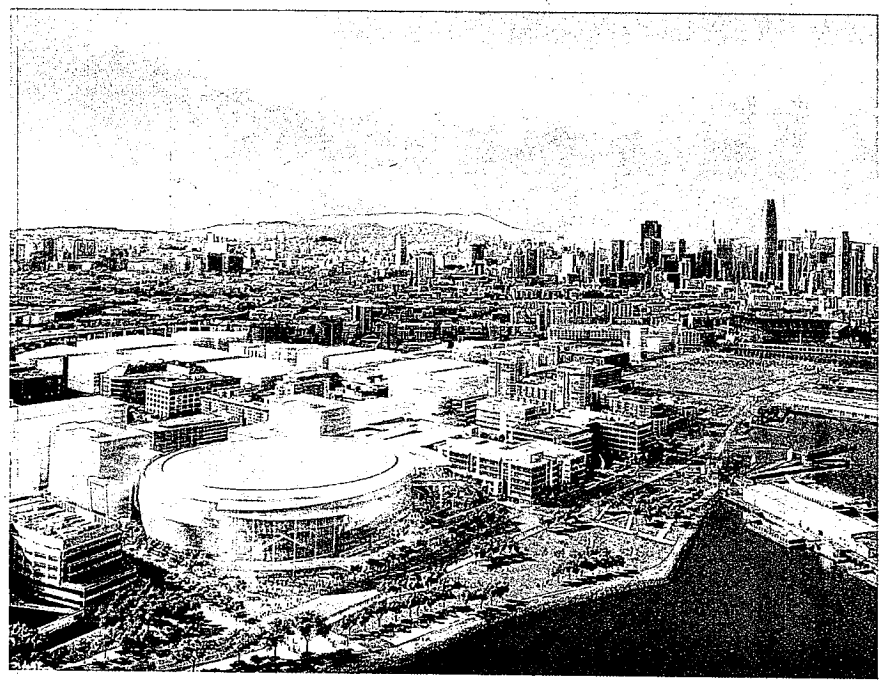
Application for Environmental Leadership Development Project

Golden State Warriors
Event Center and Mixed-Use Development at Mission Bay Blocks 29-32



February 2015

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1 Project Proposal

GSW Arena LLC (GSW), an affiliate of Golden State Warriors, LLC, which owns and operates the Golden State Warriors National Basketball Association (NBA) team, proposes to construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking, on an approximately 11-acre site (Blocks 29-32) within the Mission Bay South Redevelopment Plan Area of San Francisco.

GSW, in their commitment to sustainability and the environment, are taking this opportunity to certify the new Event Center as an Environmental Leadership Project under California Public Resources Code (PRC) 21178-21189.3.

1.1 Project Description

Under the project, Blocks 29-32 would be developed with a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking on the approximately 11-acre site. The 18,064-seat arena would total 750,000 gross square feet (GSF), with an additional 25,000 GSF of GSW office space. The arena, basketball practice facility, and GSW office space comprise the event center. Two separate buildings will house office space totaling 580,000 GSF and retail space, which includes food service, totaling 125,000 GSF. With parking and loading areas of 475,000 GSF, the project total square footage is 1,955,000 GSF.

A Site Plan is provided in Exhibit A.

Table 1. Project Land Uses at Mission Bay Blocks 29-32

Land Use	Square Footage
Event Center	750,000
GSW Office Space	25,000
Office Space	580,000
Retail Space[1]	125,000
Parking and Loading	475,000

Notes:
[1] Proposed retail uses are approximately 51,500 GSF sit-down restaurant, 11,000 quick-service restaurant, and 62,500 GSF soft goods retail including food retail.

The project site is bounded by South Street on the north, Third Street on the west, 16th Street on the south, and by the future planned realigned Terry A. François Boulevard on the east. The proposed event center would host the Golden State Warriors basketball team during the NBA season and provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions. GSW has entered into an agreement to purchase the project site from the current site owner, an affiliate of salesforce.com. The project is subject to review under the California Environmental Quality Act (CEQA) and a number of local and state approvals.

Development is allowed within the Mission Bay South Redevelopment Plan Area, including Blocks 29-32, consistent with the land use program and subject to the development controls of the Mission Bay South Redevelopment Plan, Mission Bay South Design for Development, and other related documents. No amendment to the South Plan would be required, although the proposed project at Blocks 29-32 would require certain amendments and/or variations to other documents.

The *Mission Bay Final Subsequent Environmental Impact Report* (Mission Bay FSEIR), certified in September 1998, is a program EIR under CEQA Guidelines 15168 and a redevelopment plan EIR under CEQA Guidelines 15180. The Mission Bay FSEIR analyzed the environmental impacts associated with the development program proposed for the entire plan area, including the program under the Mission Bay South Redevelopment Plan, which includes Blocks 29-32. Thus, under CEQA, the proposed project at Blocks 29-32 is considered a subsequent activity under the Mission Bay South Redevelopment program.

Concurrently with adoption of the Redevelopment Plan, the former San Francisco Redevelopment Agency (which was succeeded by the Office of Community Investment and Infrastructure, or OCII) entered into an Owner Participation Agreement with Catellus as Master Developer (now FOCIL-MB, LLC, as Catellus' successor-in-interest) (the "OPA"). The OPA provides a road map for development consistent with the Redevelopment Plan and the Mission Bay South Design for Development, and sets forth the rights and obligations of the property owner (the "Owner") to develop buildings and other improvements in the Plan Area. The OPA, in conjunction with the Redevelopment Plan and an Interagency Cooperation Agreement with other reviewing City agencies, is intended to establish the same types of vested rights typically found in a statutory Development Agreement.

The Owner's vested rights to develop the permitted uses and up to the maximum development intensity permitted under the OPA and Redevelopment Plan are passed to subsequent owners through various Purchase and Sale Agreements, Assignment and Assumption Agreements initially approved by the Agency and now by OCII, and related covenants recorded against title. FOCIL, as the master developer, allocates the overall land use and density/intensity allowed project-wide on a block-by-block basis as parcels are sold, and these allocations were initially tracked by the Agency and now by OCII in their Major Phase and project-level approvals. For example, Blocks 29-32 are subject to a recorded covenant that permits the owner to develop up to 1.1 million gross square feet (as defined under the Mission Bay South Design for Development) of commercial development, and all remaining square footage available for retail development in the Mission Bay South Plan Area, subject to necessary design approvals by the Agency in accordance with the Mission Bay South Design Review and Document Approval Procedure. FOCIL has assigned all attendant vested rights under the OPA to the Blocks 29-32 owner under an Assignment, Assumption and Release agreement approved by the Agency.

2 Consistency with Statutory Requirements for CEQA Streamlining

The following information shows how the Project satisfies the statutory requirements for CEQA streamlining as further informed by the criteria set forth in the Governor's Guidelines for Streamlining Judicial Review under CEQA (PRC) Section 21178 et seq.).

- **Information to show the project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature.**

  The Project is sports and entertainment in nature. The project site is designed to be a multi-purpose event center, which will host the Golden State Warriors NBA team, as well as a variety of entertainment events, such as concerts, family shows, other sporting events, cultural events, conferences and conventions. The Project will also be retail and commercial in nature, as the center will also include office, retail, open space and structured parking. Proposed site plans for the Project are attached as **Exhibit A**.

- **Information to show the project will qualify for LEED silver certification. The application shall specify those design elements that make the project eligible for LEED silver certification, and the applicant shall submit a binding commitment to delay operating the project until it receives LEED silver certification. If, upon completion of construction, LEED silver certification is delayed as a result of the certification process rather than a project deficiency, the applicant may petition the Governor to approve project operation pending completion of the certification process.**

  The Project has been designed to meet the standards for LEED Gold certification, which meet and exceed those required for LEED Silver certification. Relevant design features include, but are not limited to:

  - Project siting in an urban infill area, immediately adjacent to a local transit stop and less than a mile from other regional transit resources, including train and ferry
  - Maximization of open space (more than one-fourth of the total site area)
  - Reduction of fan and employee trips by private automobile through an aggressive Transportation Demand Management (TDM) program, including participation in a local Transportation Management Association's shuttle program; provision of over 500 bike parking locations; and a mobile application to direct site visitors towards efficient and sustainable modes of transit
  - Provision of carpool and vanpool spaces (5% of total spaces on-site)
  - Provision of reserved spaces either for fuel efficient vehicles (FEV) (5% of total spaces on-site), or for vehicle charging stations (VCS) (3% of total spaces on-site)
  - Stormwater quality treatment via on-site treatment basins
  - 50% reduction in water usage for outdoor irrigation, through water-efficient landscaping (emphasizing native or adapted plants) and irrigation systems

  - 30% reduction in water usage indoors, through installation of efficient fixtures
  - 15% (arena) or 24% (offices) greater energy efficiency than as discussed in Exhibit B, the LEED point tally
  - 75% diversion of construction waste from landfill
  - Use of low VOC-emitting interior building materials and recycled content

  A preliminary LEED point tally for the Project is attached as **Exhibit B**. Because final LEED certification is not granted until a project is completed and operational, the project sponsor will petition the Governor to approve project operation pending completion of the certification process, as permitted under PRC Section 21178 et seq.

- **Information to show the project will achieve at least 10 percent greater transportation efficiency than comparable projects. "Transportation efficiency" is defined as the number of vehicle trips by employees, visitors, or customers to the project divided by the total number of employees, visitors, and customers. The applicant shall provide information setting forth its basis for determining and evaluating comparable projects and their transportation efficiency, and how the project will achieve at least 10 percent greater transportation efficiency. For the purposes of this provision, comparable means a project of the same size, capacity and location type.**

  The Project will be highly transit-accessible for all site visitors and daily employees. Nearby transit resources, outlined below, were a key factor in choosing the Mission Bay Blocks 29-32 site for the Project.

  - Local public access is primarily provided by Muni light rail stops along the T Third line. These include the UCSF Mission Bay stop at the corner of South Street and Third Street (at the northwest corner of the Project site) and the Mariposa stop at Mariposa Street and Third Street (one block south of the Project site). By 2019, the UCSF Mission Bay stop will be integrated into the city's Central Subway system, which in turn connects to the regional BART system. Several Muni bus lines also serve the Project vicinity.
  - Regional public access is primarily provided via Caltrain at the 4th & King Street station, less than a mile from the Project, via BART from stations north and west of the Project site, and via the ferry routes terminating at the downtown Ferry Building about one mile away. The future Transbay Terminal in downtown San Francisco, scheduled to open in 2017, will enable additional regional travel with quick transit, bike, or shuttle connections to the Event Center project site.
  - The Mission Bay Transportation Management Association (MB TMA) currently runs shuttles from Mission Bay to the 4th & King Street Caltrain station and downtown BART stops. The Golden State Warriors will join the MB TMA and contribute funds to enable the expansion of regular shuttle service hours and/or routes.

  In order to make efficient use of the resources described above, the San Francisco MTA has proposed a project-specific Transit Service Plan (TSP). The plan will supplement

transit system capacity for guests of the Project's Event Center by adding express shuttle buses on key routes through the city and/or from major transit hubs. Proposed destinations include, for instance, the 16th Street & Mission Street BART station and the future Transbay Terminal. The plan also calls for staging additional light rail trains to serve guests during the high-demand post-event period. In total, the implementation of the TSP will increase the weekday evening transit mode share for Event Center patrons to 35%, which represents the maximum capacity available on San Francisco transit during event hours.

To encourage a similar increase in transit use for daily office and retail employees, and to incentivize Event Center patrons to use alternative modes to both auto and transit, the Golden State Warriors will also implement a robust Travel Demand Management strategy (TDM). Proposed measures include, but are not limited to, the following efforts.

- Promote the use of the indoor bicycle valet facility (approximately 300 spaces) during events
- Provide indoor secure bicycle parking rooms, and shower and locker facilities, for employees in on-site office buildings
- Provide outdoor bicycle storage/racks for Event Center and office or retail visitors
- Designate parking spaces on-site for carpool or vanpool vehicles
- Develop a mobile application and website that puts information on all transportation modes—including travel conditions, travel times, and cost comparisons—into the hands of all users with smart devices. Display the same information on screens inside office buildings and Event Center spaces.
- Program additional on-site amenities (e.g., fitness and exercise centers, food and beverage options, or automated banking resources) to encourage employees to stay on-site during the work day
- Participate in the federal Commuter Check Program and San Francisco's Emergency Ride Home program
- Encourage tenant participation in public events like an annual "Bike to Work" day or "Spare the Air" days

As a result of these combined TSP and TDM efforts:

- Transit mode share is anticipated to increase by 15% (for basketball game patrons) or 17% (for office and retail workers)
- Vehicle mode share for is anticipated to decrease by 16% (for basketball game patrons) or 12% (for office and retail workers)
- Transit person trips for a basketball game are anticipated to increase by more than 3,600 patrons
- Vehicle trips for a basketball game are anticipated to decrease by more than 1,400 cars

Therefore, the Project will achieve at least 10% greater transportation efficiency than a comparable project of a similar size, capacity and location type. Additional information on transportation efficiency is included in **Exhibit C**.

- **Information to show the project is located on an infill site, defined at Public Resources Code section 21061.3, and in an urbanized area, as defined at Public Resources Code section 21071**

  The project is located within a Priority Development Area (PDA), as identified by the San Francisco County Transportation Authority and the FEIR for the SCS. PDAs are, by definition, infill development opportunity areas. Under PRC section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." A "qualified urban use," in turn, is defined as "any residential, commercial, public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses" (PRC § 21072). The Project site has previously been developed for industrial use. The site is currently occupied by two large surface parking lots, as well as open space. There are no existing buildings currently onsite.

- **For a project that is within a metropolitan planning organization for which a sustainable communities strategy or alternative planning strategy is in effect, information to show the project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets. For the purposes of this provision, "in effect" means that the sustainable communities strategy or the alternative planning strategy has been adopted by the metropolitan planning organization, and that the Air Resources Board has accepted the metropolitan planning organization's determination that the sustainable communities strategy or alternative planning strategy meets the adopted greenhouse gas reduction targets and is not the subject of judicial challenge.**

  Senate Bill 375 requires that each metropolitan planning organization in the state prepare a Sustainable Communities Strategy (SCS) as part of a regional transportation plan (RTP). The Project is within the jurisdiction of the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), who are jointly responsible for developing the Bay Area's SCS. The SCS for San Francisco is "Plan Bay Area," which was adopted on July 18, 2013. Plan Bay Area has been accepted by ARB as sufficient to meet the GHG reduction goals of SB375 in Executive Order G-14-028, attached as **Exhibit D**, and it has been adopted by the Metropolitan Transportation Committee (MTC) and Association of Bay Area Governments (ABAG).

  The California Air Resources Board (CARB), ABAG and MTC have adopted a greenhouse gas (GHG) reduction target for the SCS, requiring a regional reduction of per-capita CO_2

emissions from cars and light-duty trucks by 7% by 2020 and by 15% by 2035, compared to a 2005 baseline.

Plan Bay Area does not have requirements for event centers. Although there are no quantitative requirements for event centers, the project will be built within a Priority Development Area (PDA), and Plan Bay Area emphasizes the importance of focusing growth in these areas. Additionally, the new arena will be located in a "transit priority area," which is defined in Section 21099(a)(7) as an area within one-half mile of a major transit stop that is existing or planned. A major transit stop is located at the intersection on the northwest corner of the project site.

- **Information to show that the applicant has notified a lead agency prior to the release of the draft environmental impact report that it intends to certify a project for streamlined environmental review under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011. Written acknowledgment from the lead agency of the applicant's intent to apply for certification may be used to satisfy this requirement.**

  The Office of Community Investment and Infrastructure (OCII) of the City and County of San Francisco, the lead agency for the Project, has been notified that the Golden State Warriors are seeking certification for the Project under the Jobs and Economic Improvement through Environmental Leadership Act. Written acknowledgement from the City of San Francisco OCII regarding the Golden State Warriors' intent to apply for certification is attached as **Exhibit E**.

- **Information to show that the project will result in a minimum investment of $100 million in California through the time of completion of construction.**

  The Project is a major mixed-use development that includes the purchase, redesign, excavation, grading, and geotechnical improvement of an approximately 11-acre site. Planned building area includes a state-of-the-art, 18,064-seat entertainment facility, team practice facilities for the Golden State Warriors, a headquarters for the team's front office staff, and additional office and retail buildings, together totaling over 1 million square feet in development. The site will also include 3.2 acres of new public and private open space and over 900 parking stalls in three levels (two below grade). Anticipated construction duration is 23 to 27 months. Based on anticipated project costs, the Project will far exceed the $100 million minimum investment requirement of Public Resources Code section 21183(a).

- **Information to show that the project will satisfy the prevailing and living wage requirements of Public Resources Code section 21183(b).**

  During construction the Project will create high-wage, highly skilled jobs that pay according to the prevailing wages and living wages required by Public Resources Code section 21183(b). All workers employed for the construction duration of the Project will receive, at minimum, the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations (DIR) pursuant to Sections 1773 and 1773.9 of the Labor Code. Rate details are included in **Exhibit F.** The Project sponsor will include this requirement in all contracts for work performed.

- **Information establishing that the project will not result in any net additional greenhouse gas emissions. This information includes (1) a proposed methodology for quantifying the project's net additional greenhouse gas emissions, and (2) documentation that quantifies both direct and indirect greenhouse gas emissions associated with the project's construction and operation, including emissions from the project's projected energy use and transportation related emissions; and quantifies the net emissions of the project after accounting for any mitigation measures. This information is subject to a determination signed by the Executive Officer of the Air Resources Board that the project does not result in any net additional greenhouse gas emissions, following the procedures set forth in section 6 of the Governor's Guidelines.**

  The proposed methodology for calculating Greenhouse Gas (GHG) emissions for the new arena project would treat the office and retail components of the project, which are the subject of fully vested legal rights, as immediately adjacent uses. Thus, the calculation of the emissions for the project would first estimate emissions associated with the arena components only. Next, the methodology proposes to deduct from those emissions totals certain "credits", as follows:

  (1) A deduction arising as a consequence of the proximity of the immediately adjacent office and retail components in the form of internal trip capture;

  (2) A deduction reflecting the sustainable features that will be incorporated into the office and retail components; and

  (3) A deduction of all emissions resulting from Golden State Warriors (GSW) games PLUS 50% of the Non-Sporting Events that were to occur at Oracle Arena in the absence of the Mission Bay Event Center, but will in the future occur only at the Mission Bay Event Center. Includes a deduction of emissions from the GSW Headquarters and practice facility emissions in Downtown Oakland, which will likewise move to the Mission Bay Event Center and cease operations in Oakland.

  The proposed technical methodology for quantifying the Project's GHG emissions is attached as **Exhibit G**. It accounts for one-time emissions impacts due to Project construction, as well as annual Project operations emissions from 2017 through 2035. Where available, the proposed methodology uses site-specific data for employee numbers, trip rates, and energy and water use. Where site-specific data is not available, default values such as those recommended in the CalEEMod® land-use model have been used.

  Based on this methodology, net operational emissions from the Project are estimated to be approximately 4,099 metric tons of carbon dioxide equivalent (MT CO_2e) for operational year 2017, decreasing to 2,923 MT CO_2e in 2035. **Exhibits G and H** show the total Project emissions as well as the emissions deducted for games and half of the non-game events at the Oracle Arena and GSW Headquarters in Oakland, as discussed above.

  Project construction emissions, including both direct and indirect emissions, are estimated to be approximately 10,066 MT CO_2e over two years of construction. Construction of the project is a one-time source of emissions.

With purchased offsets, there will be no net additional greenhouse gas emissions from the operation the project. In addition, offsets would be purchased for the one-time construction emissions.

Detailed GHG emissions calculations are provided in **Exhibit H**.

- **Information documenting a binding agreement between the project proponent and the lead agency establishing the requirements set forth in Public Resources Code sections 21183(d) (all mitigation measures will be conditions of approval and enforceable, and environmental mitigation measures will be monitored and enforced for the life of the obligation), (e) (applicant will pay costs for hearing by Court of Appeal), and (f) (applicant will pay costs of preparing the administrative record).**

  Golden State Warriors' acknowledgement and agreement with OCII, as lead agency for the Project, regarding Golden State Warriors' obligations under PRC sections 21183(d), (e), and (f) is attached as **Exhibit E**.

Name of Applicant Representative: David Kelly

Title of Applicant Representative: General Counsel and Vice President, Basketball Legal Affairs

Signature of Applicant Representative:

Date: February 17, 2015

Exhibit A

Golden State Warriors Event Center Site Plan

Exhibit B

LEED Scorecard

10.4 – CAMPUS SUSTAINABLE APPROACH

10.4.1 - Process Overview

- The LEED Campus Approach streamlines the LEED certification process for larger and more complex projects. Multiple building projects that share a site, and are under the control of the same owner, developer, or property management, fall into the criteria of the campus program. Under the Campus Approach, several LEED credits and prerequisites may be reviewed and pre-approved. Once earned, these credits may be claimed by all LEED projects for that campus, though the Campus is not eligible for LEED certification itself. The US Green Building Council (USGBC) defines a campus credit as one that can be attempted for most or all projects within a LEED campus boundary because of shared site features and uniformity in project or management traits.

- As highlighted in Figure 29, the Campus project will consist of a Master Site with several individual building projects. The Office/Mixed-Use Development will be utilizing LEED Core and Shell. The North Tower and South Tower, inclusive of the Gatehouse, will pursue LEED individually, earning two separate LEED Gold certifications. The Event Center, inclusive of the Arena, Markethall and Bayfront Terrace, will use LEED for New Construction. Campuses with multiple segregated sites can register multiple LEED Master Sites to create groups of buildings within the campus. For this project the terms Master Site and Campus represent the same single entity within the LEED certification process. Therefore, from this point on the project will be referred to as the "Campus."

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100% SCHEMATIC DESIGN
SUSTAINABILITY NARRATIVE

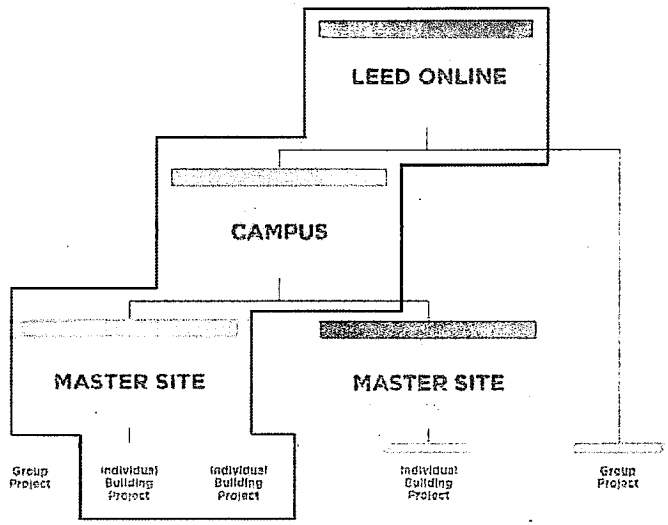

Figure 29. LEED Online Campus Application

10.4.2 - Project Registration

- The Campus project is registered on LEED-Online, and the Event Center and Office/Mixed-Use facilities will be registered early in the design phase once final building configurations are finalized. These projects will be registered through the Campus LEED website as the Event Center and Mixed-Use Development at Mission Bay Blocks 29-32. Project team access to these LEED projects will be available via LEED-Online once registration is complete.

10.4.3 - Campus LEED Detailed Scorecard

- The following page is a detailed list of all Campus credits along with design and construction criteria for the Mission Bay site.

10.5 – EVENT CENTER SUSTAINABLE APPROACH

10.5.1 - Narrative

- The 100% SD analysis identifies approximately sixty-eight (68) LEED® points that are available either within the current design or with minor modifications for the Event Center project. These credits are identified on the provided LEED® Credit Checklist under the "Yes" column. An additional seven (7) points identified under the "Maybe" column may be possible, pending further research and potentially higher investment. Credits under the "No" column were designated as such based on a higher associated cost or inapplicability to this project.
- With sixty (60) points required for LEED® Gold certification, this project is well positioned to achieve the minimum certification goal. A buffer of five to six (5-6) points above the desired certification threshold is recommended.
- With the Arena, Bayfront Terrace and Markethall being contiguous spaces these facilities will all be included as part of the Event Center's LEED application.

10.5.2 - Measurement & Verification

- LEED EA credit 5 Measurement and Verification is intended to provide for the ongoing accountability of building energy consumption over time. Through the use of utility invoices, building automation system (BAS) data logging, permanently installed sub-metering, and spot measurements, the facility will measure the actual utility usage of the building for each energy end use for at least 12 months post-occupancy. The method of metering will be primarily through the use of building meters and sub-meters. These meters will record the electrical and natural gas loads as indicated below and in the final M&V plan. These meters are intended to validate the anticipated energy savings indicated in LEED EAc1. See Electrical Narrative (Section 4) for more details on the networked metering system.

			Sustainable Sites	25	
1	1	Cred 1	Site Selection	1	
5	5	Cred 2	Development Density and Community Connectivity	5	
1	1	Cred 3	Brownfield Redevelopment	1	
6	6	Cred 4.1	Alternative Transportation—Public Transportation Access	6	
2	1	Cred 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	2 CS / 1 NC	
3	3	Cred 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	
2	2	Cred 4.4	Alternative Transportation—Parking Capacity	2	
1	1	Cred 5.1	Site Development—Maximize Open Space	1	
1	1	Cred 5.2	Stormwater Design—Quality Control	1	
1	1	Cred 7.1	Heat Island Effect—Non-roof	1	
			Water Efficiency	4	
2	2	Cred 1	Water Efficient Landscaping	2 to 4	To achieve two (2) points for 50% irrigation water reduction, the project will need to utilize rainwater/graywater and on efficient irrigation system. SF code requires weather-based unit rain sensor or soil moisture-based controllers for the irrigation systems as well as sub meters for irrigation systems that serve areas between 1,000-5,000 square feet. Since irrigation is required on site and water reuse will not be pursued due to the cost impact. Option 2 for four (4) points is no longer available to us for this project.
			Materials and Resources	2	
Y	Y	Prereq 1	Storage and Collection of Recyclables		Per SF Code, the facilities will need recycling bins (recycling), and a recycling storage room or dumpster by the loading dock.
			Indoor Environmental Quality	4	
Y	Y	Prereq 2	Environmental Tobacco Smoke (ETS) Control		The facility will be non-smoking, and this site will be subject to non-smoking based on local requirements.

Table 9. Event Center M&V Preliminary Energy End Uses

Fuel Type	Category	Sub Category	Equipment
Electricity	Lighting	Interior Lighting	
		Exterior Lighting	
	HVAC Equipment	Packaged HVAC Equipment	Variable Refrigerant Flow (VRF) Units
			AHUs, ERVs, DAUs
			CRAC Units, Split Systems
		Fans	Kitchen & Grease Exhaust Fans
			Process Ventilation Fans
			VRF Indoor FCUs
			AHU Supply Fans
			Exhaust Fans
		Heat Rejection	Cooling Towers
		HVAC Pumps	Heat Rejection Loop Recirc Pumps
			Heating Hot Water Pumps
			Radiant Heating Pumps
			Condenser Water Pumps
	Plug/Process Loads	Receptacle Loads	
		Event Center Event Lighting	
		Low Temp Chillers & associated Pumps	
		Ice Slab Chiller(s) & associated Pumps	
		Elevators/Escalators	
		Food Service Equipment	
		Food Service Refrigeration Equipment	
	Service Water Heating	Domestic Water Heaters	
		Domestic Water Pumps	
Natural Gas	Space Heating	Boilers	
	Service Water Heating	Domestic Water Heaters	
	Plug/Process Loads	Food Service Equipment	

10.5.3 - Event Center LEED Detailed Scorecard

- The following scorecard details the credit by credit approach for the Event Center project, along with design and construction notes based upon the current design for the facility.

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100% SCHEMATIC DESIGN
SUSTAINABILITY NARRATIVE

LEED 2009 for New Construction and Major Renovations
Golden State Warriors Event Center - LEED Gold Credit Strategy Scorecard
12/18/2014

Y	?	N	Sustainable Sites	Possible Points:	26	Design/Construction Coordination and Cost Notes:
Y			Prereq 1	Construction Activity Pollution Prevention		Provision for this prerequisite are required by NPDES / SF code, and will be specified by the civil engineer. Requirements for prevention of wind erosion should be included, per recent USGBC comments.
1			Credit 1	Site Selection	1	CAMPUS CREDIT
5			Credit 2	Development Density and Community Connectivity	5	CAMPUS CREDIT
1			Credit 3	Brownfield Redevelopment	1	CAMPUS CREDIT
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6	CAMPUS CREDIT
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1	CAMPUS CREDIT
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	CAMPUS CREDIT
2			Credit 4.4	Alternative Transportation—Parking Capacity	2	CAMPUS CREDIT
		1	Credit 5.1	Site Development—Protect or Restore Habitat	1	Compliance will be verified again after final landscape plans are available but due to the limited areas with vegetation this credit is not likely to be achieved.
1			Credit 5.2	Site Development—Maximize Open Space	1	CAMPUS CREDIT
		1	Credit 6.1	Stormwater Design—Quantity Control	1	Stormwater retention would be required, this credit is not cost feasible for the project.
1			Credit 6.2	Stormwater Design—Quality Control	1	CAMPUS CREDIT
	1		Credit 7.1	Heat Island Effect—Non-roof	1	CAMPUS CREDIT
1			Credit 7.2	Heat Island Effect—Roof	1	Credit will be achieved by a combination of green roofs and reflective roof surfaces. Depending on aesthetic preference low-e coating is available in white, tan, and gray.
		1	Credit 8	Light Pollution Reduction	1	SF code requires compliance with Title 24, Part 6, Section 147 so that this site lighting design will need to be more efficient than the code baseline. However, due to this credit's requirements for light trespass this credit will not be feasible based on the compactness of the site.

Y	?	N	Water Efficiency	Possible Points:	10	Design/Construction Coordination and Cost Notes:
Y			Prereq 1	Water Use Reduction—20% Reduction		Facility will utilize auto-sensor restroom lavatories, pint flush (0.125 gpf) urinals, 1.28 gpf water closets, 1.5 gpm break room sinks, and 1.5 gpm showerheads (depending on where the shower is located).
2		2	Credit 1	Water Efficient Landscaping	2 to 4	CAMPUS CREDIT
				No Potable Water Use or Irrigation	4	Water reuse for irrigation was determined not feasible. Previously, this credit required a $500,000.00 premium.
		2	Credit 3	Innovative Wastewater Technologies	2	A graywater system will not be pursued at this new site. The city graywater system will not be available until 2020+
						The event center will need to be plumbed with purple pipe
3		1	Credit 3	Water Use Reduction	2 to 4	In order to achieve these three (3) points for 35% water efficiency of building fixtures, the facility will utilize the fixtures described above for WE Prerequisite 1. Minimum 30% reduction required by SF code.
				Reduce by 40%	4	40% water use reduction is not likely for the project. It would require graywater reuse for flush fixtures.

16	5	14	Energy and Atmosphere	Possible Points:	35	
Y	?	N				
Y			Prereq 1 Fundamental Commissioning of Building Energy Systems			Provisions for this credit are required by SF code, and will be specified by the CxA.
Y			Prereq 2 Minimum Energy Performance			The facility will utilize an efficient mechanical and electrical design to achieve this prerequisite, more detail is described below under EA Credit 1- Optimize Energy Performance.
Y			Prereq 3 Fundamental Refrigerant Management			This prerequisite will not be an issue to achieve because the building will have all new equipment.
7	5	7	Credit 1 Optimize Energy Performance	1 to 19		A minimum of 15% efficiency over 90.1-2007 is required for the project, if RECs are purchased (25% if RECs are not purchased). The design will use strategies to achieve this credit and a minimum of 24% efficiency over the ASHRAE 90.1-2007 baseline with the potential to achieve up to 34% reduction. The level of savings and number of points for EA Credit 1 will be refined as the design progresses.
		7	Credit 2 On-Site Renewable Energy	1 to 7		Due to budget and structure constraints, as well as conflicts with sponsor logos, solar PV will no longer be pursued for the arena project.
2			Credit 3 Enhanced Commissioning	2		Provisions for this credit are required by SF code, and will be specified by the CxA. Independent Cx commissioning services will be included under consultant contract.
2			Credit 4 Enhanced Refrigerant Management	2		This credit will be contingent on the pounds of refrigerant per ton of cooling in the building's HVAC systems. This credit is not a cost item, but will just be determined based on the final submittal data for the cooling units, but since there will be a high tonnage cooling capacity versus lack of refrigerant for proposed evaporative cooling system this credit will likely be achieved.
3			Credit 5 Measurement and Verification	3		In order to pursue this credit, the building systems will be metered per major load category: lighting, plug loads, HVAC fans, pumps, heat rejection, heating, and the kitchen and data centers will be segregated. The Building Automation System will be set up to trend, save, and report this information (potentially in a dashboard format).
2			Credit 6 Green Power	2		Purchasing RECs lowers the energy efficiency requirement for the project. Based on the current design and energy model of the event center, RECs would cost roughly $7,000 for two points, plus an innovation point. Purchasing RECs meets another of the options for SF code requirements. REC quotes will be updated to reflect the final energy model. REC cost per MWh is known to fluctuate, therefore final purchase price will be dependent on the current rate at time of purchase during construction.

6	1	7	Materials and Resources	Possible Points:	14	
Y	?	N				
Y			Prereq 1 Storage and Collection of Recyclables			CAMPUS CREDIT
		3	Credit 1.1 Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3		N/A
		1	Credit 1.2 Building Reuse—Maintain 50% of Interior Non-Structural Elements	1		N/A
2			Credit 2 Construction Waste Management	1 to 2		Construction waste recyclers should be utilized to obtain a minimum 75% rate of diversion from the landfill for construction materials to meet SF code requirements.
		2	Credit 3 Materials Reuse	1 to 2		Though concrete piles will be crushed and re-used, cost will likely not be high enough to achieve this credit, but will contribute to MRc2 achievement.
2			Credit 4 Recycled Content - 20%	1 to 2		The specifications for this project should include details for using construction materials with recycled content.
1	1		Credit 5 Regional Materials	1 to 2		The specifications for this project should include details for using construction materials with regional content. The 20% additional Maybe point is dependent on the sourcing of the concrete during construction.
		1	Credit 6 Rapidly Renewable Materials	1		The facility may not include the types of materials that would be considered rapidly renewable (bamboo, cork, cotton, etc).
1			Credit 7 Certified Wood	1		Utilizing FSC certified wood products for doors and casework, to have 50% of the wood materials represented by FSC materials, has an incremental cost but is typically not a large add to the project budget.

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12	0	3	Indoor Environmental Quality	Possible Points:	15	
Y	?	N				
Y			Prereq 1 Minimum Indoor Air Quality Performance			This design requirements for this prerequisite are required by code.
Y			Prereq 2 Environmental Tobacco Smoke (ETS) Control			CAMPUS CREDIT
1			Credit 1 Outdoor Air Delivery Monitoring	1		To achieve this credit, mechanical system will include airflow monitoring at outside air units (per standard design practice) and CO2 monitoring in densely occupied spaces.
1			Credit 2 Increased Ventilation	1		30% increased ventilation is likely because of evaporative cooling system implemented by mechanical design.
1			Credit 3.1 Construction IAQ Management Plan—During Construction	1		A best practice construction IAQ management plan will be developed and implemented to help protect HVAC systems and absorptive materials from moisture or debris contamination, as well as to prevent high VOC product usage in the facility. This is mandated through SF code.
1			Credit 3.2 Construction IAQ Management Plan—Before Occupancy	1		Option 1 - Pre-occupancy flush out consists of providing 14,000 cubic feet of outdoor air, per square foot of floor area, into the space after construction is complete and finishes are installed. The amount of time this could take may conflict with the project schedule. The flush out usually takes anywhere from 1 week to 1 month, depending on final HVAC design airflows. Due to the size of sports facilities, scheduling conflicts typically occur. To avoid any conflicts, Option 2 – Air Testing is expected to be pursued instead. Air testing consists of sampling the project space post construction and prior to occupancy to confirm that maximum concentrations of contaminants (i.e. formaldehyde, carbon monoxide, or volatile organic compound (VOCs)) are not exceeded.
1			Credit 4.1 Low-Emitting Materials—Adhesives and Sealants	1		Per SF code, low-VOC adhesives will be included in the specifications, there is typically not a cost add for these products based on current market availability.
1			Credit 4.2 Low-Emitting Materials—Paints and Coatings	1		Per SF code, low-VOC paints/coatings will be included in the specifications, there is typically not a cost add for these products based on current market availability.
1			Credit 4.3 Low-Emitting Materials—Flooring Systems	1		Per SF code, CRI certified carpets will need to be utilized, as well as FloorScore certified manufactured hard flooring products. There may be some incremental cost for these products, but typically not significant.
1			Credit 4.4 Low-Emitting Materials—Composite Wood and Agrifiber Products	1		SF code requires urea formaldehyde-free composite wood products and laminating adhesives. Additionally, all products in this category must meet California Air Resources Board Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections
1			Credit 5 Indoor Chemical and Pollutant Source Control	1		The HVAC units will need to utilize MERV 13 filtration on the ventilation air and MERV 6 filters on the return (SF code), facility will need minimum 10' walk-off mats or systems at entrances, and copy machines will need to be in dedicated rooms with self-closing doors. This credit requires design and layout coordination, but typically not a large construction cost.
1			Credit 6.1 Controllability of Systems—Lighting	1		Clubs, conference rooms, and multi-occupant areas will need dimmable or dual stage lighting, and 90% of individual use areas (offices, ticket booths, etc) will need controllable lighting. This building will likely have a lighting control system, so this credit may have some incremental cost but likely not notable.
		1	Credit 6.2 Controllability of Systems—Thermal Comfort	1		Clubs, conference rooms, and multi-occupant areas will need to have thermostats, as well as 50% of individual use areas (ticket booths, offices, etc). This is close to standard design, but could require additional zoning.
1			Credit 7.1 Thermal Comfort—Design	1		Facility will be designed for thermal comfort with temperature, humidity, and air-speed.
1			Credit 7.2 Thermal Comfort—Verification	1		A thermal comfort survey will need to be implemented within 6-18 months of building occupancy.
		1	Credit 8.1 Daylight and Views—Daylight	1		Daylighting will not be feasible for most interior spaces.
		1	Credit 8.2 Daylight and Views—Views	1		Daylighting will not be feasible for most interior spaces.

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Y	?	N			
6	0	0	**Innovation in Design**	**Possible Points:**	**8**
1			Credit 1.1 Innovation in Design: Green Building Education	1	Design/Construction Coordination and Cost Notes: Facility can achieve this credit by having a comprehensive green building education program, including signage, website information, and potentially a kiosk or dashboard. Facility can utilize a green cleaning program that emphasizes nontoxic chemicals, and equipment that is less impactful to operations staff (note, vibration, ergonomics). This will require coordination with operations staff / facility manager.
1			Credit 1.2 Innovation in Design: Green Housekeeping	1	
	1		Credit 1.3 Exemplary Performance: MR Cr 4 or SS Cr 5.2	1	The project could achieve exemplary performance in recycled material content or site open space.
	1		Credit 1.4 Exemplary Performance: M&V	1	The project can achieve exemplary performance in Measurement and Verification, based on EA Cr 5 scope and monthly reporting of utility data.
	1		Credit 1.5 Exemplary Performance: Green Power	1	Achievement of exemplary performance in green power should be a reasonable cost, additional information is included in the attached narrative.
1			Credit 2 LEED Accredited Professional	1	The project will have several LEED professionals and a team facilitating the sustainability process.
1	0	3	**Regional Priority - San Francisco**	**Possible Points:**	**4**
Y	?	N			
1			Credit 1.1 Regional Priority: SSc5.2- Open Space	1	Design/Construction Coordination and Cost Notes: A regional priority credit in open space should be feasible for the 30% open space anticipated for the project. 40% water use reduction is not likely for the project. It would require graywater reuse for flush fixtures. Onsite renewable energy will not be pursued for the arena. A regional priority credit in innovative wastewater technology will also require the water re-use system for flush fixtures.
	1		Credit 1.2 Regional Priority: WEc2- Water Efficiency	1	
	1		Credit 1.3 Regional Priority: EAc2 (1%)- Onsite Renewable Energy	1	
	1		Credit 1.4 Regional Priority: WEc2- Innovative Wastewater Technology	1	
66	7	35	**Total**	**Possible Points:**	**110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

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10.6 – OFFICE TOWER(S) / MIXED USE SUSTAINABLE APPROACH

10.6.1 - Narrative

- The 75% SD analysis identifies sixty-six (66) LEED® points that are available either based on current design or with minor modifications, similar to the Event Center project. These credits are identified on the provided LEED® Credit Checklist under the "Yes" column. An additional sixteen (16) points identified under the "Maybe" column may be possible, pending further research and potentially higher investment. Credits under the "No" column were designated as such based on a higher associated cost or inapplicability to this project.
- With sixty (60) points required for LEED® Gold certification, this project is well positioned to achieve the minimum certification goal. As with the Event Center project, a buffer of five to six (5-6) points above the desired certification threshold is recommended.
- Due to the Gatehouse being connected to the southwest office tower, at this phase the facility will be included in the 16th Street Office Tower's LEED application.

10.6.2 - Measurement & Verification

- LEED EA credit 5 Measurement and Verification is intended to provide for the ongoing accountability of building energy consumption over time. Through the use of utility invoices, building automation system (BAS) data logging, permanently installed sub-metering, and spot measurements, the facility will measure the actual utility usage of the building for each energy end use for at least 12 months post-occupancy. The method of metering will be primarily through the use of building meters and sub-meters. These meters will record the electrical and natural gas loads as indicated below and in the final M&V plan. These meters are intended to validate the anticipated energy savings indicated in LEED EAc1. See Electrical Narrative (Section 4) for more details on the networked metering system.

Table 12. Office Buildings M&V Preliminary Energy End Uses

Fuel Type	Category	Sub Category	Equipment
Electricity	Lighting	Interior Lighting	
		Exterior Lighting	
	HVAC Equipment	Packaged HVAC Equipment	AHUs
			Packaged and Split DX Equipment
			VRF Outdoor Units
		Space Heating	Rooftop AHU Heating Coils
			UFAD Terminal Unit Heating Coils & Fans
			Pedestal-type Radiant Heaters
		Fans	AHU Supply Fans
			Toilet/General Exhaust Fans
			VRF Fan Coil Units
	Process Loads	Receptacle Loads	
		Elevators/Escalators	
	Service Water Heating	Common Area Domestic Water Heaters	
		Tenant Area Domestic Water Heaters	

10.6.3 – Office / Mixed-Use LEED Detailed Scorecard

- The following pages are a detailed list of all Mixed-Use credits along with design and construction notes based upon the current design for the project.

LEED 2009 for Core and Shell Development
Golden State Warriors Office Towers - LEED Gold Credit Strategy Scorecard
12/19/2014

24	1	3	Sustainable Sites	Possible Points: 28	
Y	?	N			Conceptual Design Notes:
Y			Prereq 1 Construction Activity Pollution Prevention		Provisions for this prerequisite are required by NPDES / SF code, and will be specified by the civil engineer.
1			Credit 1 Site Selection	1	CAMPUS CREDIT
5			Credit 2 Development Density and Community Connectivity	5	CAMPUS CREDIT
1			Credit 3 Brownfield Redevelopment	1	CAMPUS CREDIT
6			Credit 4.1 Alternative Transportation—Public Transportation Access	6	CAMPUS CREDIT
2			Credit 4.2 Alternative Transportation—Bicycle Storage and Changing Rooms	2	CAMPUS CREDIT
3			Credit 4.3 Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3	CAMPUS CREDIT
2			Credit 4.4 Alternative Transportation—Parking Capacity	2	CAMPUS CREDIT
		1	Credit 5.1 Site Development—Protect or Restore Habitat	1	Compliance will be verified again after final landscape plans are available but due to the limited areas with vegetation this credit is not likely to be achieved.
1			Credit 5.2 Site Development—Maximize Open Space	1	CAMPUS CREDIT
		1	Credit 6.1 Stormwater Design—Quantity Control	1	4-5% to be allocated for treatment areas, i.e. vegetated swales and landscaping. Additional storage tank would be required. Determined not to be pursued due to cost premium.
1			Credit 6.2 Stormwater Design—Quality Control	1	CAMPUS CREDIT
1			Credit 7.1 Heat Island Effect—Non-roof	1	CAMPUS CREDIT
1			Credit 7.2 Heat Island Effect—Roof	1	The facility will need to have a light colored roof. Depending on aesthetic preference low-e roofing is available in white, tan, and gray.
		1	Credit 8 Light Pollution Reduction	1	SF code require compliance with Title 24, Part 6, Section 147 so that the site lighting design will need to be more efficient than the baseline. However, due to this credit's requirements for light trespass this credit will not be feasible based on the compactness of the site.
1			Credit 9 Tenant Design and Construction Guidelines	1	Develop an illustrated document that provides tenants with design and construction information, specifically related to Commercial Interiors as well as how the Core and Shell project complies with achieved credits. Include sustainability goals and objectives as well as information on any credits requiring coordination between CS and CI.

5	1	4	Water Efficiency	Possible Points: 10	
Y	?	N			Conceptual Design Notes:
Y			Prereq 1 Water Use Reduction—20% Reduction		Facility will utilize auto-sensor restroom lavatories, pint flush (0.125 gpf) urinals, 1.28 gpf water closets, 1.5 gpm break room sinks, and 1.5 gpm showerheads (depending on where the shower is located).
2		2	Credit 1 Water Efficient Landscaping	2 to 4	CAMPUS CREDIT
			No Potable Water Use or Irrigation	4	Water reuse for irrigation was determined not feasible.
		2	Credit 2 Innovative Wastewater Technologies	2	A graywater system will not be pursued at the new site. The city graywater system will not be available until 2020+.
3	1		Credit 3 Water Use Reduction	2 to 4	In order to achieve these three (3) points for 35% water efficiency of building fixtures, the facility will utilize the fixtures described above for WE Prerequisite 1. Minimum 30% reduction required by SF code. 40% will be difficult to reach, but may be attainable.

16	7	14	Energy and Atmosphere	Possible Points:	35	
Y	?	N				Conceptual Design Notes:
Y			Prereq 1 Fundamental Commissioning of Building Energy Systems			Provisions for this credit are required by SF code, and will be specified by the CxA.
Y			Prereq 2 Minimum Energy Performance			The facility will utilize an efficient mechanical and electrical design to achieve this prerequisite, more detail is described below under EA Credit 1 - Optimize Energy Performance.
Y			Prereq 3 Fundamental Refrigerant Management			This prerequisite will not be an issue to achieve because the building will have all new equipment.
9	5	7	Credit 1 Optimize Energy Performance		3 to 21	The design will use strategies to achieve this credit, targeting a minimum of 24% efficiency over the ASHRAE 90.1-2007 baseline with the potential to achieve a higher percent reduction. The point allotment for this scorecard is conservative in nature based on previous project experience when energy models are used.
		4	Credit 2 On-Site Renewable Energy		4	Although some level of solar PV may be installed on the office towers, the extent of the system will not likely be large enough to achieve LEED points for this credit.
2			Credit 3 Enhanced Commissioning		2	Provisions for this credit are required by SF code, and will be specified by the CxA. Independent Cx commissioning services will be included under consultant contract.
	2		Credit 4 Enhanced Refrigerant Management		2	This credit will be contingent on the pounds of refrigerant per ton of cooling in the building's HVAC systems, and will be determined after final equipment selections.
3			Credit 5.1 Measurement and Verification-Base Building		3	In order to pursue this credit, the building systems will be metered per major load category: lighting, plug loads, HVAC fans, pumps, heat rejection, heating, and the kitchen and data centers will be segregated. The Building Automation System will be set up to trend, save, and report this information (potentially in a dashboard format).
		3	Credit 5.2 Measurement and Verification-Tenant Submetering		3	Based on initial tenant interest, it is unlikely that the office buildings will be multi-tenant, therefore tenant submetering will no longer be pursued.
2			Credit 6 Green Power		2	Based on the current design and energy model RECs would cost roughly $3,000 for the office buildings. Purchasing RECs meets another of the options for SF code requirements. REC quotes will be updated to reflect the final energy model. REC cost per MWh is known to fluctuate, therefore final purchase price will be dependent on the current rate at time of purchase during construction.

6	1	7	Materials and Resources	Possible Points:	14	
Y	?	N				Conceptual Design Notes:
Y			Prereq 1 Storage and Collection of Recyclables			CAMPUS CREDIT
		5	Credit 1 Building Reuse—Maintain Existing Walls, Floors, and Roof		1 to 5	N/A
2			Credit 2 Construction Waste Management		1 to 2	Construction waste recyclers should be utilized to obtain a minimum 75% rate of diversion from the landfill for construction materials to meet SF code requirements.
		2	Credit 3 Materials Reuse		1 to 2	N/A
2			Credit 4 Recycled Content		1 to 2	The specifications for this project should include details for using construction materials with recycled content.
1	1		Credit 5 Regional Materials		1 to 2	The specifications for this project should include details for using construction materials with regional content. The 20% additional Maybe point is dependent on the sourcing of the concrete during construction.
1			Credit 6 Certified Wood		1	Utilizing FSC certified wood products for doors and casework, to have 50% of the wood materials represented by FSC materials, has an incremental cost but is typically not a large add to the project budget.

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8	4	0	Indoor Environmental Quality	Possible Points:	15	
Y	?	N				Conceptual Design Notes:
Y			Prereq 1 Minimum Indoor Air Quality Performance			This design requirements for this prerequisite are required by code.
Y			Prereq 2 Environmental Tobacco Smoke (ETS) Control			CAMPUS CREDIT
1			Credit 1 Outdoor Air Delivery Monitoring		1	To achieve this credit, mechanical system will include airflow monitoring at outside air units (per standard design practice) and CO2 monitoring in densely occupied spaces.
	1		Credit 2 Increased Ventilation		1	30% increased ventilation may be feasibly, but will be determined as mechanical design progresses.
1			Credit 3 Construction IAQ Management Plan—During Construction		1	A best practice construction IAQ management plan will be developed and implemented to help protect HVAC systems and absorptive materials from moisture or debris contamination, as well as to prevent high VOC product usage in the facility. This is mandated through SF code.
1			Credit 4.1 Low-Emitting Materials—Adhesives and Sealants		1	Per SF code, low-VOC adhesives will be included in the specifications, there is typically not a cost add for these products based on current market availability.
1			Credit 4.2 Low-Emitting Materials—Paints and Coatings		1	Per SF code, low-VOC paints/coatings will be included in the specifications, there is typically not a cost add for these products based on current market availability.
1			Credit 4.3 Low-Emitting Materials—Flooring Systems		1	Per SF code, CRI certified carpets will need to be utilized, as well as FloorScore certified manufactured hard flooring products. There may be some incremental cost for these products, but typically not significant.
1			Credit 4.4 Low-Emitting Materials—Composite Wood and Agrifiber Products		1	SF code requires urea formaldehyde-free composite wood products and laminating adhesives. Additionally, all products in this category must meet California Air Resources Board Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections
1			Credit 5 Indoor Chemical and Pollutant Source Control		1	The HVAC units will need to utilize MERV 13 filtration on the ventilation air and MERV 8 filters on the return (SF code), facility will need minimum 10' walk-off mats or systems at entrances, and copy machines will need to be in dedicated rooms with self-closing doors. This credit requires design and layout coordination, but typically not a large construction cost.
	1		Credit 6 Controllability of Systems—Thermal Comfort		1	Provide individual comfort controls for 50% of building occupants to enable adjustments to meet individual needs or preferences. Must purchase and/or install the mechanical system or operable windows to meet the requirements of this CS credit.
1			Credit 7 Thermal Comfort—Design		1	Facility will be designed for thermal comfort with temperature, humidity, and air-speed.
	1		Credit 8.1 Daylight and Views—Daylight		1	Daylight and views to be reviewed once project drawings are issued.
	1		Credit 8.2 Daylight and Views—Views		1	Daylight and views to be reviewed once project drawings are issued.

6	0	0	Innovation and Design Process	Possible Points:	6	
Y	?	N				Conceptual Design Notes:
1			Credit 1.1 Innovation in Design: Green Building Education		1	Facility can achieve this credit by having a comprehensive green building education program, including signage, website information, and potentially a kiosk or dashboard.
1			Credit 1.2 Innovation in Design: Green Housekeeping		1	Facility can utilize a green cleaning program that emphasizes nonharmful chemicals, and equipment that is less impactful to operations staff (noise, vibration, ergonomics). This will require coordination with operations staff / facility manager.
1			Credit 1.3 Exemplary Performance: MRc4 - Recycled Content		1	The project could achieve exemplary performance in recycled material content.
1			Credit 1.4 Exemplary Performance: SSc5.2 - Maximize Open Space		1	The project could achieve exemplary performance in maximize open space.
1			Credit 1.5 Exemplary Performance: EAc5 - Green Power		1	Achievement of exemplary performance in green power should be a reasonable cost, quote to be requested.
1			Credit 2 LEED Accredited Professional		1	The project will have several LEED professionals, and a team facilitating the sustainability process.

1	2	1	Regional Priority - Zip code 94158	Possible Points:	4	
Y	?	N				Conceptual Design Notes:
1			Credit 1.1 Regional Priority: SSc5.2 - Site Development - Maximize Open Space		1	A regional priority credit in open space should be feasible for the 30% open space anticipated for the project.
	1		Credit 1.2 Regional Priority: WEc3 - Water Use Reduction		1	40% water use reduction is not likely for the project, but still an option, pending WEc3.
		1	Credit 1.3 Regional Priority: EAc2 - On-site Renewable Energy		1	Any on-site renewable energy installed will likely not meet LEED requirements to achieve LEED points.
	1		Credit 1.4 Regional Priority: EQc8.1 - Daylight and Views - Daylight		1	A regional priority credit for daylight may or may not be feasible, to be reviewed with project drawings.

60	18	29	Total	Possible Points:	110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

10.7 – ALTERNATIVE STRATEGIES

10.7.1 - Solar Photovoltaic (PV) System

- Office Tower(s)
  The opportunity exists for a solar PV system to be installed on the office tower roofs; however, the extent of the system will likely not be large enough to achieve any LEED points for the on-site renewable energy credit.

10.7.2 - Educational Opportunities

- Campus Signage
  While signage options have yet to be discussed in detail, it is understood that technology is expected to be incorporated in some fashion.
- High Performance MEP Systems

10.8 - TENANT LEASE LEED GUIDELINES

The following credits being pursued by the Office Towers must be addressed in a Tenant Lease Agreement. LEED for Core and Shell requires certain credits to be specified in the tenant lease (shown in bold below). Additional credits will assist in the required LEED for Commercial Interiors certification as they will affect future building tenants.

- **SSc4.2: Bicycle Storage and Changing Rooms**
- **WEp1: Water Use Reduction**
- **WEc3: Water Use Reduction**
- **EAp2: Minimum Energy Performance**
- **EAp3: Fundamental Refrigerant Management**
- **EAc1: Optimize Energy Performance**
- EAc3: Enhanced Commissioning
- **EAc4: Enhanced Refrigerant Management**
- EAc5: Measurement and Verification
- **IEQp1:Minimum Indoor Air Quality Performance**
- **IEQp2: Environmental Tobacco Smoke Control**
- **IEQc1: Outdoor Air Delivery Monitoring**
- **IEQc2: Increased Ventilation**
- IEQc3: Construction Indoor Air Quality Management Plan
- **IEQc5: Indoor Chemical and Pollutant Source Control**
- **IEQc6: Controllability of Systems**
- IEQc7: Thermal Comfort
- IEQc8: Daylighting and Views

The Tenant Guidelines and/or Lease Agreements are typically drafted during the core and shell design phase. The document should be provided to future tenants during lease negotiations and must be provided prior to tenant design work.

Exhibit C-1

Transportation Efficiency Analysis

Golden State Warriors Event Center
Transportation Efficiency Analysis

		GSW Event Center and Mixed-Use Development at Blocks 29-32	Comparable Project(s)
Proof of comparable projects	Size	Event center and team facilities Approx. 580,000 GSF office Approx. 125,000 GSF retail	Event center and team facilities Approx. 580,000 GSF office Approx. 125,000 GSF retail
	Capacity	Approx. 18,000 seats (event center) Approx. 2,500 anticipated office and retail employees	Approx. 18,000 seats (event center) Approx. 2,500 anticipated office and retail employees
	Location Type	San Francisco infill area Superdistrict 3 Mission Bay Blocks 29-32	San Francisco infill area Superdistrict 3 Mission Bay Blocks 29-32
Project Descriptions	LEED Target	LEED Gold certification	LEED Silver arena, LEED Gold mixed-use buildings
	Parking	Approx. 950 total vehicle spaces - 5% carpool - Either 3% electric vehicle charging stations or 5% fuel-efficient vehicle spaces Approx. 500 total bike spaces	Approx. 1,270 vehicle spaces (Design for Development code requirement) Approx. 60 total bike spaces (Design for Development code requirement)
	Transit Service	Muni Special Event Transit Service Plan (TSP)	Standard transit system service (no TSP)
	Infrastructure	Mission Bay TMA designated shuttle stop Sponsored Bay Area Bike Share station Additional buffered bike lanes on 16th Street	No designated shuttle stop No bike share station No additional buffered bike lanes
	Transportation Demand Management (TDM)	Yes (robust strategy)	No

Mode Split - Event Patrons		GSW Event Center and Mixed-Use Development at Blocks 29-32, Basketball Event night (TSP/TDM in effect) (1)	GSW Event Center and Mixed-Use Development at Blocks 29-32, Basketball Event night (TSP/TDM NOT in effect) (1)		Variance due to TSP/TDM
	Auto	54%	70%		16% reduction in Auto trips
	Transit	35%	20%		15% increase in Transit trips
	Walk/Other	11%	10%		1% increase in Walk/Other trips
Mode Split - Daily FTEs and Visitors		GSW Event Center and Mixed-Use Development at Blocks 29-32, No event night (TDM in effect) (2)	San Francisco Guidelines for Visitor Trips, Superdistrict 3, All Non-Retail Uses (TDM NOT in effect) (1)	San Francisco Guidelines for Visitor Trips, Superdistrict 3, All Retail Uses (TDM NOT in effect) (1)	Variance due to TDM
	Auto	48%	57%	64%	12% reduction in Auto trips
	Transit	32%	19%	12%	17% increase in Transit trips
	Walk/Other	20%	25%	24%	4% increase in Walk/Other trips

(1) Adavant Consulting and LCW Consulting, *GS Warriors Trip Gen 2015 01 20 v3 - TSP vs no TSP*. Transmitted to the Golden State Warriors via email (February 9, 2015).
(2) Adavant Consulting and LCW Consulting, *Table 9*, Memorandum re: Travel, Parking, and Loading Demand Estimates for the Proposed Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 - Case No. 2014.1441E (November 26, 2014), 20.

Exhibit C-2
Except from Transportation Management Plan

CHAPTER 4. TRAVEL DEMAND MANAGEMENT

The purpose of the strategies described in this chapter is to increase the level of access to the project by transit, bicycling and walking while discouraging the use of private automobiles, particularly by solo drivers. The strategies identified in this chapter will be reviewed and refined both during the Event Center's first year of the project's completion and as new transportation facilities are developed in the project vicinity.

4.1 GENERAL TRANSPORTATION MANAGEMENT STRATEGIES

Measures that will be implemented to support all public transit, bicycle, and automobile reduction strategies include:

1. Appoint an Event Center Transportation Coordinator (ECTC) to: manage the transportation needs of employees and event attendees; provide information and education materials; implement and administer various TDM measures; coordinate with nearby employers; promote use of rideshare; encourage use of public transportation, Mission Bay TMA shuttles, and bicycles; conduct surveys to determine travel mode and other relevant information; and implement new strategies as needed to meet target auto mode share and reduce impacts to adjacent businesses and residents.

2. Develop means of in-building communication (radio, TV, smart phone app, etc.) that give Event.Center, office, or retail users multiple, real-time advisories about the status of the transportation system to facilitate convenient transportation choices that include availability of public transit and shuttle bus service, location and capacity of bike parking facilities, best walking paths, location of taxi stops, and limited extent of – or high price for – available parking.

3. Develop a crowd-sourced app that puts information on all transportation modes in the hands of event attendees with smart communication devices. This real-time information on travel conditions and travel times by mode will lead to a transportation system that will become increasingly more user optimized. The app will be free and available to anyone who wishes to download it, and will be useful for anyone working, living, or visiting the Mission Bay Area.

4. Provide extensive use of real-time transit info in public assembly areas that reflect the range of transit services in the area.

5. Install a machine to add value to Clipper Cards on-site.

4.2 EMPLOYEE TDM

The strategies described below are designed to limit employee auto mode split for weekday, peak-hour travel to no more than 48 percent.

4.2.1 Employee Public Transit Strategies

Measures that will be implemented to increase the use of public transit among employees of the office, retail, and event center uses on-site include:

1. Participate in Commuter Check Program, a federal program that allows employees to reduce their commuting costs by up to 40 percent using tax-free dollars to pay for their commuting expenses.

2. Notify employees that they are eligible to ride the Mission Bay TMA shuttles, and provide information about routes, stop locations, and schedule.

4.2.2 Employee Bicycle Strategies

Measures that will be implemented to increase the frequency and convenience of biking among employees of the office, retail, and event center uses on-site include:

1. Promote use of the indoor bicycle valet facility (approximately 300 bike spaces) at Bayfront Park.

2. Provide indoor secure bicycle parking facilities for employees in office buildings and retail uses on-site.

3. Provide outdoor bicycle storage/racks for Event Center and office or retail visitors.

4. Sponsor Bay Area Bike Share pod(s) in the project vicinity.

5. Provide shower and locker facilities in each on-site building for Event Center Development employee use.

6. Encourage all employees and guests to participate in public events that promote bicycling such as the annual "Bike to Work" day.

4.2.3 Employee Automobile Reduction Strategies

Measures that will be implemented to reduce the effects of employee vehicular traffic include:

1. Allow employees to work flexible schedules and telecommute, to the extent possible.

2. Support Ridesharing Program – Participate in free-to-employees ride-matching program through www.511.org.

3. Emergency Ride Home Program – Participate in ERH program through the City of San Francisco (www.sferh.org).

4. Organize and publicize promotions like Spare the Air days (as declared for the Bay Area region) or a Rideshare Week.

5. Encourage carpooling and vanpooling by designating/reserving some Event Center garage parking spaces for employees who use those modes.

4.2.4 Additional Strategies

1. Encourage employees to choose electric vehicles (EVs) over gas-fueled autos by designating/reserving some Event Center garage parking spaces for EVs and providing charging equipment.

2. Program additional on-site amenities (fitness and exercise centers, food and beverage options, automated banking resources) to encourage employees to stay on-site during the work day.

4.3 EVENT CENTER PATRON TDM

The strategies described below are designed to limit event patron auto mode split for weekday, peak-event travel (6:00 PM to 8:00 PM) to no more than 53 percent.

4.3.1 Patron Public Transit Strategies

Measures that will be implemented to increase the use of public transit among guests include:

1. Reward patrons arriving via transit with implementation options that may include discounted food or beverage, team or venue merchandise, raffle entry, or access to a "fast-track" security line. Market these incentives with a robust communications strategy prior to an event day so that guests can make choices accordingly.
2. Establish a partnership to brand Clipper Cards and/or transit stops and stations near the Event Center to encourage the mental association of event attendance with transit usage during attendee's trip planning process.
3. Promote transit access to project by: providing interactive trip-planning tool, transit maps, with recommended stops/stations for accessing site; best routes to the Event Center; and walking directions from transit stations/stops. Provide these on the Event Center web site, on websites of events taking place at the site (to be required as a standard part of event contract), and mobile app. Provide real-time transit information, including train or bus arrivals and departures, in key Event Center locations (exit areas, gathering areas, etc.) inside the building (on TVs and other screens) post-event.
4. Utilize TVs and other screens inside the Event Center building to display real time transit information and prominent comparisons between transportation choices available to fans, employees, and visitors to the Event Center Development. Emphasize transit's lower-cost, higher sustainability, and other beneficial factors as compared with private autos.
5. Play recorded announcements during halftime (for games) or between opening and main acts (for concerts), and as Event Center attendees exit the building, to notify guests of non-auto travel options home, including real time transit and shuttle departure times.
6. Provide additional communication of transit options and wayfinding during playoff games for non-season pass holders who may be coming from out of town by providing information to, and coordinating displays within, hotels and local businesses in the Event Center vicinity

4.3.2 Patron Bicycle Strategies

Measures that will be implemented to increase the frequency and convenience of biking among Event Center patrons include:

1. Promote use of the indoor bicycle valet facility (approximately 300 bike spaces) at Bayfront Park. Reward patrons of the bike valet with implementation options that may include discounted food or beverage, team or venue merchandise, raffle entry, or access to a "fast-track" security line. Market these incentives with a robust communications strategy prior to an event day so that guests can make choices accordingly.
2. Provide outdoor bicycle storage/racks for Event Center and office or retail visitors.
3. Sponsor Bay Area Bike Share pod(s) in the project vicinity.
4. Encourage all employees and guests to participate in public events that promote bicycling such as the annual "Bike to Work" day

5. Provide temporary outdoor bike valet parking areas in both major plazas for peak events that experience bicycle storage demands that exceed the 300 space indoor valet facility.
6. Provide a bicycle map, showing routes to the Event Center development site, on the Event Center web site and mobile app.

4.3.3 Patron Automobile Reduction Strategies

Measures that will be implemented to reduce the effects of visitor vehicular traffic include:

1. Increase fees for parking on-site above typical event center rates.
2. Design a "Getting There" page for the venue website that lists multi-modal options and comparisons before showing preferred driving routes or available parking.
3. Promote transit and bicycle information on event site website, event apps, and in event literature and advertisements, when appropriate.
4. Provide electronic message boards displaying upcoming event schedules to discourage auto use and parking on-site.
5. Designate priority curb areas on-site for taxis and rideshare vehicles. Explore partnership options with rideshare/carpool/TNC companies to offer discounts to event attendees.

4.4 SPECIAL EVENT TRANSIT SERVICE PLAN

This section summarizes a preliminary Transit Service Plan (TSP) for the Warriors Event Center and Mixed Use Development as outlined by the SFMTA in a presentation on October 1, 2014.

4.4.1 Service Plan Objectives

The key objective for the TSP is as follows:

- Provide high quality service to event goers, without affecting service reliability for other Muni customers
- Accommodate a 35 percent transit mode share for peak events.
- Develop a service plan that maximizes existing infrastructure and prioritizes operations efficiencies

4.4.2 Service Plan for Peak Event

The majority of regional transit riders will use Muni as a last-mile connection to the Event Center Development. Most Muni passengers will travel on the T 3rd southbound pre-event, and northbound post-event. The T 3rd service pre-event is expected to have excess capacity, while post-event excessive capacity will not be allocated from regular service, but rather will be served from additional trains and supplemental routes. The T 3rd service will be supplemented with bus service to respond to distributed customer demand, to minimize transfers made, and to minimize rail car demand. Inset 4-1 shows proposed routes for each of the supplemental shuttles. Supplemental bus routes include:

- T 3rd Supplemental Service
- Metro Shuttle via The Embarcadero

- 16th Street BART Station Shuttle
- Van Ness Avenue Shuttle
- Ferry Building / Transbay Terminal Shuttle

Inset 4-1 Supplemental Shuttle Routes

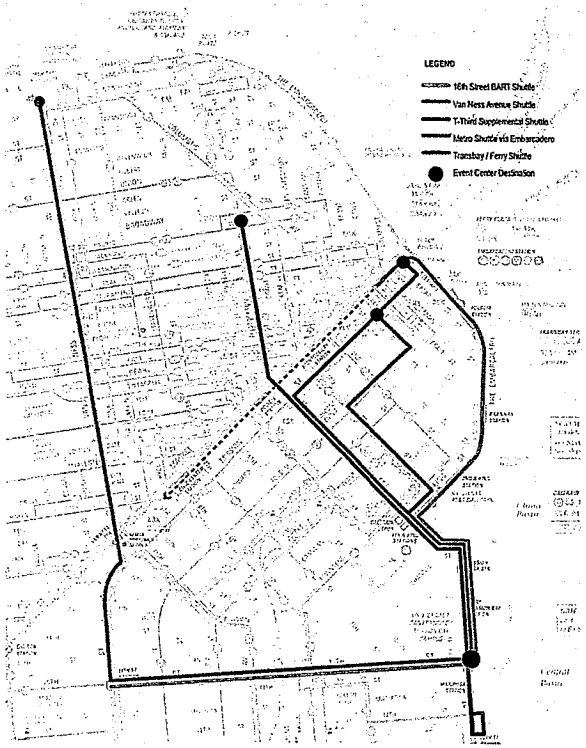


Table 4-1 summarizes the fleet of shuttle buses and light rail vehicles necessary for pre- and post-event scenarios.

Figure 4-1 shows the pre-event shuttle plan, including stop locations at the site. Figure 4-2 shows the post-event shuttle plan; including shuttle stop locations, staging areas, and temporary lane closers, which are discussed in more detail in Chapter 6.

TABLE 4-1: PRELIMINARY TRANSIT SERVICE PLAN FOR PEAK EVENT

SERVICE	FLEET NECESSARY	
	Pre-Event	Post-Event
T 3rd Supplemental Service	4 two car trains between Chinatown and Mission Bay Loop combined with 4 minute scheduled subway service	10 two car trains staged to clear event
Metro Shuttle via The Embarcadero	None – limited car availability	2 three car trains staged to clear event
16th Street BART Station Shuttle	4 articulated motor coaches operating between 16th Street BART and the arena every 7-8 minutes	4 articulated motor coaches + 1 standard motor coaches operating between 16th Street BART and the arena staged to clear event with half of vehicles returning for a second trip
Van Ness Avenue Shuttle	5 standard motor coaches operating every 12 minutes along the Van Ness corridor to arena via 16th Street	4 standard motor coaches operating to the Van Ness corridor via 16th Street staged to clear event
Ferry Building / Transbay Terminal Shuttle	6 standard motor coaches operating every 10 minutes via Ferry Plaza and the Transbay Terminal to the arena	6 standard motor coaches operating to Transbay Terminal and Ferry Building Plaza staged to clear event

Source: SFMTA (Oct. 1, 2014).

Exhibit D

ARB Acceptance of GHG Quantification Determination for Plan Bay Area

http://www.arb.ca.gov/cc/sb375/mtc_exec_order.pdf

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER G-14-028

Association of Bay Area Governments' (ABAG) and
Metropolitan Transportation Commission's (MTC)
Sustainable Communities Strategy (SCS)
ARB Acceptance of GHG Quantification Determination

WHEREAS, the Sustainable Communities and Climate Protection Act of 2008 ((Chap. 728, Stats. 2008) Senate Bill 375, or SB 375, as amended) requires each California Metropolitan Planning Organization (MPO), as part of its Regional Transportation Plan (RTP) planning process, to develop a Sustainable Communities Strategy (SCS) or an Alternative Planning Strategy (APS) that meets regional greenhouse gas (GHG) emission reduction targets (targets) set by the Air Resources Board (ARB or Board);

WHEREAS, SB 375 also recognizes ARB's target-setting responsibility as a recurring process, requiring ARB to update the targets every eight years and permitting target updates every four years;

WHEREAS, on September 23, 2010, the Board set targets for the ABAG/MTC region of 7 percent per capita reduction from 2005 by 2020, and 15 percent per capita reduction from 2005 by 2035;

WHEREAS, in March 2013, ABAG/MTC published a draft Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), known as Plan Bay Area, for 2040 that stated it would achieve the region's GHG targets with a 10 percent per capita reduction from 2005 by 2020 and a 16 percent per capita reduction from 2005 by 2035;

WHEREAS, ARB staff performed a technical evaluation of the SCS in the draft Plan Bay Area based on ARB's technical methodology for evaluating an SCS (published in July 2011);

WHEREAS, ARB staff's evaluation showed that ABAG/MTC used technical methodologies that would accurately quantify GHG reductions from the SCS in the draft Plan Bay Area;

WHEREAS, ARB staff evaluated key performance indicators that support ABAG/MTC's determination that the SCS in the draft Plan Bay Area would achieve the region's GHG targets;

WHEREAS, ARB staff's evaluation showed that ABAG/MTC's SCS in the draft Plan Bay Area, if implemented, would meet the GHG targets that the Board established for the region for 2020 and 2035;

WHEREAS, ARB staff presented an informational item on ABAG/MTC's SCS to the Board at its June 27, 2013 public meeting;

WHEREAS, during the public discussion of this item at its June 2013 meeting, the Board acknowledged that several of Plan Bay Area's Climate Policy Initiatives will provide useful data for future analysis;

WHEREAS, in response to comments from the public, stakeholders, ABAG Executive Board members, and MTC Commissioners, ABAG/MTC staff made minor modifications to the draft Plan Bay Area which did not significantly change the GHG emission reduction results;

WHEREAS, these proposed changes were presented at public meetings held by ABAG/MTC on June 14, 2013 and July 12, 2013;

WHEREAS, the ABAG Executive Board and MTC Commissioners adopted the final Plan Bay Area as revised at its public meeting on July 18, 2013;

WHEREAS, ABAG/MTC submitted the final Plan Bay Area containing the final SCS to ARB on January 6, 2014 and provided the final data table on February 18, 2014 in support of its GHG quantification determination of a 10 percent per capita reduction by 2020 and a 16 percent per capita reduction by 2035, as required by California Government Code section 65080(b)(2)(J)(ii);

WHEREAS, ARB staff reviewed both the draft SCS and subsequent modifications to the SCS contained in the adopted 2013-2040 Plan Bay Area;

WHEREAS, the modifications adopted by the ABAG Executive Board and MTC Commissioners as part of the final Plan Bay Area are minor, and do not change the underlying technical land use and transportation assumptions of the SCS or its GHG quantification methodology, and does not significantly change the GHG reduction results demonstrated by the draft SCS for 2020 and 2035;

WHEREAS, ARB staff's technical review of ABAG/MTC's GHG reduction quantification is contained in Attachment A, "Technical Evaluation of Greenhouse Gas Emissions Reduction Quantification for the Association of Bay Area Governments' and Metropolitan Transportation Commission's SB 375 Sustainable Communities Strategy" dated April 2014;

WHEREAS, section 65080(b)(2)(J)(ii) of the California Government Code calls for ARB to accept or reject the MPO's determination that the strategy submitted would, if implemented, achieve the GHG emission reduction targets established by the Board;

http://www.arb.ca.gov/cc/sb375/mtc_exec_order.pdf

WHEREAS, the California Health and Safety Code sections 39515 and 39516 delegate to the Board's Executive Officer the authority to act on behalf of the Board in this manner;

NOW, THEREFORE, BE IT RESOLVED that pursuant to section 65080(b)(2)(J)(ii) of the California Government Code, the Executive Officer hereby accepts ABAG/MTC 's quantification of GHG emissions reductions from the final SCS adopted by the ABAG Executive Board and MTC Commissioners on July 18, 2013, and the MPO's determination that the SCS would, if implemented, achieve the 2020 and 2035 GHG emission reduction targets established by ARB.

NOW, THEREFORE, IT IS ORDERED that ARB staff is directed to forward this executive order to the ABAG Executive Board, the MTC Commission, and the ABAG and MTC Executive Directors.

Executed at Sacramento, California, this 18th day of April 2014.

Richard W. Corey
Executive Officer

Attachment A:
"Technical Evaluation of Greenhouse Gas Emissions Reduction Quantification for the Association of Bay Area Governments' and Metropolitan Transportation Commission's SB 375 Sustainable Communities Strategy" April 2014

Exhibit E

Written Acknowledgement of Notice and Obligations

Office of Community Investment and Infrastructure
(Successor to the San Francisco Redevelopment Agency)

One South Van Ness Avenue
San Francisco, CA 94103
415.749.2400

EDWIN M. LEE, Mayor

Mara Rosales, Chair
Marily Mondejar
Darshan Singh
Miguel Bustos

Tiffany Bohee, Executive Director

February 11, 2015

126-0172015-014

David Kelly, Esq.
Golden State Warriors
1011 Broadway
Oakland, CA 94607

Re: Acknowledgement of the GSW Arena, LLC (GSW) Intent to Seek Certification Under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011

Dear Mr. Kelly:

The Office of Community Investment and Infrastructure of the City and County of San Francisco ("OCII"), as lead agency for the proposed Golden State Warriors Arena Project (the "Project") in San Francisco, California, acknowledges that it has been notified of GSW's intent to apply for certification of the Project as a "Leadership Project" under the Jobs and Economic Improvement through Environmental Leadership Act of 2011 (the "Act"). Public Resources Code section 21178 et seq.

OCII further acknowledges that, as part of the certification process, GSW is obligated to enter into an agreement with OCII establishing the requirements of Public Resources Code sections 21183(d), (e), and (f), and that the certification under the Act entitles the Project to streamlined environmental review and requires the lead agency to prepare an administrative record in accordance with the requirements of Public Resources Code section 21186.

As the Executive Director for OCII, I am authorized to make the above acknowledgement on behalf of OCII.

Sincerely,

Tiffany Bohee
Executive Director

February, 5, 2015

Tiffany Bohee
Office of Community Investment and Infrastructure ("OCII")
1South Van Ness Avenue, 5th Floor
San Francisco, CA 94103

Re: Event Center and Mixed-Use Development at Mission Bay Blocks 29-32

Dear Ms. Bohee:

I write on behalf of GSW Arena LLC ("GSW"), an affiliate of Golden State Warriors, LLC (which owns and operates the Golden State Warriors National Basketball Association (NBA) team), the project sponsor of that certain proposed event center and mixed-use development project located on Blocks 29-32 in the Mission Bay South Redevelopment Plan Area of San Francisco (the "Project"). GSW wishes to confirm to the Office of Community Investment and Infrastructure (OCII) in its capacity as the lead agency for the approval of the Project GSW's agreement to the following items, all of which are conditions of qualifying for the Project's treatment as a "leadership project" under the Jobs and Economic Improvement Through Environmental Leadership Act of 2011, as amended (The "Act") California Public Resources Code Sections 21178 et. seq. By this letter, GSW acknowledges and agrees to its obligations under the Act as set forth in California Public Resources Code Sections 21183 (d), (e) and (f).

Accordingly, as required by Public Resources Code § 21183(d), GSW agrees that all mitigation measures required pursuant to CEQA to certify the Project under the Act shall be conditions of approval, and those conditions will be fully enforceable by OCII or another agency designated by OCII. GSW agrees that all environmental mitigation measures required to certify the Project under the Act will be monitored and enforced by OCII for the life of the obligation.

As required by Public Resources Code § 21183(e), GSW agrees to pay the costs of the Court of Appeal in hearing and deciding any case, including payment of the costs for the appointment of a special master if deemed appropriate by the court, in a form and manner specified by the Judicial Council, as provided in the Rules of Court adopted by the Judicial Council pursuant to the Act.

GOLDEN STATE WARRIORS • NATIONAL BASKETBALL ASSOCIATION
1011 Broadway • Oakland, CA 94607-4019
510.986.2200 • 1-888-GSW-HOOP • warriors.com

As required by Public Resources Code § 21183(f), GSW agrees to pay the costs of preparing the administrative record for the Project, in a form and manner specified by OCII, concurrent with review and consideration of the Project pursuant to CEQA and the Act.

In entering into this letter agreement, GSW acknowledges and agrees that this agreement will have no impact on the on-going process under the California Environmental Quality Act (CEQA). In order to comply with CEQA and give the public and decision-makers the opportunity to be aware of the environmental consequences of the Project, and to fully participate in the CEQA process, the Parties acknowledge that OCII has no obligation to approve, and GSW has no obligation to develop, the Project unless and until the Parties have negotiated, executed and delivered mutually acceptable agreements based upon information produced from the CEQA environmental review process and any other public review and hearing processes, subject to all applicable governmental approvals. OCII retains the absolute, sole discretion to: (1) modify the Project as OCII may, in its sole discretion, deem necessary to comply with CEQA; (2) select other feasible alternatives and/or impose mitigation measures to avoid or minimize significant environmental impacts, which this agreement; (3) balance the benefits of the Project against any significant environmental impacts prior to taking final actions, if such significant impacts cannot otherwise be avoided; and/or (4) determine not to proceed with the Project.

GSW Arena LLC

By: _____
Its: General Counsel

Acknowledged and Agreed to by:

Tiffany Bohee, Director of
Office of Community Investment and Infrastructure

cc: City of San Francisco Dept. of City Planning

101875308.5

Exhibit F

Wage and Investment Documentation

Mortenson | CLARK
180 Howard Street, Suite 1200
San Francisco, CA 94105
CA License No. 996476

February 12, 2015

Golden State Warriors
Attn: David Kelly

Re: Golden State Warriors
Event Center and Mixed-Use Development

Per your request, we are confirming published prevailing wage information for select field craft labor anticipated to work on the Golden State Warriors Event Center and Mixed-Use Development in Mission Bay, San Francisco. We intend to contract with contractors and to pay wages as negotiated through appropriate collective bargaining agreements for non-artisan on site craft labor These wages are anticipated to meet or exceed the prevailing wages for job classifications as set forth by California's Department of Industrial Relations ("DIR").

Below is a subset of job classifications and median journeyman wages from the DIR Database for 2014-2 that will comprise a majority of the non-artisan on site construction jobs created by the project:

Trade Classification	2014-2 Rates
Construction Laborer (Group 3) - Area 1	$48.27
Carpenter - Area 1	$68.07
Cement Mason and Concrete Finisher	$53.66
Electrician - Inside Wireman	$87.73
Operating Engineer - Group II	$66.70
Plumber	$108.44
Sheet Metal Worker	$91.64
Steel Erector - Group II	$68.31

These values represent base wages plus health and welfare and other employer paid benefits for San Francisco County based on the SFR-2014-2 Determination.

These rates were developed using the published information from the 2014-2 general prevailing wage journeymen determinations made by the Director of DIR.

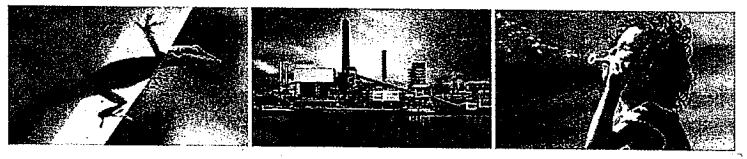
If you have any questions, please let me know.

Sincerely,
Mortenson/Clark, a Joint Venture

Steven J. Dell'Orto
Senior Vice President

Exhibit G

Greenhouse Gas Emissions Methodology



Application for CEQA Streamlining: GHG Emissions Methodology and Documentation

Event Center and Mixed-Use Development
Mission Bay South Redevelopment Plan Area Blocks 29-32,
San Francisco, California

Prepared for:
Golden State Warriors, LLC
Oakland, California

Prepared by:
ENVIRON International Corporation
San Francisco, California

Date:
February, 2015

Project Number:
03-31144A

ENVIRON

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Acronyms and Abbreviations

AB32:	(California) Assembly Bill 32 (Nuñez)
AB900:	(California) Assembly Bill 900 (Buchanan)
ACC:	Advanced Clean Cars
ARB:	(California) Air Resources Board
BART:	Bay Area Rapid Transit
BTU:	British Thermal Unit
BAAQMD:	Bay Area Air Quality Management District
CalEEMod®:	California Emissions Estimator Model
CAPCOA:	California Air Pollution Control Officers Association
CEC:	California Energy Commission
CEQA:	California Environmental Quality Act
CFR:	Code of federal regulations
CH_4:	Methane
CO_2e:	Carbon dioxide equivalents
DU:	dwelling unit
Draft EIR:	Draft Environmental Impact Report
EIR:	Environmental Impact Report
g/hp-hr:	gram per horsepower-hour
g/mile:	gram per mile
g/s:	gram per second
GHG:	Greenhouse Gases
GSF:	gross square foot
GSW:	Golden State Warriors
GWP:	Global warming potential
kBTU:	thousand British thermal units
kWh:	kilowatt-hour
m:	meter
miles/day:	miles per day
mph:	miles per hour
Mgal:	million gallons
MT:	metric tonne

N_2O:	Nitrous oxide
NBA:	National Basketball Association
NOP:	Project Notice of Preparation
PG&E:	Pacific Gas and Electric Company
PRC	Public Resources Code
RPS:	Renewable Portfolio Standard
SB743:	(California) Senate Bill No. 743 (Steinberg)
SOV:	single occupancy vehicle
sq ft:	square foot
tons/day:	tons per day
USEPA:	United States Environmental Protection Agency
g/veh-hr:	grams per vehicle-hour
WetCat:	Water Energy Team of the Climate Action Team
VMT:	vehicle miles traveled
yr:	year

1. Introduction

The Event Center and Mixed-Use Development Project located on Blocks 29-32 within the Mission Bay South Redevelopment Plan Area of San Francisco (herein referred to as the "Project") has applied for California Environmental Quality Act (CEQA) judicial streamlining under Public Resources Code (PRC) Section 21178 et seq. In support of the Application, ENVIRON quantified both direct and indirect greenhouse gas emissions associated with the Project's operation, including ongoing emissions reductions associated with transportation and building energy use, to show the Project meets the requirement for no "net additional emission of greenhouse gases [GHG], including greenhouse gas emissions from employee transportation" [California PRC §21183(c)].

ENVIRON quantified potential emissions for the Project as well as those associated with the existing uses at the Oracle Arena and the Golden State Warriors (GSW) Headquarters and practice facility in Oakland to calculate the net GHG emissions associated with the Project. ENVIRON also quantified emissions reductions associated with internal trip capture made possible by the immediately adjacent office and retail uses and sustainability components of the newly constructed office, as described in Section 3 of this methodology document. Lastly, ENVIRON quantified the Project's one-time emissions due to construction. This document summarizes of the assumptions and calculation methodologies ENVIRON used to estimate GHG emissions.

Throughout this report, GHG emissions are reported in units of metric tons of carbon dioxide equivalents (MT CO_2e). Carbon dioxide equivalents are emissions of carbon dioxide, methane (CH_4), and nitrous oxide (N_2O), weighted by the global warming potentials (GWP) from Title 40 of the Code of Federal Regulations (CFR), Part 98, Table A-1, as referenced by the California Mandatory Reporting Rule for GHG (Title 17 of the California Code of Regulations, §§95100-95158). GHG emissions are quantified for this Project, existing uses at the Oracle Arena and the current GSW Headquarters in Oakland, and one-time emissions associated with construction.

1.1. Project

The Project on Blocks 29-32 consists of development of a new arena for the National Basketball Association (NBA) team the Golden State Warriors (GSW), who currently play at the Oracle Arena in Oakland, California. Currently, the Project site is used for surface parking. As described in the Application for judicial streamlining, there are immediately adjacent office and retail land uses. The calculations of the GHG emissions for the Project include emissions associated with the event center and reductions associated with transportation and building energy use. Table 1 shows the proposed land uses at Mission Bay Blocks 29-32.

Table 1. Project Land Uses at Mission Bay Blocks 29-32

Land Use	Square Footage
Event Center	750,000
GSW Office Space	25,000
Office Space	580,000
Retail Space[1]	125,000
Parking and Loading	234,411

Notes:
[1] Proposed retail uses are approximately 51,500 GSF sit-down restaurant, 11,000 quick-service restaurant, and 62,500 GSF soft goods retail including food retail.

The GSW are assumed to play 47 games per year at the Mission Bay Event Center, which is the number of pre-season, regular season, and post-season home games in the 2013-2014 season. This represents an average good year as the GSW made the first round of playoffs (including 3 pre-season home games). Home games can range from a minimum of 43 (including 2 pre-season games) to a maximum of 60 (including 3 pre-season games and 16 post-season games) if the GSW continue through a seven-game championship.

Currently, construction of the Project is scheduled to be completed in late 2017. Thus, for the purposes of this analysis the first operational year of the Project is assumed to be 2017. A GHG emissions inventory is also presented for each year from 2017 to 2035. From 2017 to 2035, emissions change each year due to the phase-in of the Renewable Portfolio Standard from 2017 to 2020 and CO_2e emission factors resulting from an improved vehicle fleet as documented by ARB guidance for AB900 projects.

1.2. Oracle Arena and GSW Oakland Headquarters

The current GSW Headquarters are located at 1011 Broadway in Oakland, California. The calculations of potential Project GHG emissions at the Mission Bay Event Center would deduct a portion of the existing GHG emissions from the Oracle Arena and the existing GSW Headquarters from the future GHG calculations. The portion deducted is associated with the relocation of all the GSW games, the GSW Headquarters and practice facility in Oakland, and fifty percent (50%) of the non-GSW events currently taking place at the Oracle Arena, as described in the Application.

Methodologies for quantifying GHG emissions associated with all events at the Oracle Arena and the existing GSW Headquarters in Oakland are presented in Section 2. Methodologies for quantifying GHG emissions associated with the Mission Bay Event Center, emission reductions due to the Project, and emissions from the remaining 50% of non-GSW events at Oracle Arena are presented in Section 3.

Table 2. Oracle Arena and GSW Headquarters Land Uses

Location	Square Footage
Oracle Arena	approx. 500,000
GSW Headquarters (management offices and practice facility)	16,000[1]

Notes:
[1] Greenhouse gas emissions associated with the GSW Headquarters are based on actual consumption data and not the building square footage.

1.3. One-Time Emissions

Construction of the Project will generate "one-time" emissions, that is, discrete emissions that are not associated with ongoing Project operation. These emissions are quantified and disclosed for the Project. Methodologies for quantifying construction GHG emissions are detailed in Section 4.

1.4. Emissions Sectors

For the Project in Mission Bay and the Oracle Arena and GSW Oakland Headquarters, emissions are quantified and presented for the following sectors:

Table 3. Emissions Sectors

Sector	Description
Energy	Emissions from purchased electricity and natural gas
Mobile sources	Emissions from on-road vehicle traffic
Waste	Emissions from solid waste treatment
Water	Indirect GHG emissions from the treatment and delivery of fresh water and wastewater treatment
Area sources	Emissions from landscaping equipment
Stationary Sources	Emissions from emergency generators at the Project

Detailed calculations of one-time emissions associated with construction and emissions in the above sectors are presented in **Exhibit H: Greenhouse Gas Emissions Calculations** of the Application.

2. Oracle Arena and GSW Oakland Headquarters Operational Emissions

The estimated GHG emissions from Oracle Arena and GSW Oakland Headquarters operations at the existing site are shown in Table 4. Total GHG emissions are 14,930 MT CO_2e/year, with 14,304 MT CO_2e/year originating at the Oracle Arena and the remaining 625 MT CO_2e/year from the GSW Headquarters (numbers do not add to 14,930 MT CO_2e/year due to rounding). The GSW provided site-specific data for energy use and transportation, as described in the respective subsections below. For both land uses, mobile sources are the largest contributor of GHG emissions, followed by energy use.

Table 4: Oracle Arena and GSW Oakland Headquarters 2017 GHG Emissions

GHG Emissions [MT CO_2e/year]	Emission Source					
	Energy	Mobile	Area	Waste	Water	Total
Oracle Arena (47 games and 42 events)	1,413	12,284	0.010	91	517	**14,304**
GSW Headquarters	258	365		2	1	**625**
Total	1,671	12,648	0.010	92	518	**14,930**

No stationary sources such as emergency generators are considered for the Oracle Arena and GSW Oakland Headquarters. This is a conservative approach.

The GHG emissions from energy use and mobile sources were evaluated between 2017 and 2035. Detailed calculations for the Oracle Arena and GSW Oakland Headquarters emission calculations are in **Exhibit H: Greenhouse Gas Emissions Calculations** of the Application.

2.1. Energy

Energy emissions from Oracle Arena and GSW headquarters land uses were estimated using similar methodology to that of the California Air Resources Board (ARB) in evaluating GHG emissions from the Apple Campus 2 project in Cupertino, California ("ARB Determination for Apple Campus 2").[1] The ARB emissions methodology was developed to assess GHG emissions in support of a CEQA judicial streamlining application under California Assembly Bill 900 (AB900). The energy emissions estimates consider emissions from two processes, electricity generation and natural gas combustion, with further details in Section 2.1.1 and 2.1.2 below.

2.1.1. Electricity

Determining GHG emissions from electricity generation requires an emission factor correlating MWh of electricity consumed to MT CO_2e. The emission factor for GHG from electricity production for customers of the Pacific Gas and Electric Company (PG&E) is based on the

[1] ARB. 2011. Attachment A to letter from Lynn M. Terry to Ken Alex. June 14. Available online at http://opr.ca.gov/docs/ARBDeterminationAppleCampus2.pdf

PG&E report "Greenhouse Gas Emission Factors: Guidance for PG&E Customers."[2] All calculations use the PG&E 2017 through 2020 emission factors for electricity production. The CH_4 and N_2O emission factors are the same as those used in the California Air Pollution Control Officers Association (CAPCOA)-developed model for land uses, California Emissions Estimator Model, version 2013.2.2 (CalEEMod®).[3]

Electricity demand for the Oracle Arena is estimated based on historical CalEEMod® energy intensities for the Arena land use, which reflect 2005 Title 24 standards. The GSW provided historical actual electricity usage data for the GSW Headquarters.

Emissions from electricity use are the product of the historical annual electricity use and the GHG emission factor.

2.1.2. Natural Gas

Emission factors for CO_2, CH_4, and N_2O from natural gas combustion were taken from CalEEMod®.

Natural gas demand for the Oracle Arena is estimated based on historical CalEEMod® energy intensities for the Arena land use, which reflect 2005 Title 24 standards. As Oracle Arena was originally opened in 1966 and last renovated in 1997, it is likely that energy use is underestimated here. Natural gas demand for the GSW Headquarters is based on historical actual usage data provided by the GSW.

Emissions from natural gas use are the product of the historical annual natural gas use and the GHG emission factors from CalEEMod®.

2.2. Mobile Sources

Mobile source emissions for the Oracle Arena and GSW headquarters are considered separately for GSW Headquarters employees, Oracle Arena employees, and spectators at the Oracle Arena, as discussed in the subsections below. Trip rate estimates are based on staff and spectator head counts. Trip lengths are the default values from CalEEMod® except for event spectator trips, which are longer, as discussed below. CO_2e emission factors are from the ARB guidance document "Statewide Emission Factors For Use With AB900 Projects."

[2] Pacific Gas and Electric Company. 2013. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. April. Available online at: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

[3] CalEEMod® calculates annual GHG emissions which can be used in support of analyses in environmental documents such as Environmental Impact Reports (EIRs) and Negative Declarations used to support a California Environmental Quality Act (CEQA) evaluation. CalEEMod® utilizes widely accepted models for emission estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the United States Environmental Protection Agency (USEPA) AP-42 emission factors, California Air Resources Board (ARB) onroad and offroad equipment emission models such as the EMission FACtor 2011 model (EMFAC2011) and the Offroad Emissions Inventory Program model (OFFROAD), and studies commissioned by California agencies such as the California Energy Commission (CEC) and Calrecycle. Available at: http://www.caleemod.com/

2.2.1. Employee Trips

ENVIRON estimated GHG emissions from employees working at the GSW Headquarters and as part of non-event operations at the Oracle Arena. The actual count of full-time employees (not including vendor and event staff on event days) at the Oracle Arena was used.[4] The number of employees at the GSW Headquarters in Oakland was based on the Project Notice of Preparation (NOP) from November 2014.

Bay Area Census data from 2013 show that 78% of commuters drive to work, the employee driving rate assumed for Oracle Arena staff.[5] The Bay Area Census data also show that the single occupancy vehicle (SOV) rate is 86% and the average local carpool rate is 14%, so 14% of Oracle Arena employees were assumed to carpool in 2-person carpools. The GSW provided a driving rate of 85% for the Headquarters employees. The GSW also provided a carpool rate of 6%, assumed to be of 2-person carpools.

Employees were assumed to take one round-trip commute trip and one round-trip non-commute trip per day. The CalEEMod® default trip length of 9.5 miles was used for the employee commute trips. The non-commute trip length is assumed to be 3 miles.

The emissions for employee trips are the product of employee trips per year, length per trip, and the ARB CO_2e emission factor.

2.2.2. Spectator Trips

The GSW provided average count of game and non-game event spectators. The trip length for all spectators (game and non-game event) was developed based on the zip codes of GSW season ticket-holder addresses. The trip length of 25 miles used for event spectators is the weighted-average of distances to each Bay Area county represented by the season ticket-holder addresses.

The GSW estimated that 2,000 of the total spectators per game event took public transit or taxis. In the absence of survey or public transit data, ENVIRON assumed the count of single-occupancy vehicles and 3-person carpools based on the capacity of the Oracle Arena parking lot. About four times as many spectators attend events as there are parking spaces. Of the spectators driving to game events, ENVIRON assumed that 20% of spectators drive in single-occupancy vehicles while the remaining spectators drive in carpools of 3 people. ENVIRON also conservatively assumed that all non-game event spectators drive, and that 20% of these spectators drive in single-occupancy vehicles while the remaining carpool at a density of 3 people per vehicle.

[4] City of Oakland. 2014. Oakland Coliseum Area Specific Plan Draft Environmental Impact Report, Volume II. Available online at: http://www2.oaklandnet.com/Government/o/PBN/OurOrganization/PlanningZoning/OAK048830

[5] Bay Area Census. 2013. Selected Census Data from the San Francisco Bay Area. Available online at http://www.bayareacensus.ca.gov/bayarea.htm

The emissions for event spectator trips are the product of spectator trips per year, trip length, and the ARB CO_2e emission factor.

2.2.3. Vendor and Event Staff Trips

Event staff are those employees who work only on game days and for non-game events at the Oracle Arena. Vendors are contractors who provide services at games and non-game events. The annual number of vehicle trips by vendor and event staff is based on number of vendors at each event and total number of event days per year.

Vendors and event staff are assumed to drive and carpool at the average local rates in the Bay Area Census data, that is, a driving rate of 78% and a carpool rate of 14%. Carpools are assumed to be of 2 people per vehicle.

The trip length for vendor and event staff trips, 9.5 miles, is the default commercial-work trip length in CalEEMod® for the Bay Area.

The emissions for vendor and event staff trips are the product of employee trips per year, trip length, and the ARB CO_2e emission factor.

2.2.4. Opposing Team Bus Trips

Typically, the opposing team visiting to play against the GSW stays in a hotel in San Francisco. The opposing team takes a bus to the Oracle Arena for each game, a trip of approximately 17.5 miles. On average, there are 1.5 bus trips per game based on information from the GSW.

The emissions for opposing team bus trips are the product of opposing team bus trips per year, trip length, and the ARB CO_2e emission factor for the fleet mix.

2.2.5. Delivery Trips

On average, there are about 8 deliveries per work day to the GSW Headquarters. The trip length for delivery trips is 7.3 miles, the default commercial-nonwork trip length in CalEEMod®.

The emissions for delivery trips are the product of delivery trips per year, trip length, and the ARB CO_2e emission factor.

2.3. Waste

Solid waste treatment releases GHG, primarily methane, as a result of decomposition. The ARB developed an emission factor for CO_2e from solid waste disposal in the ARB Determination for Apple Campus 2.[6] ENVIRON uses the same emission factor in this analysis, and shows its derivation in **Exhibit H: Greenhouse Gas Emissions Calculations** of the Application. The GHG emission factor for waste is 0.155 MT CO_2e/MT waste.

The annual waste generation rate for the Oracle Area on a square footage basis is 1.29 tons/1000 square feet per year, based on the Sacramento Entertainment and Sports Center & Related Development EIR cited in the GSW Event Center November 2014 NOP. GHG

[6] California Air Resources Board. 2012. Email between Webster Tasat of the California Air Resources Board and Catherine Mukai of ENVIRON, 20 November 2012.

emissions from solid waste at the Oracle Arena are the product of the amount of waste generated per year and the CO_2e emission factor for solid waste.

The GSW provided an estimate for the amount of solid waste generated at the GSW Headquarters as well as the amount of diverted waste. GHG emissions from GSW Headquarters-generated solid waste are the product of the amount of waste generated per year less the amount diverted and the CO_2e emission factor for solid waste.

2.4. Water

Water treatment and transport results in indirect emissions of GHG. In the ARB Determination for Apple Campus 2, ARB developed a CO_2e emission factor for water use based on a study by the University of California on behalf of the California Public Utilities Commission and the California EPA's Water Energy Team of the Climate Action Team (WetCat). The emission factor accounts for emissions from fresh water supply, treatment, distribution, and wastewater treatment. The GHG emission factor for water use is 2.255 MT CO_2e/Mgal.

The water use rate for the Oracle Arena is based on data from the "Commercial and Institutional End Uses of Water" report by the American Water Works Association Research Foundation.[7] The use rate is multiplied by the square footage of the Oracle Arena to get the usage in gallons per year. The GSW provided the annual water use for the GSW Headquarters.

GHG emissions from water usage are the product of water used per year and the CO_2e emission factor for water use.

2.5. Area Sources

The Project includes area sources such as landscaping equipment. GHG emissions from area sources were estimated using CalEEMod® based on the type and size of land uses associated with the Oracle Arena and the GSW Oakland Headquarters.

[7] American Water Works Association Research Foundation. 2000. Commercial and Institutional End Uses of Water.

3. Project Operational Emissions

The estimated Project GHG emissions from future operations at the Project site at full build-out are shown in Table 5. Total GHG emissions in the first operational year, 2017, are 19,133 MT CO_2e/year, with 18,384 MT CO_2e/year originating from the new Event Center at Mission Bay and 2,939 MT CO_2e/year from remaining events at Oracle Arena. Credits due to Energy Efficiency and Trip Linking account for a reduction of 2,008 MT CO_2e/year. For all land uses, mobile sources are the largest contributor of GHG emissions, followed by energy use.

Table 5: Project GHG Emissions in 2017 (MT CO2e/year)

GHG Emissions [MT CO_2e/year]	Emission Source					
	Energy	Mobile	Area	Waste	Water	Generators
Oracle Arena (21 events)	333	2,242	0.0023	21	122	-
Mission Bay Event Center (47 games and 161 events)	748	16,741	0.014	136	23	106
GSW Office Space	74	104	0.00047	4.6	0.66	
Parking and Loading	446	-	0.0090	-	-	
Credit due to Energy Efficiency	-646	-	-	-	-	-
Credit due to Trip Linking	-	-1,362	-	-	-	-
Sub-Total	956	17,726	0.026	162	145	106
Total	**19,095**					

The GHG emissions from energy use and mobile sources associated with the Project were evaluated at full build-out between 2017 and 2035. Credits due to energy efficiency and trip linking are also calculated for these years, as discussed below.

ENVIRON calculated the Project emissions using largely the same methodology as described in Section 2. There are additional sources of GHG emissions in the Project, namely stationary sources, which are discussed in Section 3.6.

Detailed calculations for Project emissions are in **Exhibit H: Greenhouse Gas Emissions Calculations** of the Application.

3.1. Energy

The energy emissions estimates consider emissions from two processes, electricity generation and natural gas combustion.

Project emissions from electricity are the sum of the emissions from the new event center, the GSW office space, and the Oracle Arena. Though the Oracle Arena will no longer host GSW games, it is assumed that approximately 50% of the non-game events will still occur at the Oracle Arena, or 24% of a typical year's game and non-game events will still occur at the Oracle Arena. Thus, emissions calculations for the remaining non-game events at Oracle Arena use a 24% scaling factor to account for this reduction in number of events. An emission reduction from the electricity use of the Office Tower is also applied; this is discussed further below.

3.1.1. Electricity

The GHG emission factors for electricity use change over time due to the California Renewable Portfolio Standard (RPS), a program designed to meet statewide GHG reduction targets. The RPS requires grid electricity to come from 33% renewable sources by 2020. ENVIRON used emission factors for 2017 through 2020 for electricity from the PG&E report "Greenhouse Gas Emission Factors: Guidance for PG&E Customers."[8] The PG&E emission factors for electricity production range between 0.158 and 0.131 MT CO_2e/MWh between 2017 and 2020.

SSR, Sustainable Design and LEED consultants to the GSW, provided the electricity demand for the Event Center. Emissions from arena electricity use are the product of the energy demand rate and the GHG emission factor.

Emissions from electricity use at the Oracle Arena were calculated using the same methods described in Section 2; however, annual electricity use was scaled down to 24% of the existing arena. This scaling accounts for the percentage of total events that will continue to occur at the Oracle Arena.

Finally, the proposed office towers of the Project will generate lower GHG emissions due to greater building energy efficiency associated with the LEED Gold certification when compared to a similarly sized office buildings that are code-compliant. Emission reduction credits from the office electricity use are calculated by subtracting the code-compliant office energy emissions from the immediately adjacent office energy emissions. Code-compliant office energy emissions were calculated in CalEEMod® assuming 2013 Title 24 standards. Immediately adjacent office energy emissions were calculated by multiplying the annual electricity use by the PG&E emission factor.

3.1.2. Natural Gas

As was done in the Oracle Arena and GSW Oakland Headquarters calculations, emission factors for CO_2, CH_4, and N_2O from natural gas combustion were taken from CalEEMod® defaults. SSR, Sustainable Design and LEED consultants to the GSW, provided the natural gas demand for the Event Center. Emissions from the Event Center and GSW office space natural gas use are the product of the natural gas demand rate and the GHG emission factor.

[8] Pacific Gas and Electric Company. 2013. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. April. Available online at http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

Finally, emissions from natural gas use at the Oracle Arena were calculated using the same methods described in Section 2; however, annual natural gas use was scaled down by 24%. This scaling accounts for the percentage of total events that will continue to occur at the Oracle Arena.

3.2. Mobile

Mobile source emissions for the Project are based on daily vehicle trip data provided by Adavant Consulting, the traffic consultant for the Project. One-way vehicle trips are provided separately at the Mission Bay Event Center for weekdays and weekends, and for various event scenarios: no events, basketball game event, and convention event. ENVIRON assumed the number of home games (assumed to be the same as the 2013-2014 season, 47) are distributed evenly between weekdays and weekends over a year. Trip generation associated with 45 concerts and 55 family shows distributed throughout the year is approximated by the basketball event scenario (assumes 55 events occur on weekends and 45 occur on weekdays). 61 convention events in a year are assumed to occur on weekdays, while the remaining days (157) are assumed to be "no event" days.

The one-way trip length to the Event Center is conservatively assumed to be 25.2 miles, which is based on addresses of GSW season ticket holders. The average length of a trip to the GSW office, 8 miles, is the average CalEEMod default value for offices.

Oracle Arena trips to account for non-game events that will still take place at that arena are calculated similarly to the calculations described in Section 2; however, a 50% scaling factor is applied to the spectator, vendor, and event staff trips to account for 50% of the non-game events (or 24% of total events) that will take place there.

CO_2 emission factors are from ARB's Statewide Emission Factors For Use With AB900 Projects. The emissions for each event scenario are the product of vehicle trips per year, trip length, and weighted CO_2 emission factor.

Finally, the retail trips associated with the Project will result in lower GHG emissions due to internal trip capture when compared to trips generated by retail use of the same size that is not immediately adjacent to an event center. Emission reduction credits from retail trip linking are calculated by determining the difference in retail trips with and without internal trip capture. The difference can be seen in the Adavant Consulting traffic data for no event days versus event days. Emission credits were calculated by multiplying the annual reduction in vehicle miles traveled (VMT) due to internal trip capture and the CO_2 emission factor.

3.3. Waste

Emissions from the transport and processing of solid waste were calculated using solid waste generation rates were obtained from the Sacramento Entertainment and Sports Center & Related Development Environmental Impact Report (EIR) for the event center, GSW offices, and untransferred events at the existing Oracle Arena, as cited in the November 2014 NOP. Waste emissions were calculated using the same methods described in Section 2. A scaling factor of 24% was applied to waste emissions from the existing Oracle Arena to account for reduction in number of events.

3.4. Water

As in the Oracle Arena and GSW Oakland Headquarters calculations, emissions are estimated from the energy use associated with the supply, treatment, and distribution of water, as well as wastewater treatment. The emission factor described in the calculation methodology in Section 2 was also used for this Project calculation.

Project water use includes event center and GSW office water use, water used for landscaping, and facility washdown and cleaning; these usage rates were provided by the Project Water Demand Memorandum dated November 14, 2014. Water use emissions also include those from the existing Oracle arena, scaled to 24% of the original value to include only untransferred events.

Emissions from water use are the product of the water use rate for each of the components described above and the emission factor.

3.5. Area Sources

The Project includes area sources such as architectural coatings and landscaping equipment. GHG emissions from area sources were estimated using CalEEMod® based on the type and size of land uses associated with the Oracle Arena and the GSW Oakland Headquarters.

3.6. Stationary Sources

Operation of standby emergency engines will result in direct emissions of GHGs. The Project includes the installation of two 1,500 kW diesel generators at the arena. Emissions are calculated as a product of engine horsepower, a CO_2 emission factor of 526 g/hp-hr based on AP-42 for large stationary diesel engines, and a limit of 50 hours of operation for routine maintenance and testing by the Bay Area Air Quality Management District (BAAQMD).

4. One-Time Emissions

The one-time emissions from Project construction are shown in Table 6. Project construction will span 24 months, with total GHG emissions summing to 10,066 MT CO_2e. Detailed calculations for the one-time emissions due to construction are in **Exhibit H: Greenhouse Gas Emissions Calculations** of the Application.

Table 6: Construction Emissions

Emission Source	GHG Emissions [MT CO_2e/yr]		
	Year 1	Year 2	Total
Offroad Equipment	3,997	1,358	5,355
Construction Trips	2,355	2,355	4,711
Total by Year	**6,352**	**3,714**	**10,066**

4.1. Construction

Greenhouse gas emissions from construction of the Project include emissions from offroad equipment and construction trips. Construction phasing was provided by the Project construction contractor.

4.1.1. Offroad Equipment

Project-specific construction equipment inventories that include details on the type, quantity, construction schedule, and hours of operation anticipated for each piece of equipment for each construction phase were provided by the GSW Construction Team, as shown in Table 3: Construction Equipment List in **Exhibit H** of the Application. ENVIRON estimated GHG emissions from construction equipment using methodologies consistent with CalEEMod®. Specifically, emissions are the product of the equipment horsepower, total hours of operation, load factor, and CO_2 emission factor.

4.1.2. Construction Trips

GHG emissions from on-road construction trips were calculated using the total number of truck and worker trips provided by the GSW Construction Team, as shown in Table 5: Project Construction Trip Estimates in **Exhibit H** of the Application, and emission factors from ARB's EMission FACtor model (EMFAC2011) model. For haul trucks, a 20-mile one-way trip length was used, based on CalEEMod® default truck trip lengths, and for vendor trucks a 7.3-mile trip length was used, based on the regional default vendor trip length from CalEEMod®. For worker trips, the regional default trip length of 12.4 miles from CalEEMod® was used. The CO_2 emission factors were generated with the current version of the EMFAC2011, released on September 30, 2011, and updated in January 2013. The model includes updated information on California's car and truck fleets and travel activity. Emissions reported by the model were converted to units of grams of pollutant emitted per vehicle mile traveled (VMT) using the daily VMT for running emissions, or grams of pollutant emitted per trip for idling and starting emissions.

5. Comparison of Project to Oracle Arena and GSW Headquarters Emissions

The comparison of the Oracle Arena and GSW Headquarters emissions and Project emissions between 2017 and 2035 is shown in Table 7. In 2017, Project emissions exceed Oracle Arena and GSW Headquarters emissions by 4,099 MT CO_2e/year, but by 2035, with anticipated reductions from the RPS, Advanced Clean Cars (ACC), and fleet turnover, Project emissions are only 2,923 MT CO_2e/year above Oracle Arena and GSW Headquarters emissions.

The increase in Project emissions over the Oracle Arena and GSW Headquarters is small when considering the increased area and expected utilization of the Event Center. This represents a more efficient and sustainable Project given that the new Event Center will host more events on an annual basis and will allow spectators and residents to take advantage of nearby amenities and public transportation.

Table 7. Comparison of GHG Emissions between Oracle Arena and GSW HQ versus the Event Center Project, 2017 - 2035

GHG Emissions [MT CO_2e/year][1]	Oracle Arena and GSW HQ	Event Center Project	Difference
2017	15,034	19,133	**4,099**
2018	14,780	18,813	**4,032**
2019	14,527	18,493	**3,966**
2020	14,253	18,139	**3,886**
2021	14,049	17,854	**3,805**
2022	13,815	17,529	**3,714**
2023	13,553	17,163	**3,611**
2024	13,348	16,879	**3,530**
2025	13,086	16,513	**3,427**
2026	12,881	16,228	**3,347**
2027	12,677	15,944	**3,267**
2028	12,502	15,700	**3,198**
2029	12,356	15,497	**3,140**
2030	12,210	15,293	**3,083**
2031	12,093	15,131	**3,037**
2032	12,006	15,009	**3,003**
2033	11,918	14,887	**2,968**
2034	11,860	14,806	**2,946**
2035	11,802	14,724	**2,923**

While the Project emissions are higher than those at the Oracle Arena and GSW Oakland Headquarters, the GSW are committing to purchase carbon credits to offset the difference in GHG emissions.

5.1. Project Sustainability Commitments

Even though the Project anticipated event count exceeds those at the Oracle Arena by over 100 events per year, and square footage is increased by 50%, emissions are reduced by 15% per square foot in 2017. This is in no small part due to aggressive energy and transportation efficiency efforts taken by the GSW.

The Project will increase transportation efficiency by at least 10% compared to similar projects. The Project location, in close proximity to Muni Metro (adjacent to UCSF/Mission Bay Station) and Caltrain (0.7 miles to San Francisco Station), allows it to reduce on-road vehicle trips by making public transit an attractive option. The Central Subway Project will further improve public transit in the area by providing connections to downtown San Francisco with light-rail stops in South of Market, Yerba Buena, Union Square, and Chinatown. These transit centers connect the Project to the Peninsula (via bus, BART, and Caltrain), the North Bay (via bus and ferry), the East Bay (via bus, BART, and ferry), and San Francisco (via bus, Muni Metro, and BART). Exhibit C to Application provides more detail on the Project transportation efficiency.

The new Event Center will increase energy efficiency to exceed the 2013 Title 24 building standards. This commitment allows the Project to achieve LEED Gold certification through a combination of design features and operational measures.

5.2. Project GHG Reduction Strategies

The GSW commit to purchasing GHG credits so there are no net additional GHG emissions associated with the Project. By purchasing offsets, the GSW will help the State achieve its GHG reduction targets under Assembly Bill 32 (AB32)

Exhibit H

Greenhouse Gas Emissions Calculations

GSW Mission Bay Multi-Purpose Event Center & Ancillary Development
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GSW Mission Bay Multi-Purpose Event Center & Ancillary Development Construction GHG Emission Calculations

Abbreviations for Construction Emission Calculations:

ARB	California Air Resources Board
CalEEMod	California Emissions Estimator Model
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DSL	Diesel
GAS	Gasoline
GHG	Greenhouse gases
GSW	Golden State Warriors
HHDT	Heavy-Heavy Duty Trucks
HP	Horsepower
LDA	Light-Duty Auto
LDT	Light-Duty Trucks
LF	Load factor
MHDT	Medium-Heavy Duty Trucks
MT	Metric Ton

Golden State Warriors Event Center
Table 1. Construction Greenhouse Gas Emissions

Emission Source	GHG Emissions [MT CO_2e/yr][1]		
	Year 1	Year 2	Total
Offroad Equipment[2]	3,997	1,358	5,355
Construction Trips[3]	2,355	2,355	4,711
Total by Year	**6,352**	**3,714**	**10,066**

Notes:

1. Emissions reflect construction of both the event center and the office towers.

2. Emissions based on construction phases provided by the Project construction contractor and emission factors from OFFROAD2011. 2015 emission factors were conservatively used to calculate emissions for the first twelve months of construction.

3. Emissions from construction trips are conservatively based on 2015 emission factors from EMFAC2011, and are distributed evenly between 2015 and 2016.

References:

California Air Resources Board (ARB). 2011. EMFAC2011.
ARB. 2011. OFFROAD 2011.

Table 2. Construction Phases

Phase Name	Project Equipment at Site	Equipment Quantity	Usage Hours per Workday	Equipment Start Month	Equipment End Month	Workdays per Week
Demolition/Mass Excavation	Street Sweeper	2	7	1	10	5
Mass Excavation	Large Excavator	3	7	1	3	5
Mass Excavation	Scraper	3	7	1	3	5
Mass Excavation	Wheel Loader	3	7	1	3	5
Mass Excavation	Track Type Tractor Blde/Ripper	2	7	1	3	5
Rapid Impact Compaction	Track type tractor with hammer	3	7	1	3	5
Pile Installation	Drill Rig (for installation of Auger Cast piles)	4	7	2	4	5
Pile Installation	Crawler Cranes	4	7	2	4	5
Pile Installation	Large Forklifts	2	7	2	4	5
Pile Installation	Bobcat or small excavators	4	7	2	4	5
Pile Installation	Cutting and chopping saws	4	7	2	4	5
Shoring	Cut off wall (CDSM) equipment	4	7	1	2	5
Shoring	Drill Rig	2	7	2	4	5
Shoring	Support Crane	2	7	2	4	5
Shoring	Grout-mixing plant	2	7	2	4	5
Shoring	Small Excavator	2	7	2	4	5
Building Construction (including arena)	Concrete Boom Pumps	2	7	2	13	5
Building Construction (including arena)	Bobcat	2	7	2	23	5
Building Construction (including arena)	Small Excavator	2	7	2	23	5
Building Construction (including arena)	Large Excavator	2	7	2	13	5
Building Construction (including arena)	Crawler Cranes	4	7	3	16	5
Building Construction (including arena)	Mobile Cranes	4	7	3	23	5
Building Construction (including arena)	Grandall-type Forklifts	8	7	3	24	5
Building Construction (including arena)	Cutting/chopping saws	15	7	3	24	5
Building Construction (including arena)	Tile cutting saws	10	7	8	24	5
Building Construction (including arena)	Drywall stud impact guns	25	7	8	20	5

Table 3. Construction Equipment List

Phase ID	Phase	Project Equipment	OFFROAD Equipment	HP	OFFROAD HP Bin	Tier HP Bin	LF	Quantity	Total Hours	Calendar Year	Construction Year	Fuel
1	Demolition/Mass Excavation	Street Sweeper	Sweepers/Scrubbers	285	500	300	0.4556	2	3042	2015	1	Diesel
2	Mass Excavation	Large Excavator	Excavators	523	750	600	0.3819	3	1369	2015	1	Diesel
2	Mass Excavation	Scraper	Scrapers	500	500	600	0.4824	3	1369	2015	1	Diesel
2	Mass Excavation	Wheel Loader	Tractors/Loaders/Backhoes	211	250	300	0.3685	3	1369	2015	1	Diesel
2	Mass Excavation	Track Type Tractor Blde/Ripper	Tractors/Loaders/Backhoes	150	175	175	0.3685	2	913	2015	1	Diesel
3	Rapid Impact Compaction	Track type tractor with hammer	Tractors/Loaders/Backhoes	150	175	175	0.3685	3	1369	2015	1	Diesel
4	Pile Installation	Drill Rig (for installation of Auger Cast piles)	Bore/Drill Rigs	1205	9999	2000	0.5025	4	1825	2015	1	Diesel
4	Pile Installation	Crawler Cranes	Cranes	530	750	600	0.2881	4	1825	2015	1	Diesel
4	Pile Installation	Large Forklifts	Forklifts	93	120	120	0.201	2	913	2015	1	Diesel
4	Pile Installation	Bobcat or small excavators	Rubber Tired Loaders	71	120	75	0.3818	4	1825	2015	1	Diesel
4	Pile Installation	Cutting and chopping saws	Other Construction Equipment	0	50	11	0.4154	4	1825	2015	1	Electric
5	Shoring	Drill Rig	Bore/Drill Rigs	150	175	175	0.5025	2	913	2015	1	Diesel
5	Shoring	Support Crane	Cranes	630	750	600	0.2881	2	913	2015	1	Diesel
5	Shoring	Grout-mixing plant	Other Material Handling Equipment	20	50	25	0.3953	2	913	2015	1	Diesel
5	Shoring	Small Excavator	Excavators	71	120	75	0.3819	2	913	2015	1	Diesel
5	Shoring	Cut off wall (CDSM) equipment	Bore/Drill Rigs	150	175	175	0.5025	4	1217	2015	1	Diesel
6	Building Construction (including arena)	Concrete Boom Pumps	Other Construction Equipment	480	500	600	0.4154	2	3346	2015	1	Diesel
6	Building Construction (including arena)	Bobcat	Rubber Tired Loaders	71	120	75	0.3818	2	3346	2015	1	Diesel
6	Building Construction (including arena)	Small Excavator	Excavators	404	500	600	0.3819	2	3346	2015	1	Diesel
6	Building Construction (including arena)	Large Excavator	Excavators	523	750	600	0.3819	2	3346	2015	1	Diesel
6	Building Construction (including arena)	Crawler Cranes	Cranes	530	750	600	0.2881	4	6083	2015	1	Diesel
6	Building Construction (including arena)	Mobile Cranes	Cranes	530	750	600	0.2881	4	6083	2015	1	Diesel
6	Building Construction (including arena)	Grandall-type Forklifts	Forklifts	93	120	120	0.201	8	12167	2015	1	Diesel
6	Building Construction (including arena)	Cutting/chopping saws	Other Construction Equipment	0	50	11	0.4154	15	22813	2015	1	Electric
6	Building Construction (including arena)	Tile cutting saws	Other Construction Equipment	0	50	11	0.4154	10	7604	2015	1	Electric
6	Building Construction (including arena)	Drywall stud impact guns	Other Construction Equipment	0	50	11	0.4154	25	19010	2015	1	Electric
6	Building Construction (including arena)	Concrete Boom Pumps	Other Construction Equipment	480	500	600	0.4154	2	304	2016	2	Diesel
6	Building Construction (including arena)	Bobcat	Rubber Tired Loaders	71	120	75	0.3818	2	3346	2016	2	Diesel
6	Building Construction (including arena)	Small Excavator	Excavators	404	500	600	0.3819	2	3346	2016	2	Diesel
6	Building Construction (including arena)	Large Excavator	Excavators	523	750	600	0.3819	2	304	2016	2	Diesel
6	Building Construction (including arena)	Crawler Cranes	Cranes	530	750	600	0.2881	4	2433	2016	2	Diesel
6	Building Construction (including arena)	Mobile Cranes	Cranes	530	750	600	0.2881	4	6692	2016	2	Diesel
6	Building Construction (including arena)	Grandall-type Forklifts	Forklifts	93	120	120	0.201	8	14600	2016	2	Diesel
6	Building Construction (including arena)	Cutting/chopping saws	Other Construction Equipment	0	50	11	0.4154	15	27375	2016	2	Electric
6	Building Construction (including arena)	Tile cutting saws	Other Construction Equipment	0	50	11	0.4154	10	18250	2016	2	Electric
6	Building Construction (including arena)	Drywall stud impact guns	Other Construction Equipment	0	50	11	0.4154	25	30417	2016	2	Electric

Table 4. Offroad Equipment Activities and Emissions

Construction Year	Phase ID	Phase	Project Equipment	OFFROAD Equipment	Total Hours	HP	OFFROAD HP Bin	Tier HP Bin	Fuel	Emissions	Units	Pollutant
1	1	Demolition/Mass Excavation	Street Sweeper	Sweepers/Scrubbers	3042	285	500	300	Diesel	494,825	lb	CO2
1	2	Mass Excavation	Large Excavator	Excavators	1369	523	750	600	Diesel	342,521	lb	CO2
1	2	Mass Excavation	Scraper	Scrapers	1369	500	500	600	Diesel	413,631	lb	CO2
1	2	Mass Excavation	Track Type Tractor Blde/Ripper	Tractors/Loaders/Backhoes	913	150	175	175	Diesel	63,194	lb	CO2
1	2	Mass Excavation	Wheel Loader	Tractors/Loaders/Backhoes	1369	211	250	300	Diesel	133,338	lb	CO2
1	3	Rapid Impact Compaction	Track type tractor with hammer	Tractors/Loaders/Backhoes	1369	150	175	175	Diesel	94,790	lb	CO2
1	4	Pile Installation	Bobcat or small excavators	Rubber Tired Loaders	1825	71	120	75	Diesel	58,738	lb	CO2
1	4	Pile Installation	Crawler Cranes	Cranes	1825	530	750	600	Diesel	349,135	lb	CO2
1	4	Pile Installation	Cutting and chopping saws	Other Construction Equipment	1825	0	50	11	Electric	0	lb	CO2
1	4	Pile Installation	Drill Rig (for installation of Auger Cast piles)	Bore/Drill Rigs	1825	1205	9999	2000	Diesel	1,384,513	lb	CO2
1	4	Pile Installation	Large Forklifts	Forklifts	913	93	120	120	Diesel	21,371	lb	CO2
1	5	Shoring	Drill Rig	Bore/Drill Rigs	913	150	175	175	Diesel	86,173	lb	CO2
1	5	Shoring	Grout-mixing plant	Other Material Handling Equipment	913	20	50	25	Diesel	9,039	lb	CO2
1	5	Shoring	Small Excavator	Excavators	913	71	120	75	Diesel	30,999	lb	CO2
1	5	Shoring	Support Crane	Cranes	913	530	750	600	Diesel	174,567	lb	CO2
1	6	Building Construction (including arena)	Bobcat	Rubber Tired Loaders	3346	71	120	75	Diesel	107,882	lb	CO2
1	6	Building Construction (including arena)	Concrete Boom Pumps	Other Construction Equipment	3346	480	500	600	Diesel	835,840	lb	CO2
1	6	Building Construction (including arena)	Crawler Cranes	Cranes	6083	530	750	600	Diesel	1,163,783	lb	CO2
1	6	Building Construction (including arena)	Cutting/chopping saws	Other Construction Equipment	22813	0	50	11	Electric	0	lb	CO2
1	6	Building Construction (including arena)	Drywall stud impact guns	Other Construction Equipment	19010	0	50	11	Electric	0	lb	CO2
1	6	Building Construction (including arena)	Grandall-type Forklifts	Forklifts	12167	93	120	120	Diesel	284,945	lb	CO2
1	6	Building Construction (including arena)	Large Excavator	Excavators	3346	523	750	600	Diesel	837,272	lb	CO2
1	6	Building Construction (including arena)	Mobile Cranes	Cranes	6083	530	750	600	Diesel	1,163,783	lb	CO2
1	6	Building Construction (including arena)	Small Excavator	Excavators	3346	404	500	600	Diesel	646,765	lb	CO2
1	6	Building Construction (including arena)	Tile cutting saws	Other Construction Equipment	7604	0	50	11	Electric	0	lb	CO2
2	6	Building Construction (including arena)	Bobcat	Rubber Tired Loaders	3346	71	120	75	Diesel	107,882	lb	CO2
2	6	Building Construction (including arena)	Concrete Boom Pumps	Other Construction Equipment	304	480	500	600	Diesel	75,985	lb	CO2
2	6	Building Construction (including arena)	Crawler Cranes	Cranes	2433	530	750	600	Diesel	465,513	lb	CO2
2	6	Building Construction (including arena)	Cutting/chopping saws	Other Construction Equipment	27375	0	50	11	Electric	0	lb	CO2
2	6	Building Construction (including arena)	Drywall stud impact guns	Other Construction Equipment	30417	0	50	11	Electric	0	lb	CO2
2	6	Building Construction (including arena)	Grandall-type Forklifts	Forklifts	14600	93	120	120	Diesel	341,935	lb	CO2
2	6	Building Construction (including arena)	Large Excavator	Excavators	304	523	750	600	Diesel	76,116	lb	CO2
2	6	Building Construction (including arena)	Mobile Cranes	Cranes	6692	530	750	600	Diesel	1,280,161	lb	CO2
2	6	Building Construction (including arena)	Small Excavator	Excavators	3346	404	500	600	Diesel	646,765	lb	CO2
2	6	Building Construction (including arena)	Tile cutting saws	Other Construction Equipment	18250	0	50	11	Electric	0	lb	CO2

Table 5. Project Construction Trip Estimates

Phase	Duration [months]	Average Number of Daily Construction Trucks[1]	Average Number of Daily Construction Workers[1]	Number of Work Days	Total One-Way Trips		
					Hauling Trips	Vendor Trips	Worker Trips
Entire Site							
Demolition (Entire Site)	1	8	10	22	352	-	440
Excavation and Shoring (Entire Site)	3	300	25	66	39,600	-	3,300
Arena							
Foundation & Below Grade Construction (Piles & Concrete)	6	20	100	131	-	5,240	26,200
Base Building	16	25	200	348	-	17,400	139,200
Exterior Finishing	10	25	50	218	-	10,900	21,800
Interior Finishing	18.5	30	150	402	-	24,120	120,600
Garage/Podium							
Foundation & Below Grade Construction (Piles & Concrete)	6	20	50	131	-	5,240	13,100
Base Building	9	20	50	196	-	7,840	19,600
NW Tower							
Base Building	8	15	40	174	-	5,220	13,920
Exterior Finishing	5	2	10	109	-	436	2,180
Interior Finishing	12	10	100	261	-	5,220	52,200
SW Tower							
Base Building	8	15	40	174	-	5,220	13,920
Exterior Finishing	5	2	10	109	-	436	2,180
Interior Finishing	12	10	100	261	-	5,220	52,200
Entire Site							
Street Improvements	5	10	40	109	-	2,180	8,720
				Total Construction Trips	39,952	94,672	489,560

Notes:

1. Proposed number of construction trucks and workers provided by Project Sponsor in a table titled "Summary of Construction Phases and Duration, and Daily Construction Trucks and Workers by Phase," dated 11/25/2014.

Table 6. Onroad Equipment Activities, Emission Factors and Emissions

Site	Emission Factor Year	Trip Type[1]	Vehicle Type[1]	Fuel	% of Fleet[1]	Total One-way Trips	One-way Trip Length	CO_2 Emission Factor and Emissions					
								Running Exhaust		Idling Exhaust		Starting Exhaust	
								Emission Factor[2] [g/mile]	Emissions [lb]	Emission Factor[3] [g/hr-vehicle]	Emissions [lb]	Emission Factor[2] [g/one-way trip]	Emissions [lb]
Mission Bay	2015	Worker	LDA	GAS	50%	489,560	12.4	319	2,131,413	0	0	65	34,846
	2015	Worker	LDT1	GAS	25%	489,560	12.4	380	1,272,229	0	0	76	20,463
	2015	Worker	LDT2	GAS	25%	489,560	12.4	458	1,531,579	0	0	91	24,623
	2015	Vendor	T6	DSL	50%	94,672	7.3	1,155	879,662	7,308	63,551	0	0
	2015	Vendor	T7	DSL	50%	94,672	7.3	1,711	1,303,415	6,854	59,609	0	0
	2015	Hauling	T7	DSL	100%	39,952	20	1,711	3,013,955	6,854	50,311	0	0

Notes:

1. CalEEMod default vehicle mix of light-duty auto (LDA), light-duty truck type 1 (LDT1), and light-duty truck type 2 (LDT2) for worker trips; mix of medium heavy-duty vehicles (MHDT or T6) and heavy heavy-duty trucks (HHDT or T7) for vendor trips; and all HHDT for hauling trips.

2. Running exhaust and starting exhaust emission factors are based on EMFAC2011 for San Francisco County.

3. Idling exhaust emission factors are based on EMFAC2011 Idling Emission Rates (ARB 2012). Idling is assumed to occur for 5 minutes per one-way trip.

References:

California Air Resources Board (ARB). 2011. EMFAC2011.

ARB. 2012. EMFAC2011 Idling Emission Rates. Available online at: http://www.arb.ca.gov/msei/emfac2011_idling_emission_rates.xlsx

GSW Mission Bay Multi-Purpose Event Center & Ancillary Development Operational GHG Emission Calculations

Abbreviations for Operational Emission Calculations:

AB	Assembly Bill
ANDOC	Anaerobically Degradable Carbon
ARB	(California) Air Resources Board
AWWA	American Water Works Association
CalEEMod	California Emissions Estimator Model
CEC	California Energy Commission
CFR	Code of Federal Regulations
CH_4	Methane
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
EF	Emission factor
EIR	Environmental Impact Report
GHG	Greenhouse gases
GSF	Gross square feet
GSW	Golden State Warriors
HQ	Headquarters
IPCC	Intergovernmental Panel on Climate Change
kBTU	Thousand British Thermal Units
KSF	Thousand square feet
LDA	Light-Duty Auto
LDT	Light-Duty Trucks
LHD	Light-Heavy Duty (Trucks)
MCY	Motorcycles
MDV	Medium-Duty Trucks
MMBtu	Million British Thermal Units
MT	Metric Ton
MWh	Megawatt-hour
N_2O	Nitrous oxide
NOP	Notice of Preparation
OBUS	Other Buses
PG&E	Pacific Gas and Electric Company
SF	Square feet
SOV	Single Occupancy Vehicle
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled

Golden State Warriors Event Center
Operational GHG Emissions Summary

Table 1. Project Description

Element	Oracle Arena and GSW Oakland Headquarters	Event Center Project
First Operational Year Considered	2017	2017
Oracle Arena	500 KSF	500 KSF
GSW Games[1]	100%, 47 games	No games
Non-game Events[2]	100%, 42 events	50%, 21 events
Mission Bay Event Center	-	750 KSF
GSW Games[1]	-	100%, 47 games
Non-game Events[3]	-	100%, 161 events
GSW Headquarters	Oakland	Mission Bay, 25 KSF

Table 2. Oracle Arena and GSW Oakland Headquarters 2017 GHG Emissions

GHG Emissions [MT CO_2e/year]	Emission Source					
	Energy	Mobile	Area[1]	Waste	Water	Generators
Oracle Arena (47 games and 42 events)	1,413	12,388	0.010	91	517	-
GSW Headquarters	258	365		2	1	-
Sub-Total	1,671	12,753	0.010	92	518	-
Total	15,034					

Table 3. Event Center Project 2017 GHG Emissions

GHG Emissions [MT CO_2e/year]	Emission Source					
	Energy	Mobile	Area[4]	Waste	Water	Generators
Oracle Arena (21 events)	333	2,280	0.010	21	122	-
Mission Bay Event Center (47 games and 161 events)	748	16,741	0.014	136	23	106
GSW Headquarters	74	104	4.7E-04	4.6	0.66	
Parking and Loading[4]	446	-	0.0090	-	-	
Credit due to Energy Efficiency	-646	-	-	-	-	-
Credit due to Trip Linking	-	-1,362	-	-	-	-
Sub-Total	956	17,764	0.033	162	145	106
Total	19,133					

Notes:

1. Number of GSW games in both scenarios is based on the 2013-2014 season. Averages for the previous years were skewed by the 2011 NBA lockout.

2. Number of non-game events at Oracle Arena is based on the schedule from recent years. In the Event Center Project scenario, half of the non-game events are assumed to remain at Oracle Arena while the other half are transferred to the Mission Bay Event Center.

3. Number of non-game events at Mission Bay Event Center is based on the Notice of Preparation dated 11/19/2014.

4. GHG emissions from parking and area sources are based on CalEEMod runs. Emission calculations for other sources can be found in subsequent tables.

Operational GHG Emissions Summary

Table 4. Annual Energy Emissions, Mobile Emissions, and Credits

GHG Emissions [MT CO_2e/year]	Oracle Arena and GSW HQ		Event Center Project			
	Energy	Mobile	Energy	Mobile	Credit due to Energy Efficiency	Credit due to Trip Linking
2017	1,671	12,753	1,602	19,125	-646	-1,362
2018	1,621	12,549	1,559	18,819	-639	-1,340
2019	1,572	12,344	1,517	18,512	-632	-1,318
2020	1,532	12,111	1,483	18,162	-627	-1,293
2021	1,532	11,907	1,483	17,856	-627	-1,271
2022	1,532	11,673	1,483	17,506	-627	-1,246
2023	1,532	11,411	1,483	17,112	-627	-1,218
2024	1,532	11,206	1,483	16,806	-627	-1,196
2025	1,532	10,944	1,483	16,412	-627	-1,168
2026	1,532	10,739	1,483	16,105	-627	-1,147
2027	1,532	10,535	1,483	15,799	-627	-1,125
2028	1,532	10,360	1,483	15,536	-627	-1,106
2029	1,532	10,214	1,483	15,318	-627	-1,090
2030	1,532	10,068	1,483	15,099	-627	-1,075
2031	1,532	9,951	1,483	14,924	-627	-1,062
2032	1,532	9,864	1,483	14,792	-627	-1,053
2033	1,532	9,776	1,483	14,661	-627	-1,044
2034	1,532	9,718	1,483	14,574	-627	-1,037
2035	1,532	9,660	1,483	14,486	-627	-1,031

Table 5. Annual Operational Emissions

GHG Emissions [MT CO_2e/year][1]	Oracle Arena and GSW HQ	Event Center Project	Difference
2017	15,034	19,133	4,099
2018	14,780	18,813	4,032
2019	14,527	18,493	3,966
2020	14,253	18,139	3,886
2021	14,049	17,854	3,805
2022	13,815	17,529	3,714
2023	13,553	17,163	3,611
2024	13,348	16,879	3,530
2025	13,086	16,513	3,427
2026	12,881	16,228	3,347
2027	12,677	15,944	3,267
2028	12,502	15,700	3,198
2029	12,356	15,497	3,140
2030	12,210	15,293	3,083
2031	12,093	15,131	3,037
2032	12,006	15,009	3,003
2033	11,918	14,887	2,968
2034	11,860	14,806	2,946
2035	11,802	14,724	2,923

Notes:

1. GHG emissions reflect all source categories including energy, mobile, area, waste, water, and generators. Emissions from all sources except energy and mobile are assumed to remain constant in future years.

Energy Use GHG Emissions Estimates

Determination of Emission Factors

Global Warming Potentials (IPCC 1995)

CH_4 Global Warming Potential	21
N_2O Global Warming Potential	310

Electricity Use Emission Factor

Year	PG&E Electricity CO_2 Emission Factor[1]	CH_4 Emission Factor[2]	N_2O Emission Factor[2]	Weighted Greenhouse Gas Emission Factor	
	[lb CO_2/MWh]	[lb CH_4/MWh]	[lb N_2O/MWh]	[lb CO_2e/MWh]	[MT CO_2e/MWh]
2017	349	0.029	0.00617	352	0.159
2018	328			331	0.150
2019	307			310	0.140
2020	290			293	0.133

Natural Gas Use Emission Factor[2]

Natural Gas CO_2 Emission Factor	117.6 lb CO_2/MMBtu
CH_4 Emission Factor	0.0023 lb CH4/MMBtu
N_2O Emission Factor	0.0022 lb N_2O/MMBtu
Weighted Greenhouse Gas Emission Factor	118.4 lb CO2e/MMBtu
	0.0054 MT CO_2e/therm

Oracle Arena and GSW Oakland HQ GHG Emission Calculations

Energy Use Calculations

Venue	Area	Electricity Use Rate[3]	Annual Electricity Use[4]	Natural Gas Use Rate[3]	Annual Natural Gas Use[4]
	[sq ft]	[kWh/sq ft-yr]	[MWh/yr]	[kBTU/sq ft-yr]	[therm/yr]
Oracle Arena	500,000	8.7	4,325	27.0	134,800
GSW Headquarters	-	-	875	-	22,000

Annual Emission Calculations

Year	Oracle Arena Emissions [MT/yr]			GSW Headquarters Emissions [MT/yr]		
	Electricity	Natural Gas	Total	Electricity	Natural Gas	Total
2017	690	724	1,413	140	118	258
2018	648	724	1,372	131	118	249
2019	607	724	1,331	123	118	241
2020	574	724	1,298	116	118	234

Notes:
1. Based on PG&E 2013.
2. Based on CalEEMod.
3. Based on historical CalEEMod energy intensities for the Arena land use, which reflect 2005 Title 24 standards.
4. GSW Headquarters electricity and natural gas use based on actual receipts.

Energy Use GHG Emissions Estimates

Project GHG Emission Calculations

Electricity Use Emissions Calculations

Venue	Area		Electricity Use Rate		Scaling Percentage	Annual Electricity Use [MWh/yr]
Event Center[1]	750,000	sq ft	-		-	3,109
GSW Office[2]	25,000	sq ft	12.8	kWh/sq ft-yr	-	320
Oracle Arena (scaled)[3]	500,000	sq ft	8.7	kWh/sq ft-yr	24%	1,021

Natural Gas Use Emissions Calculations

Venue	Area		Natural Gas Use Rate		Scaling Percentage	Annual Natural Gas Use [therm/yr]
Event Center[1]	750,000	sq ft	-		-	47,087
GSW Office[2]	25,000	sq ft	17.1	kBTU/sq ft-yr	-	4,283
Oracle Arena (scaled)[3]	500,000	sq ft	27.0	kBTU/sq ft-yr	24%	31,807

Annual Emission Calculations

Year	Event Center Emissions [MT/yr]		GSW Office Emissions [MT/yr]		Oracle Arena (Scaled) Emissions [MT/yr]	
	Electricity	Natural Gas	Electricity	Natural Gas	Electricity	Natural Gas
2017	496	253	51	23	163	171
2018	466	253	48	23	153	171
2019	436	253	45	23	143	171
2020	412	253	42	23	135	171

Energy Use GHG Emissions Estimates

Office Tower Emission Reduction

Venue	Area		Annual Electricity Use [MWh/yr]
Office[1]	580,000	sq ft	6,695

Annual Emission Reduction at Office Towers

Year	Code-Compliant Office Energy Emissions [MT/yr][4]	Project Office Energy Emissions [MT/yr]	Emission Credit [MT/yr]
2017	1,714	1068	-646
2018	1,643	1004	-639
2019	1,572	940	-632
2020	1,515	888	-627

Notes:

1. Annual energy use provided by SSR in the document titled "100% Schematic Design Sustainability Narrative." No natural gas consumption is expected at the office towers, which will use electric heating.

2. Based on default CalEEMod energy intensities for the arena land use. Title 24 components for electricity and natural gas were further reduced by 21.8% and 16.8%, respectively, to account for 2013 Standards (CEC 2013).

3. Oracle Arena will continue to operate without GSW games and with 50% of the baseline non-game events. Thus, the emissions were scaled by 24%, the percentage of all events that will continue to occur at the Oracle Arena.

4. Based on CalEEMod runs. Title 24 electricity and natural gas components were further reduced by 21.8% and 16.8%, respectively, to account for 2013 Standards (CEC 2013).

References:

California Energy Commission. 2013. Impact Analysis. California's 2013 Building Energy Efficiency Standards.
Available online at http://www.energy.ca.gov/2013publications/CEC-400-2013-006/CEC-400-2013-006.pdf?_sm_au_=iVVRz3FV2dMBFjr2

California Emissions Estimator Model (CalEEMod). Available online at http://www.caleemod.com/

Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report.
Available at http://www.ipcc.ch/ipccreports/sar/wg_I/ipcc_sar_wg_I_full_report.pdf

Pacific Gas and Electric Company (PG&E). 2013. Greenhouse Gas Emission Factors: Guidance for PG&E Customers.
Available online at http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

Mobile Source GHG Emision Estimates

Mobile Source GHG Emissions Estimates

Oracle Arena and GSW Oakland HQ Vehicle Trips Calculation

Employee Commute/ Non-Commute Trips

Scenario	Total Employees[1]	Total Driving Employees[2]	% SOV[3]	% Carpool[3]	Carpool Density [people/ vehicle][4]	One-way Trips/ Roundtrip	Total Vehicle Trips per Day	Average operating days per year[5]	Total Vehicle Trips per Year
Oracle Arena Operations Employees	71	55	86%	14%	2	2	103	260	26,859
GSW Headquarters Employees	150	128	94%	6%	2	2	248	260	64,350

Notes:

1. Actual number of Oracle Arena Operations employees was used. Number of existing GSW employees at the Oakland headquarters is based on the Project Notice of Preparation dated 11/19/2014.

2. A 78.1% driving rate was assumed for the Oracle Arena employees according to the most recent Bay Area Census data (http://www.bayareacensus.ca.gov/bayarea.htm). GSW employees who drive based on a 85% driving rate according to Ben Drea, Senior Financial Analyst, GSW.
3. Oracle Arena employees SOV and carpool rates from Bay Area Census data. GSW Headquarters SOV and carpool rates from Ben Drea, Senior Financial Analyst, GSW.
4. A carpool density of two people per vehicle is assumed to be conservative.
5. Assumes 5 days per week for 52 weeks per year.

Spectator Trips

Scenario	Total Spectators Per Event[1]	Total Driving Spectators[2]	% SOV[3]	% Carpool[3]	Carpool Density [people/ vehicle][3]	One-way Trips/ Roundtrip	Total Vehicle Trips per Event	Event Days per Year[4]	Total Vehicle Trips per Year
Oracle Arena Game Spectators	18,250	16,250	20%	80%	3	2	16,197	47	712,833
Oracle Arena Non-game Event Spectators	9,125	9,125	20%	80%	3	2	8,517	42	357,700

Notes:

1. Average spectator count and transit riders from Ben Drea, Senior Financial Analyst, GSW.
2. Ben Drea, Senior Financial Analyst, GSW, estimated that 2,000 of the total spectators take public transit or taxis per event.
3. The carpool assumptions are conservative in that 20% of the driving spectators would drive alone, while the remaining 80% would carpool at a density of 3 people per vehicle.
4. Number of GSW games is based on the 2013-2014 season and number of non-game events is based on four-year averages (2010-2013).

Vendor and Event Staff Trips

Scenario	Total Staff Per Event[1]	Total Driving Staff[2]	% SOV[3]	% Carpool[3]	Carpool Density [people/ vehicle][4]	One-way Trips/ Roundtrip	Total Vehicle Trips per Event	Event Days per Year[3]	Total Vehicle Trips per Year
Oracle Arena Game Event Staff	1,013	791	86%	14%	2	2	1,474	47	69,274
Oracle Arena Non-game Event Staff	845	604	86%	14%	2	2	939	42	39,410

Notes:

1. Actual numbers of game event and non-game event staff were used.
2. A 78.1% driving rate was assumed for the vendor and event staff according to the most recent Bay Area Census data (http://www.bayareacensus.ca.gov/bayarea.htm).
GSW employees who drive based on a 85% driving rate according to Ben Drea, Senior Financial Analyst, GSW.
3. SOV and carpool rates from Bay Area Census data.
4. The minimum carpool density of two people per vehicle is assumed.
4. Number of GSW games is based on the 2013-2014 season and number of non-game events is based on recent years (2010-2013).

Mobile Source GHG Emissions Estimates

Oracle Arena and GSW HQ GHG Emission Calculations

Trip Type	Scenario	Total Vehicle Trips per Year	Trip Length [mile]	Total VMT [mile/year]
Employee Commute Trips[1]	Oracle Arena operations employees	26,859	9.5	255,163
	GSW Headquarters	84,350	9.5	811,325
Employee Non-Commute Trips[2]	Oracle Arena operations employees	26,859	3	80,578
	GSW Headquarters	64,350	3	193,050
Spectator Trips[3]	Oracle Arena game spectators	712,833	25	17,983,400
	Oracle Arena non-game event spectators	357,700	25	9,014,040
Vendor and Event Staff Trips[1,4]	Oracle Arena game vendors and event staff	69,274	9.5	658,103
	Oracle Arena non-game event vendors and event staff	39,419	9.5	374,479
Opposing Team Bus Trips[5,6]	Oracle Arena Opposing Team Bus trips	141	18	2,488
Delivery Trips[7,8]	GSW Headquarters	4,180	7.3	30,368
Total Oracle Arena VMT [miles/year]				28,348,231
Total GSW Office VMT [miles/year]				834,743

Year	Emission Factor [g/mile][9]	Emissions [MT/yr]		
		Arena	GSW HQ	Total
2017	437	12,388	365	12,753
2018	430	12,190	359	12,549
2019	423	11,991	353	12,344
2020	415	11,765	346	12,111
2021	408	11,566	341	11,907
2022	400	11,339	334	11,673
2023	391	11,084	326	11,411
2024	384	10,886	321	11,206
2025	375	10,631	313	10,944
2026	368	10,432	307	10,739
2027	361	10,234	301	10,535
2028	355	10,064	296	10,360
2029	350	9,922	292	10,214
2030	345	9,780	288	10,068
2031	341	9,667	285	9,951
2032	338	9,582	282	9,864
2033	335	9,497	280	9,778
2034	333	9,440	278	9,718
2035	331	9,383	276	9,660

Notes:
1. CalEEMod Default Trip Length for Commercial-Worker trips in the San Francisco Bay Area Air Basin.
2. Non-commute trips are assumed to have a trip length of 3 miles.
3. Trip length is an estimation based on season ticket holder addresses. Season ticket holders account for approximately 60% of seating at Warrior games.
4. Annual vehicle trips based on number of vendors at each event and total number of event days per year.
5. Annual vehicle trips based on 1.5 bus trips per game, 2 trips per round trip and 47 events per year. Count of opposing team bus trips from Ben Drea, Senior Financial Analyst, GSW.
6. Trip length is the driving distance from Union Square, San Francisco, where the Opposing Team is assumed to stay, to Oracle Arena.
7. Annual vehicle trips based on a daily delivery count of 8 from Ben Drea, Senior Financial Analyst, GSW. Assume 5 days per week for 52 weeks per year.
8. CalEEMod Default Trip Length for Commercial-Nonwork trips in the San Francisco Bay Area Air Basin.
9. From ARB's Statewide Emission Factors For Use With AB 900 Projects.

Mobile Source GHG Emissions Estimates

Project GHG Emission Calculations

Trip Type	Scenario	Daily One-way Vehicle Trips[1,2]		Days Per Year[3]	Trip Length [mile][4]		Total VMT [mile/yr]	
		Event Center	GSW Office		Event Center	GSW Office	Event Center	GSW Office
Mission Bay, Weekend Trips	Basketball Event Days	8,715	21	23	25	8.0	5,051,214	3,863
	Concert Event Days	8,715	21	55			12,078,990	9,285
	No Event Days	55	21	26			36,036	4,389
Mission Bay, Weekday Trips	Basketball Event Days	8,569	105	24			5,194,627	20,233
	Concert Event Days	8,569	105	45			9,739,926	37,936
	Convention Event Days	3,921	105	61			8,027,351	51,427
	No Event Days	55	105	131			181,568	110,441
Total Annual VMT [mile/year]							38,309,720	237,595

Trip Type[4]	Scenario	Total Vehicle Trips per Year[4]	Trip Length [mile][4]	Scaling %[5]	Total VMT [mile/year]
Employee Commute Trips	Oracle Arena operations employees	26,859	9.5	-	255,163
Employee Non-Commute Trips	Oracle Arena operations employees	26,859	3	-	80,578
Spectator Trips	Oracle Arena non-game event spectators	357,700	25	50%	4,507,020
Vendor and Event Staff Trips	Oracle Arena non-game event vendors and event staff	39,419	9.5	50%	374,479
Total Oracle Arena VMT [miles/year]					5,217,240

Year	Emission Factor [g/mile][6]	Emissions [MT/yr]			
		Arena	GSW Office	Oracle Arena (scaled)	Total
2017	437	16,741	104	2,290	19,125
2018	430	16,473	102	2,243	18,819
2019	423	16,205	101	2,207	18,512
2020	415	15,899	99	2,165	18,162
2021	408	15,630	97	2,129	17,856
2022	400	15,324	95	2,087	17,506
2023	391	14,979	93	2,040	17,112
2024	384	14,711	91	2,003	16,806
2025	375	14,366	89	1,956	16,412
2026	368	14,098	87	1,920	16,105
2027	361	13,830	86	1,883	15,799
2028	355	13,600	84	1,852	15,536
2029	350	13,408	83	1,826	15,318
2030	345	13,217	82	1,800	15,099
2031	341	13,064	81	1,779	14,924
2032	338	12,949	80	1,763	14,792
2033	335	12,834	80	1,748	14,661
2034	333	12,757	79	1,737	14,574
2035	331	12,681	79	1,727	14,486

Notes:
1. Daily vehicle trips provided by Adavant Consulting. GSW office trips are based on values for total office space scaled by GSW office square footage.
2. ENVIRON conservatively assumed daily concert vehicle trips to be the same as daily basketball event trips.
3. It is assumed that half of the games will take place on weekends. Vehicle generation associated with all concert and family show events is approximated by concert trips, while the other 61 events are assumed to be convention events on weekdays.
4. For details on trip types and lengths, refer to Table Oracle Arena and GSW HQ GHG Emission Calculations above.
5. Oracle Arena will continue to operate without GSW games and with 50% of the baseline non-game events. Thus, the VMT for non-game event trips was scaled by 50%.
6. From ARB's Statewide Emission Factors For Use With AB 900 Projects.

Mobile Source GHG Emissions Estimates

GHG Internal Trip Reduction

Trip Type	Project Scenario	Daily One-way Vehicle Trips[1]		Days Per Year[2]	Reduction in VMT (mile/yr)[3]
		Retail with Internal Trip Capture	Retail without Internal Trip Capture		
Mission Bay, Weekend Trips	Basketball Event Days	3,105	5,313	23	365,325
	Concert Event Days	3,105	5,313	55	921,430
	No Event Days	5,313	5,313	26	0
Mission Bay, Weekday Trips	Basketball Event Days	2,550	4,393	24	333,842
	Concert Event Days	2,550	4,393	46	626,141
	Convention Event Days	2,550	4,393	61	846,769
	No Event Days	4,393	4,393	131	0
Total Reduction in VMT (mile/year)					3,115,608

Year	Emission Factor (g/mile)[4]	Emission Credit (MT/yr)
2017	437	-1,362
2018	430	-1,340
2019	423	-1,318
2020	415	-1,293
2021	408	-1,271
2022	400	-1,246
2023	391	-1,218
2024	384	-1,196
2025	375	-1,168
2026	368	-1,147
2027	361	-1,125
2028	355	-1,106
2029	350	-1,090
2030	345	-1,075
2031	341	-1,062
2032	338	-1,053
2033	335	-1,044
2034	333	-1,037
2035	331	-1,031

Notes:

1. Daily vehicle trips for "Retail with Internal Trip Capture" provided by Adavant Consulting. "Event day" trips increased to equal "No Event Days" for "Retail without Internal Trip Capture" to account for the increase in retail trips that would occur if the Arena and retail were not colocated.
2. It is assumed that half of the games will take place on weekends. Vehicle generation associated with all concert and family show events is approximated by concert trips, while the other 61 events are assumed to be convention events on weekdays.
3. Average CalEEMod Trip Length of 7.6 miles for restaurant and shopping land uses in the San Francisco Bay Area Air Basin, weighted by square footage.
4. From ARB's Statewide Emission Factors For Use With AB 900 Projects.

References

Bay Area Census. 2013. Selected Census Data from the San Francisco Bay Area.
Available online at http://www.bayareacensus.ca.gov/bayarea.htm

California Air Resources Board (ARB). 2014. Statewide Emission Factors For Use With AB 900 Projects. April.

California Air Resources Board (ARB). 2011. EMission FACtor Model (EMFAC2011).
Available online at www.arb.ca.gov/msei/modeling.htm

California Air Resources Board (ARB). 2011. LEV 3 Inventory Database Tool Version 6h.
Available online at http://www.arb.ca.gov/msprog/clean_cars/clean_cars_ab1085/lev3-inv-dbase_v6h.accdb

Solid Waste Indirect GHG Emissions Estimates

Solid Waste Indirect GHG Emissions Estimates

Determination of Emission Factor

Calculate the amount of Anaerobically Degradable Carbon (ANDOC) in 1 metric ton (MT) of solid waste

Input	Value	Notes
ANDOC Content of Municipal Solid Waste	7.7%	[1]
Total ANDOC in 1 MT waste	0.077 MT ANDOC/MT waste	Calculated

Calculate the amount of uncaptured and unoxidized ANDOC in 1 MT waste

Input	Value	Notes
Captured Portion of Landfill Gas	85%	[1]
Uncaptured Portion of Landfill Gas	15%	[1]
Oxidized Portion of Carbon in the Landfill Cap	10%	[1]
Unoxidized Portion of Carbon in the Landfill Cap	90%	[1]
Uncaptured and unoxidized ANDOC	1.04E-02 MT ANDOC/MT waste	Calculated

Calculate the amount of uncaptured and unoxidized ANDOC in 1 MT waste

Input	Value	Notes
Captured Portion of Landfill Gas	85%	[1]
Uncaptured Portion of Landfill Gas	15%	[1]
Controlled Portion of Captured Landfill Gas	99%	[1]
Uncontrolled Portion of Captured Landfill Gas	1%	[1]
Captured and uncontrolled ANDOC	6.55E-04 MT ANDOC/MT waste	Calculated

Solid Waste Indirect GHG Emissions Estimates

Calculate methane (CH_4) emissions from uncaptured and unoxidized, and captured and uncontrolled ANDOC in carbon dioxide equivalents (CO_2e)

Input	Value	Notes
Total ANDOC available for release	1.10E-02 MT ANDOC/MT waste	Calculated
Portion of Landfill Gas released as CH_4	50%	[1]
Portion of Landfill Gas released as CO_2	50%	[1]
100-year Global Warming Potential of CH_4	21 g CO_2e/g CH_4	[2]
Molecular Weight for CH_4	16.04 g/mol CH_4	-
Molecular Weight for C	12.01 g/mol C	-
CO_2e Emission Factor	0.155 MT CO_2e/MT waste	-

Notes:
1. California Air Resources Board. 2012. Email between Webster Tasat of the California Air Resources Board and Catherine Mukai of ENVIRON, 20 November 2012.
2. Based on IPCC 1995.

Oracle Arena and GSW HQ Emission Calculations

Use	Square Footage	Solid Waste Generation Rate[1]	Solid Waste Generation	CO_2e EF	Emissions
	[square feet]		[tons/yr]	[MT CO_2e/MT waste]	[MT CO_2e/yr]
Oracle Arena	500,000	1.29 tons/1000 sf-yr	645	0.155	91

Use	Volume of Waste Generated[2]	Waste Density[3]	Mass of Waste Generated	Diversion Rate[4]	CO_2e EF	Emissions
	[gallons/year]	[lb/cubic yard]	[lb/year]	[%]	[MT CO_2e/MT waste]	[MT CO_2e/yr]
GSW Headquarters	93,000	87	40,060	35%	0.155	2

Notes:
1. From the Notice of Preparation dated 11/19/2014. Based on factors used in the Sacramento Entertainment and Sports Center & Related Development EIR, 2013.
2. Waste generation from Ben Draa, Senior Financial Analyst, GSW.
3. Average for Services - Business Services, from CalRecycle (http://www.calrecycle.ca.gov/WasteChar/DispRate.htm).
4. Calculated diversion rate based on information provided by Ben Draa, Senior Financial Analyst, GSW.

Solid Waste Indirect GHG Emissions Estimates

Project Emission Calculations

Use	Square Footage[1]	Solid Waste Generation Rate[2]		Solid Waste Generation	Scaling Percentage	CO_2e EF	Emissions
	[square feet]			[tons/yr]		[MT CO_2e/MT waste]	[MT CO_2e/yr]
Event Center	750,000	1.29	tons/1000 sf-yr	968	-	0.155	136
GSW Office Space[3]	25,000	1	lb/100 sf-d	33	-		5
Untransferred Events at Oracle Arena[4]	500,000	1.29	tons/1000 sf-yr	645	24%		21
						Total Emissions:	162

Notes:

1. From the Notice of Preparation dated 11/19/2014.
2. Based on factors used in the Sacramento Entertainment and Sports Center & Related Development EIR, 2013.
3. GSW office assumed to operate 260 days a year.
4. Oracle Arena will continue to operate without GSW games and with 50% of the baseline non-game events. Thus, the emissions were scaled by 24%, the percentage of all events that will continue to occur at the Oracle Arena.

References:

CalRecycle. 2006. Waste Disposal and Diversion Findings for Selected Industry Groups. June.
Available online at http://www.calrecycle.ca.gov/Publications/Documents/Disposal%5C34106006.pdf.

Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report.
Available at http://www.ipcc.ch/ipccreports/sar/wg_I/ipcc_sar_wg_I_full_report.pdf

Water Indirect GHG Emissions Estimates

Water Indirect GHG Emissions Estimates

Determination of Emission Factor

Excerpt of Table A4-6 of Implementing a Public Goods Charge for Water, 2020 GHG emissions per acre-foot of urban water in California (p. 32 of 48 of pdf)

Stage	State Average (ton CO_2/acre-foot)
Supply	0.6
Treatment	0.01
Distribution	0.1
Wastewater	0.1
End Use	1.7
Total	**2.51**
Total Excluding End Use	**0.81**

Conversion Factors

1 acre-foot =	325,851 gal
1 Mgal =	1,000,000 gal
1 MT CO_2 =	1 MT CO_2e

Emission factor for indirect GHG emissions from water: 2.255 MT CO_2e/Mgal

Oracle Arena and GSW HQ Emission Calculations

Venue	Water Use Rate[1]	Area	Annual Water Use[2]	Emission Factor	Emissions
	[gal/1000 sq ft-yr]	[sq ft]	[Mgal/yr]	[MT CO_2e/Mgal]	[MT CO_2e/yr]
Oracle Arena	458,266	500,000	229	2.255	517
GSW Headquarters	-	-	0.465		1
				Total Emissions:	**518**

Notes:
1. Based on data from the "Commercial and Institutional End Uses of Water" report (AWWA Research Foundation 2000).
2. GSW Headquarters water use based on information provided by Ben Draa, Senior Financial Analyst, GSW.

Water Indirect GHG Emissions Estimates

Project Emission Calculations

Project Component	Water Use Rate[1]	CO_2e EF	Emissions
	[Mgal/yr]	[MT CO_2e/Mgal]	[MT CO_2e/yr]
Event Center (includes GSW office)	9.1	2.255	21
Landscape	0.54		1.2
Washdown & Facility Cleaning	0.76		1.7
		Total Emissions:	24

Venue	Water Use Rate[2]	Area	Annual Water Use	Scaling Percentage	Emission Factor	Emissions
	[gal/1000 sq ft-yr]	[sq ft]	[Mgal/yr]		[MT CO_2e/Mgal]	[MT CO_2e/yr]
Untransferred Events at Oracle Arena[3]	458,266	500,000	229	24%	2.255	122

Notes:
1. Based on Project Water Demand Memorandum dated November 14, 2014.
2. Based on data from the "Commercial and Institutional End Uses of Water" report (AWWA Research Foundation 2000).
3. Oracle Arena will continue to operate without GSW games and with 50% of the baseline non-game events. Thus, the emissions were scaled by 24%, the percentage of all events that will continue to occur at the Oracle Arena.

References:

American Water Works Association Research Foundation. 2000. Commercial and Institutional End Uses of Water.

California Public Utilities Commission. 2010. Implementing a Public Goods Charge for Water
Available online at http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v4c02a19_cwp2009.pdf

Generator GHG Emissions Estimates

Generator GHG Emissions Estimates

Project Emission Calculations

Location	Size		Fuel Type	Operation[1]	CO_2 Emission Factors[2]	CO_2 Emissions
	[kW]	[hp]		[hr/yr]	[g/bhp-hr]	[MT/yr]
Mission Bay						
Arena Standby Emergency	1,500	2,012	diesel	50	526	53
Arena Standby Emergency	1,500	2,012	diesel	50		53
					Total Emissions:	106

Notes:

1. Operation for routine maintenance and testing is conservatively assumed to be 50 hours per year, the maximum allowable by the Bay Area Air Quality Management District.

2. CO_2 emission factor based on AP-42 (USEPA 1995).

References:

USEPA. 1995. AP 42, Volume I, Fifth Edition. §3.4. Large Stationary Diesel and All Stationary Dual-Fuel Engines.

Available online at: http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf

CalEEMod Run Output

GSW No Project Arena

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	16.00	1000sqft	0.37	16,000.00	0
Arena	500.00	1000sqft	160.71	500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	349	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on PG&E forecasting for Year 2017.

Land Use - Lot Acreage is CalEEMod default. ENVIRON did not modify lot acreage because it is only used for calculating construction emissions and the purpose of this run is to calculate area source emissions.

Architectural Coating -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use -

Construction Phase - Construction emissions determined outside of CalEEMod

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	349
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003
Energy	0.0710	0.6453	0.5421	3.8700e-003		0.0490	0.0490		0.0490	0.0490	0.0000	1,392.2574	1,392.2574	0.0708	0.0247	1,401.4123
Mobile	2.1489	1.2957	9.4179	4.5900e-003	0.1603	0.0113	0.1715	0.0435	0.0104	0.0538	0.0000	344.7456	344.7456	0.0303	0.0000	345.3826
Waste						0.0000	0.0000		0.0000	0.0000	5.8137	0.0000	5.8137	0.3436	0.0000	13.0288
Water						0.0000	0.0000		0.0000	0.0000	69.2339	195.5137	264.7476	7.1272	0.1713	467.5124
Total	4.5046	1.9411	9.9648	8.4600e-003	0.1603	0.0603	0.2206	0.0435	0.0594	0.1029	75.0476	1,932.5259	2,007.5734	7.5720	0.1960	2,227.3458

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	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003
Energy	0.0710	0.6453	0.5421	3.8700e-003		0.0490	0.0490		0.0490	0.0490	0.0000	1,392.2574	1,392.2574	0.0708	0.0247	1,401.4123
Mobile	2.1489	1.2957	9.4179	4.5900e-003	0.1603	0.0113	0.1715	0.0435	0.0104	0.0538	0.0000	344.7456	344.7456	0.0303	0.0000	345.3826
Waste						0.0000	0.0000		0.0000	0.0000	5.8137	0.0000	5.8137	0.3436	0.0000	13.0288
Water						0.0000	0.0000		0.0000	0.0000	69.2339	195.5137	264.7476	7.1259	0.1710	467.4019
Total	4.5046	1.9411	9.9648	8.4600e-003	0.1603	0.0603	0.2206	0.0435	0.0594	0.1029	75.0476	1,932.5259	2,007.5734	7.5707	0.1957	2,227.2354

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.14	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

3.1 Mitigation Measures Construction

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	2.1489	1.2957	9.4179	4.5900e-003	0.1603	0.0113	0.1715	0.0435	0.0104	0.0538	0.0000	344.7456	344.7456	0.0303	0.0000	345.3826
Unmitigated	2.1489	1.2957	9.4179	4.5900e-003	0.1603	0.0113	0.1715	0.0435	0.0104	0.0538	0.0000	344.7456	344.7456	0.0303	0.0000	345.3826

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	5,355.00	5,355.00	5355.00	105,043	105,043
General Office Building	176.16	37.92	15.68	318,998	318,998
Total	5,531.16	5,392.92	5,370.68	424,041	424,041

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
Arena	9.50	7.30	7.30	0.00	81.00	19.00	0.66	0.28	0.6
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
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.028417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0710	0.6453	0.5421	3.8700e-003		0.0490	0.0490		0.0490	0.0490	0.0000	702.5153	702.5153	0.0135	0.0129	706.7907
NaturalGas Unmitigated	0.0710	0.6453	0.5421	3.8700e-003		0.0490	0.0490		0.0490	0.0490	0.0000	702.5153	702.5153	0.0135	0.0129	706.7907
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	689.7421	689.7421	0.0573	0.0119	694.6216
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	689.7421	689.7421	0.0573	0.0119	694.6216

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	1.284e+007	0.0692	0.6294	0.5287	3.7800e-003		0.0478	0.0478		0.0478	0.0478	0.0000	685.1913	685.1913	0.0131	0.0126	689.3613
General Office Building	324640	1.7500e-003	0.0159	0.0134	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.3240	17.3240	3.3000e-004	3.2000e-004	17.4295
Total		0.0710	0.6453	0.5421	3.8800e-003		0.0491	0.0491		0.0491	0.0491	0.0000	702.5153	702.5153	0.0135	0.0129	706.7907

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					
Arena	1.284e+007	0.0692	0.6294	0.5287	3.7800e-003		0.0478	0.0478		0.0478	0.0478	0.0000	685.1913	685.1913	0.0131	0.0126	689.3613
General Office Building	324640	1.7500e-003	0.0159	0.0134	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.3240	17.3240	3.3000e-004	3.2000e-004	17.4295
Total		0.0710	0.6453	0.5421	3.8800e-003		0.0491	0.0491		0.0491	0.0491	0.0000	702.5153	702.5153	0.0135	0.0129	706.7907

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	4.135e+005	654.5860	0.0544	0.0113	659.2168
General Office Building	222080	35.1561	2.9200e-003	6.0000e-004	35.4048
Total		689.7420	0.0573	0.0119	694.6216

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	4.135e+005	654.5860	0.0544	0.0113	659.2168
General Office Building	222080	35.1561	2.9200e-003	6.0000e-004	35.4048
Total		689.7420	0.0573	0.0119	694.6216

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	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003
Unmitigated	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0152					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7000e-004	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003
Total	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003

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	0.2691					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0152					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.7000e-004	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003
Total	2.2848	5.0000e-005	4.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	9.2200e-003	9.2200e-003	3.0000e-005	0.0000	9.7600e-003

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	264.7476	7.1272	0.1713	467.5124
Mitigated	264.7476	7.1259	0.1710	467.4019

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	215.385 / 13.748	260.4439	7.0343	0.1690	460.5603
General Office Building	2.84374 / 1.74294	4.3038	0.0930	2.2500e-003	6.9521
Total		264.7476	7.1272	0.1713	467.5124

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	215.385 / 13.748	260.4439	7.0330	0.1688	460.4513
General Office Building	2.84374 / 1.74294	4.3038	0.0929	2.2400e-003	6.9506
Total		264.7476	7.1259	0.1710	467.4019

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.8137	0.3436	0.0000	13.0288
Unmitigated	5.8137	0.3436	0.0000	13.0288

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	13.76	2.7932	0.1651	0.0000	6.2596
General Office Building	14.88	3.0205	0.1785	0.0000	6.7692
Total		5.8137	0.3436	0.0000	13.0288

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	13.76	2.7932	0.1651	0.0000	6.2596
General Office Building	14.88	3.0205	0.1785	0.0000	6.7692
Total		5.8137	0.3436	0.0000	13.0288

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

GSW Mission Bay Arena

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	750.00	1000sqft	241.07	750,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	349	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on PG&E forecasting for Year 2017

Land Use - Actual lot size is different than CalEEMod default acreage values but default values are used here since lot acreage only affects the construction equipment list, and construction emissions are calculated outside of CalEEMod.

Architectural Coating -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use - 'Title 24 eletricity and natural gas energy intensities have been adjusted for 2013 standards per CEC report: http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf

Construction Phase - Construction emissions determined outside of CalEEMod

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	0.00
tblEnergyUse	T24E	1.48	1.16
tblEnergyUse	T24NG	18.78	15.60
tblProjectCharacteristics	CO2IntensityFactor	641.35	349
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142
Energy	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	1,844.4003	1,844.4003	0.0957	0.0327	1,856.5582
Mobile	3.1053	1.6891	12.9948	4.2800e-003	0.0596	0.0130	0.0725	0.0162	0.0119	0.0281	0.0000	318.3972	318.3972	0.0373	0.0000	319.1807
Waste						0.0000	0.0000		0.0000	0.0000	4.1897	0.0000	4.1897	0.2476	0.0000	9.3895
Water						0.0000	0.0000		0.0000	0.0000	102.4976	288.1682	390.6658	10.5514	0.2535	690.8405
Total	6.5172	2.5163	13.6967	9.2400e-003	0.0596	0.0759	0.1354	0.0162	0.0748	0.0910	106.6873	2,450.9790	2,557.6664	10.9321	0.2863	2,875.9830

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	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142
Energy	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	1,844.4003	1,844.4003	0.0957	0.0327	1,856.5582
Mobile	3.1053	1.6891	12.9948	4.2800e-003	0.0596	0.0130	0.0725	0.0162	0.0119	0.0281	0.0000	318.3972	318.3972	0.0373	0.0000	319.1807
Waste						0.0000	0.0000		0.0000	0.0000	4.1897	0.0000	4.1897	0.2476	0.0000	9.3895
Water						0.0000	0.0000		0.0000	0.0000	102.4976	288.1682	390.6658	10.5495	0.2531	690.6770
Total	6.5172	2.5163	13.6967	9.2400e-003	0.0596	0.0759	0.1354	0.0162	0.0748	0.0910	106.6873	2,450.9790	2,557.6664	10.9302	0.2859	2,875.8196

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.14	0.01

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

3.1 Mitigation Measures Construction

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	3.1053	1.6891	12.9948	4.2800e-003	0.0596	0.0130	0.0725	0.0162	0.0119	0.0281	0.0000	318.3972	318.3972	0.0373	0.0000	319.1807
Unmitigated	3.1053	1.6891	12.9948	4.2800e-003	0.0596	0.0130	0.0725	0.0162	0.0119	0.0281	0.0000	318.3972	318.3972	0.0373	0.0000	319.1807

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	8,032.50	8,032.50	8032.50	157,565	157,565
Total	8,032.50	8,032.50	8,032.50	157,565	157,565

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
Arena	9.50	7.30	7.30	0.00	81.00	19.00	0.66	0.28	0.6

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946
NaturalGas Unmitigated	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	943.8860	943.8860	0.0784	0.0162	950.5636
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	943.8860	943.8860	0.0784	0.0162	950.5636

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	1.6875e+007	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946
Total		0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946

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					
Arena	1.6875e+007	0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946
Total		0.0910	0.8272	0.6949	4.9600e-003		0.0629	0.0629		0.0629	0.0629	0.0000	900.5143	900.5143	0.0173	0.0165	905.9946

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	5.9825e+006	943.8860	0.0784	0.0162	950.5636
Total		943.8860	0.0784	0.0162	950.5636

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	5.9625e+006	943.8860	0.0784	0.0162	950.5636
Total		943.8860	0.0784	0.0162	950.5636

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	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142
Unmitigated	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3911					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9291					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.8000e-004	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142
Total	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142

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	0.3911					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9291					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.8000e-004	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142
Total	3.3209	7.0000e-005	7.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0142

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	390.6658	10.5514	0.2535	690.8405
Mitigated	390.6658	10.5495	0.2531	690.6770

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	323.078 / 20.622	390.6658	10.5514	0.2535	690.8405
Total		390.6658	10.5514	0.2535	690.8405

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	323.078 / 20.622	390.6658	10.5495	0.2531	690.6770
Total		390.6658	10.5495	0.2531	690.6770

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.1897	0.2476	0.0000	9.3895
Unmitigated	4.1897	0.2476	0.0000	9.3895

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	20.64	4.1897	0.2476	0.0000	9.3895
Total		4.1897	0.2476	0.0000	9.3895

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	20.64	4.1897	0.2476	0.0000	9.3895
Total		4.1897	0.2476	0.0000	9.3895

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

GSW Mission Bay Non-Arena

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.00	1000sqft	0.57	25,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	349	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on PG&E forecasting for Year 2017.

Land Use - Actual lot size including event center is 12 acres. CalEEMod default acreage values are used here since lot acreage only affects the construction equipment list, and construction emissions are calculated outside of CalEEMod.

Architectural Coating -

Energy Use - Title 24 eletricity and natural gas energy intensities have been adjusted for 2013 standards per CEC report: http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf

Construction Phase - Construction emissions determined outside of CalEEMod

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblEnergyUse	T24E	5.01	3.92
tblEnergyUse	T24NG	19.28	16.04
tblProjectCharacteristics	CO2IntensityFactor	641.35	349
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004
Energy	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	73.3639	73.3639	4.6400e-003	1.2900e-003	73.8605
Mobile	0.1229	0.2651	1.1792	2.7200e-003	0.1884	4.0800e-003	0.1925	0.0511	3.7500e-003	0.0548	0.0000	207.0012	207.0012	8.5300e-003	0.0000	207.1804
Waste						0.0000	0.0000		0.0000	0.0000	4.7195	0.0000	4.7195	0.2789	0.0000	10.5768
Water						0.0000	0.0000		0.0000	0.0000	1.4097	5.3150	6.7247	0.1452	3.5100e-003	10.8628
Total	0.2359	0.2860	1.1969	2.8500e-003	0.1884	5.6700e-003	0.1941	0.0511	5.3400e-003	0.0554	6.1292	285.6806	291.8098	0.4373	4.8000e-003	302.4807

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	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004
Energy	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	73.3639	73.3639	4.6400e-003	1.2900e-003	73.8605
Mobile	0.1229	0.2651	1.1792	2.7200e-003	0.1884	4.0800e-003	0.1925	0.0511	3.7500e-003	0.0548	0.0000	207.0012	207.0012	8.5300e-003	0.0000	207.1804
Waste						0.0000	0.0000		0.0000	0.0000	4.7195	0.0000	4.7195	0.2789	0.0000	10.5768
Water						0.0000	0.0000		0.0000	0.0000	1.4097	5.3150	6.7247	0.1452	3.5000e-003	10.8803
Total	0.2359	0.2860	1.1969	2.8500e-003	0.1884	5.6700e-003	0.1941	0.0511	5.3400e-003	0.0554	6.1292	285.6806	291.8098	0.4373	4.7900e-003	302.4784

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.21	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

3.1 Mitigation Measures Construction

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	0.1229	0.2651	1.1792	2.7200e-003	0.1884	4.0800e-003	0.1925	0.0511	3.7500e-003	0.0548	0.0000	207.0012	207.0012	8.5300e-003	0.0000	207.1804
Unmitigated	0.1229	0.2651	1.1792	2.7200e-003	0.1884	4.0800e-003	0.1925	0.0511	3.7500e-003	0.0548	0.0000	207.0012	207.0012	8.5300e-003	0.0000	207.1804

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	275.25	59.25	24.50	498,434	498,434
Total	275.25	59.25	24.50	498,434	498,434

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
0.527987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848
NaturalGas Unmitigated	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.6176	50.6176	4.2100e-003	8.7000e-004	50.9757
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.6176	50.6176	4.2100e-003	8.7000e-004	50.9757

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	426250	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848
Total		2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848

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	426250	2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848
Total		2.3000e-003	0.0209	0.0176	1.3000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	22.7463	22.7463	4.4000e-004	4.2000e-004	22.8848

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	319750	50.6176	4.2100e-003	8.7000e-004	50.9757
Total		50.6176	4.2100e-003	8.7000e-004	50.9757

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	319750	50.6176	4.2100e-003	8.7000e-004	50.9757
Total		50.6176	4.2100e-003	8.7000e-004	50.9757

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	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004
Unmitigated	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0976					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	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004
Total	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004

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	0.0130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0976					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	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004
Total	0.1107	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.7000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	6.7247	0.1452	3.5100e-003	10.8626
Mitigated	6.7247	0.1452	3.5000e-003	10.8603

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.44334 / 2.72334	6.7247	0.1452	3.5100e-003	10.8626
Total		6.7247	0.1452	3.5100e-003	10.8626

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.44334 / 2.72334	6.7247	0.1452	3.5000e-003	10.8603
Total		6.7247	0.1452	3.5000e-003	10.8603

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.7195	0.2789	0.0000	10.5768
Unmitigated	4.7195	0.2789	0.0000	10.5768

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	23.25	4.7195	0.2789	0.0000	10.5768
Total		4.7195	0.2789	0.0000	10.5768

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	23.25	4.7195	0.2789	0.0000	10.5768
Total		4.7195	0.2789	0.0000	10.5768

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

GSW Mission Bay Non-Arena

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	475.00	1000sqft	10.90	475,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	349	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on PG&E forecasting for Year 2017.

Land Use - Actual lot size including event center is 12 acres. CalEEMod default acreage values are used here since lot acreage only affects the construction equipment list, and construction emissions are calculated outside of CalEEMod.

Architectural Coating -

Energy Use - Title 24 eletricity and natural gas energy intensities have been adjusted for 2013 standards per CEC report: http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf

Construction Phase - Construction emissions determined outside of CalEEMod

Off-road Equipment -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	3.92	3.07
tblProjectCharacteristics	CO2IntensityFactor	641.35	349
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	442.8943	442.8943	0.0368	7.6100e-003	446.0275
Mobile	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	0.0000	0.0000
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	2.1032	4.0000e-005	4.4500e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	442.9028	442.9028	0.0368	7.6100e-003	446.0365

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	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	442.8943	442.8943	0.0368	7.6100e-003	446.0275
Mobile	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	0.0000	0.0000
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	2.1032	4.0000e-005	4.4500e-003	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	442.9028	442.9028	0.0368	7.6100e-003	446.0365

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

3.1 Mitigation Measures Construction

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	0.0000	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	0.0000	0.0000
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	442.8943	442.8943	0.0368	7.6100e-003	446.0275
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	442.8943	442.8943	0.0368	7.6100e-003	446.0275

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	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

5.2 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					
Enclosed Parking with Elevator	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

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	2.79775e+006	442.8943	0.0368	7.6100e-003	446.0275
Total		442.8943	0.0368	7.6100e-003	446.0275

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	2.79775e+006	442.8943	0.0368	7.6100e-003	446.0275
Total		442.8943	0.0368	7.6100e-003	446.0275

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	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003
Unmitigated	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2477					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8551					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	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003
Total	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003

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	0.2477					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8551					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	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003
Total	2.1032	4.0000e-005	4.4500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.4900e-003	8.4900e-003	2.0000e-005	0.0000	8.9800e-003

7.0 Water Detail

7.1 Mitigation Measures Water

	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

Unmitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		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			
Enclosed Parking with Elevator	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

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation