0.0126	0.0126	0.0000	100.9419	100.9419	3.5600e-003	1.8200e-003	101.5807
Unmitigated	10.1946	0.1312	11.8645	4.2800e-003		1.5261	1.5261		1.5261	1.5261	144.6141	62.3471	206.9612	0.1351	0.0114	213.3247

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	0.3942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9842					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0100	0.0000	5.5000e-004	0.0000		6.9300e-003	6.9300e-003		6.8600e-003	6.8600e-003	0.0000	99.2439	99.2439	1.9000e-003	1.8200e-003	99.8479
Landscaping	0.0318	0.0121	1.0430	5.0000e-005		5.7300e-003	5.7300e-003		5.7300e-003	5.7300e-003	0.0000	1.6980	1.6980	1.6600e-003	0.0000	1.7328
Total	**1.4202**	**0.0121**	**1.0435**	**5.0000e-005**		**0.0127**	**0.0127**		**0.0126**	**0.0126**	**0.0000**	**100.9419**	**100.9419**	**3.5600e-003**	**1.8200e-003**	**101.5807**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	37.9507	0.2394	5.9600e-003	44.8245
Unmitigated	44.8864	0.2991	7.4300e-003	53.4723

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	7.29725 / 5.39977	37.9507	0.2394	5.9600e-003	44.8245
Total		**37.9507**	**0.2394**	**5.9600e-003**	**44.8245**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.6453	0.9837	0.0000	37.3031
Unmitigated	33.2905	1.9674	0.0000	74.6062

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	82	16.6453	0.9837	0.0000	37.3031
Total		**16.6453**	**0.9837**	**0.0000**	**37.3031**

Barstow - Dev Site 10 - Condos Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	20.00	Dwelling Unit	1.25	20,000.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	5.67
tblVehicleTrips	SU_TR	6.07	4.84
tblVehicleTrips	WD_TR	6.59	5.81

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.1154	1.7200e-003	0.1491	1.0000e-005		1.8100e-003	1.8100e-003		1.8000e-003	1.8000e-003	0.0000	14.4203	14.4203	5.1000e-004	2.6000e-004	14.5115
Energy	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	37.4354	37.4354	1.2500e-003	5.2000e-004	37.6214
Mobile	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963
Waste						0.0000	0.0000		0.0000	0.0000	0.9338	0.0000	0.9338	0.0552	0.0000	2.0926
Water						0.0000	0.0000		0.0000	0.0000	0.3307	5.0908	5.4215	0.0342	8.5000e-004	6.4035
Total	**0.1962**	**0.2460**	**1.2834**	**2.0100e-003**	**0.1220**	**7.2700e-003**	**0.1292**	**0.0326**	**6.9200e-003**	**0.0395**	**1.2645**	**192.4383**	**193.7028**	**0.0961**	**1.6300e-003**	**196.2253**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963
Unmitigated	0.0791	0.2294	1.1280	1.9000e-003	0.1220	4.2500e-003	0.1262	0.0326	3.9100e-003	0.0365	0.0000	135.4918	135.4918	4.9700e-003	0.0000	135.5963

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	116.20	113.40	96.80	321,015	321,015
Total	116.20	113.40	96.80	321,015	321,015

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	20.1542	20.1542	9.1000e-004	2.0000e-004	20.2350
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.4216	22.4216	1.0200e-003	2.2000e-004	22.5115
NaturalGas Mitigated	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2812	17.2812	3.3000e-004	3.2000e-004	17.3864
NaturalGas Unmitigated	2.2200e-003	0.0190	8.0800e-003	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	21.9918	21.9918	4.2000e-004	4.0000e-004	22.1256

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/yr	tons/yr										MT/yr					
Condo/Townhouse	323838	1.7500e-003	0.0149	6.3500e-003	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2812	17.2812	3.3000e-004	3.2000e-004	17.3864
Total		**1.7500e-003**	**0.0149**	**6.3500e-003**	**1.0000e-004**		**1.2100e-003**	**1.2100e-003**		**1.2100e-003**	**1.2100e-003**	**0.0000**	**17.2812**	**17.2812**	**3.3000e-004**	**3.2000e-004**	**17.3864**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	87667.1	20.1542	9.1000e-004	2.0000e-004	20.2350
Total		**20.1542**	**9.1000e-004**	**2.0000e-004**	**20.2350**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1154	1.7200e-003	0.1491	1.0000e-005		1.8100e-003	1.8100e-003		1.8000e-003	1.8000e-003	0.0000	14.4203	14.4203	5.1000e-004	2.6000e-004	14.5115
Unmitigated	1.3689	0.0188	1.6949	6.1000e-004		0.2180	0.2180		0.2180	0.2180	20.6592	8.9067	29.5659	0.0193	1.6200e-003	30.4750

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	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.4300e-003	0.0000	8.0000e-005	0.0000		9.9000e-004	9.9000e-004		9.8000e-004	9.8000e-004	0.0000	14.1777	14.1777	2.7000e-004	2.6000e-004	14.2640
Landscaping	4.5400e-003	1.7200e-003	0.1490	1.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	0.2426	0.2426	2.4000e-004	0.0000	0.2475
Total	**0.1154**	**1.7200e-003**	**0.1491**	**1.0000e-005**		**1.8100e-003**	**1.8100e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**14.4203**	**14.4203**	**5.1000e-004**	**2.6000e-004**	**14.5115**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.4215	0.0342	8.5000e-004	6.4035
Unmitigated	6.4124	0.0427	1.0600e-003	7.6389

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.771395	5.4215	0.0342	8.5000e-004	6.4035
Total		**5.4215**	**0.0342**	**8.5000e-004**	**6.4035**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.9338	0.0552	0.0000	2.0926
Unmitigated	1.8675	0.1104	0.0000	4.1852

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	4.6	0.9338	0.0552	0.0000	2.0926
Total		**0.9338**	**0.0552**	**0.0000**	**2.0926**

Barstow - Dev Site 11 - SFR Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	500.00	Dwelling Unit	162.34	900,000.00	1430

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearths

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	7.93
tblVehicleTrips	SU_TR	8.77	6.90
tblVehicleTrips	WD_TR	9.57	7.62

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	5.0721	0.0431	3.7269	2.0000e-004		0.0452	0.0452		0.0450	0.0450	0.0000	360.5068	360.5068	0.0127	6.5000e-003	362.7881
Energy	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	1,513.7464	1,513.7464	0.0499	0.0210	1,521.3026
Mobile	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848
Waste						0.0000	0.0000		0.0000	0.0000	59.5068	0.0000	59.5068	3.5168	0.0000	133.3586
Water						0.0000	0.0000		0.0000	0.0000	8.2682	127.2702	135.5383	0.8549	0.0213	160.0877
Total	**7.7899**	**8.3327**	**41.7206**	**0.0676**	**4.0793**	**0.2374**	**4.3167**	**1.0909**	**0.2259**	**1.3168**	**67.7750**	**6,533.6144**	**6,601.3894**	**4.6006**	**0.0488**	**6,713.1217**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848
Unmitigated	2.6455	7.6718	37.7309	0.0634	4.0793	0.1422	4.2215	1.0909	0.1310	1.2218	0.0000	4,532.0910	4,532.0910	0.1664	0.0000	4,535.5848

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,810.00	3,965.00	3450.00	10,737,682	10,737,682
Total	3,810.00	3,965.00	3,450.00	10,737,682	10,737,682

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	798.3318	798.3318	0.0362	7.8800e-003	801.5341
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	882.7524	882.7524	0.0401	8.7100e-003	886.2933
NaturalGas Mitigated	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.4146	715.4146	0.0137	0.0131	719.7685
NaturalGas Unmitigated	0.0910	0.7780	0.3311	4.9700e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.9657	900.9657	0.0173	0.0165	906.4489

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/yr	tons/yr										MT/yr					
Single Family Housing	1.34064e+007	0.0723	0.6177	0.2629	3.9400e-003		0.0500	0.0500		0.0500	0.0500	0.0000	715.4146	715.4146	0.0137	0.0131	719.7685
Total		**0.0723**	**0.6177**	**0.2629**	**3.9400e-003**		**0.0500**	**0.0500**		**0.0500**	**0.0500**	**0.0000**	**715.4146**	**715.4146**	**0.0137**	**0.0131**	**719.7685**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	3.47261e+006	798.3318	0.0362	7.8800e-003	801.5341
Total		**798.3318**	**0.0362**	**7.8800e-003**	**801.5341**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	5.0721	0.0431	3.7269	2.0000e-004		0.0452	0.0452		0.0450	0.0450	0.0000	360.5068	360.5068	0.0127	6.5000e-003	362.7881
Unmitigated	36.4094	0.4687	42.3732	0.0153		5.4503	5.4503		5.4502	5.4502	516.4789	222.6681	739.1470	0.4825	0.0406	761.8740

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	1.4079					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.5150					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0358	0.0000	1.9500e-003	0.0000		0.0247	0.0247		0.0245	0.0245	0.0000	354.4424	354.4424	6.7900e-003	6.5000e-003	356.5995
Landscaping	0.1134	0.0431	3.7249	2.0000e-004		0.0205	0.0205		0.0205	0.0205	0.0000	6.0644	6.0644	5.9100e-003	0.0000	6.1886
Total	**5.0721**	**0.0431**	**3.7269**	**2.0000e-004**		**0.0452**	**0.0452**		**0.0450**	**0.0450**	**0.0000**	**360.5068**	**360.5068**	**0.0127**	**6.5000e-003**	**362.7881**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	135.5383	0.8549	0.0213	160.0877
Unmitigated	160.3087	1.0683	0.0265	190.9724

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	26.0616 / 19.2849	135.5383	0.8549	0.0213	160.0877
Total		**135.5383**	**0.8549**	**0.0213**	**160.0877**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	59.5068	3.5168	0.0000	133.3586
Unmitigated	119.0136	7.0335	0.0000	266.7172

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	293.15	59.5068	3.5168	0.0000	133.3586
Total		**59.5068**	**3.5168**	**0.0000**	**133.3586**

Barstow - Dev Site 11 - Diverse Use Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	75.00	User Defined Unit	0.00	75,000.00	0
User Defined Retail	75.00	User Defined Unit	0.00	75,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow. Given same trip profile as Residential

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances.
Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblVehicleTrips	CC_TTP	0.00	40.20
tblVehicleTrips	CC_TTP	0.00	40.20
tblVehicleTrips	CNW_TTP	0.00	40.60
tblVehicleTrips	CNW_TTP	0.00	40.60
tblVehicleTrips	CW_TTP	0.00	19.20
tblVehicleTrips	CW_TTP	0.00	19.20
tblVehicleTrips	DV_TP	0.00	11.00
tblVehicleTrips	DV_TP	0.00	11.00
tblVehicleTrips	PB_TP	0.00	3.00
tblVehicleTrips	PB_TP	0.00	3.00
tblVehicleTrips	PR_TP	0.00	86.00
tblVehicleTrips	PR_TP	0.00	86.00
tblVehicleTrips	ST_TR	0.00	1.10
tblVehicleTrips	ST_TR	0.00	7.52
tblVehicleTrips	SU_TR	0.00	1.10
tblVehicleTrips	SU_TR	0.00	7.52
tblVehicleTrips	WD_TR	0.00	1.10
tblVehicleTrips	WD_TR	0.00	7.52

2.0 Emissions Summary

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	0.7596					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1934**	**1.1873**	**6.0264**	**9.5800e-003**	**0.6130**	**0.0215**	**0.6345**	**0.1639**	**0.0198**	**0.1837**	**0.0000**	**684.1714**	**684.1714**	**0.0254**	**0.0000**	**684.7044**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044
Unmitigated	0.4337	1.1873	6.0264	9.5800e-003	0.6130	0.0215	0.6345	0.1639	0.0198	0.1837	0.0000	684.1714	684.1714	0.0254	0.0000	684.7044

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	82.50	82.50	82.50	205,905	205,905
User Defined Retail	564.00	564.00	564.00	1,407,639	1,407,639
Total	646.50	646.50	646.50	1,613,543	1,613,543

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
User Defined Recreational	9.50	7.30	7.30	19.20	40.20	40.60	86	11	3
User Defined Retail	9.50	7.30	7.30	19.20	40.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.7596					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.7596					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	0.1738					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5858					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.7596**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.0000	0.0000	0.0000	0.0000
Mitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Barstow - Dev Site 12 - MDR Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	60.00	Dwelling Unit	3.75	60,000.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Land Use - Site Specifics

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances
Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	7.16	6.39
tblVehicleTrips	SU_TR	6.07	5.86
tblVehicleTrips	WD_TR	6.59	6.65

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.3461	5.1700e-003	0.4472	2.0000e-005		5.4300e-003	5.4300e-003		5.4000e-003	5.4000e-003	0.0000	43.2608	43.2608	1.5200e-003	7.8000e-004	43.5346
Energy	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	85.5668	85.5668	2.9700e-003	1.1400e-003	85.9825
Mobile	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688
Waste						0.0000	0.0000		0.0000	0.0000	2.8013	0.0000	2.8013	0.1656	0.0000	6.2778
Water						0.0000	0.0000		0.0000	0.0000	0.9922	15.2724	16.2646	0.1026	2.5500e-003	19.2105
Total	**0.6225**	**0.8267**	**4.3522**	**6.7500e-003**	**0.4208**	**0.0225**	**0.4433**	**0.1125**	**0.0214**	**0.1339**	**3.7935**	**611.6084**	**615.4018**	**0.2898**	**4.4700e-003**	**622.8742**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688
Unmitigated	0.2729	0.7914	3.8921	6.5400e-003	0.4208	0.0147	0.4355	0.1125	0.0135	0.1260	0.0000	467.5084	467.5084	0.0172	0.0000	467.8688

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	399.00	383.40	351.60	1,107,647	1,107,647
Total	399.00	383.40	351.60	1,107,647	1,107,647

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	50.6152	50.6152	2.3000e-003	5.0000e-004	50.8182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.2480	56.2480	2.5500e-003	5.5000e-004	56.4737
NaturalGas Mitigated	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	34.9516	34.9516	6.7000e-004	6.4000e-004	35.1644
NaturalGas Unmitigated	4.4400e-003	0.0379	0.0161	2.4000e-004		3.0700e-003	3.0700e-003		3.0700e-003	3.0700e-003	0.0000	43.9361	43.9361	8.4000e-004	8.1000e-004	44.2035

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/yr	tons/yr										MT/yr					
Apartments Low Rise	654969	3.5300e-003	0.0302	0.0128	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003	0.0000	34.9516	34.9516	6.7000e-004	6.4000e-004	35.1644
Total		**3.5300e-003**	**0.0302**	**0.0128**	**1.9000e-004**		**2.4400e-003**	**2.4400e-003**		**2.4400e-003**	**2.4400e-003**	**0.0000**	**34.9516**	**34.9516**	**6.7000e-004**	**6.4000e-004**	**35.1644**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	220167	50.6152	2.3000e-003	5.0000e-004	50.8182
Total		**50.6152**	**2.3000e-003**	**5.0000e-004**	**50.8182**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.3461	5.1700e-003	0.4472	2.0000e-005		5.4300e-003	5.4300e-003		5.4000e-003	5.4000e-003	0.0000	43.2608	43.2608	1.5200e-003	7.8000e-004	43.5346
Unmitigated	4.1066	0.0563	5.0848	1.8400e-003		0.6540	0.6540		0.6540	0.6540	61.9775	26.7202	88.6976	0.0579	4.8700e-003	91.4249

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	0.0939					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2343					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3000e-003	0.0000	2.3000e-004	0.0000		2.9700e-003	2.9700e-003		2.9400e-003	2.9400e-003	0.0000	42.5331	42.5331	8.2000e-004	7.8000e-004	42.7919
Landscaping	0.0136	5.1700e-003	0.4470	2.0000e-005		2.4600e-003	2.4600e-003		2.4600e-003	2.4600e-003	0.0000	0.7277	0.7277	7.1000e-004	0.0000	0.7426
Total	**0.3461**	**5.1700e-003**	**0.4472**	**2.0000e-005**		**5.4300e-003**	**5.4300e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**43.2608**	**43.2608**	**1.5300e-003**	**7.8000e-004**	**43.5346**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.2646	0.1026	2.5500e-003	19.2105
Unmitigated	19.2371	0.1282	3.1900e-003	22.9167

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.12739 / 2.31419	16.2646	0.1026	2.5500e-003	19.2105
Total		**16.2646**	**0.1026**	**2.5500e-003**	**19.2105**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.8013	0.1656	0.0000	6.2778
Unmitigated	5.6026	0.3311	0.0000	12.5557

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	13.8	2.8013	0.1656	0.0000	6.2778
Total		**2.8013**	**0.1656**	**0.0000**	**6.2778**

Barstow - Dev Site 12 - Office Mitigated

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	506.83	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS In Effect. 506.83 CO2, 0.023 CH4, 0.005 N2O

Vehicle Trips - Trip Generation Rates from Advantec Consulting Engineers/Traffic Study for Barstow

Energy Mitigation - 2014 Title 24 Standards 25 percent more efficient than 2008 Title 24 for residential land uses, 30 percent more for non-residential land uses. CAPCOA LE-1 High Efficiency Lighting. Energy Efficient Appliances

Water Mitigation - 2013 Green Building Standards

Area Mitigation - Only Natural Gas Hearth

Waste Mitigation - 50 percent diversion/recycling

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	630.89	506.83
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	2.37	2.46
tblVehicleTrips	SU_TR	0.98	1.05
tblVehicleTrips	WD_TR	11.01	3.32

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	43.2871	43.2871	1.8900e-003	4.5000e-004	43.4664
Mobile	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646
Waste						0.0000	0.0000		0.0000	0.0000	1.8878	0.0000	1.8878	0.1116	0.0000	4.2307
Water						0.0000	0.0000		0.0000	0.0000	0.9022	13.7378	14.6400	0.0933	2.3200e-003	17.3181
Total	**0.1396**	**0.1046**	**0.5262**	**8.4000e-004**	**0.0522**	**2.0200e-003**	**0.0542**	**0.0140**	**1.8800e-003**	**0.0158**	**2.7900**	**115.3442**	**118.1342**	**0.2089**	**2.7700e-003**	**123.3802**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

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	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646
Unmitigated	0.0380	0.1021	0.5239	8.2000e-004	0.0522	1.8300e-003	0.0540	0.0140	1.6900e-003	0.0156	0.0000	58.3190	58.3190	2.1700e-003	0.0000	58.3646

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	66.40	49.20	21.00	137,308	137,308
Total	66.40	49.20	21.00	137,308	137,308

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.431121	0.068220	0.184097	0.161063	0.046501	0.007847	0.006802	0.077745	0.000804	0.001145	0.010347	0.000572	0.003736

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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						0.0000	0.0000		0.0000	0.0000	0.0000	40.5602	40.5602	1.8400e-003	4.0000e-004	40.7229
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	49.1514	49.1514	2.2300e-003	4.8000e-004	49.3485
NaturalGas Mitigated	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7269	2.7269	5.0000e-005	5.0000e-005	2.7435
NaturalGas Unmitigated	3.9000e-004	3.5800e-003	3.0100e-003	2.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	3.8956	3.8956	7.0000e-005	7.0000e-005	3.9193

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/yr	tons/yr										MT/yr					
General Office Building	51100	2.8000e-004	2.5000e-003	2.1000e-003	2.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7269	2.7269	5.0000e-005	5.0000e-005	2.7435
Total		**2.8000e-004**	**2.5000e-003**	**2.1000e-003**	**2.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**2.7269**	**2.7269**	**5.0000e-005**	**5.0000e-005**	**2.7435**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	176430	40.5602	1.8400e-003	4.0000e-004	40.7229
Total		**40.5602**	**1.8400e-003**	**4.0000e-004**	**40.7229**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Unmitigated	0.1013	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004

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	0.0232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0781					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Total	**0.1013**	**0.0000**	**1.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.6400	0.0933	2.3200e-003	17.3181
Unmitigated	17.3331	0.1166	2.8900e-003	20.6783

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	2.84374 / 2.04577	14.6400	0.0933	2.3200e-003	17.3181
Total		**14.6400**	**0.0933**	**2.3200e-003**	**17.3181**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.8878	0.1116	0.0000	4.2307
Unmitigated	3.7756	0.2231	0.0000	8.4614

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	9.3	1.8878	0.1116	0.0000	4.2307
Total		**1.8878**	**0.1116**	**0.0000**	**4.2307**