Sustainability Roadmap 2020-2021

California Exposition & State Fair (Cal Expo)

Progress Report and Plan for Meeting
the Governor's Sustainability Goals

For California State Agencies

California Exposition & State Fair
Gavin Newsom, Governor

November, 2021

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Chapter 1- Climate Change Adaptation

Cal Expo's efforts to be sustainable includes prioritizing climate change in the planning process for large projects, addressing needs for shade, and education to guests. With deferred maintenance funds, Cal Expo has reroofed three buildings with reflective durable roofs. Stainless steel cooling towers have replaced old systems in the same three buildings. The Cal Expo 1.8 miles of old gas lines throughout the entire fairgrounds was recently replaced.

The property has hundreds of trees. While adapting to climate change, more attention has been given to the ongoing health and support of the trees. Diseased trees are removed when necessary and new trees planted. Although landscape watering has been cut back considerably, the trees continue to benefit from regular watering. Cal Expo also rents large amounts of shade for the hot summer months. Shade cover is important for guests and animals. Low energy high efficiency fans have been purchased for the pavilion, our largest building to keep animals and guests cool. Plans for new automatic doors in some of the buildings is also underway. New doors will help keep indoor temperatures easier to manage and control.

When planning for hotter or wetter seasons, we have updated our evacuation plans to include the evacuation of people and animals due to flooding and/or evacuation due to fires on the American River Parkway. Staff are trained to clear and give attention to the many storm drains when storms are forecasted. Parts of this property have flooded in the past due to water coming from Chicken Ranch Slough. Rainwater enters into the Cal Expo property from Ethan Way. As a result, information and maps are provided to guests who may be staying in their RV on the property. Staff contact information is provided to guests in the event a guest needs additional support/help in moving their RV. The American River Flood Control Agency has removed trees from the levee on the south side of Cal Expo's developed property. The trees on the levee were considered a weakness to the levee structure.

Fires in the Parkway are random and are generally caused by people. An evacuation plan is in place whereby attendees can be directed the safest way to exit the property. We have evacuated buildings in the past due to intense smoke coming from a fire in the Parkway. Planning for adapting to climate change is important for Cal Expo's role as an Emergency Facility, in addition to our role as a venue for educational and entertainment purposes.

Chapter 2 – Zero Emission Vehicles

The Cal Expo fleet is aged. The maintenance vehicles that include heavy-duty trucks, light duty trucks, sedans, and vans are driven almost exclusively on the Cal Expo property. The property consists of 700 acres. The developed portion of the property is 350 acres and the undeveloped portion of the property in is the American River Parkway. Maintenance and event service vehicles rarely leave the property. Maintenance and event service vehicles often tow a trailer which contains equipment being moved for event support. The police vehicles are driven primarily on the property but are also driven on the streets around the property to assist with traffic control when there are a large number of vehicles entering or exiting the property.

The largest use of ZEV's on the property are electrical golf carts using L1 charging. There are approximately 50- L1 charging ports within the property. The golf carts make sense for safely navigating around crowds during the events. We have not purchased any truck or sedan ZEV's as they are cost prohibitive at this time and we do not have the permanent infrastructure for charging any vehicle that requires over L1 charging.

During the annual state fair, we have been able to provide temporary L2 charging for guests in one of our parking lots. We have approximately 12,000 parking spaces for public to use during their visit. Cal Expo wants to invest in ZEV permanent charging ports for public attendee parking and hopes to obtain funding for these projects. Due to a significant financial decline and layoff of staff during the pandemic we are unable to support the financial investment at this time. However, for our particular type of business, we see the public use of charging stations as a greater need than the need to purchase ZEV's for staff use on the Cal Expo grounds.

The Cal Expo fleet asset is not capable of having telematics installed due to the aged of our fleet.

Chapter 3 – Energy

Cal Expo has reached and exceeded the requirement to reduce grid based energy purchase by 2018. As of 2020, grid based electrical purchase has decreased by 43%. The decrease is due to conservation efforts and the closing of Cal Expo to events in March of 2020. The natural gas purchase has decreased by 55% as of the end of 2020. This is due to conservation efforts and the closing of Cal Expo to events during the pandemic. Cal Expo pivoted to the position of being an emergency response facility for 16 months during the pandemic offering Covid-19 testing and vaccinations. Additionally, Cal Expo

replaced over 1.8 miles of 50-year-old natural gas lines, which required that shut down of gas was required for several months.

New reflective cooler roofs have replaced 50-year-old roofs on three of our buildings. New stainless steel cooling towers replaced 50-year-old inefficient cooling systems in three of our buildings. Cal Expo IT Department has achieved major upgrades of servers and individual workstations including: implementing power management practices on all computers, printers, copiers, scanners and monitors, ensuring that during normal business hours devices that are not in use for 30 minutes automatically go into an energy saving mode.

Cal Expo is not in the planning process for new building construction; however, is continually repairing/replacing below ground and above ground infrastructure with deferred maintenance funds. Cal Expo partners with California Construction Authority to ensure Title 24 compliance and, as a purchaser of large planning materials it considers industry best practices in environmental and conservation sustainability.

The goal for the future for Cal Expo is the replacement of outdated solar panels. Years ago, in conjunction with SMUD, one parking lot has a solar array built to produce one megawatt of photovoltaic panels. The panels have reached their life expectancy and are no long producing power. There are solar panels on the roofs of the Cal Expo horse barns. These panels are also no longer productive. Cal Expo continues to dialogue with SMUD and others to determine the next step for the wide spread use of solar on the property. Cal Expo executives have also spoken with the current Administration as being available as a solar farm to produce renewable energy for nearby State buildings, including the State Capitol.

Chapter 4 – Water Efficiency and Conservation

The Cal Expo water system is operated and managed by the Cal Expo maintenance staff and a licensed water distribution contractor. The water system solely serves the Cal Expo facility. The water system is supplied by four wells. The well pumps are automatically started and stopped by an electronic level control system on an elevated 300,000-gallon storage tank (known as the Cal Expo water tower).

In 2020, with deferred maintenance funds, the tower received new cathodic protection and much needed painting. Although the protection for the tower was still in place, the protection performance had denigrated to the point that our inspection reports recommended replacement since 2018. The cost was approximately $800,000. This water storage is the primary source of water for the

facility. The water system is a funding priority for Cal Expo with the emphasis on water storage and well efficiency first. In 2019, Well 1A was underperforming and a project began to replace the well. In 2020, the new well was dug and final construction took place. This was funded with deferred maintaintence funds at a final cost of approximately 1 million dollars.

Water main valve replacement was completed in 2020. In 2020, water usage by the Cal Expo facility was 97,120,000 gallons. Water provided to Bushy Lake from Cal Expo was approximately 70,540,000 gallons. Total water usage for 2020 was 167,660,000 down from 214,848,000 gallons in the 2003 baseline year. This is a reduction of 22% in water usage from the baseline year. The water provided to maintain the ecosystem at Bushy Lake is concerning with the ongoing drought conditions but Cal Expo is required by legislation to support Bushy Lake by providing an adequate water supply. Assembly Bill 175 states the Bushy Lake Preservation Act requires the Cal Expo Board of Directors to preserve the Bushy Lake area consistent with the features of a natural preserve.

With a 2016 water grant program, we replaced all of 398 toilets, 168 urinals, 314 sink faucets, and 43 showerheads with low flow equipment. We have seen significant water savings with the change in these fixtures. We have completed some smaller indoor water savings projects but our priority has been to complete the large projects that included the well replacement and water tower upgrades.

Chapter 5 – Green Operations

Cal Expo has achieved great progress towards greenhouse gas reduction since the 2010 baseline year. In 2020, purchases of electricity was reduced by 50%. Some of the reduction was due to the pandemic and the change of direction for the venue. Cal Expo did not host events but did host COVID-19 testing and vaccinations beginning in March of 2020 until mid-year 2021. Purchase of natural gas was also reduced by over 50% in 2020. As mentioned earlier, Cal Expo began the process for replacing 50 year old gas lines in 2020 with the completion date in 2021.

Cal Expo had no new building construction since 2012. Cal Expo will implement mandatory measures and best practices related to indoor air quality in the future should any new building construction be planned. The 99,000 square foot livestock pavilion is the largest building on the facility and is not eligible for LEED EBOM. Cal Expo, within design specifications, is operating HVAC systems to provide no less than the minimum required ventilation during work hours. Cal Expo has one stationery engineer who inspects and documents HVAC systems

annually including all elements specified in management Memo 14-05 and OSHA's Title 8.

No major class of recycling material is being sent to the landfill. Due to the nature of the business, when there is large attendance on the grounds, some materials slip past recycling efforts. Cal Expo's recycling program includes aluminum, asphalt, concrete, green waste, paper, cardboard, plastic bottles, scrap metal, wood waste, glass, grease, e-waste, tires, used oil and automotive wastes are are collected and sorted for shipment to commercial recyclers. This agency also pursues all avenues to provide information electronically and with signage to lower the generation of waste in the first place. Exhibits are shared with other fairs to save resources. Exhibits are stored and repurposed annually. Cal Expo utilizes used equipment (State surplus) in maintenance and operations. Cal Expo is active in exchanging equipment and supplies with other fairs to maximize utilization of limited resources. Recycling training and education includes signage (signs, posters, bin labeling), fact sheets for office recycling, employee training, and waste evaluations/surveys.

With the assistance of our new master food and beverage contractor, organic recycling will continue with a greater emphasis on educating the public. Recyclable and/or reusable packaging options are becoming more available. Our new food and beverage contractor is familiar with our goals and is committed to the same sustainability measures.

Tom Martinez
Executive Director

CHAPTER 1 - CLIMATE CHANGE ADAPTATION

Executive Order B-30-15 directs State Agencies to integrate climate change into all planning and investment. Planning and investment can include the following:

- Infrastructure and capital outlay projects
- Grants,
- Development of strategic and functional plans,
- Permitting,
- Purchasing and procurement,
- Guidance development,
- Regulatory activity,
- Outreach, and education.

Climate Change Risks to Facilities

For all infrastructure, it is important to assess the risk that a changing climate poses to an asset or project (e.g., sea level rise or increasing daily temperatures). It is also important to recognize the impact that an infrastructure project has on the surrounding community and the impacts on individual and community resilience (e.g., heat island impacts).

To determine how to consider climate change for a given project or plan or existing infrastructure, this department will consider the following screening questions.

1. What is the lifetime of the facility, planned project, or plan?
2. Could it be affected by changing average climate conditions or increases in extreme events over its lifetime? California is susceptible to many climate risks, with many locations at risk from multiple impacts, for example wildfire and mudslides in the same year. It is important to consider the possibility of single climate impacts, as well multiple, compounding events that may cause you to plan more conservatively. *[In order to address this question, please see below on understanding climate risk to see where to look at data and projections. You can also refer to the Planning & Investing for a Resilient California Guidebook.*
3. What are the consequences of that disruption? When answering this, consider how the project/site will be used in its useful lifetime.
4. Will that disruption affect vulnerable populations, critical natural systems, critical infrastructure, or other assets?

5. Will that disruption cause irreversible effects or pose an unacceptable risk to public health and safety?

One of the ways that Cal Expo is approaching climate change considerations is to prioritize climate changes in the planning & preparing for capital outlay projects. While there are no new facilities planned at Cal Expo, we have used deferred maintenance funds to replace large critical items on the property. When planning for the replacement of building roofs the 20-30 year lifetime of a roof along with the new advantages of "cool roofs" was researched with the goal of selecting roofing that was reflective and durable. The installation of new cooling towers for buildings provides further resilience to the buildings. The 20 year lifetime of the new stainless steel cooling towers provides indoor protection from extreme climate. The planning approach to include climate considerations is of top priority as the Cal Expo facility includes large public use of outdoor and indoor areas. The effect of higher temperatures in the future in Sacramento has been a concern in that Cal Expo hosts both indoor and outdoor events that draws a large number of public. Planning for higher temperatures in the summer and lower temperatures in the winter has always been considered as attendees are affected. The attendees to the Cal Expo property are coming not just for entertainment but as of the last 18 months, attendees have come for COVID 19 testing and vaccinations. The property is designated as an emergency support facility in times of need. Lower temperatures that include higher levels of precipitation are also considered, as Cal Expo is located on a floodplain near the American River. The following are considered: 1. The lifetime of the proposed replacement. 2. The level of energy savings potential when planning a capital outlay project. 3. The positive or negative affect of the replacement product for the public during their visit to the property 4. Is there a more sustainable product that may provide the highest/best use should climate and precipitation rise dramatically over the proposed life of the product? This is considered in the initial planning.

Natural Infrastructure to Protect Facilities

EO B-30-15 directs State agencies to prioritize the use of natural and green infrastructure solutions. Natural infrastructure is the "*preservation or restoration of ecological systems or the utilization of engineered systems that use ecological processes to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but need not be limited to, flood plain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days*" (Public Resource Code Section 71154(c)(3)).

Natural infrastructure solutions should be prioritized and fully considered when thinking through adaptation actions that can be taken for at risk facilities you will identify below, and in planning for future facilities. Examples of natural infrastructure include urban tree planting to address high heat days and rainwater harvesting, bioswales, and downspout disconnection to address increased precipitation.

Understanding the Potential Impacts of Facilities on Communities

It is also important to recognize the impact that an infrastructure project has the surrounding community and the impacts on individual and community resilience (e.g., heat island impacts).

Climate change disproportionately impacts vulnerable communities, with certain populations experiencing heightened risk and increased sensitivity to climate change and have less capacity to recover from changing average conditions and more frequent and severe extreme events. A number of factors contribute to vulnerability, often in overlapping and synergistic ways. These can include a number of social and economic factors, and be determined by existing environmental, cultural, and institutional arrangements. Vulnerable populations can include, but are not limited to, people living in poverty; people with underlying health conditions; incarnated populations; linguistically or socially isolated individuals; communities with less access to healthcare or educational resources; or communities that have suffered historic exclusion or neglect.

While there is no single tool to identify vulnerable populations in an adaptation context, there are a number of state-wide, publicly available tools that when overlaid with climate projection data can help identify communities most at risk to a changing climate. Some of these tools, including a definition for vulnerable communities, are available in a resource guide developed by the Integrated Climate Adaptation and Resiliency Program in the Office of Planning and Research

Understanding Climate Risk to Existing Facilities

Cal-Adapt is the most updated source of climate change data/projections for the State of California.

Background on Climate Projections: Global Circulation Models (GCMs) are used to project future climate conditions. Models project future climate conditions under different future emission scenarios that are called Representative

Concentration Pathways (RCPs). Different RCPs essentially represent different rates and magnitudes of global greenhouse gas (GHG) emission reduction.

Of the 32 internationally-recognized course-resolution GCMs, the State of California has chosen four models to utilize in its climate studies for the Fourth Assessment.[1] The following four models were selected to capture a range of different climate futures:

- Model 1: HadGEM2-ES characterizes a warm and dry future (warm/dry)
- Model 2: CNRM-CM5 characterizes a cool and dry future (cool/wet)
- Model 3: CanESM2 characterizes an average future condition (average)
- Model 4: MIROC5 provides a complement to the above models, and covers a range of outputs

Risk from Changing Extreme Temperatures:

Under a changing climate, temperatures are expected to increase – both at the high and low end. As a result, facilities will experience higher maximum temperatures and increased minimum temperatures. In addition to changing average temperatures, climate change will increase the number of extreme heat events across the State. Extreme events are already being experienced, and they are likely to be experienced sooner than changes in average temperatures.

Table 1.1: Top 5-10 Facility that Will Experience the Largest Increase in Extreme Heat Events

1 Pierce, D.W., D.R. Cayan, L. Dehann. June 2016. Creating Climate projections to support the 4th California Climate Assessment.

Facility Name	Extreme heat threshold (EHT) °F	Average # of days above EHT (1961-1990)	Average # of days above EHT (2031-2060)	Change from Historical to projected average # of days above EHT (2031-2060)	Avg. # days above EHT (2070-2099)	Change from historical to projected average # of days above EHT (2070-2099)	Increase in # of days above EHT by mid-century (2031-2060)	Increase in Avg. # days above EHT by end of century (2070-2099)
Cal Expo	103.7	4	18	14	27	23	14	13

Table 1.2 a: Facility Most Affected by Changing Temperature – Annual Mean Max. Temp

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031-2060)	Annual Mean Max Temp. (2070-2099)	Change from Historical to Annual Mean Max. Temp (2070-2099)
Cal Expo	77.0	81.6	4.6	83.8	6.8

Table 1.2 b: Facility Most Affected by Changing Temperature- Annual Mean Min Temp

Facility Name	Historical Annual Mean Min. Temp. (1961 – 1990)	Annual Mean Min. Temp. (2031 – 2060) °F	Change from Annual Mean Min. Temp (2031-2060)	Annual Mean Min. Temp. (2070-2099 °F	Change from Annual Mean Min. Temp (2070-2099)
Cal Expo	46.6	50.8	4.2	52.3	5.7

Heating and Cooling Degree Days

A Heating Degree Day (HDD) is defined as the number of degrees by which a daily average temperature is below a reference temperature (i.e., a proxy for when heat would be needed). The reference temperature is typically 65

degrees Fahrenheit, although different utilities and planning entities sometimes use different reference temperatures. The reference temperature loosely represents an average daily temperature *above which* space heating is not needed. The average temperature is represented by the average of the maximum and minimum daily temperature. Similarly, a Cooling Degree Day (CDD) is defined as the number of degrees by which a daily average temperature exceeds a reference temperature. The reference temperature is also typically 65 degrees Fahrenheit, and different utilities and planning entities sometimes use different reference temperatures. The reference temperature loosely represents an average daily temperature *below which* space cooling (e.g., air conditioning) is not needed.

Table 1.3: Facility that will be Most Impacted by Projected Changes in Heating and Cooling Degree Days (HDD/CDD)

Facility Name	Heating/Cooling Degree Days (1961-1990) (HDD/CDD)	Heating/Cooling Degree Days (2031-2060) (HDD/CDD)	Heating/Cooling Degree Days (2070-2099) (HDD/CDD)
Cal Expo	Cooling 1385	Cooling 2072	Cooling 2446
	Heating 2441	Heating 1841	Heating 1593

Below Cal Expo is addressing the climate change risk questions:

- HHD and CDD are of concern for staff and public attendees. Because Cal Expo has large outdoor areas surrounding buildings, shade structures are rented or purchased to provide protection from the sun. Cal Expo has hundreds of trees on the property and diseased or fallen trees are replaced throughout the facility except on the levee. High precipitation is more difficult to manage due to Cal Expo's location. Evacuation plans are in place for guests and animals should the property be affected by water coming from Chicken Ranch Slough or from a possible levee breach. In preparation for a possible flooding, Cal Expo staff monitors river water levels and the sloughs that could affect the property. If there is a chance that we would be affected, our evacuation plan would go into effect.

- How will an increase in extreme heat events affect your facilities? Will it pose a risk to structural integrity? Heating and cooling systems? Occupant health and safety?

  Extreme heat events will affect cooling system performance indoors. It is not anticipated that structural integrity will be an issue as the buildings have new

roofs, & new cooling towers. The roofs that were in place for many years were replaced with white roofs to reflect sunlight and save energy.

- What facilities are likely to be most impacted by an increase in extreme heat events? Are there regions of specific concern, or operations that are more sensitive to temperature?

  Specific concerns include people and animals who may be on the property during an extreme heat event. Providing shade, water, and an onsite medical first aid or transport will be important. During events with large crowds of people, medical transport is available on site and this is included in the guidelines/planning process for events.

- Describe strategies that you can employ to reduce the impact of changing temperatures, and HDD/CDD, on facility performance and/or to protect occupant health and safety (e.g., additional HVAC capacity, shade structures or tree planting, relocation, etc). For some examples of actions, review the Safeguarding California Plan: 2018 Update for your sector, or Preparing California for Extreme Heat: Guidance and Recommendations.

  Identify how climate change could affect a project or plan.

  Conduct an analysis of climate risks.

  Make a climate informed decision.

  Monitor progress.

  Our new cooling towers and new gas lines can help reduce the impact of changing temperatures on facility performance and the impact on the health and safety of staff and public. Additionally, the replacement of automatic doors on large buildings will be contracted to improve the performance of cooling and heating systems. Low energy, high efficiency fans are proven to be effective in large open building spaces.

Urban Heat Islands

Urban heat islands are areas with localized spikes in temperature, which impact human health, increase pollution, and increase energy demand. Urban heat islands occur during the hot summer months in areas with higher percentages of impervious surface and less vegetation. This is likely in areas with large parking lots, dense development, and lower tree density and shading. Urban heat islands can be mitigated (i.e., reduced) through tree planting and other greening measures, cool roofs (e.g., lighter roofing materials that reflect light), cooler pavements, and other measures.

Using the State's Urban Heat Island interactive maps, complete the following table for **all** facilities.

Table 1.4: Facility Located in Urban Heat Islands

Facility Name	Located in an urban heat island (yes/no)
Cal Expo Parking Lot A	Yes

After completing Table 1.4, please discuss the following:

- How many facilities are located in urban heat islands (or what share)?
  1 area within a 22 acre Parking Lot located next to the Capital City Freeway.
- Do those facilities have large parking lots, or other sections of impervious surface?
  Yes.
- What steps are you taking, or can you take, to reduce the facility's contribution to the urban heat island? Actions could include reducing impermeable surface areas surrounding a facility, additional greening, or shading. For additional guidance on actions that can be taken, refer to Preparing California for Extreme Heat: Guidance and Recommendations Shading, vegetation.
  Cal Expo owns and also rents large amounts of shade cloth that is installed in the Spring and removed in the Winter. Most of the shade is installed around buildings and walkways to lessen the amount of heat penetrating the facility.
  Some buildings have new white reflective roofs with insulation.
  Educational Tree Events at the California State Fair: In an effort to provide education, Cal Expo contracts with the Tree Circus to educate, demonstrate, and have fun with events including the vision that 'Healthy Communities Grow on Trees.' The exhibit at the State Fair includes a build that comes from recycled urban lumber, a Children's Activity state, and the Ask the Arborist station.
- Have you considered urban heat island in your energy plan for facilities?
  The heat island is in a dirt parking lot, which is approximately 10 acres away from building structures. No changes will be made at this time due to a 5 year construction project to widen the Capital City Freeway wherein this particular parking lot will be utilized for equipment vehicles and equipment staging. Future plans will include the addition of vegetation to the parking lot after the widening project is completed. The heat island is included in our energy plan for facilities.

Risks from Changes in Precipitation

The impacts of climate change on the amount of precipitation that California will receive in the future are slightly less certain that the impacts on temperature. However, it is expected that California will maintain its Mediterranean climate pattern (dry summers and wet winters), but more precipitation will fall as rain than as snow. It is also likely that extremes will intensify, both drought and heavy precipitation events. Larger rains can result in flooding, but will also result in shifts in runoff timing (earlier) and runoff volumes (higher). It will also result in decreased snowpack.

Table 1.5: Facility that will be Most Impacted by Projected Changes in Precipitation

Facility Name	Annual Mean Max. Precip. (1961 – 1990) (in/yr)	Annual Mean Precip. (2031 – 2060) (in/yr)	Percent Change by mid-century	Annual Mean Precip. (2070 – 2099) (in/yr)	Percent change by end of century	Extreme Precip (1961-1990) (in/day)	Extreme Precip (2031-2060) (in/day)	Extreme Precip (2070-2090) (in/day)
Cal Expo	5.14	4.39	-15%	6.95	+26%	1.33	4.06	6.13

Discuss how precipitation affects your facilities and operations. Consider facility performance, structural integrity, facility access (e.g., if surrounding roads flood), occupant health and safety, etc.

- The end of century (2100) results do not need to be planned for, but please include some discussion of how these longer-term estimates of impacts could affect facility performance. Specifically, consider what a worst-case scenario could look like and how that can inform facility design, operation, and performance benchmarking.

  The approach to increasing precipitation at Cal Expo:

  1. Areas of anticipated flooding have been identified from past flooding experiences.

  2. Drains to be checked by staff and cleared when necessary.

  3. Evacuation plans include priority areas for evacuation during flooding that are considered to be most impacted: people in rvs from the Cal Expo RV Park (low ground), vehicles and people from Parking Lot A (low ground), evacuating horses from their stalls by moving them to higher ground or (if time

permits) transporting them to higher ground. These items are included in our Flood/Evacuation Planning.

4. Evacuees coming from other communities or cities to Cal Expo on an emergency basis are considered in our flood plan. The use of second floor rooms in our grandstand for shelter is in part of our history. These areas have emergency back-up generators, water, a kitchen, and restrooms.

Risks from Sea Level Rise

Increasing global temperatures are contributing to rising sea levels. Rising sea levels will result in inundation of coastal areas and increased flooding due to storm surges. The California Ocean Protection Council (OPC) has issued the State of California Sea-Level Rise Guidance (Guidance) for State agencies on what level of sea level rise projections to consider in planning.

The Guidance provides estimates of sea level rise for the California Coast for all active tide gauges based on a range of emission trajectories, which are based on the report, Rising Seas in California: An Update on Sea-Level Rise Science. These data provide projections for use in low, medium-high, and extreme risk aversion decisions. Current guidance from the CA Coastal Commission suggests using the medium-high risk aversion or extreme risk when assessing the vulnerability of critical infrastructure.

Although rising sea levels are a concern for al Expo, we do not anticipate that phenomenon having an impact on the department. Cal Expo is identified as a facility that will be used an as evacuation facility housing victims of natural disasters being evacuated and/or displaced. Cal Expo considers this responsibility as part of the planning for extreme events. Rising sea levels could affect Cal Expo, as Sacramento is only 30 feet above sea level.

Table 1.6 : Facility at Risk from Rising Sea Levels

Facility Name	Tide Chart Region	2050 Water Level (ft)	Exposed at 2050? (y/n)	2100 Water Level (ft)	Exposed at 2100? (y/n)
Cal Expo	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Risks from Wildfire

Wildfire is a serious hazard in California. Several studies have indicated that the risk of wildfire will increase with climate change. Importantly, we are already seeing more extreme wildfire seasons that are longer and with more extreme

wildfires. By 2100, if greenhouse gas emissions continue to rise, one study found that the frequency of extreme wildfires would increase, and the average area burned statewide would increase by 77 percent. Wildfire hazard is also a critical present issue. Five of California's six largest fires all occurred in 2020[2]. 2017 and 2018 previously set records as the most destructive fire seasons in California's history[3]. To contextualize how wildfire hazards already impact California's facilities, consider that 1 in 5 California children were affected by wildfire-related school closures during the 2018-2019 school year[4].

Table 1.7: Facility Most at risk to current wildfire threats

Facility Name	Fire Hazard Severity Zone (low, medium, high, very high)
Cal Expo	low

Table 1.8: Facility that will be Most Impacted by Projected Changes in Wildfire

Facility Name	Acres Burned (1961-1990)	Acres Burned (2031-2060)	Acres Burned (2070-2099)
Cal Expo	Data not available		

Cal Expo planning for wildfire risk includes the following:

Evacuation Plans representing exiting from various points on the facility.
Mapping of public ingress/egress routes.
Addition of vegetation to parking lots/other large dirt/asphalt areas.
Clear written instructions for staff and public in RV parking areas.
Continued financial support for "cool roofs" and shade structures.
Continued careful observation of tenant compliance with Cal Fire Title 19 laws.

Summarizing Natural Infrastructure Actions to Protect Existing Facilities

For Cal Expo, flood plain and wetlands restoration or preservation planning of the property located on the American River Parkway is important. Currently

2 https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf

3 https://www.fire.ca.gov/incidents/2017/ ; https://www.fire.ca.gov/incidents/2018/

4 https://calmatters.org/projects/california-school-closures-wildfire-middletown-paradise-disaster-days/?

Bushy Lake, located on the Parkway, uses one-half of the total water pumped by Cal Expo wells. This water is to support the ecosystem at Bushy Lake.

New tree planting and replacement tree planting is ongoing on the property.

Elimination of trees/plantings on the levee between Cal Expo and the American River Parkway has been completed by American River Flood Control.

Understanding the Potential Impacts of Facilities on Communities

Disadvantaged Communities

California is required to invest certain funding streams in disadvantaged communities (DACs). Many state programs that have DAC funding requirements use CalEnviroScreen, a tool that ranks census tracts based on a combination social, economic, and environmental factors, to identify DACs. While it does not capture all aspects of climate vulnerability, it is one tool that is available, and does include several relevant characteristics. The department's facilities located in these communities can contribute or alleviate the vulnerability of these Disadvantaged Communities.

Use CalEnviroScreen to identify which facilities are located in disadvantaged communities and list them here. Complete Table 1.7. Disadvantaged communities have CalEnviroScreen scores between 75 – 100.

Table 1.9: Facility located in disadvantaged communities

Facility Name	CalEnviroScreen Score	Is it located in a disadvantaged community? Yes/No
Cal Expo	70-75%	No

After completing Table 1.9:

Understanding Climate Risk to Planned Facilities

Table 1.10 a-g: Climate Risks to New Facilities

a.1

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031-2060)	Annual Mean Max Temp. (2070-2099)	Change from Historical to Annual Mean Max. Temp (2070-2099)
No new facilities					
are planned					

Natural Infrastructure

EO B-30-15 also directs agencies to prioritize natural and green infrastructure solutions. Natural infrastructure is the "preservation or restoration of ecological systems or the utilization of engineered systems that use ecological processes to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but need not be limited to, flood plain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days" (Public Resource Code Section 71154(c)(3)).

Integrating Climate Change into Department Planning and Funding Programs

EO B-30-15 extends beyond infrastructure to broader planning efforts. Using the tables below, indicate whether you have taken the following actions in your planning processes.

Table 1.11: Integration of Climate Change into Department Planning

Plan	Have you integrated climate?	If no, when will it be integrated?	If yes, how has it been integrated?
Irrigation systems Roofs, Climate controls for indoor Buildings.	Yes	2018, 2019	Text-Capital Outlay projects

Table 1.12: Engagement and Planning Processes

Plan	Does this plan consider impacts on vulnerable populations?	Does this plan include coordination with local and regional agencies?	Does this plan prioritize natural and green infrastructure?
N/A	N/A	N/A	N/A

Table 1.13: Climate Change in Funding Programs

Grant or funding program	Have you integrated climate change into program guidelines?	If no, when will it be integrated ?	Does this plan consider impacts on vulnerable populations?	Does this program include coordination with local and regional agencies?
N/A	N/A	N/A	N/A	N/A

Measuring and Tracking Progress

Changing climate conditions necessitate an adaptive management approach. An adaptive management approach is informed by tracking changing climate conditions and the performance of a plan or project. Building check points into a project or plan timeline can help to create a system for regular review and, if needed, adjustments.

Discuss the following to explain how your department will track increase resilience and overall progress in integrating climate change into planning and investment.

- What climate impacts are of most concern to your facilities and plans? How will you keep track of how they are changing?

  Most concerning to Cal Expo is the impact of higher heat. When recording event history information the temperature is recorded to track changes in attendance that are related to higher heat days.
- How will you measure progress toward departmental goals under a changing climate?

  With the installation of new roofs and new cooling towers this year, we will be able to evaluate a comparison on average building temperatures, average cost savings, and feedback from clients.
- How will you build in flexibility and adaptability into long-term planning?

Continue to educate ourselves on patterns & be open to options. We understand that flexibility is important in the planning process as new information or new situations may dictate a change of plans.

Recognizing that this is likely a new topic for many departments, please describe the steps your department will take to ensure that the proceeding steps are undertaken for each new investment. Answer the following questions:

- What office or branch will develop a policy to integrate climate change into all infrastructure investment?

  Our Capital Outlay Department
- How will your department identify and prioritize natural and green infrastructure options?

  Continue to explore green/natural options as infrastructure planning develops. Stay educated and open to new options on methods to integrate climate change into infrastructure investment. Although no new construction is planned, we will look at what others who have funding are able to accomplish on their facilities.
- When will that policy be completed? Ongoing.
- How will the policy be integrated in all infrastructure investment?

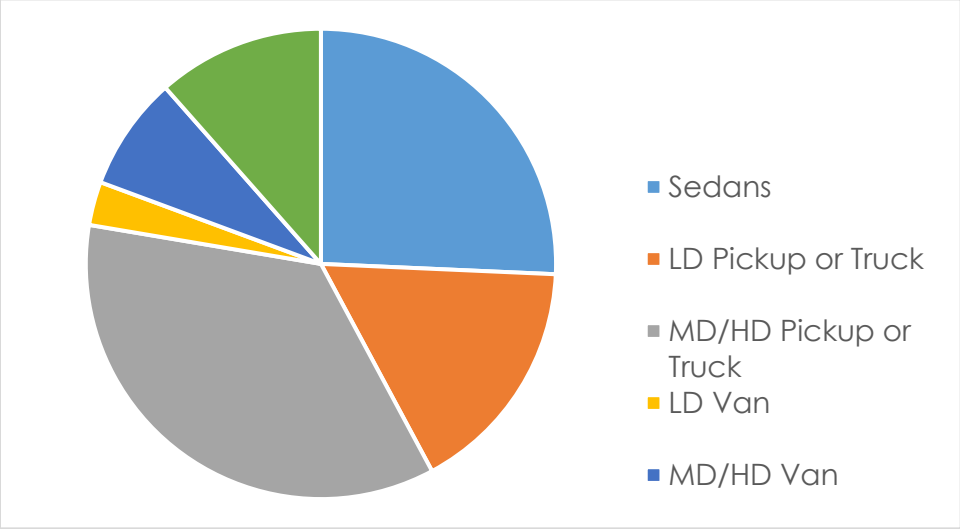
  Natural and green options are already considered for all infrastructure investments.

CHAPTER 2 – ZERO-EMISSION VEHICLES

Department Mission and Fleet

This ZEV Report and Plan demonstrates to the Governor and the public the progress the Department has made toward meeting the Governor's sustainability goals related to Zero Emission Vehicles. This report identifies successful accomplishments, ongoing efforts, outstanding challenges and future efforts.

Graph 2.1: 2020 Composition of Vehicle Fleet

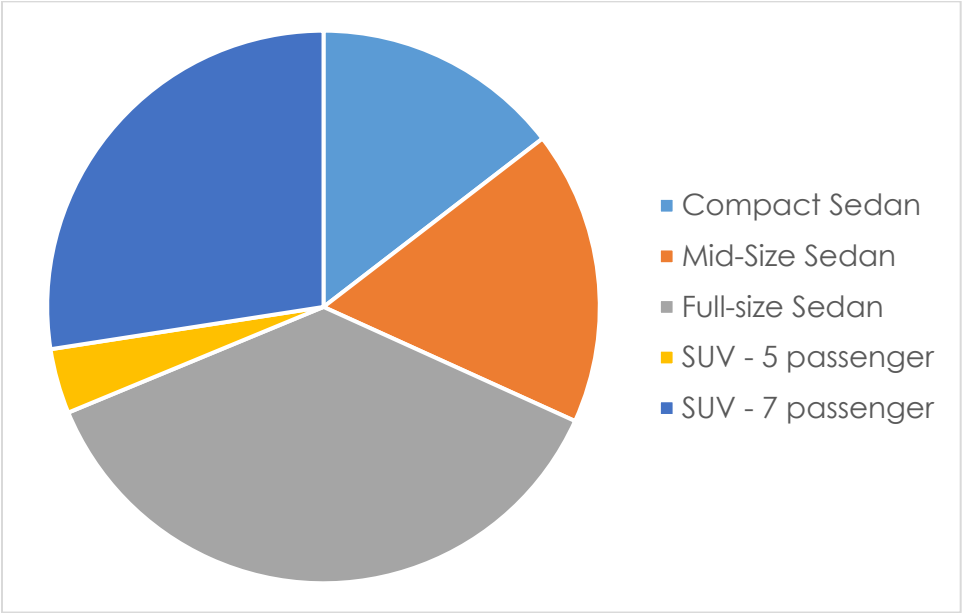


Light Duty Fleet Vehicles

The Cal Expo fleet is used for a variety of typical duties. The maintenance department's use of light duty trucks is generally on paved interior road on the property. The electricians, carpenters, plumbers, janitors, and set up crews are supporting the facility event schedule on an ongoing basis. They are setting up for weekly events or as more recently without events for 18 months, they were supporting COVID-19 vaccination & testing providers on the property. Each week there are different needs in terms of building and outdoor usage. Employees trucks contain work related materials and tools. Typical everyday

trips are made from the maintenance area to buildings on the 350 developed acreage of the facility.

Graph 2.2: Composition of Light Duty Vehicle Fleet

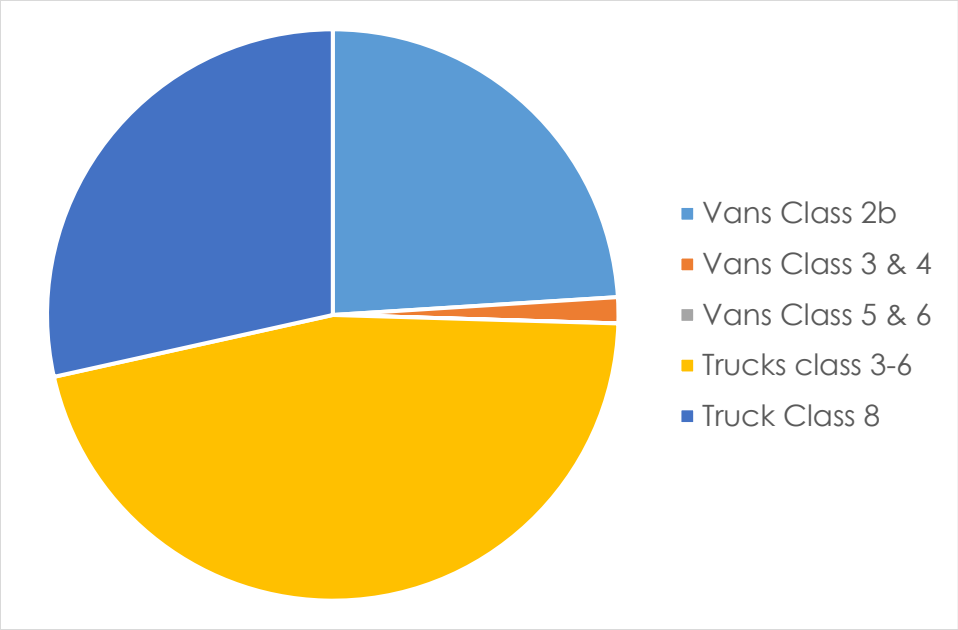


Fleet is averaging approximately 16.8 miles per gallon for diesel and gasoline fueled vehicles. This has not changed.

Medium and Heavy-Duty Fleet Vehicles

Medium and heavy duty vehicles (often with trailers) are used for transport of equipment from the maintenance department to "event space" to support the events. Typical items that are transported are barricades, fencing, traffic cones, signage, A frames, hand wash stations, staging, lighting. Several of the maintenance trucks have materials and equipment used by electricians and plumbers so they can have their tools handy for whatever building they are servicing.

Graph 2.3: Composition of Medium and Heavy-Duty Vehicle Fleet Subject to the ZEV First Purchasing Mandate



What is the average Mileage per Gallon of the department fleet and how has that changed over time? Consider Total Fuel Use, Vehicle Count by Class, Fleet MPG, Fleet GHG, and the number of Hybrids, PHEVs and BEVs are all reported and available from green.ca.gov/fleet.

The average mileage per gallon continues to be 16 miles per gallon. There has not been a change in the average mileage per gallon in the last couple of years.

Table 2.1: Total Fuel Purchased in 2020

	Diesel	Gasoline	Renewable Diesel
Fuel Amount Gallons	0	11,995	0

Incorporating ZEVs into the State Fleet

Pursuant to the Governor's Executive Order (EO) B-16-12, state departments are required to increase the number of zero emission vehicles (ZEV) within their state fleet. As departments move towards this initiative, additional measures have

been placed on the ZEV vehicle purchasing policy. Departments are advised, as of January 1st, 2020, to purchase vehicles from authorized Original Equipment Manufacturers (OEMs) that have aligned with the California Air Resources Board (CARB). In addition, the state anticipates significant economic impacts from the COVID-19 pandemic which will result in a decrease in state revenues for fleet purchasing.

With these policies in place, departments should consider the most effective ways to incorporate ZEVs into their fleet.

Light-Duty ZEV Adoption

A widespread shift to ZEVs is essential for California to meet its Green House Gas (GHG) emission goals. State departments are now required to incorporate and prioritize a larger number of light-duty ZEVs in their vehicle fleets. Starting in FY 17/18 the percentage of new light duty vehicles that must be ZEVs began increasing by 5% each year, reaching 25% in FY 19/20 and 50% in FY 24/25.

In addition to light duty vehicles Cal Expo has 17 battery operated golf carts that are used by staff all year except during heavy rain. The typical employee use of golf carts are for transporting employees and materials from one work area to another across the 350-acre property. Plug in Hybrids are also used in the same manner. This facility typically has multiple events which can draw thousands of guests to the property. The use of the golf carts provides not only GHG savings but is a safer way to travel amongst pedestrian traffic on the grounds. Fuel cell vehicles could also be used on the property but the challenge is the size of the vehicle. Golf carts because of their size are a safer way for staff to move through crowds of people.

Vehicles that meet specified mileage and age thresholds are eligible for replacement. Currently ZEVs are available on statewide commodity contracts in a range of light duty vehicle categories. While many vehicle classes currently lack a ZEV alternative to purchase due to the purchasing restrictions imposed in State Administrative Manual Section 4121.8, departments are encouraged to complete and review Table 2.2 as if all light duty vehicle classes have a ZEV alternative available for purchase.

Note for Table 2.2: Please note the number of vehicles in each class that are currently eligible for replacement.

Table 2.2: Light Duty Vehicles in Department Fleet Currently Eligible for Replacement

Table Header Name	Sedans	Minivans	Pickups	SUVs, 5 passengers	SUVs, 7 passengers	Total
# of vehicles eligible for replacement	**3**					**3**

The table below shows the estimated number of ZEVs that have been or are anticipated to be added to the department fleet in coming years. Please consider the impact of the Light Duty ZEV first purchasing policy (SAM Sections 4121.1), the CARB Aligned Vehicle Manufacturer Purchasing Restrictions (SAM Section 4121.8), and the Sedan Purchasing Restrictions (SAM Section 4121.7) when completing this table. Number of ZEV's purchased in prior years is available from green.ca.gov/fleet.

Table 2.3: Light Duty ZEV Additions to the Department Fleet

Table Header Format	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle	0	0	1	2	2
Plug-in Hybrid Vehicle	0	0	1	2	2
Fuel Cell Vehicle	0	0	0	0	0
Percent of total purchases	0purchased	0purchased	Unknown	Unknown	unknown
Required ZEV Percentage	15%	20%	25%	30%	35%
Total number of ZEVs in Fleet*	17	17			

At this time we have no budget for any vehicles. We hope that as we rebuild staffing and funds, we will have the opportunity to invest in ZEV's.

Medium- Heavy-Duty ZEV Adoption

Similar to the light-duty purchasing policy above, the adoption of MD/HD ZEVs is essential to meet greenhouse gas emission reduction goals. As of July 2020, SAM section 4121.9 requires state agencies to prioritize the purchasing of MD and HD ZEVs vehicles into their fleets. Additionally, beginning December 31st, 2025, departments are required, per Assembly Bill (AB) 739, to have 15% of newly purchased vehicles with a gross weight rating of 19,000 pounds or more be ZEVs. This percentage will increase to 30% by December 31st, 2030.

Please describe what roles could be filled by MD and HD ZEVs. Are there any challenges that may arise to fill these requirements? Try to describe a typical use for each type including Battery Electric Vehicles, Plug-in Hybrids, and Fuel Cell vehicles. What types of vehicles are most beneficial to your fleet? Are there any vehicles missing that your department needs to carry out state functions? Who would drive them and what job would they be performing?

Most beneficial to our fleet are trucks and electric golf carts.

Vehicles over meet specified mileage and age thresholds are eligible for replacement. Currently ZEVs are available on statewide commodity contracts are the Class 2B, Class, 3, Class 4, Class 5, Class 6 and Class 8.

Note for Table 2.4: Please note the number of vehicles in each class that are currently eligible for replacement.

Table 2.4: MD/HD Vehicles in Department Fleet Currently Eligible for Replacement

	Vans, Class 2b	Vans, Class 3 & 4	Vans, Class 5 & 6	Trucks, Class 3-6	Truck, Class 8	Total
# of vehicles eligible for replacement				47		47

The table below shows the estimated number of MD/HD ZEVs that have been or are anticipated to be added to the department fleet in coming years. Please consider the impact of the MD/HD ZEV first purchasing policy (SAM Section 4121.9) and the CARB Aligned Vehicle Manufacturer Purchasing Restrictions (SAM Section 4121.8) when completing this table. Number of ZEV's purchased in prior years is available from green.ca.gov/fleet.

Currently there is no budget for vehicle replacement. Cal Expo is currently rebuilding after being closed to income producing events due to the pandemic.

Table 2.5: ZEV Additions to the Department Fleet

Table Header Format	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle	0	0	1	1	1
Plug-in Hybrid Vehicle	0	0	1	1	1
Fuel Cell Vehicle	0	0	0	0	0

Table Header Format	21/22	22/23	23/24	24/25	25/26
Percent of total purchases					
Total number of ZEVs in Fleet	0	0	1	1	1

ZEV Take-home Vehicles

Vehicles that are authorized for home storage, per SAM Section 4109, are subject to all applicable ZEV purchasing policies.

We currently have no home storage vehicles.

Telematics Plan

In accordance with SAM section 4122, state departments are required to install telematics devices on all state fleet assets. Departments are required to install all telematics devices on light duty vehicles August 1, 2021 and are required to install telematics on all remaining assets by February 1, 2022. Additionally, departments shall develop and issue a telematics policy that is specific to their needs by March 31, 2021.

Our vehicles are older and cannot support the addition of telematics. Additionally, the addition of telematics is cost prohibitive. We understand that telematics is required but Cal Expo vehicles fit the Standard Exemptions to Telematics Installation as Cal Expo fleet assets are not capable of having telematics installed.

Public Safety Exemption

Management Memo 16-07 changed the requirements for Public Safety Exemptions. If your department employs sworn peace officers, please describe how the updated rules for public safety vehicles will impact the number of ZEVs incorporated into your department fleet. Will any sworn officers be driving ZEVs? If so, please describe.

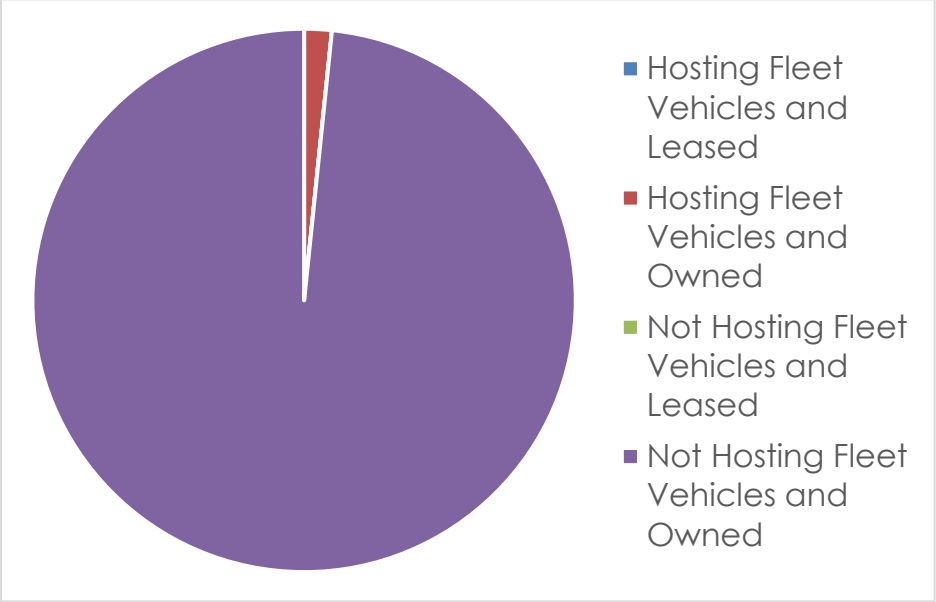
Cal Expo police officers are using light duty police logoed vehicles. These vehicles are used for pursuits, arrests, and driving throughout the property to ensure the facility is safe, gates are locked, and unknown persons who may come on the property are identified as being The officers have tactical gear, equipment, and computers in their vehicles. Sworn officers will not be driving ZEV's in the near future.

Cal Expo Parking Facilities

All facilities are state owned. Customers primarily are the largest users of the parking lots.

Cal Expo has 12,000 parking spaces for guests in 4 large public parking lots. The fleet, employee, and visitor parking lots are physically separated. Fleet vehicles are parked in the maintenance area. The administration building parking lot has 100 parking spaces which facilitates employee parking and guest who are conducting business at Cal Expo. The Cal Expo property is state owned.

Graph 2.4: Parking Facilities



Given the nature of the department's fleet operations, the length of stay for visitors and employees, it was determined that L1 chargers should make up approximately 100% of the chargers in the employee parking areas and 90% of the chargers in the fleet parking areas with the remainder being L2. There are currently more L1 chargers than what is needed for employee use.

Based on estimates of future ZEV fleet purchases and a count of visitor and workplace parking spaces it has been determined that the Department will need XX L1 and XX L2 chargers to adequately serve fleet vehicles and achieve the goals established in the ZEV Action Plan.

There is L1 charging available across the property for employee use. Cal Expo has 17 battery operated golf carts which are regularly used by employees to move across the facility. The typical use of the golf cart is to move staff and materials. 21% of the transportation vehicles used by employees are golf carts. The golf carts have been found to be the safest way for our employees to move through crowds of people.

The facilities with the most urgent need for EV charging are listed below.

Table 2.6: High Priority EVSE Projects

Facility Name	Total Parking Spaces	Existing L1 Charging Ports (2020)	Existing L2 Charging Ports (2020)	Existing L3 Charging Ports (2020)	Total Charging Ports (2020)	EV Charging Ports Needed by 2025
Parking **Lot D-** customer parking	2,000	0	0	0	0	20
Total	2,000					20

Outside Funding Sources for EV Infrastructure

Cal Expo has partnered with SMUD in the past to install temporary charging stations for customers in parking lot B during the state fair in 2018 and 2019. We plan to further expand EV charging in the future when the facility returns to optimal prior use post COVID-19. Although the number of parking spaces on the facility supports the installation of EV charging for guests, the number of guests returning to the facility after the pandemic is currently unknown.

Hydrogen Fueling Infrastructure

Cal Expo currently has no hydrogen fueling stations and no plans to install hydrogen fueling infrastructure at this time.

Comprehensive Facility Site and Infrastructure Assessments

Site Assessments are performed to establish the cost and feasibility of installing needed EV infrastructure. The table below lists the facilities that have been evaluated with Site Assessments.

Site assessments were performed in 2018 for Parking Lot D.Table 2.7: Results of Site Assessments

Facility Name	L1 Chargers with Current Electrical System	L2 Chargers with Current Electrical System	Total cost for Project using Current Electrical System	L1 Chargers with Electrical System Upgrades	L2 Chargers with Electrical System Upgrades
Cal Expo	20	0	Unknown	0	0
Total	20	0	0	0	0

EVSE Construction Plan

Currently, Cal Expo does not have a plan to design, bid, construct and activate new charging infrastructure at this time. The property was "shuttered" from the normal business operations during the pandemic. The property was used for COVID-19 vaccinations and is still a testing site for the County of Sacramento. As we proceed toward the return of normal operations, EVSE construction plans will be addressed.

EVSE Operation

We have not yet discussed the collection and reporting of potential EVSE use data. Currently the L1 charging on the facility is for staff golf cart use and use of 14 L2 temporary chargers in the parking lots are for guests.

CHAPTER 3 - ENERGY

This "Energy Report - Template" is intended to guide and support California State Department staff as they report Department progress toward meeting the Governor's sustainability goals related to energy and update the Department's plan for continuing to meet those goals. This template, along with the companion "Energy Report - Workbook" excel file, are both a template for reporting and a tool for collecting and analyzing the Department's energy and sustainability information. Once available data for your department's infrastructure has been recorded in the Workbook, most of the information for tables in this Report will be calculated and presented in a similar format for reference and analysis.

This Energy Report demonstrates to the Governor and the public the progress the Department has made toward meeting the Governor's sustainability goals related to energy. This report identifies successful accomplishments, ongoing efforts, and outstanding challenges.

Department Mission and Built Infrastructure

Cal Expo is an independent state agency established by law in the California Food & Agriculture Codes. It is governed by an appointed 11-member Board of Directors with daily operations managed by the Chief Executive Officer. The facility is located in 800 acres in the American River Floodplain. The developed 350 acres of the property is supported by events and the annual state fair. The use of the property from March, 2020, until August 2021, was to support emergency operations including response to COVID-19. During this period of time no events were held other than the ongoing efforts to support COVID-19 testing & vaccinations. Additionally, the property has been used to support the National Guard and various police and fire entities as directed by the Office of Emergency Services. The built infrastructure includes large & small buildings (80 structures) and large outdoor space all of which consume energy when activated. The current goal of Cal Expo is to begin to rebuild our business after being closed to events and to rebuild our staff after a layoff of 50% of our employees in January of 2021. Energy usage in all areas in 2020 is significantly decreased due to consequences of the pandemic.

Table 3.1: Total Purchased Energy 2020

Purchased Energy	2003 Baseline Quantity	2020 Quantity	% Qty. Change
Electricity	12,584,484 kWh	7,122,405 kWh	-43%
Less EV Charging	N/A	N/A	N/A
Natural Gas	254,794 therms	64,795 therms	-75%
Propane	N/A	N/A	N/A
Fuel Oil	N/A	N/A	N/A
Steam	N/A	N/A	N/A
Chilled H2O	N/A	N/A	N/A
TOTALS	**1,210,677,364 kBtu Site**	**971,796,812 kBtu Site**	**-55%**

Note for Table 3.2: Include information on the Department's owned buildings with the largest energy consumption (at least one, and up to ten buildings, Department's choice) – based on the total energy. This information is automatically calculated in the Workbook, Tab 3.2, based on the information entered into the Owned tab (please check calculations).

Table 3.2: Properties with Largest Energy Consumption

Building Name	Floor Area (ft^2)	Site Energy (kBTU)	Source Energy (kBTU)	Source EUI (kBTU/ft^2-yr)
Grandstand	227,000	1,213,176	124,732,250	259
Expo Center	64,000	1,245,260	27,160,105	165
Buildings A/B	85,248	390,906	31,232,997	166
Total for Buildings in This Table	376,248	2,849,342	183,125,352	---
Total for All Department Buildings	1,000,000			---
% of Totals	38%			---

*Number reflects buildings subject to sustainability. There are more than 80 structures on the developed land at Cal Expo (others include: horse racing barns, stalls, warehouses, etc.)

Cal Expo has a 3-year plan for proposed resiliency projects through June, 2023. Below is a list by priority.

Fire Alarms System/Live Safety: Bringing all up to code.	$1,000,000
Water System Rehab/Emergency Power:	
Add back up power to run wells.	$250,000
Restroom Rehab: Rebuild public restrooms.	$1,500,000
Asphalt: Replace deteriorated asphalt:	$2,000,000
Electrical System/Transfer Switches: refurbish 50 year old system.	$900,000
Energy Management System: Control of HVAC systems	$300,000
Solar Panel System Rehab: rehab 25 year old system	$2,750,000

Cal Expo will use California Construction Authority (CCA) as the lead for design and construction contracts.

Zero Net Energy (ZNE)

State policies set forth the following milestones for state zero net energy buildings:

- 2017 – 100% of new construction, major renovations and build-to-suit leases beginning design after 10/23/2017 to be ZNE
- 2025 – 50% of total existing building area will be ZNE

Cal Expo is not currently in the planning process for new building construction. However, we are continually repairing/replacing below ground and above ground infrastructure systems. Cal Expo is collaborating with California Fair Services Authority to ensure Title 24 compliance, and as a purchaser of large planning materials it considers industry best practices in environmental and conservation sustainability.

Note for Table 3.3: See Workbook Tab 3.3, "Zero Net Energy Buildings".

Table 3.3: Zero Net Energy Buildings

No new buildings are proposed prior to 2025.

New Construction Exceeds Title 24 by 15%

All new state buildings and major renovations beginning design after July 1, 2012, must exceed the current California Code of Regulations (CCR) Title 24, energy requirements by 15% or more.

Cal Expo has no new building construction since 2012. No new construction is planned at this time.

Table 3.4: New Construction Exceeding Title 24 by 15%

Buildings Exceeding Title 24 by 15%	Number of Buildings	Floor Area (ft^2)
Completed Since July 2012	0	
Under Design or Construction	0	
Proposed Before 2025	0	

Reduce Grid-Based Energy Purchased by 20% by 2018

Executive Order B-18-12 requires state agencies to reduce grid-based energy purchased by 20% by 2018, compared with a 2003 baseline.

Before completing this section of the Energy Report, please verify all data entries into Energy Star Portfolio Manager (ESPM) for your Department, including energy use by facilities, individual buildings (if metered separately), and, if tracking, leased spaces where the state pays the utilities. Ensure that baseline data is also entered (2003 is typical baseline year).

Workbook Tabs 3.4A & 3.4B should help Departments collect information about existing Energy Management Control Systems installed in their infrastructure. Tab EMS1 is a list of survey questions that may be sent to building engineering staff, and Tab EMS2 is a table where that information may be recorded and analyzed. This information can then be referenced elsewhere in the Workbook and in this report.

There are numerous Management Memos and sections of the State Administrative Manual (SAM) that provide specific directions and support for this

goal, including, but not limited to, the following (note embedded links below to the referenced documents). For each item below discuss how the recommendation has been implemented, the extent to which it has been implemented, and future plans to expand adoption:

- The Department of Technology's Basic Policy 4819.31, item 13:
    - "13. Agencies/state entities shall implement power management practices on all desktop and laptop computing devices, thin client devices, printers, copiers, scanners, and monitors. During hours of normal operation, devices which are not in use for 30 minutes shall automatically go into an energy-saving mode. Devices shall be shut down at the end of the normal business day."
    - What percentages of devices go into energy saving mode after 30 minutes? 100%
    - What software or system does your department use for power management on computing devices?
- Management Memo 14-07 "Standard Operating Procedures for Energy Management in State Buildings" and the associated Standard Operating Procedures:
    - Building maintenance workers are tasked with insuring all lights and equipment are turned off at the end of each work day.
    - All computers, copiers and printers are set to utilize their Energy Saver mode during periods of inactivity.
    - Energy Star rated equipment is purchased whenever practical.
    - Lighting and HVAC electric usage is minimized outside of normal building hours.
    - Building HVAC controls are set to allow for a +2 or -2 degree F fluctuation from the temperature set point or have controlled access.
    - Buildings equipped with economizers are set to take advantage of cool nighttime and morning temperatures.
    - Building lights and systems are on timers. Timers are viewed and changed weekly as needed.
    - Stationary Engineer controls use of personal heaters by allowing only when HVAC systems cannot fix the problem or needed for reasonable accommodation.
    - Cal Expo has not achieved implementation on every system. As new controls are purchased & introduced, compliance will

be achieved.

- Ensure that buildings take advantage of cool nighttime and morning temperatures by effectively utilizing economizer and night flush cycles.
- Buildings equipped with economizers are set to take advantage of cool nighttime and morning temperature.
- Building night flush cycles are automatic and controlled automatically based upon the temperature outside vs inside the building.
- HVAC ducts, filters and equipment are inspected yearly and Maintained at maximum effectiveness.
- IT Department staff ensure that data centers are operated at the maximum temperatures allowed by the equipment Manufacturer.
- Describe implementation of this measure in the section below regarding Management Memo 14-09
- Ensure that domestic hot water systems are not set hotter than 105 degrees.
  Settings are regularly checked by staff to ensure accuracy.
- Ensure that HVAC ducts, filters and equipment are inspected and maintained at maximum effectiveness.
- Stationary Engineer is responsible for boilers being tuned up at least twice annually in buildings that are used on a daily basis. Boilers in exhibit buildings used on an intermittent rental basis are Tuned up once annually and combustion is checked annually.
- All departments are in compliance with the Memo-14-07
- All boilers are tuned up, including a combustion efficiency check, at least twice per year.
- 250 sensors are installed across the property.
- Electrical staff and/or maintenance workers measure light levels and remove lamps or reduce wattage to provide appropriate light levels for activities in work areas.
- Electrical Supervisor and Building Maintenance Workers measure light levels and remove lamps or reduce wattage to provide appropriate light level for the activities in the work areas and decide where task lighting might be more appropriate.

- Replace all incandescent light bulbs and any remaining magnetic fluorescent ballasts in fluorescent light fixtures- attach replacement plan as appendix.
- Are any of these lights still present in any of your facilities?

  Yes, there are still a few fluorescent ballasts. There are no incandescent light bulbs used.
- Install daylight controls on electric lights in any space over 10,000 ft^2 that has skylights or windows.
- Describe steps taken to ensure compliance.

  Have buildings been surveyed to identify spaces near windows that do not have lighting controls? Yes.
- Ensure that state employees not plug in any personal devices other than cell phone and Tablet chargers and task lights, and that any personal space heaters, microwaves, refrigerators and coffee makers are removed from the workplace.
- Ensure that employees are not using personal heaters without written permission. Provide a link to any department policy that disallows personal heaters and other personal devices or describe how your department implements this requirement.
- Ensure that any new equipment purchased for employee kitchens and break rooms has an Energy Star rating. Strive to replace refrigerators manufactured prior to the year 2000 with more efficient models.
- What percent of refrigerators in your buildings were manufactured prior to the year 2000? 0%
- There are no employee-funded refrigerators.
- Ensure that all vending machines on-site are certified to Energy Star version 3.0, section 3(B) or are equipped with after-market occupancy sensor or sales-based energy management hardware.

- Please report the total number of refrigerated and non-refrigerated vending machines in your building portfolio, and the percentage of each (refrigerated and non-refrigerated vending machines) that are Energy Star V 3.0 compliant or have after-market energy management hardware.

  One outdoor vending machine is non refrigerated. Three vending machines are refrigerated. All are Energy Star V 3.0 complaint.

- Ensure that all coffee makers shut off automatically.
- Ensure that kitchen, break room, and lunchroom equipment is cleaned regularly and maintained to optimize efficiency.
- Ensure that timers are installed on all equipment including paper shredders, lighted snack vending machines, and water coolers, so the equipment will be turned off automatically during non-working hours.

- Please describe your plan to install timers on all water coolers.
    - Establish an annual email from Department directors to educate all employees on the importance of minimizing electrical plug loads.
- When was the last email sent? January, 2022.
- Email sent to all staff was a reminder. No responses.
- Management Memo 14-09 "Energy Efficiency in Data Centers and Server Rooms":
    - All state-owned and leased data centers and server rooms greater than 200 square feet must be operated within the ASHRAE-TC 9.9, Class A1-A4 guidelines, including operating at temperatures between 73-81 degrees Fahrenheit.

  No data centers are greater than 200 square feet.

- Discuss whether all server rooms are being operated at the recommended temperature and any barriers to achieving this standard.
    - All state-owned data centers over 1,000 square feet must report their power usage effectiveness (PUE) to the Department of Technology each year.
    - All state-owned data centers over 1,000 square feet with a PUE above 1.5 must reduce their PUE by a minimum of 10 percent per year until they achieve a PUE of 1.5 or lower.

  Cal Expo does not have any data centers over 200 square feet.
- List all data centers over 1000 square feet and their PUE.

  None.
- Describe how your department measures PUE.

  No data center exceeding 1.5 pue.

In this section, please discuss the following, focusing on how each item relates to the Governor's goal of reducing California state agency grid-based energy purchases by 20% by 2020, relative to a 2003 baseline year (Workbook Tab A &

B, "State-Owned Buildings" and "State-Leased Buildings" is intended to support this collection and analysis of information):

- Discuss the Department wide building area, total energy consumption, and EUI trends (see Table 5 below).

Significantly lower consumption due to significantly lower property usage due to consequences of the pandemic.

Lowest energy use year is 2020. Comparison with previous years is comparing apples v oranges due to consequences of the effect of the pandemic on gatherings. In 2020, some buildings were occupied for guest walk in vaccinations. Other buildings were used to facilitate drive in vaccination and testing.

From 2010 to 2020, Cal Expo has reduced purchased electricity by over 40%. From 2010 to 2020, Cal Expo has reduced natural gas purchased by over 60%. Cal Expo has saved both in the cost and quantity of grid based energy purchased. The huge savings is due to conservation measures from 2010 – 2019. Beginning in March of 2020, Cal Expo was not open to normal business due to the pandemic. The normal event business at Cal Expo was replaced by COVID 19 response support for 16 months resulting in a substantial loss of funds to the department.

Note for Table 3.5: All values are calculated in Workbook Tab 3.5, "Department Wide Energy Trends". Note that the Workbook will only calculate Department wide average EUI values if all listed buildings have an EUI, and will only calculate EUIs if a building has a non-zero area and energy consumption. This is to avoid missing EUI values effectively counting as a zero EUI and invalidating the average.

Table 3.5: Department-Wide Energy Trends (if available)

Department –wide energy trends not available. Required greenhouse gas reduction has been met.

Describe major energy projects that are either completed or in-progress. This will flow into the "Summary of Energy Projects Completed or In Progress" in Table 3.6, below.

Two electrical vaults have been replaced. One electrical vault has been

rehabbed. Many Christie boxes have been replaced. Small HVAC units have

been replaced by new energy efficient units. The old electrical vault servicing the administration building has been replaced.

The discussion and outreach for information for the last year has been the goal to replace the current solar panels, which are at the end of life and not producing.

Note for Table 3.6: Record all energy projects in Tab 3.6B of the Workbook. Deferred Maintenance or other projects that improve energy efficiency BEYOND CODE REQUIREMENTS may be included. Tab 3.6B of the Workbook contains a PivotTable that will then summarize all the information entered in Tab 3.6, into the format for this Table.

Table 3.6: Summary of Energy Projects Completed or In Progress

Year Funded	Estimated Energy Savings (kBTU/yr)	Floor Area Retrofit (sq.ft.)	Percent of Department Floor Area
2015	Electrical Vault #10 Replacement	Outdoors	N/A
2016	Electrical Vault #1 Replacement	Outdoors	N/A
2017	Christie Box Replacement	Outdoors	N/A
2018	Small HVAC unit replacements		N/A
2019	Electrical Building Penetrations	Outdoors	N/A
2020	Administration Electric Vault Rehab	Outdoors	N/A

After Table 3.6, discuss the energy surveys conducted on Department-owned buildings in the last five years. Approximately 10% of Department building inventory should undergo an ASHRAE Level 2 survey each year, generally focusing on the highest energy using buildings first. These surveys should guide the Department's energy efficiency projects and maintenance activities.

No energy surveys are underway. We have recently replaced roofs and cooling and cooling systems in three of our buildings. We have also recently replaced over one mile of gas lines. As projects completely finalize and we

have enough staff to become familiar with the changes, we will have the opportunity to conduct energy surveys.

Note for Table 3.7: Record all energy surveys in Tab 3.7 of the Workbook. Tab 3.7 of the Workbook contains a PivotTable that will then summarize all the information entered in Tab 3.7B, into the format for this Table. Collect the "Total Department Floor Area" for each year from Tab Owned, "Baseline & Historical Energy Use" section.

Table 3.7: Energy Surveys

No Energy Surveys have been completed.

Demand Response

Executive Order B-18-12 directed all state Departments are to participate in available demand response programs and to obtain financial incentives for reducing peak electrical loads when called upon, to the maximum extent cost-effective.

Cal Expo is continuing our engagement with SMUD to reduce peak lads when energy grid gets overloaded and cutbacks are called for by the utility. We are working toward identifying when we could participate in demand response wherein it would not affect a large number of attendees onsite.

Cal Expo hosts thousands of vendors, exhibitors, and attendees that participate in the events that are booked on the property. During the hot summer days, vendors, exhibitors, and attendees need to have the buildings cool. We have large areas of shaded outdoor space however; people need to have access to cooler buildings, as many people, especially children, are sensitive to heat after hours of being outdoors. There is a health risk to some if a cool environment during the hot days/evenings is not available. Cal Expo is currently not participating in demand response programs.

Note for Table 3.8: All values are calculated in Workbook Tab 3.8, Demand Response. In addition, Workbook Tab 3.8B contains a place to record information about all available DR programs, and Tabs 3.4A and 3.4B contain survey questions that may help Departments assess the demand response capability of the Department's owned and leased buildings.

Table 3.8: Demand Response-

Demand Response Participation	Number of Buildings	Estimated Available Energy Reduction (kW)
Number of Buildings Participating in 2020	0	
Number of Buildings That Will Participate in 2021	0	
All Department Buildings (Totals)	0	
All Department Buildings (Percent)	0	

Renewable Energy

New or major renovated state buildings over 10,000 square feet must use clean, on-site power generation, and clean back-up power supplies, if economically feasible. Facilities with available open land must consider large scale distributed generation through various financing methods, including, but not limited to, third party power purchase agreements (PPAs).

Although there are no specific kW goals for renewable energy, renewable energy does count towards meeting: (1) Zero Net Energy goal for 2025 and; (2) 20% grid based energy use reduction by 2018.

Cal Expo's developed property has two distinct areas that are utilized for solar power. One is located in Parking Lot B, adjacent to Exposition Blvd. The solar array was originally designed to produce 700 kilowatts and has reached its life expectancy and are no longer being utilized. The production from these panels' was originally sent back to the SMUD grid and were not available to Cal Expo. In addition, Cal Expo has solar panels that were designed and mounted on several horse barns located at the east end of the property. Similar to the solar panels in parking Lot B, these have run their course and no longer operate efficiently and do not provide energy for our use currently. The original design power production was for 200 to 250 kilowatts of power.

We are currently in the process of locating financing opportunities for solar panels to install on building roofs. We want to revisit our agreement with SMUD on the current solar array in our parking lot that is no longer generating energy.

Note for Table 3.9: See Workbook Tabs 3.9 & 3.9B. Tab 3.9 contains the data in this table, based on inputs in the Owned Tab. Tab 3.9B is a place to record details about all Department renewable projects that are currently operational, in construction, or in planning.

Table 3.9: On-Site Renewable Energy

Cal Expo currently has no onsite operational renewable energy. We continue to explore a resolution to adding solar to our facility. Current solar arrays on the property are non-functional, as they have exceeded their lifetime use.

Monitoring Based Commissioning (MBCx)

New and existing state buildings must incorporate Monitoring Based Commissioning (MBCx) to support cost effective and energy efficient building operations, using an Energy Management Control System (EMCS). State agencies managing state-owned buildings must pursue MBCx for all facilities over 5,000 square feet with EUIs exceeding thresholds described in Management Memo 15-04.

Discuss the following, focusing on how they relate to the Governor's sustainability goals for participating in Monitoring Based Commissioning:

- Summarize the Department's experience with installed EMCS and current MBCx activities.
    - Include a discussion of positive accomplishments, lessons learned because of MBCx work, energy or cost savings opportunities discovered, etc.
    - Include a summary of any challenges encountered while installing or updating EMCS and implementing MBCx at Department facilities.

MM 15-04 identifies the size and energy intensities that would require the implementation of MBCx and an energy management and control system (EMCS).

- Is MBCx currently implemented in all Department buildings, as required by Management Memo 15-04?
    - Discuss the Department's existing EMCS infrastructure and whether the existing EMCS are capable of providing required MBCx services.
    - For each site where MBCx is required, but is not yet implemented, please list the site in Table 3.10 below and discuss the department's plans to implement MBCx following the table.

Cal Expo has plans for a grounds wide Energy Management System. We have

previously had the Yamas system for 25 years and the system is no longer supported. A new system would be automated and available on a computer screen to monitor temperature, view graphics of use, and measure efficiency. It is anticipated the system would save energy and provide climate control in the buildings. Proposed cost for a new Energy Management System is approximately $500,000 or more.

Note for Table 3.10: Workbook Tab 3.10 is provided to help collect information for this table.

Table 3.10: Planned MBCx Projects

Facility	Building Name	Location	Floor Area (sq. ft.)	EMS Make, Model, Installation/Upgrade	EMS Year	MBCx Capable, Difficult, or No EMS	MBCx Projected To Start	MBCx Projected Cost ($)
Facility A	Simulcast	Sacramento	38,000	Carrier		Capable	2023	$100,000
Facility B	Building A/B	Sacramento	85,248	Carrier		Capable	2023	$100,000
Facility C	Building C/D	Sacramento	53,264	Carrier		Capable	2023	$100,000
	Totals		176,512					$300,000

Financing

State agencies are required to pursue all available financing and project delivery mechanisms to achieve these goals including, but not limited to: state revolving loan funds, utility On-Bill Financing (OBF), Power Purchase Agreements (PPAs), GS $Mart, Energy Service Contractors (ESCOs), or other available programs

List specific steps your Department is taking (or will take) to secure financing in support of these goals and projects. Include associated timelines(s).

- Describe all financing programs available to the Department, including those that the Department does not participate in. Your utility account representative should be able to help you collect this information. If there are any financing programs available that the Department does not participate in, discuss why.

Cal Expo has applied and been approved for grant funding. Relevant to energy sustainability, Cal Expo received Cy Pres Funds to upgrade electronic within the grandstand with energy efficiency equipment. Additionally, Cal Expo will pursue available financing and project delivery mechanisms to achieve these goals at the relevant/appropriate prior to constructions. We continue to look for solar and water project grants/funding. Our priority is to rebuild staff and our revenue programs in order to afford a loan.

CHAPTER 4 - WATER EFFICIENCY AND CONSERVATION

This Water Efficiency and Conservation report demonstrates to the Governor and the public the progress the Department has made toward meeting the Governor's goals. This report identifies successful accomplishments, ongoing efforts, and outstanding challenges.

California experiences the most extreme variability in yearly precipitation in the nation. In 2015, California had record low statewide mountain snowpack of only 5 percent of average while 2012-14 were the 4 driest consecutive years of statewide precipitation in the historical record. The 2017 water year (October 1, 2016-September 30, 2017) surpassed the wettest year of record (1982-83) in the Sacramento River and San Joaquin River watersheds and close to becoming the wettest year in the Tulare Basin (set in 1968-69). These potential wide swings in precipitation from one year to the next show why California must be prepared for either flood or drought in any year.

Therefore, using water wisely is critical. The E.O.s and SAM sections listed in the previous section help demonstrate the connection between water and energy use, (the water-energy nexus), water and climate change, and water and landscaping. Further, the impact of water uses by state agencies goes beyond the scope of these E.O.s and SAM sections and DGS management memos as these documents do not address such related issues as water runoff from landscaping and various work processes and the potential for water pollution or the benefits of water infiltration, soil health and nutrient recycling. However, by using holistic water planning, a well-crafted water plan can not only meet all state requirements but add considerable value and benefits to the organization and surrounding communities.

The water plan component of the Governor's Sustainability Roadmap will help all agencies and departments maximize water efficiency and conservation while improving their energy savings. Further, the plan helps agencies to gain additional benefits regarding climate adaptation and other ecosystem services. The water efficiency and conservation plan sets priorities, defines tasks, timelines and budgets and designates responsible personnel for each step of the plan.

This water plan has two major components. The first component consists of a quantitative inventory of indoor water use by fixtures, boilers and cooling systems and appliances in state buildings and facilities. The second component focuses on outdoor water use and landscaping and includes a measurement of

landscape areas and types as well as an assessment of irrigation equipment. Each water plan component includes a mandatory set of BMPs for ongoing water use efficiency in both buildings and landscapes. Additionally, there are further requirements for large landscape water use tracking, if an agency has a total landscape area greater than 20,000 square feet at a facility. Both components of water use include monitoring, reporting, oversight and compliance. State agencies shall complete all of the applicable Building and Landscape Inventories and Best Practices assessments found in the workbook sections and report their results in the following tables and sections.

DWR suggests that state agencies contact their water supplier for advice and assistance regarding local water conditions. Water suppliers are a source of expertise and can assist with water conservation and water efficiency efforts in a number of ways including: rebates and other incentives, free water audits for both buildings and landscapes, irrigation scheduling assistance, water shortage contingency plans and informational brochures.

Best Management Practices

Building Best Management Practices (BMPs) are ongoing actions that establish and maintain building water use efficiency. State agencies are required by DGS Management Memo 14-02 to implement the building BMPs outlined below.

BMPs can be continuously updated based on need and tailored to fit the facility depending on occupancy and specific operations.

One of the critical practices in effective water management is to designate a water management coordinator to conduct the building walk-through inventory, implement the building BMP's and monitor and report water use. In the beginning of implementation, these BMPs require that staff be able to have enough time and resources to perform the actions required. A certain level of expertise may also be required. It is possible that various skills are needed which may not be found in just one person but require a team approach. Additionally, many of the BMPs are location specific, and it may be that BMP responsibilities are best assigned on that basis.

BMPS are found in the appropriate section. To complete building BMPS, discuss under each section how each BMP has been implemented. If the BMP is a process or inspection, explain how the process is institutionalized by the Department. Give number of repairs and replacements as well as estimated water savings under each BMP inspection.

Department Mission and Built Infrastructure

The California Exposition & State Fair has been a self-funded state agency.

The mission of Cal Expo is to create a State Fair experience reflecting California including its industries, agriculture, and diversity of its people, traditions and trends shaping its future supported by year around event. Beginning in March 2020, our facility closed to events due to the pandemic. During 2020 and continuing into 2021, Governor Newsom designated Cal Expo as a vaccination supersite. Cal Expo was used as a drive thru testing facility, a recovery and sheltering facility for homeless with COVID, a law enforcement emergency command post during civil unrest, a housing a support facility for thousands of National Guard during the civil unrest, a support facility for the Governor's Office of Emergency Services and various fire support operations.

Cal Expo does not purchase water from an outside source. There are 6 wells on the property that provide all of the water supply to the property. 42% of the water used at Cal Expo is pumped into Bushy Lake located on the American River Parkway. In 2020, this equated to 70.54 million gallons of water that is being pumped as per legislation to support Bushy Lake environment/ecosystems. There are more than 80 structures on the Cal Expo property totaling more than 1 million square feet. People visiting the property during various events occupy these buildings and structures. Below is the square footage of the larger buildings:

Building Name	Square Footage
Administration building	23,000
Rock & Brews Restaurant	14,000
Horse Barns & Related racing structures	368,620
Grandstand & Satellite Wagering	227,000
Livestock Pavilion	104,000
Building C/D	53,264
Cavalcade, Stables, Log Cabin	24,832
Law Enforcement/Police Building	10,920
Expo Center 1-8	75,546
Maintenance & Warehouse	60,200
Building A/B	85,248
Smaller building: outdoor restrooms, parking, Entrance gate, the farm, monorail shop, water Tower, rv park, tote board	100,000

Table 4.1: 2020 Total Purchased Water

Purchased Water	Quantity	Cost ($/yr)
Potable	167,660,000	$ Unknown – Well Water
Recycled Water	0	0
	167,660,000 Gallons	0

Note for Table 4.2: Using data from facility data sheet, Tab 4.2, show the Department's owned and/or leased buildings with the largest water consumption per capita (top 5). If irrigation water is sub metered, subtract the irrigation water from the total.

Table 4.2: Properties with Largest Water Use Per Capita

Building Name	Area (ft^2)	# of Building Occupants	Total 2020 Gallons	Total 2020 Irrigation in Gallons (if known)	Gallons per Capita
Cal Expo Buildings	15,246,000	Varies	97,120,000	42,700,000	64
Bushy Lake-American	871,200		70,540,000		unknown
River Parkway	Xx	Xx	Xx	Xx	Xx
	Xx	Xx	Xx	Xx	Xx
	Xx	Xx	Xx	Xx	Xx
Total for Buildings in This Table	A ft^2		167,660,000		---
Total for All Department Buildings	X ft^2				---
% of Totals	A/X %		B/Y %		---

The usage at the Bushy Lake well is estimated as the meter was not working

Note for Table 4.3: Using data from the facility data sheet, Tab 4.3, show the Department's largest landscape areas (top 5 sites) for both leased and owned buildings.

Table 4.3: Properties with Largest Landscape Area

Building Name	Landscape Area (ft^2)
Cal Expo Landscape-approximately 35 acres	1,524,600
Total Landscaping for All Department Buildings	1,524,600
% of Totals that is large landscape	100%

Discuss the following for both Table 4.2 and 4.3:

- Discuss any challenges the Department has faced while working toward meeting the Governor's water efficiency and conservation goals including the Department's drought response. Wherever possible, also discuss responses and proposed solutions to those challenges.

  Cal Expo has hundreds of trees. We are able to cut back on landscape watering however we need to support the continued growth and health of trees. Landscape areas brown quickly with our reduced watering. Solutions to challenges requires staff and funding.

- Describe demonstration projects the Department has implemented to promote the Governor's water efficiency and conservation goals.

  The consequence of closing the venue to the public due to the pandemic has automatically decreased the water usage. Cal Expo is in the process of rebuilding staff after a layoff of 50% of our employees. Unfortunately, no projects are taking place currently. Funding and staff are the challenge.

  In order to look for funding, staff is needed. In order to plan and monitor conservation goals, funding is needed for staff.

- Describe any public relations efforts the Department had implemented to promote the Governor's water efficiency and conservation goals.

  Although there was no California State Fair in 2020 or 2021, State Fair has exhibited a water education program produced by the Department of Water Resources in the past. The goal was to educate the public about water efficiency and conservation.

Table 4.4: Department Wide Water Use Trends

Year	Total Occupancy /year	Total Amount Used (Gallons/year)	Per capita Gallons per person per day
Baseline Year 2010	2,153,000	214,848,000	N/A
2020	350,000	167,660,000	N/A
2020 Goal		171,879,000	

Note for Table 4.4.

Note for Table 4.5: All values are calculated in Roadmap Water Efficiency Report, Tab "Owned" and "Leased".

Table 4.5: Total Water Reductions Achieved

Total Water Use Compared to Baseline	Total Amount Used (gallons per year)	Annual Gallons Per capita
20% Reduction Achieved	167,660,000	
Less than 20% Reduction		
Totals	167,660,000	
Department-Wide Reduction	22%	

After Table 4.5, describe major water efficiency projects over the last five years that are completed or in-progress. This will flow into the "Summary of Water Efficiency Projects Completed or In Progress" in Tables 4.6, 4.7 and 4.8, below.

Cal Expo has the goal or reducing water use and has completed several projects in the last 5 years. Meters and flow sensors were added to our wells so that we could be informed as to the actual amount of water being used. One of our wells was underperforming and inefficient. With deferred maintenance funds that well was abandoned and a new well was installed. The new well is much more efficient in saving electricity and water.

With Department of General Services water grant funds all toilets and urinals were replaced with low flow toilets. Landscape watering has been cut back due to drought conditions. Trees continue to be watered on a regular basis but general landscape watering has been reduced and scheduled for early mornings or later in the evenings to conserve water.

Cal Expo has achieved over 20% reduction in water usage since the baseline year.

Building Water Management BMPS

General Water Management

- Track monthly water use
- Check leak indicator on water meter when water is not in use

Monthly water use is tracked and recorded. Use is tracked by the water meters on the wells. Routinely, staff visually surveys water fixtures to observe and repair any leaks. Water quality is tested at least 3 days a week.

Leak Detection and Repair

Perform monthly visual leak detection survey on all water use fixtures:

- Toilets
- Urinals
- Faucets - Check faucets for proper aerators (kitchen faucets 2.2 gpm and lavatory faucets 0.5 gpm) and install aerators or laminar flow devices if necessary.
- Showers - Check showerhead flow rates and install showerheads using no more than 2.0 gpm with trickle flow controls.

Kitchens

- Replace any broken or damaged dishwasher racks, and run dishwasher only when full to maximize capacity
- Check all equipment water temperatures and flow rates against the manufacturer recommendations. Use the recommended minimum temperature and flow to maximize savings.
- Turn off the continuous flow used to wash the drain trays of the coffee/milk/soda beverage island. Clean thoroughly as needed.
- Adjust ice machines to dispense less ice if ice is being wasted.
- Reduce the flow to dipper wells (troughs) for ice cream and butter scoops, and other frequently used utensils.
- Presoak utensils and dishes in basins of water, rather than in running water.
- Do not use running water to melt ice in bar sink strainers.
- Do not use running water to defrost food.
- Do not allow water to flow unnecessarily.

Laundry Facilities

- Run washer only when full to maximize capacity
- Set water level and water temperature appropriate according to the load

Leak Detection and Repair

Perform monthly visual leak detection survey on all water use fixtures:

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- Presoak utensils and dishes in basins of water, rather than in running water.
- Do not use running water to melt ice in bar sink strainers.
- Do not use running water to defrost food.
- Do not allow water to flow unnecessarily.

Laundry Facilities

- Run washer only when full to maximize capacity
- Set water level and water temperature appropriate according to the load

Note for Table 4.6: Record all building water efficiency projects in facility data sheet, Tab 4.6B. The summary for Table 4.6 will then be found in Tab 4.6.

Table 4.6: Summary of Indoor Water Efficiency Projects Completed 2014-2020 or In Progress

Year Completed	Water Saved (Gallons/yr.)	Number of Indoor Water Efficiency Projects Completed	Cost Savings per Year
2014	5000	1	50
2015	0		
2016	0		
2017	10000	1	100
2018	0		
2019	20000		
2020	0	1	200

Note for Table 4.7: Record all boilers and cooling systems water efficiency projects in Tab 4.7B. The summary will then be found in Tab 4.7.

Building Heating and Cooling Systems BMPs

Directions for completing this section The BMPs in this section not only save water and energy but they perform an important safety role as well. The meters, leak detection processes, and routine maintenance following manufactures instructions required by these BMPs assure that costly repairs and accidents are avoided.

These BMPs require that enough staff with the requisite expertise and knowledge have enough time and resources to perform the actions required. Discuss how each of the BMPs is implemented; give the number of repairs and replacements as well as the estimated water savings under each BMP.

- Develop and implement a routine inspection and maintenance program to check steam traps and steam lines for leaks.
- Repair leaks and replace faulty steam traps as soon as possible.
- Develop and implement a boiler tuning program to be completed a minimum of once per operating year.
- Provide proper insulation on steam and condensate return piping, as well as, on the central storage tank.
- For both cooling towers and boilers, obtain the services of a water treatment specialist to prevent system scale and corrosion and to optimize cycles of concentration. Treatment programs should include routine checks of boiler water chemistry.
- Develop and implement routine inspections and maintenance programs on condensate pumps.

- Regularly inspect both the water side and fire side of the boiler. If needed, clean the tube surfaces to ensure optimal heat transfer thereby maximizing system energy efficiency.
- Adjust boiler and cooling tower blowdown rate to maintain TDS at levels recommended by manufacturers' specifications.
- Shut off water-cooled air conditioning units when not needed or replace water-cooled equipment with air-cooled systems.

Table 4.7: Summary of Boilers and Cooling Systems Projects Completed or In Progress

Year Completed	Water Saved (Gallons/yr.)	Number of Systems with Water Efficiency Projects
2014	unknown	0
2015		1
2016		0
2017		1
2018		0
2019		1
2020		0

Note for Table 4.8: Record all Landscaping Hardware Water Efficiency projects in Tab 4.8B. The summary will then be found in Tab 4.8.

Table 4.8: Summary of Landscaping Hardware Water Efficiency Projects Completed or In Progress

Year Funded	Water Saved (Gallons/yr.)	Estimated Annual Cost Savings	Total Number of Projects per Year
2014			0
2015			0
2016			0
2017			0
2018	5,000		1
2019	100,500		1
2020	20,000		1

Note for Table 4.9: Record all Living Landscape Water Efficiency projects in Tab 4.9B. The summary will then be found in Tab 4.9

Table 4.9: Summary of Living Landscaping Water Efficiency Projects Completed or In Progress

Year Funded	Water Saved (Gallons/yr.)	Landscape Area MWELO (ft2)	Climate Appropriate Landscape Area (ft2)
2014			
2015			
2016			
2017			
2018	5,000	20	50
2019	100,500	150	225
2020	20000	250	250

Water Shortage Contingency Plans and Critical Groundwater Basins

Urban water suppliers are required to maintain Water Shortage Contingency Plans that are customized to local conditions. These plans include a staged response to water shortages and droughts lasting up to three years. When implementing the stages of the Water Shortage Contingency Plan, the water supplier will require increasingly stringent reductions in water use.

EO 37-16 required DWR to strengthen the requirements for these Plans, including, among other proposed changes, the creation of common standards for each stage in the plan, and extending the drought planning from three to five years. For smaller water suppliers and rural communities not required to maintain a Water Shortage Contingency Plan, DWR works with counties to facilitate improved drought planning.

DWR has finalized these requirements in a Primer that can be found at:

Making Conservation a CA-Way-of-Life-Primer.

State agencies are to be aware of their water suppliers' Water Shortage Contingency Plan and the potential impact each stage may have on their water use. State agencies are to have their own contingency plans in place for their building and landscaping water use in order to respond to any stage implemented by the water supplier.

The Sustainable Groundwater Management Act (SGMA) established a new structure for managing California's groundwater resources at a local level by local agencies. SGMA required, by June 30, 2017, the formation of locally-

controlled groundwater sustainability agencies (GSAs) in the State's high- and medium-priority groundwater basins and subbasins (basins). A GSA is responsible for developing and implementing a groundwater sustainability plan (GSP) to meet the sustainability goal of the basin to ensure that it is operated within its sustainable yield, without causing undesirable results. For those facilities located in critical groundwater basins, state agencies are to work with the local GSA plan.

Directions for completing Table 4.10. Using the information from the Worksheet, "Owned" and "Leased", enter the number of buildings with water shortage contingency plans, and the number of buildings located in critical groundwater basins. Include the total amount of water used in critical groundwater basins.

Discuss in detail how the Department has planned to meet each of its water suppliers' water shortage contingency plan stages and how the Department's plan meets the necessary reductions.

Discuss in detail the number of buildings in critical groundwater basins and what steps the Department is taking to reduce its use of water in these facilities.

Table 4.10: Number of Buildings with Urban Water Shortage Contingency Plans and in Critical Groundwater Basins

Number of Buildings with urban water shortage contingency plans.	Number of buildings in critical groundwater basins	Total Amount of water used by buildings in critical groundwater basins (Gallons)
0	0	0

Building Inventories Summary

Directions for completing Table 4.11. Using the summary data from tab 4.11 of the facility data sheet, discuss the results of the building inventories and the total number of items to be replaced. Discuss how the Department will replace the items, the total costs involved and the proposed timelines for completion. If the Department has already completed the replacements discuss how the Department approached the task, the total cost and the timeframe in which the replacements took place.

Also discuss any conditions found during the walkthroughs that need to be addressed and what the Department plan is for addressing them.

Table 4.11: Summary of Building Inventory Needs

Number of toilets to be replaced	Number of urinals to be replaced	Number of faucet aerators to be replaced	Number of showerheads to be replaced * Changing to 1.8 gallons in 2020	Number of clothes washers to be replaced	Number of garbage disposals to be replaced.	Number of pre-rinse valves to be replaced
0	0	0	0	0	0	0

Heating and Cooling Systems Inventories Summary

Directions for completing Table 4.12. Using the data from tab 4.12 of the facility data sheet, discuss the results of the heating and cooling system inventories and the total number of items to be replaced. Discuss how the Department will replace the items, the total costs involved and the proposed timelines for completion. If the Department has already completed the replacements discuss how the Department approached the task, the total cost and the timeframe in which the replacements took place.

Also discuss any conditions found during the walkthroughs that need to be addressed and what the Department plan is for addressing them.

Table 4.12: Summary of Boilers and Cooling Systems Inventory

Amount of Water Used for make-up (Gallons)	Number of flash tanks to purchase and install	Number of meters to purchase and install	Amount currently reused? (Gallons)	Remaining additional water suitable for other purposes (Gallons)
0	0	10	Unknown	0

Irrigation Hardware Inventories Summary

Landscaping typically uses 50 percent or more of an agency's total water use. While landscaping serves critical functions, the accompanying irrigation hardware, if not properly installed and maintained, can contribute to water waste. By reviewing and inventorying all irrigation hardware, it is possible to achieve significant water savings.

For each facility follow these steps to ensure an efficient irrigation system. If a system map is not already available, start with creating one. Next, find where the landscaping water meters are located. If your landscape is over 20000 sq. ft. and the irrigation system does not have meters, install them. Meters or sub-meters are essential for managing a landscape irrigation budget. Meters are also a valuable tool to detect leaks. Leaks do more than waste water. Leaks degrade pavement, create hazards and damage buildings.

Identify downspouts and redirect water into landscaping. Be sure to leave at least 10 feet from building foundation or use local code requirement for spacing.

When looking at the landscaping system pressure, it is important to realize that many contractors "value engineer" irrigation systems to lowers cost/increase profit by "stretching" the irrigation systems. This results in uneven coverage by spray and rotors, and inadequate pressure. When reviewing your system, additional stations may need to be added.

Pressure regulation:

Pressure issues are found in nearly all irrigation systems from high or low pressure, friction loss and inadequate pressure regulation for the installed equipment to operate correctly. All irrigation emission devices are designed to operate within a narrow pressure range. If operated outside the optimum range, the system will have poor performance, wasting water and causing poor plant health and appearance. Pressure may need to be reduced, especially for drip irrigation systems, but it can also need to be boosted by pumps to operate some equipment such as high coverage rotors on turf grass areas. A measurement of static pressure and operating pressure compared against the manufacturers specifications will indicate what type of regulation is needed and by how much change in pounds per square inch (psi).

Irrigation sensors: When using automatic rain shut off devices, it is important to ensure that the sensor is properly situated on the site. Make sure the sensor is not blocked by overhanging bushes, trees or building overhangs and canopies.

Backflow prevention:

A backflow prevention device is required on all irrigation systems to prevent contaminated water from entering the supply line from backpressure or back siphonage. State and local plumbing and building codes specify the type of backflow prevention required. The type of backflow prevention may vary

according to the site, but all irrigation is considered a high hazard application and some types of backflow devices are restricted.

Flow sensing (MWELO requirement for landscapes >5000 sq. ft.):

Flow sensing and flow measuring are irrigation techniques that are becoming more commonplace due to the usefulness of their applications in large irrigation systems. Flow sensors monitor the flow through an irrigation system and can alert a user to low or high flow conditions. The conditions may be caused by stuck valves, leaks or failures. At a minimum, flow sensing will save water, but the greatest advantages are realized for large system failures that can cause flooding, damages to buildings and safety hazards.

Irrigation equipment manufacturers will provide guidance on siting and other specifications.

Directions for completing Table 4.13. Using the data from the facility data sheet Tab 4.13, discuss the results of the Irrigation hardware inventories and the total number of items to be replaced.

Cal Expo is in need of a large amount irrigation hardware. We will be looking into the projected cost of adding these as soon as finances are available.

Table 4.13: Summary of Irrigation Hardware Inventory

Number of separate meters or sub-meters needed	Number of irrigation controllers required with weather or soil moisture adjustment and flow sensing capabilities needed.	Number of backflow prevention devices needed.	Number of flow sensors to be purchased and installed	Number of automatic rain shut-off devices needed	Number of new pressure regulators needed.	Number of new hydrozones needed.	Number of new valves needed.	Number of filter assemblies needed.	Amount of drip irrigation needed (area covered)	Number of booster pumps needed	Number of rotary nozzles or other high efficiency nozzles needed
77	23		23	23	0	0	170	0	7500 Sq ft	2	400

Landscaping Hardware Maintenance BMPS

Discuss how each of the BMPs is implemented; give the number of repairs and replacements as well as the estimated water savings under each BMP.

- Install check valves, swing joints and replace nozzles as needed
- Install faucet timers for hose or hand irrigation
- Install shut-off nozzles or quick-couplers for all hoses

Living Landscape Inventory

Far from being just an aesthetic or ornamental feature, landscaping plays a critical role around public buildings and facilities. From providing safety and security, to reducing local heat islands, suppressing dust, reducing water runoff, maintaining soil health, aiding in water filtration and nutrient recycling, landscaping around public buildings is essential. Further, landscaping in public places frequently surrounds historic places and public memorials as well as provides pleasant public gathering spaces. The health and proper maintenance of these landscapes is vital to the physical wellbeing of California's people as well as to its social, cultural, political and historical life.

Additionally, the many vital ecosystem functions carried out by living public landscaping are critical in helping California meet its goals for greenhouse gas reduction, climate adaptation, and water and energy efficiency and water conservation.

Urban forests are vital to improve site conditions for occupants and visitors to buildings and the surrounding community. Large shade trees should be considered valuable infrastructure and given priority over other plants to maintain tree health. A voluntary urban forest plan is encouraged to assess individual trees and plan for additional tree plantings.

Table 4.14 identifies the landscape features to be inventoried. Please note whether the landscape area has historical features or is a designated memorial. These areas will need to be prioritized in the final water plan.

Directions for completing Table 4.14. Using the data from the facility data sheet Tab 4.14, discuss the results of the living landscape inventories and the total number of booster pumps and high efficiency nozzles to be installed. Distinguish between the amount of turf landscape and other landscape types. Discuss how the Department has adapted its living landscape choices for both drought and climate adaptation.

Discuss the total costs involved and the proposed timelines for completion. If the Department has already completed the living landscape improvements, discuss how the Department approached the task, the total cost and the timeframe in which the climate adaptation of its living landscape took place.

Table 4.14: Summary of Living Landscape Inventory

Landscape >500Sq. ft.)	Turf (Sq. ft.)	Number of historical sites or memorials	MWELO landscape area (Sq. Ft.)	Climate appropriate landscape area (Sq. Ft.)
35 acres		**1**		

Living Landscape BMPs

Discuss how each of the BMPs is implemented; give the number of repairs and replacements as well as the estimated water savings under each BMP.

- Prioritize and assign value to plants within a landscape.

Trees, hundreds of them, are given highest priority for watering.

- During drought or other water shortages, give trees and large shrubs highest priority for survival.
- Continue to water trees and shrubs as needed.
- Refresh mulch as needed. All bare soil must be covered by a minimum of 3 inches of mulch.

Mulch is used on annual spring plantings of flowers. Due to budget constraints, annual flower planting is limited to small spaces.

Irrigation schedule is adjusted for seasonal changes by landscape personnel.

- Test irrigation system monthly to check for leaks and misalignment, and other malfunctions. Repair immediately with the correct parts. Adjust irrigation systems as needed.

Irrigation systems are checked monthly to check for leaks and misalignment, and other malfunctions. Repairs are made as needed and are routine.

- Water early in the morning or in the evening when wind and evaporation are lowest. Never water between 10am and 6pm

Water is generally scheduled for the early mornings unless there are a number of public show attendees on the grounds. Then, the schedule is modified to evening hours.

- Prevent runoff! Make sure sprinklers are directing water to only landscape areas, avoiding hardscapes such as parking lots, sidewalks, or other paved areas. No irrigation water should ever be permitted to leave the site.

Sprinklers are directing water to landscape areas only. Water funning on asphalt/hardscape areas is identified and corrected quickly as to avoid wasting water and to avoid any potential guest slip and falls.

- Use WUCOLS to find plant water use requirements and only water landscapes according the plant water needs.

WUCLS are used to check plant water use requirements.

- Plant species native to the climate zone.

Yes plant species native to the climate zone are purchased and planted.

- Use bio-swales and other forms of rainwater capture to keep water onsite.

There is no need to waste clean water for irrigation when we have a manmade lake in the center of the racetrack available to hold water for re-use.

- Incorporate plantings for pollinators
- When planting new areas or replacing plants, add compost to the soil (entire planting areas, not just planting holes) at a rate of 4 cubic yards per 1000 square feet to a depth of six inches unless contradicted by a soil test. Fix leaks immediately.

Compost is added to the soil when planting new areas or replacing plants. We have a farm on the property where pollinators have watermelon, squash, and other plants that are attractive to them.

Large landscape Water Use

Large landscape water use often represents a significant percentage of a facility's water use and significant water savings can often be achieved through better irrigation scheduling or inexpensive improvements in irrigation hardware. As part of the Water Use Guidelines and Criteria, the water uses for landscape areas over 20,000 sq. ft. shall be tracked through a water budget program.

A landscape water budget is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance. The water budget establishes an efficient standard for the landscape area. The water budget programs use local weather measurements to adjust the irrigation schedule on a weekly, biweekly or monthly basis. A dedicated landscape meter or an irrigation sub-meter is required to track the actual landscape water use. The actual water use is entered the water budget program and the program compares the water use to an efficiency standard. A landscape water use tracking program will help improve irrigation scheduling and will also help detect irrigation system leaks. Landscape water budget management services in California are available by landscape associations and private vendors.

By reading the water meter and entering water use data into the program database, the landscape water manager can monitor water use and make immediate decisions regarding the irrigation schedule to maintain the landscape at or below the water budget. A landscape water audit and needed repairs to the irrigation system are advised at initiation of the Program to obtain optimum results. Costs for the program are the responsibility of the agency.

Water use data from the local water provider or data entered by the landscape manager and landscape water budget calculated specific to each landscape based on local climate and plant water needs is used for landscape water management. Data from dedicated landscape meters or in the case of facilities with mixed use meters, a landscape sub-meter can provide the necessary data. If a dedicated meter or sub-meter is not available a winter / summer water use comparison can be used to estimate the summer irrigation demand and landscape water budget.

Landscape maintenance staff should attend an EPA WaterSense labeled training program. WaterSense labeled irrigation training programs include the Irrigation Association Certified Irrigation Auditor (CLIA), Certified Irrigation Contractor (CIC), Certified Irrigation Designer (CID), Sonoma Marin Water Saving Partnership Qualified Water Efficient Landscaper (QWEL)and the California Landscape Contractor Association 's Water Management Certification Program

(WMCP). All listed EPA WaterSense labeled programs are available throughout California.

Water use baselines and targets do not have to be established separately for large landscapes. The large landscape water use should be included in the facilities baseline and target water use. If the landscape is served by a utility owned dedicated landscape account meter, the volume of water used should be added to the amount recorded by the utility meter serving the building. If the landscape water is sub-metered after it has gone through the mixed-use utility owned meter, it has already been accounted for in the total facility water use measurement.

Directions for completing Table 4.15. Using the data from the facility data sheet Tab 4.14, discuss the water budget for your large landscapes, whether climate appropriate plants are incorporated in your large landscape plantings and what percentage of the large landscape is drought tolerant. Also include the number of EPA WaterSense trained staff. If no staff has been trained, discuss plan for assuring training.

Table 4.15: Summary of Large Landscape Inventory and Water Budget

Number of Facility Sites/Locations with > 20,000 sq. ft. of Landscaping	**Total Landscape** Area all Facilities	**Total Water Budget all Facilities**	**Total EPA WaterSense or Irrigation Association Certified Staff**
1			**1**

Directions for completing Table 4.16. Using the data from the facility data sheet Tab 4.16, discuss the Living Landscape Water Efficiency Projects Completed or In Progress. Discuss the actual water savings achieved from the completed projects and proposed water savings from planned projects.

Table 4.16: Summary of Completed Living Landscaping Water Efficiency Projects

Total of all Facilities	**Est Annual Water Savings (Gallons)**	**Est Annual Cost ($) Savings**	**Sum of MWELO Landscape installed (Sq. Ft.)**	**Sum of Climate Appropriate Landscape Installed (Sq. Ft.)**

Monitoring, Reporting and Compliance

Each state agency is responsible for monitoring water use and reporting baseline and annual water use for compliance with the water use reduction targets. Water use shall be measured at facilities that have meters and submeters.

Water use must be estimated at state facilities that do not have water meters. If not cost prohibitive, state agencies should prioritize water meter installations to obtain accurate measurement of water use. Baseline water use can be estimated based on water use ratings of fixtures and appliances at the site, the duration per use, amount of usage, and the number of occupants. The California Green Building Standards Code provides a baseline water use calculation table that will aid state agencies in developing their water use estimates. Water use reductions can be estimated by comparing flow rates of replacement fixtures with old fixtures. For example, there will be a water use reduction of 3.72 gallons per flush (gpf) by replacing a 5-gpf toilet with a 1.28-gpf toilet. All estimates and assumptions of water use should be well documented.

CHAPTER 5 - GREEN OPERATIONS

Greenhouse Gas (GHG) Emissions

State agencies are directed take actions to reduce entity-wide greenhouse gas emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

For each strategy below describe what steps have already been taken and what additional measures need to be taken to achieve the 20% minimum reduction by 2020 or any higher goal set by your department. If your agency has not yet reached its GHG reduction goal, please describe which strategies you will employ to meet the 2020 reduction target. If your agency has met its GHG goal describe how you have used each of the below strategies to meet the goal and your plans for increasing use of these strategies in the future for additional GHG reductions.

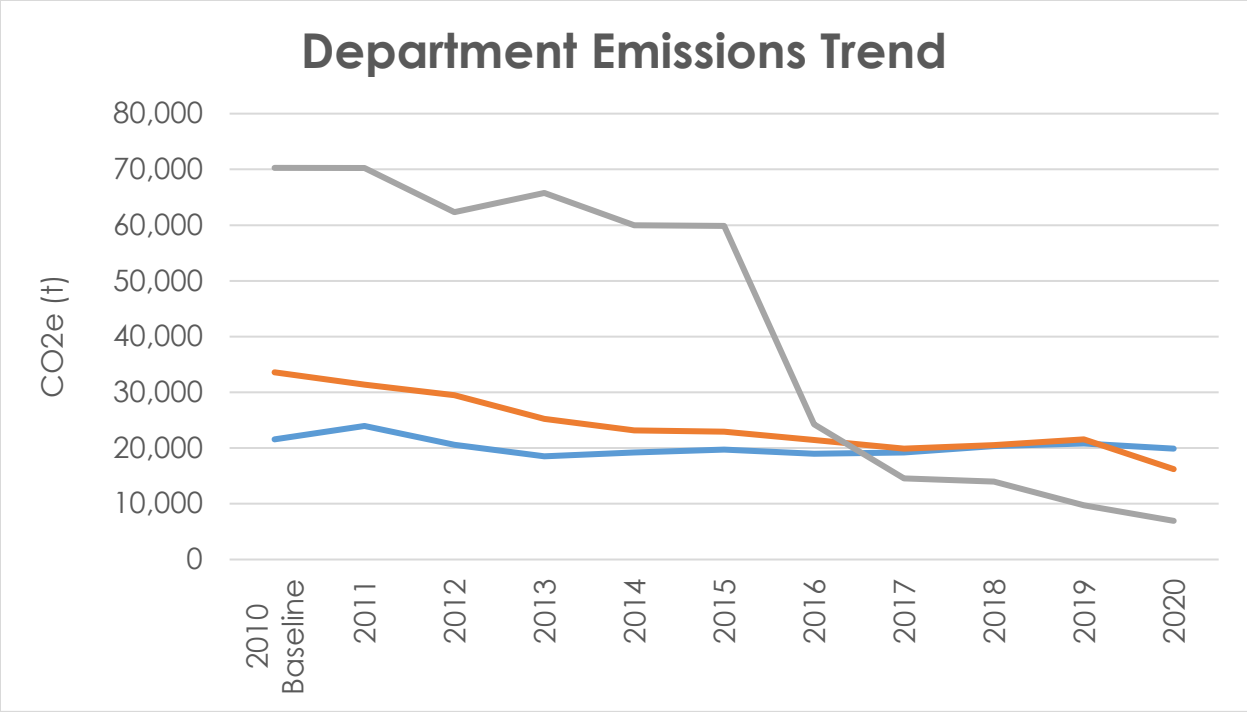
Cal Expo has met and exceeded the 2020 reduction target. Cal Expo's goal is to invest in solar and replace the outdated solar arrays currently on the property.

Note for Table 5.1 and Graph 5.1: Populate this table with the metric tons of GHG emissions that were reported by your department in the CRIS report to CalEPA. Graph this information for Graph 1.

Table 5.1: GHG Emissions since 2010

Emissions Source	2010 Baseline	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Per Cha sinc Bas
Natural gas	726	684	647	558	415	354	365	414	436	486	288	**-6**
Vehicles	569	486	369	372	353	443	439	421	346	366	107	**-8**
Purchased Electricity	2,662	2,035	2,300	2,813	2,336	2,263	2,254	2,410	2,172	2,109	1,314	**-5**
Total	3,957	3,205	3,316	3,743	3,104	3,059	3,057	3,245	2,954	2,961	1,709	**-5**

Graph 5.1: GHG Emissions since 2010



Low Emitting Landscaping Equipment

State agencies are to use manual landscape and hardscape maintenance as much as possible to reduce air pollution, dust and noise. These measures are addressed in SAM Section 1821.6.

During the pandemic there were so many emergency functions taking place at Cal Expo that were of such priority the low emitting landscape equipment planning was not moved forward due to no funds and minimal staff.

Building Design and Construction

Executive Order B-18-12 requires that all new buildings, major renovation projects and build-to-suit leases over 10,000 square feet shall obtain LEED Silver certification or higher. All new buildings under 10,000 square feet shall meet applicable CalGreen Tier 1 Measures. New buildings and major renovations greater than 5,000 square feet are also required to be commissioned after construction.

There are no new buildings at Cal Expo since 2012.

Table 5. 2: New Construction since July 1, 2012

Facility Name	LEED Certification Type & Level Achieved	Commissioning Performed (Y/N)
Cal Expo – No new construction since 2012		

State agencies shall implement mandatory measures and relevant and feasible voluntary measures of the California Green Building Standards Code (CALGreen), Part 11, related to indoor environmental quality (IEQ) that are in effect at the time of new construction or alteration and shall use adhesives, sealants, caulks, paints, coatings, and aerosol paints and coatings that meet the volatile organic chemical (VOC) content limits specified in *CALGreen*.

LEED for Existing Buildings Operations and Maintenance

All State buildings over 50,000 square feet were required to complete LEED-EBOM certification by December 31, 2015 and meet an Energy Star rating of 75 to the maximum extent cost effective.

Table 5.3: LEED for Existing Buildings and Operations

Number of Buildings over 50,000 sq. ft. and eligible for LEED EBOM	Number of Building over 50,000 sq. ft. that have achieved LEED EBOM	Percentage of buildings over 50,000 sq. ft. required to achieve LEED EBOM that have achieved it
0 eligible	0	0

Indoor Environmental Quality

When accomplishing Alterations, Modifications, and Maintenance Repairs and when relevant and feasible, state agencies shall implement the mandatory and voluntary measures of the California Green Building Standards Code (CALGreen), Part 11, related to indoor environmental quality.

Indoor Environmental Quality must also be maintained through the use of low emitting furnishings, cleaning products and cleaning procedures.

New Construction and Renovation

Discuss how your department ensures the voluntary measures from CalGreen related to IEQ are implemented in all building projects. If such a system is not in place, describe the steps needed to institutionalize use of these standards, what parts of your organization will be responsible, and a goal date for the policy to be in place. Be sure to specifically discuss:

- adhesives, sealants, caulks, paints, coatings, and aerosol paints and coatings that meet the volatile organic chemical (VOC) content limits specified in CALGreen
- carpet systems, carpet cushions, composite wood products, resilient (e.g., vinyl) flooring systems, and thermal insulation, acoustical ceilings and wall panels that meet the VOC emission limits specified in CALGreen.

No new construction or renovation has occurred after July 2012, and no new construction/renovation is planned. If a new construction/renovation planned, Cal Expo will meet the mandatory and voluntary measures of CalGreen Part II.

Furnishings

Discuss how your department ensures or will ensure that all furniture and seating purchased by the department complies with either:

- The DGS' Purchasing Standard and Specifications (*Technical*

Environmental Bid Specification 1-09-71-52, Section 4.7) or

- ii. The American Society of Heating, Refrigerating and Air-Conditioning

Engineers' (ASHRAE) *Standard 189.1-2011* (Section 8.4.2.5).

- iii. CALPIA manufacturing and associated products are compliant with the

DG S' Purchasing Standard and Specifications (*Technical Environmental*

Bid Specification 1-09-71-52

Cleaning Products

Cal Expo only uses cleaning products that are Green Seal certified. Cal Expo uses carpet systems, carpet cushions, composite wood products, vinyl flooring systems, thermal insulation, acoustical ceilings and wall panels that meet VOC emission limits as specified in Cal Green. A Supervisor who supervises and directs cleaning operations plans purchases. Maintenance staff plan purchases for adhesives, sealants, etc. Then the Chief of Plant reviews these proposed purchased. All are required to adhere to the Green Buildings Standards Code whenever feasible.

Cleaning Procedures

Discuss how your department ensures that:

- All vacuum cleaners used in department facilities achieve the Carpet and Rug Institute Seal of Approval.
- Entryways are maintained as specified in CalGreen Section A5.504.5.1. Entryways and passages are kept clean and orderly. Garbage is removed often, areas are kept free from loose boards, holes, and openings are repaired.
- Cleaning procedures meet the Green Seal GS-42 standard. Cleaning and sweeping is done to minimize the contamination of the air. Buildings are well maintained and effective programs of extermination are used if pests are present.
- Cleaning procedures follow the Carpet and Rug Institute's *Carpet Maintenance Guidelines for Commercial Applications*.
- Cleaning procedures meet Title 8 Section 3362

Cal Expo is following the cleaning procedures of Green Seal Standard GS-42. Janitors have ongoing updated training and engaged with the green cleaning procedures. Entryways are maintained as specified in CalGreen Section A5.505.5.1. Vacuum cleaners meet the Carpet & Rug Institute's standard.

HVAC Operation

Discuss how your department ensures or will insure that:

- HVAC systems provide no less than the required minimum outdoor air requirements

- HVAC systems are inspected at least annually and that all HVAC inspections and maintenance are documented in writing. These inspections must include:
    - Verification of minimum outdoor airflows using hand-held airflow measuring instruments.
    - Confirmation that air filters are clean and replaced based on manufacturer's specified interval.
    - Air filters used have a MERV rating of no less than 11.
    - Verification that all outdoor dampers, actuators and linkages operate properly.
    - Checking condition of all accessible heat exchanger surfaces for fouling and microbial growth, with action taken when fouling is found.
    - Checking the first 20 feet of ductwork downstream of cooling coils for microbial growth, take action if growth is found.
    - Ensuring that cooling towers are properly maintained and that records of chemical treatment are kept. Retrofit to prevent cooling tower plumes closer than 25 feet to any building air intake.

Cal Expo, within design specifications, is operating HVAC systems to provide no less than the minimum required ventilation during work hours. Cal Expo Stationery Engineer inspects and documents HVAC systems annually including all elements specified in Management Memo 14-05 and OSHA's Title 8 section 5142. Air filters with a MERV rating of no less than 11 and no less than 13 are used in areas where US EPA standards for PM10 and PM2.5 levels are routinely exceeded. MERV 16 or HEPA filters are used in buildings that house children. Buildings are kept clean and sanitary.

- A computer-based preventative maintenance program is in place for all HVAC equipment.

  Cal Expo has no ability to purge buildings prior to daily occupancy with outdoor air as required. Should we receive resiliency or deferred maintenance funds from the state, we have planned to install a new Energy Management System to control HVAC systems and lights on the grounds for emergency service and energy conservation.

Integrated Pest Management

Department staff and contracted pest management companies will follow an integrated pest management (IPM) strategy that focuses on long-term prevention of pest problems through monitoring for pest presence, improving sanitation, and using physical barriers and other nonchemical practices. If nonchemical practices are ineffective, Tier 3 pesticides may be used, progressing to Tier 2 and then Tier 1 if necessary.

Grounds maintenance staff focus on a long-term suppression of pest problems. Staff are instructed to monitor the presence of pests. Staff meetings include determining levels or thresholds of pest presence, where those areas of infestation are, and evaluation of the appropriate method to suppress the pests. Improving sanitation in areas where pests are present include: placement and regular emptying of garbage containers, and storing empty containers away from buildings. Building doors are closed and building cracks and small cervices are repaired. Food storage areas are kept clean and dry. Garbage cans are stored away from buildings and transported to areas as needed.

Note for table 4: List all current pest control contracts held by the department. Note whether IPM as described in MM 15-06 is required in the contract.

Table 5.4: Pest control contracts

Pest Control Contractor	IPM Specified (Y/N)
Hunters Pest Control Management	Yes

Waste and Recycling Programs

The California Integrated Waste Management Act (Assembly Bill 939, Sher, Chapter 1095, Statutes of 1989 as amended) established the solid waste management hierarchy. Source reduction is at the top of the state's waste management hierarchy; recycling and composting is next, followed last by environmentally safe disposal. California's Department of Resources Recycling and Recovery (CalRecycle) administers the state's recycling and waste management programs. State agencies must report their waste and recycling efforts by May 1 of each year covering activities conducted during the prior calendar year. Using your agency's most recent annual report (State Agency Reporting Center (SARC) Report), give a waste management overview of your agency's waste, recycling and organics recycling efforts. You can search for your agency recycling coordinator using the search feature of the website linked above.

Pursuant to SB 1106 each state agency shall have at least one designated waste and recycle coordinator. The coordinator shall perform the duties imposed pursuant to this

chapter using existing resources. The coordinator shall be responsible for implementing the integrated waste management plan and shall serve as a liaison to other state agencies and coordinators. In addition, each state agency is required to provide adequate receptacles, signage, and education and outreach to staff.

Cal Expo's designated recycling coordinator trains and educates staff on the many different recyclable items and how and where each of these categories are handled prior to their removal from the facility. Receptacles are available in offices for recycled office type waste. In the maintenance yard, there are large bins each individually labeled with the name of the appropriate material for disposal.

Table 5.5: State Agency Reporting Center (SARC) Report on Total Waste per Capita

Per Capita Baseline	**2019**	**2020**	**Total Waste 2019**	**Total Waste 2020**	**% Change from 2019/2020**
			927 tons	854 tons	-7.8%

In Table 5.5 above, provide data from State Agency Reporting Center (SARC) Report. Contact your agency's recycling coordinator if you need assistance getting a copy of the 2020 SARC report.

Due to the pandemic and the closing of the facility in 2020 to events, unable to evaluate 2020 total waste v 2019.

Recycling

Recycling is the practice of collecting and diverting materials from the waste stream for remanufacturing into new products, such as recycled-content paper. Stewardship programs help collect and recycle carpet, paint, pharmaceutical and sharps, and mattresses. AB 341, Mandatory Commercial Recycling (Chesbro, Chapter 476, Statutes of 2011) requires businesses and public entities that generate four cubic yards or more of commercial solid waste per week to arrange for recycling services under the goal of source reducing, recycling or composting 75% of solid waste generated statewide.

Cal Expo's recycling program includes aluminum, asphalt, concrete, green waste, paper, cardboard, plastic bottles, scrap metal, wood waste, glass, grease, e-waste,

tires, used oil and automotive wastes that are collected and sorted for shipment to commercial recyclers. We also pursue all avenues to provide information electronically to support our mission to lower generation in the first place. Exhibits are shared with other fairs so that materials developed for state fair can be used to save resources.

Organics Recycling

State agencies must implement AB 1826 (Chesbro, Chapter 727, Statues of 2014). State agencies that generate 2 cubic yards or more of commercial solid waste (total trash, recyclables, and organics) per week shall arrange for organic waste recycling services.

Organic waste includes:

- Food waste
- Green waste
- Landscape and pruning waste
- Nonhazardous wood waste
- Food-soiled paper

The exemption under 42649.82 (e)(3)(E) related to businesses that generate one cubic yard or less of organic waste is no longer in effect. Furthermore, CalRecycle has extended the current AB 1826 rural exemption until December 31, 2026.

Effective January 1, 2022, state agencies must implement SB 1383 (Lara, Chapter 395, Statutes of 2016). State agencies are currently required to maintain mandatory commercial recycling and organic recycling programs, including ensuring that properly labeled recycling containers are available to collect bottles, cans, paper, cardboard, food waste, and other recyclable materials. SB 1383 builds upon these efforts by identifying non-local entities and expanding the definition of organic waste to include food scraps, landscape and pruning waste, organic textiles and carpets, lumber, wood, manure, bio solids, digestant, and sludge's.

Under SB 1383, non-local entities include:

- Special districts
- Federal facilities
- Prisons
- State park facilities
- Public universities and community colleges
- County fairgrounds
- State agencies

SB 1383 organics collection requirements are effective January 1, 2022.
You can view the SB 1383 statewide webinar to learn more by clicking here.

Using your agency's most recent annual report, describe your agency's program process for organics recycling.

Staff are trained to place, monitor, empty, and clean scrap collection bins throughout the property. Educational signs are posted for patrons, and teach vendors how to separate food scraps. Food scraps must be separated from plastics and glass. The public and food vendors are key players in the process. For food that is still edible when a vendor has leftover food, the food is donated. The staff involved in the organics recycling program are custodial staff Training of staff is done by a Custodial Supervisor. Educational signage is produced and placed on the appropriate bins. Bins are placed near food service areas and seating areas.

Edible Food Recovery Program

Commercial edible food recovery begins January 1, 2024 for Tier 2 generators which most state agencies would fall under. SB 1383 requires that by 2025 California will recover 20 percent of edible food that would otherwise be sent to landfills, to feed people in need.

Hazardous Waste Materials

Using your agency's most recent annual report, describe your agency's process for Universal Waste and Electronic Waste as well as any other hazardous wastes such as antifreeze, asbestos, paint, treated wood, used oil, etc.

All of the mentioned items are separated and placed into separate bins. Employees are trained in the handling & disposal of the waste materials. There is a collection area in the administration building and in the maintenance area. Staff can leave used batteries, electronic waste, magazines into labeled bins. Staff are trained how to handle antifreeze, paint, treated wood and used oil. All of the hazardous waste items have labeled receptacles for disposal.

Material Exchange

These programs promote the exchange and reuse of unwanted or surplus materials from your agency. The exchange of surplus materials reduces the cost of materials/products for the receiving agency and results in the conservation of energy, raw resources, landfill space, including the reduction of greenhouse gas emissions, purchasing and disposal costs.

Cal Expo buys used equipment/furniture from state surplus. When used equipment is no longer used it is donated if it is still usable. Exhibits and equipment are often shared with other fairs. Exhibits are stored for several years and repurposed often.

Waste Prevention/Reuse

Programs in this section support (a) waste prevention: actions or choices that reduce waste and prevent the generation of waste in the first place; and (b) reuse: using an object or material again, either for its original purpose or for a similar purpose, without significantly altering the physical form of the object or material.

Small and large exhibits are repurposed annually. More use of online form to reduce paper use along with emails in place of paper memos. Bulletin boards are reused. Only remanufactured toner cartridges are purchased. Towels used for cleaning are washed and reused. Boxes, packing materials, and pallets are reused.

Training and Education

Pursuant to AB 2812 (Gordon, Chapter 530, Statutes of 2016), each state agency is required to provide adequate receptacles, signage, education, and staffing, and arrange for recycling services consistent with existing recycling requirements for each office building of the state agency or large state facility. The bill requires, at least once per year, each covered state agency and large state facility to review the adequacy and condition of receptacles for recyclable material and of associated signage, education, and staffing. Additionally, the bill requires each state agency to include in its existing Report to CalRecycle a summary of the state agency's compliance with the act.

Since Cal Expo has such a diverse base of exhibitors/contractors during the annual state fair, materials and exhibits are stored and reused as often as possible. Our staff are trained to review receptacles & signage annually. Employees are engaged in the recycling efforts. Promoters who rent space at the facility are educated on the correct disposal for a variety of items. Promoters share information with individual vendors to use the correct receptacle for disposing of any items during their event. Signage and education to visitors is key. Staff are trained to separate many items by placing like items into **labeled** bins. The following items are separated during the disposal process by staff: aluminum, asphalt, batteries, glass, green, metal paper, plastic, sand, straw, shavings, trash, wood, and food waste.

Foodservice Items

SB 1335 (Allen, Chapter 610, Statutes of 2018) requires food service facilities located in a state-owned facility, operating on or acting as a concessionaire on state-owned property, or under contract to provide food service to a state agency to dispense prepared food using food service packaging that are reusable, recyclable, or compostable. CalRecycle approved proposed regulations December 31, 2020 to establish the process and criteria to determine what types of food service packaging

are reusable, recyclable, or compostable. CalRecycle must also publish a list of food service packaging that meets these criteria within 90 days of the regulation going into effect. Food service facilities will only be allowed to purchase food service packaging from the approved list, which will be updated at least once every five years.

A Master Food & Beverage contractor handles Food Service at Cal Expo. There are many opportunities to use recyclable packaging. As of January 2023, Cal Expo has a new food & beverage contractor. We have a unique opportunity to improve the environmental impact of food service to large gatherings of guests. We have a goal to minimize single use service ware. VerTerra Dinnerware provides the most up-to-date sustainable options for packaged food products. The company produces sustainable packaging/service ware for virtually any foodservice need including fallen leaf plates, server sourced from balsa wood and wrapped in rice paper, and the strongest wooden cutlery on the market. The use of alternative materials such as boxed water and aluminum cups is part of the approach to use options to the current plastic use. Preparing and serving food requires a significant amount of equipment. Energy star equipment is used along with an equipment operation-training program to increase efficiency and reduce the use of gas, electricity, and water consumption.

Environmentally Preferable Purchasing

State agencies are required to purchase and use environmentally preferable products (EPP) that have a reduced effect on human health and the environment when compared with competing goods that serve the same purpose.

Additionally, the State Agency Buy Recycled Campaign (SABRC) is a joint effort between CalRecycle and the Department of General Services (DGS) to implement state laws requiring state agencies and the Legislature to purchase recycled-content products (RCP) and track those purchases. Both state agency and its contractors must be track purchases that fall under eleven product categories. Click here for the current product categories. It complements the intent of the Integrated Waste Management Act (AB 939, Sher, Chapter 1095, Statutes of 1989 and Public Resources Code 4000 et al), which was enacted to reduce the amount of waste going to California's landfills. An annual report detailing state agencies' annual RCP purchase is due to CalRecycle by October 31 of each year.

Pursuant to Public Contract Code Sections 12203 and 12211 (AB 2675, Lowen thal. State agency: public contracts), effective January 1, 2020, this bill requires each state agency to ensure that at least 75 percent of the total purchases under the reportable categories contain recycled-content products meeting the minimum percentage content, except for paint, antifreeze, and tires which

would remain at the 50 percent requirement. Click here for current SABRC compliance percentages

Reducing Impacts

The environmental impact of the goods we buy is often larger than the impact of our own department operations. Our department is committed to reducing the environmental impact of our goods and services we purchase.

Describe your agency's commitment to buy goods and services that lessen impacts to public health, natural resources, economy, and environment.

- Discuss how your agency will reduce environmental impacts such as energy, water and natural resource conservation when making purchasing decisions.
- Discuss how your agency ensures contractors provide EPP goods and meet SABRC requirements in service contracts

Discuss how your agency will ensure that the goods and services they buy meet the current DGS purchasing standards and specifications available from the Department of General Services Buying Green website For each product category below describe what steps have already been taken to ensure purchases are EPP.

- Paint (i.e. master painter's institute certified paint and recycled paint)

Paint is re-mixed on site so unused paint is mixed and reused. Cal Expo uses DMP and the recycled paint is very limited and expensive. The interior recycled paint is not low or no VOC and not suitable for human health reasons is it is not used for office interiors.

- IT goods (energy star rated: computers, monitors and televisions DGS-52161505 Purchasing Standard or meet current specifications of statewide contracts)

All IT products are energy star rated and purchasing meet specifications of statewide contracts.

- Janitorial supplies and cleaners (EcoLogo, Greenseal certified cleaners, DGS_471318A Purchasing Standard compliant)

Janitorial supplies and cleaners are all within purchasing standards. For paper products we have consistently exceeded the mandates for both printing and writing paper. Recycle bins are available throughout the property for disposal of

paper, plastic, water bottles, and packaging material. Recycle boxes are in each department and also at the employee's work stations or offices.

- Janitorial supplies, paper products (i.e. SABRC compliant and DGS_141117A Purchasing Standard Compliant)
- Desk Lamps (DGS-391115-A Purchasing Standard compliant)

Desk lamps are complaint.

- Office equipment (i.e. EPEAT compliant and EnergyStar rated printers, copiers and DGS_432121A Purchasing Standard compliant for high-end multifunctional devices) and

Cal Expo requires that only EnergyStar rated office equipment is purchased.

- Paper products (i.e. Forest Stewardship Council certified, SABRC compliant copy paper, DGS-441200-A Purchasing Standard compliant)

Paper products are and have been compliant.

- Remanufactured toner cartridges (available from PIA and statewide contract ID/Number: 1-15-75-61)

Only remanufactured toner cartridges are purchased.

Measure and Report Progress

Discuss the strategies and plans your agency has taken or will take to increase EPP.

- Increase EPP spend on plastic, printing & writing paper, & metal. These are the items where we have an opportunity to increase.
- Continue to embed sustainability roles into the purchasing procedures.
- Train buyers in the benefits of buying EPP products. Increase the number of Staff trained in EPP available products and buying habits.
- Engage and educate suppliers to offer EPP products when selling to the state

With the rebuilding of Cal Expo staff, we will get back on track. Very little purchasing has been done since 2019 due to lack of funds and a large decrease in the number of staff. Therefore, EPP product spending is down along with the overall 2020 and 2021 spending.

All EPP purchases are tracked and recorded by a staff member.

Note for table 5.5: Provide your department's State Agency Buy Recycled Campaign FY 19/20 Performance numbers in the table below (Agencies reporting SABRC purchases can access the information through CalRecycle at https://secure.calrecycle.ca.gov/sabrc/signin.aspx):

Table 5.5: State Agency Buy Recycled Campaign FY 19/20 Performance

Product Category	SABRC Reportable Dollars	SABRC Compliant Dollars	% SABRC Compliant
Antifreeze	327.36	327.36	100%
Compost and Mulch	0	0	0
Glass Products	15,923.14	0	0%
Lubricating Oils	3,227.16	3,227.16	100%
Paint	6,374.16	133.47	2.09%
Paper Products	2,892.74	563.44	19.48%
Plastic Products	34,473.09	31,315.19	90.84%
Printing and Writing Paper	32,581.05	31,209.79	95.79%
Metal Products	64,699.13	64,575.19	99.81%
Tire Derived Products	1,051.96	284.55	27.05%
Tires	12,522.97	0	0%

Discuss your agency's efforts to achieve SABRC compliance for the non-compliant categories and increase procurement of recycled products across all categories.

Glass product purchases were primarily lightbulbs. Retreads are not the preferable safety option for our police officers. Due to the crushing impacts of COVID-19 and the cancellation of our annual state fair, Cal Expo had to halt discretionary spending in March of 2020. Therefore the two categories – Paper Products & tire derived products have very small reportable dollars, thru creating an issue with compliance due to small opportunities.

Note for 5.6: Identify the top five commodities that your agency buys that have the greatest potential to green. What commitment will your agency make to increase spend each year for the top 5 commodities listed? The commitment will be reported as "Commitment to increase EPP per commodity". It is reported as a percent of spend.

The Green Buyer website tracks and offers transparency in agencies performance for buying EPP goods. EPP goods are those identified as EPP when entered into SCPRS. These goods are available from statewide contracts or

complaint with DGS Purchasing Standards or SABRC. EPP goods are categorized by UNSPSC and compared with goods of the same category to establish the percent EPP spend as reported in SCPRS. EPP goods are found on DGS Buying Green website.

Table 5.6: Commodities categories with the greatest Potential to Green

Commodity	2020 Total Spend ($)	2020 Percent EPP Spend (%)	EPP Target (%)
Paint	$6,374.16	2.09%	50%
Paper & Writing	$32,581.05	95.79%	100%
Metal Products	$64,699.13	99.81%	100%
Plastic	$34,473	90.84%	96%
Glass	$15,923	0	60%

Sustainability Development and Education

Describe your agency's efforts to promote the understanding and advancement of sustainable procurement internally within your agency and external suppliers.

California Construction Authority handles construction, architecture and engineering contracts for Cal Expo. All bidders are notified in advance during the project information of the requirements for sustainable procurement and construction practices. Our agency has one employee who has completed training at this time. Interagency agreements, purchases, and service agreement bidders are notified in advance via the Request for Proposal period of the State requirements. As we are financially able to re-employ staff we will plan to assign at least one additional employee, as a part of their duties, to further promote sustainable procurement internally and with our suppliers.

Note for Table 5.7: Identify the total number of buyers by CalHR classification within your agency. Identify the percent of procurement staff within each classification who have completed EPP training through California Procurement and Contract Academy (CALPCA). EPP training is highly recommended but non mandatory and is taught separate from basic CalPCA courses. It is a strategy to increase the purchase of EPP goods.

Total Number of Employees Assigned as Buyers: **1**

Table 5.7: Buyers who have completed EPP Training

CalHR Classification	Total Number of Buyers	Percent Completing EPP Training	Commitment to have buyers complete EPP training (%)
SSM I	1	100%	2

Location Efficiency

Location efficiency refers to the effect of a facility's location on travel behavior and the environmental, health and community impacts of that travel behavior including emissions from vehicles. Locating department facilities in location efficient areas reduces air emissions from state employees and users of the facilities, contributes to the revitalization of California's downtowns and town centers, helps the department compete for a future workforce that prefers walkable, bikeable and transit-accessible worksites and aligns department operations with California's planning priorities.

Our department's goal is that the average location efficiency score for all new leases be 10% higher than our average on of Jan 1 2017.

Cal Expo has no leases of other locations.

Appendix A – Sustainability Leadership

Insert Organization Chart of Department or **Agency Sustainability** Leadership and how connected to executive management.

CEO/GENERAL MANAGER
Tom Martinez

Facility Operations/Administration
Marcia Shell

Chief of Plant Operations
Mitch Pryor

Capital Outlay

Ron King (RA) Steve Launey(RA)

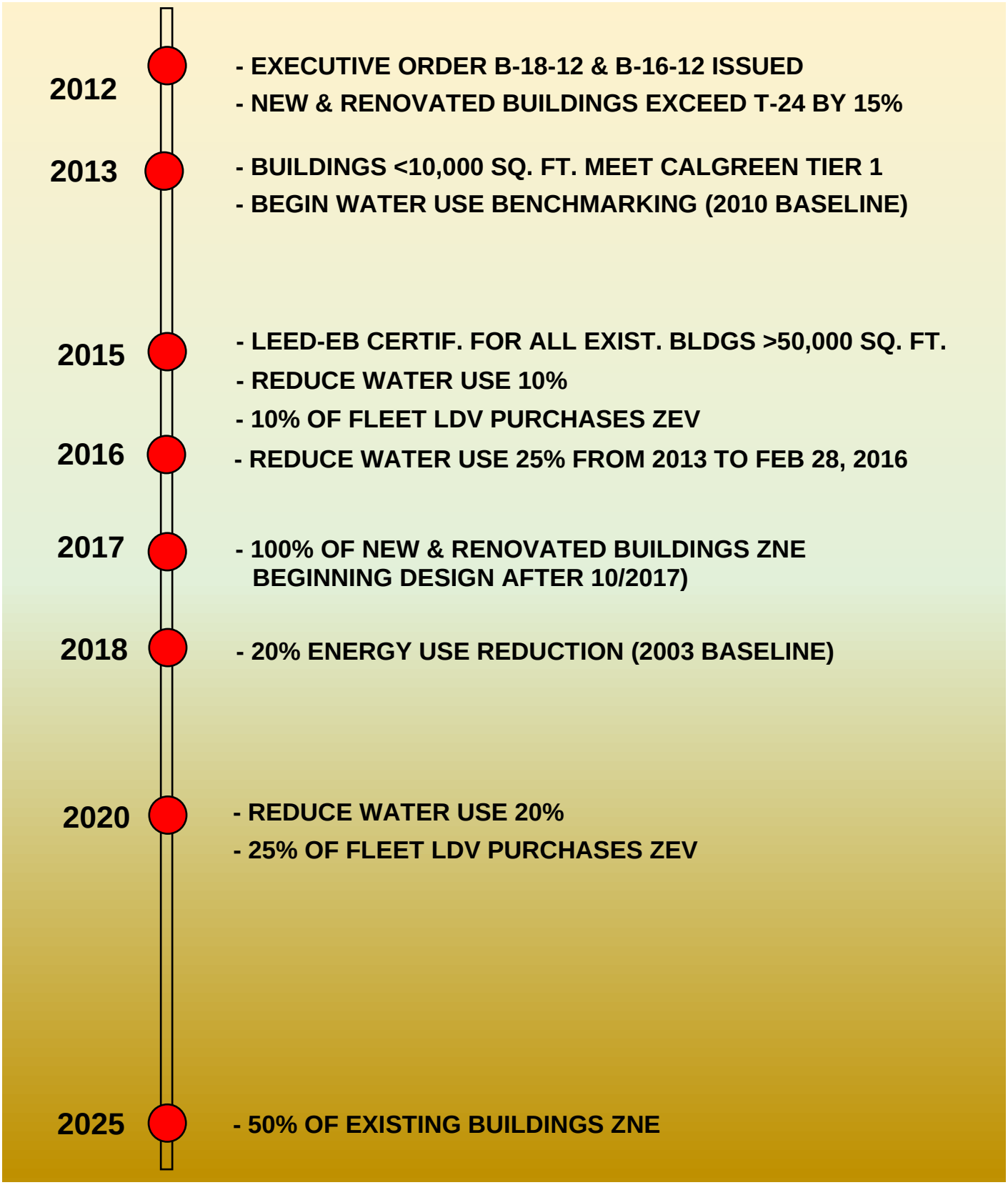
Account Administrator
Diana Barrios

IT Supervisor
Pat Conner

Event Services Sup
Thomas Ynigues

HVAC
James Daily

Appendix B - Sustainability Milestones &Timeline



Appendix C – Roadmap Checklists

1 - Climate Adaptation Roadmap Checklist

Policy References: Executive Order B-30-15

Executive Summary:

☐ Summary of status and actions underway to meet sustainability objectives related to climate adaptation.

☐ Include summary of changes from previous roadmap.

(This executive summary can be a paragraph in a single, comprehensive executive summary including all roadmap chapters if combined into one document.)

Past Performance:

- ☐ Describe how screening process will integrate facility operations and planning processes
- ☐ Describe approach and steps taken to integrate climate considerations in planning and investment, and how this will address changes
- ☐ Use Cal-Adapt to collect data and characterize anticipated climate change
- ☐ Report Top 5 facilities most affected by changing temperature in Table 1.2a
- ☐ Discuss how temperature and extreme heat events affect your facilities and operations, and what facilities and regions are most affected
- ☐ Describe strategies to reduce impacts of changing temperatures
- ☐ Describe ways you could employ natural infrastructure to reduce risks of climate change
- ☐ Report facilities located in disadvantaged communities in Table 1.5 and discuss how these facilities can interact with the community or serve as a resource
- ☐ Report facilities located in urban heat islands in Table 1.4

- ☐ Describe whether these facilities have large parking lots or impervious surface
- ☐ Describe actions that can be or are being taken to reduce urban heat island affect at these facilities

Future Planning:

- ☐ Report five facilities that will experience the largest increase in extreme heat events in Table 1.1
- ☐ List facilities most impacted by projected changes in precipitation in Table 1.5, and describe strategies to reduce these impacts
- ☐ Identify facilities at risk from rising sea levels in Table 1.6
- ☐ Discuss actions that can be taken to minimize risks of sea level rise
- ☐ List facility climate risks in Table 1.10
- ☐ Identify new facilities anticipating future extreme heat events in Table 1.10
- ☐ Discuss how new facilities siting, design, construction and operation are accounting for these changing conditions
- ☐ Report new facilities and disadvantaged communities and urban heat islands in Table 1.11
- ☐ Describe how climate change will affect useful life of each planned facility
- ☐ Verify the integration of a Climate Change Plan into department planning in Table 1.12
- ☐ Verify the engagement and planning processes in Table 1.13
- ☐ Report if climate change is integrated into funding programs in Table 1.14
- ☐ Describe what climate impacts are of most concern to your facilities and plans, and how department will track how they are changing
- ☐ Describe which office or branch will develop a policy to integrate climate change into infrastructure, how it will prioritize, and when the policy will be complete

2 - Zero-Emission Vehicle Roadmap Checklist

Policy References: EO B-18-12, EO B-16-12, 2016 ZEV Action Plan

Executive Summary:

☐ Summary of status and actions underway to meet sustainability objectives related to fleet operations and Zero Emission Vehicles.

☐ Include summary of changes from previous roadmap.

(This executive summary can be a paragraph in a single, comprehensive executive summary including all roadmap chapters if combined into one document, signed by the department executive director.)

Department Fleet Status:

☐ Describe fleet composition and uses

☐ Edit Graph 2.1 to reflect Department fleet vehicle composition

☐ Edit Graph 2.2 to reflect Department light duty vehicle fleet composition

☐ Edit Graph 2.3 to reflect Department medium and heavy duty vehicle fleet composition

Past Performance:

☐ Report all prior year Total Purchased Fuel in Table 2.1

☐ Describe any successes or challenges encountered by your department as it seeks to incorporate ZEVs into its portfolio

☐ Report on department light duty fleet eligible for replacement in Table 2.2

☐ Report recent and planned light duty ZEV fleet additions in Table 2.3

☐ Report on facilities with parking and whether hosting fleet vehicles & modify Graph 2.2 to reflect this

Future Planning:

☐ Identify facilities with the most urgent need for EV charging in Table 2.4

- ☐ Describe department's engagement with utility and other funding programs for EVSE's and infrastructure
- ☐ List any hydrogen fueling stations that could serve as any primary refueling stations for fleet vehicles, and any plans to install hydrogen refueling infrastructure at department facilities
- ☐ List site and infrastructure assessment results for ZEV parking in Table 2.5
- ☐ Describe plan to design, bid, construct and activate EVSE infrastructure
- ☐ Describe department's operation plan for EVSE infrastructure and how it will collect and report EVSE use data and maintain equipment
- ☐ Identify department stakeholders for ZEVs and EVSE efforts in Appendix

3 - Energy Efficiency Roadmap Checklist

Policy References: EO B-18-12, MM 14-07, MM 14-09, MM 15-04, MM 15-06, MM 17-04

Executive Summary:

☐ Summary of status and actions underway to meet sustainability objectives related to energy use and efficiency.

☐ Include summary of changes from previous roadmap.

(This executive summary can be a paragraph in a single, comprehensive executive summary including all roadmap chapters if combined into one document, signed by the department executive director.)

Department Energy Status:

☐ Describe mission of your department

☐ Describe built infrastructure supporting department mission that consumes energy (electricity, natural gas, propane, etc.). Include number and total square footage of department facilities.

☐ Complete summary of actions and timeframes to meet requirements (can be bullet points)

Past Performance:

☐ Report 2020 Total Purchased Energy in Table 3.1

☐ List department properties with largest energy consumption in Table 3.2

☐ Describe any successes or challenges encountered by your department and solutions as it seeks to achieve energy efficiency

☐ Identify specific challenges to achieving ZNE, T-24+15%, reducing grid-based energy, demand response, renewable energy or monitoring-based commissioning

☐ Describe department's 5-year capital improvement program

☐ List department zero net energy buildings in Table 3.3 and department's plans to achieve ZNE at 50% of building portfolio area

☐ Report department wide energy trends in Table 3.5

☐ Report yearly energy surveys in Table 3.7

☐ Discuss energy survey status and efforts over past 5 years

Future Planning:

☐ Describe efforts to reduce plug loads and comply with energy standard operating procedures

☐ List status of new buildings exceeding Title 24 by 15% in Table 3.4, and describe strategy for ensuring this minimum level of efficiency in future

☐ Identify department energy projects in Table 3.6

☐ Identify department demand response in Table 3.8

☐ Describe demand response programs available, and positive or negative experiences or lessons learned, and department benefits for participation

☐ Discuss steps department is taking to implement DR in more buildings

☐ Identify department on-site renewable energy in Table 3.9

☐ Discuss proposed increases in on-site renewable energy

☐ Report department planned Monitoring-Based Commissioning (MBCx) projects in Table 3.10

☐ Summarize department's MBCx experience, challenges, successes, and whether MBCx is incorporated as required, or plans to implement

☐ Discuss how energy efficiency Best Management Practices have been implemented, how they were institutionalized, and quantify repairs and replacements with estimated energy savings, if possible.

☐ Describe department steps to finance energy goals and requirements, and what programs it us using

4 - Water Efficiency and Conservation Roadmap Checklist

Policy References: Executive Order B-37-16

Executive Summary:

☐ Summary of status and actions underway to meet sustainability objectives related to water efficiency and conversation.

☐ Include summary of changes from previous roadmap.

(This executive summary can be a paragraph in a single, comprehensive executive summary including all roadmap chapters if combined into one document.)

Past Performance:

☐ Describe built infrastructure supporting department mission that consumes purchased water. Include number and total square footage of department facilities.

☐ Report all 2020 Total Purchased Water in Table 4.1

☐ List department properties with largest water use per capita in Table 4.2

☐ List facilities with largest landscape areas in Table 4.3

☐ Describe any successes or challenges encountered by your department, and solutions as it seeks to achieve water efficiency and conservation

☐ Report department wide water use trends in Table 4.4

☐ Report total water reductions achieved in Table 4.5

☐ Describe major water efficiency project over past five years or underway

☐ Identify indoor water efficiency projects in Table 4.6

☐ Identify boilers and cooling systems projects in Table 4.7

☐ Identify landscaping hardware water efficiency projects in Table 4.8

☐ Identify living landscaping water efficiency projects in Table 4.9

Future Planning:

☐ Report the number of buildings with urban water shortage contingency plans and in critical groundwater basins in Table 4.10, and discuss steps to reduce water use in those facilities

☐ Identify building inventory interior fixture needs in Table 4.11

☐ Summarize water using boilers and cooling systems inventory in Table 4.12

☐ Identify irrigation hardware inventory in Table 4.13 and discuss how replacements will occur

☐ Identify living landscape inventory in Table 4.14 and discuss results

☐ Identify large landscape inventory and water budget, as well as certified staff in Table 4.15

☐ Discuss how water conservation Best Management Practices have been implemented, how they were institutionalized, and quantify repairs and replacements with estimated water savings, if possible.

5 - Green Operations Roadmap Checklist

Policy References: Executive Order B-18-12

Executive Summary:

☐ Summary of status and actions underway to meet sustainability objectives related to green operations

☐ Include summary of changes from previous roadmap.

(This executive summary can be a paragraph in a single, comprehensive executive summary including all roadmap chapters if combined into one document.)

Past Performance:

☐ Report GHG Emissions since 2010 in Table 5.1 and update Graph 5.1 to reflect department emissions trend

☐ Describe any successes or challenges encountered by your department as it seeks to achieve GHG Emission reductions, and how various strategies contribute

☐ Explain which actions your department has taken that had the largest impact on GHGe

☐ Identify newly constructed buildings since July 1, 2012 and LEED level achievement in Table 5.2 and list number of buildings eligible as well as have achieved LEED for Existing Buildings and Operations in Table 5.3.

☐ Report state agency buy recycled campaign 2016 performance in Table 5.5 and describe your department's efforts to increase green commodities

☐ Report the lowest smart location score leases in Table 5.9 and describe the department's measures to improve location efficiency scores

Future Commitment:

☐ Discuss how your department implements efficiency measures to meet Energy Star targets and to achieve LEED EBOM for buildings >50,000 sw. ft. Describe steps to achieve these and goal dates.

- ☐ **D**iscuss the steps taken to ensure new construction incorporates the IEQ provisions of CalGreen, and ensures IEQ is considered and incorporated into products, cleaning, and HVAC operation

- ☐ Identify pest control contracts in Table 5.4 and discuss the steps taken to incorporate IPM into all contracts and practices

- ☐ Describe department efforts to reduce waste and recycle

- ☐ Describe department efforts to reduce environmental impacts through purchases of goods and services

- ☐ Identify commodities categories with the greatest potential to green in Table 5.6 and describe your department's efforts to increase green commodities

- ☐ List buyers who have completed EPP Training in Table 5.7 and discuss available training and certifications buyers may have beyond the basic training courses

- ☐ List new leases and their smart location scores in Table 5.8 and describe the department's measures to improve location efficiency scores

- ☐ Describe how you will achieve greener operations and how many GHGe reductions your department will need to achieve its goal

Appendix D – Acronyms

Customize to include organizations and acronyms within your specific department

AB	**Assembly Bill**
ADR	Automated Demand Response
AMB	Asset Management Branch (at DGS)
BMP	Best management practices
CA	California
CALGREEN	California Green Building Code (Title 24, Part 11)
CEC	California Energy Commission
DGS	Department of General Services
DWR	Department of Water Resources
EHT	Extreme heat threshold
EMS	Energy management system (aka EMCS)
EMCS	Energy management control system (aka EMS)
EO	Executive Order
EPP	Environmentally preferable purchasing
ESCO	Energy service company

ESPM	Energy Star Portfolio Manager
ETS	Enterprise Technology Solutions (a division at DGS)
EUI	Energy use intensity (source kBTU/sq. ft.)
EVSE	Electric vehicle supply equipment (charging equipment)
FMD	Facilities Management Division (a division at DGS)
GCM	Global circulation model
GHG	Greenhouse gas
GHGe	Greenhouse gas emissions
GSP	Groundwater Sustainability Plan
IEQ	Indoor environmental quality
kBTU	Thousand British thermal units (unit of energy)
LCM	The Landscape Coefficient Method
LEED	Leadership in Energy and Environmental Design
MAWA	Maximum applied water allowance
MM	Management Memo
MWELO	Model Water Efficient Landscape Ordinance
OBAS	Office of Business and Acquisition Services (at DGS)
OBF	On-bill financing

OFAM	Office of Fleet and Asset Management (at DGS)
OS	Office of Sustainability (at DGS)
PMDB	Project Management and Development Branch (at DGS)
PPA	Power purchase agreement
PUE	Power usage effectiveness
RCP	Representative Concentration Pathway
SABRC	State Agency Buy Recycled Campaign
SAM	State Administrative Manual
SB	Senate Bill
SCM	State Contracting Manual
SGA	Sustainable groundwater agency
SGMA	Sustainable Groundwater Management Act
WMC	Water management coordinator
WUCOLS	Water Use Classifications of Landscape Species
ZEV	Zero-emission vehicle
ZNE	Zero net energy

Appendix E - Glossary

Backflow - is the undesirable reversal of the flow of water or mixtures of water and other undesirable substances from any source (such as used water, industrial fluids, gasses, or any substance other than the intended potable water) into the distribution pipes of the potable water system.

Back flow prevention device – a device that prevents contaminants from entering the potable water system in the event of back pressure or back siphonage.

Blowdown - is the periodic or continuous removal of water from a boiler to remove accumulated dissolved solids and/or sludge. Proper control of blowdown is critical to boiler operation. Insufficient blowdown may lead to deposits or carryover. Excessive blowdown wastes water, energy, and chemicals.

Compost – Compost is the product resulting from the controlled biological decomposition of organic material from a feedstock into a stable, humus-like product that has many environmental benefits. Composting is a natural process that is managed to optimize the conditions for decomposing microbes to thrive. This generally involves providing air and moisture, and achieving sufficient temperatures to ensure weed seeds, invasive pests, and pathogens are destroyed. A wide range of material (feedstock) may be composted, such as yard trimmings, wood chips, vegetable scraps, paper products, manures and biosolids. Compost may be applied to the top of the soil or incorporated into the soil (tilling).

Critical overdraft - a condition in which significantly more water has been taken out of a groundwater basin than has been put in, either by natural recharge or by recharging basins. Critical overdraft leads to various undesirable conditions such as ground subsidence and saltwater intrusion.

Ecosystem services - are the direct and indirect contributions of ecosystems to human well-being. They support directly or indirectly our survival and quality of life. Ecosystem services can be categorized in four main types:

- Provisioning services are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines.

- Regulating services are the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control.

- Habitat services provide living places for all species and maintain the viability of gene-pools.

- Cultural services include non-material benefits such as spiritual enrichment, intellectual development, recreation and aesthetic values.

Grass cycling -refers to an aerobic (requires air) method of handling grass clippings by leaving them on the lawn when mowing. Because grass consists largely of water (80% or more), contains little lignin and has high nitrogen content, grass clippings easily break down during an aerobic process. Grass cycling returns the decomposed clippings to the soil within one to two weeks acting primarily as a fertilizer supplement and, to a much smaller degree, mulch. Grass cycling can provide 15 to 20% or more of a lawn's yearly nitrogen requirements

Hydrozone – is a portion of a landscaped area having plants with similar water needs that are served by one irrigation valve or set of valves with the same schedule.

Landscape Coefficient Method (LCM) describes a method of estimating irrigation needs of landscape plantings in California. It is intended as a guide for landscape professionals.

Landscape water budget - is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance.

Model Water Efficient Landscape Ordinance (MWELO) - The Water Conservation in Landscaping Act was signed into law on September 29, 1990. The premise was that landscape design, installation, and maintenance can and should be water efficient. Some of the provisions specified in the statute included plant selection and groupings of plants based on water needs and climatic, geological or topographical conditions, efficient irrigation systems, practices that foster long term water conservation and routine repair and maintenance of irrigation systems. DWR adopted the Model Ordinance in June of 1992. One element of the Model Ordinance was a landscape water budget. In the water budget approach, a

Maximum Applied Water Allowance (MAWA) was established based on the landscape area and the climate where the landscape is located. The latest update to MWELO was in 2015. MWELO applies to all state agencies' landscaping.

Mulch – Mulch is a layer of material applied on top of soil. Examples of material that can be used as mulch include wood chips, grass clippings, leaves, straw, cardboard, newspaper, rocks, and even shredded tires. Benefits of applying mulch include reducing erosion and weeds and increasing water retention and soil vitality. Whenever possible, look for mulch that has been through a sanitization process to kill weed seeds and pests.

Trickle flow – A device that allows users to reduce flow to a trickle while using soap and shampoo. When the device is switched off, the flow is reinstated with the temperature and pressure resumes to previous settings.

Sprinkler system backflow prevention devices – are devices to prevent contaminants from entering water supplies. These devices connect to the sprinkler system and are an important safety feature. They are required by the California Plumbing Code.

Submeter- a metering device installed to measure water use in a specific area or for a specific purpose. Also known as dedicated meters, landscape submeters are effective for separating landscape water use from interior water use, evaluating the landscape water budget and for leak detection within the irrigation system.

Water Budget - A landscape water budget is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance.

Water-energy nexus - Water and energy are often managed separately despite the important links between the two. 12 percent of California's energy use is related to water use with nearly 10 percent being used at the end water use. Water is used in the production of nearly every major energy source. Likewise, energy is used in multiple ways and at multiple steps in water delivery and treatment systems as well as wastewater collection and treatment.

Water Shortage Contingency Plans - each urban water purveyor serving more than 3,000 connections or 3,000 acre-feet of water annually must have an

Urban Water Shortage Contingency Plan (Water Shortage Plan) which details how a community would react to a reduction in water supply of up to 50% for droughts lasting up to three years.

Appendix F – Department Stakeholders

List individuals, offices, and divisions responsible for leading efforts related to each initiative identified in this report. Include their respective titles, roles, responsibilities.

Climate Change Adaptation

Understanding Climate Risk at Existing Facilities
Capital Outlay, Retired Annuitant Steve Launey

Integrating Climate Change into Department Planning and Funding Programs
Mitch Pryor, Chief of Plant

Measuring and Tracking Progress
Mitch Pryor, Chief of Plant

Zero Emission Vehicles

Incorporating ZEVs Into the Department Fleet
Mitch Pryor, Chief of Plant

Telematics
N/A. Exempt.

Public Safety Exemption
Craig Walton, Chief of Police

Outside Funding Sources for ZEV Infrastructure
Mitch Pryor, Chief of Plant

Hydrogen Fueling Infrastructure
N/A.

Comprehensive Facility Site and Infrastructure Assessments
Capital Outlay, RA- Construction Manager

EVSE Construction Plan
Capital Outlay, Construction Manager

EVSE Operation
Capital Outlay, Construction Manager

Energy

Zero Net Energy (ZNE)
N/A

Reduce Grid-Based Energy Purchased by 20% by 2018
Done

Server Room Energy Use
IT Manager, IT Manager

Demand Response
N/A

Renewable Energy
Capital Outlay, Construction Manager

Monitoring Based Commissioning (MBCx)
N/A

Financing
Accounting, Accounting Administrator

Water Efficiency and Conservation

Indoor Water Efficiency Projects In Progress First initiative
Capital Outlay, Steve Launey

Boilers and Cooling Systems Projects In Progress
HVAC. No projects in progress.

Landscaping Hardware Water Efficiency Projects In Progress
Chief of Plant, Supervision of purchasing for water projects.

Living Landscaping Water Efficiency Projects In Progress
Chief of Plant, Supervision of landscapers and water testing.

Buildings with Urban Water Shortage Contingency Plans In Progress
N/A

Green Operations

Greenhouse Gas Emissions
Chief of Plant, Lead for electricity, fleet, and infrastructure items.

Building Design and Construction
Captial outlay, Part time retired annuitants work closely with California Construction Authority but no new construction is planned.

LEED for Existing Buildings Operations and Maintenance
Electrical Supervisor, Responsible for building operations & improvements.

Indoor Environmental Quality
HVAC, Responsible for indoor environmental decisions.

Integrated Pest Management
Chief of Plant, Co-ordinates with contractor and staff.

Waste Management and Recycling
Event Services Supervisor, Responsible for the recycling program and waste management

Environmentally Preferable Purchasing
Event Services Supervisor, Responsible for purchasing for maintenance & janitorial supply.

Location Efficiency
N/A. Vehicles rarely go outside of the Cal Expo grounds

Appendix G – Sustainability Requirements & Goals

Governor Edmund G. Brown Jr. directed California state agencies to demonstrate sustainable operations and to lead the way by implementing sustainability policies set by the state. Additionally, enacted legislation includes sustainability-related requirements of state facilities and operations. Specific references and background on executive orders, legislation, management memos and other requirements or actions are included in five general chapters within this roadmap, as follows:

Climate change adaptation

Zero-emission vehicles

Energy

Water efficiency and conservation

Green operations

These general sustainability initiatives include the following:

- GHG emissions reductions
- Climate change adaptation
- Building energy efficiency and conservation
- Indoor environmental quality (IEQ)
- Water efficiency and conservation
- Monitoring-based Building Commissioning (MBCx)
- Environmentally preferable purchasing (EPP)
- Financing for sustainability
- Zero-emission vehicle (ZEV) fleet purchases
- Electric vehicle charging infrastructure
- Monitoring and executive oversight
- Zero Net Energy (ZNE)

Appendix H – Sustainability Background References

The following executive orders, Management Memos, legislative actions, resources and guidance documents provide the sustainability criteria, requirements, and targets tracked and reported herein.

Executive Orders

The governor issued the following executive order relevant to chapters of this roadmap:

- **Executive Order B-16-12**

  EO B-16-12 directs state agencies to integrate zero-emission vehicles (ZEVs) into the state vehicle fleet. It also directs state agencies to develop the infrastructure to support increased public and private sector use of ZEVs. Specifically, it directs state agencies replacing fleet vehicles to replace at least 10 percent with ZEVs, and by 2020 to ensure at least 25 percent of replacement fleet vehicles are ZEVs.
- **Executive Order B-18-12**

  EO B-18-12 and the companion *Green Building Action Plan* require state agencies to reduce the environmental impacts of state operations by reducing greenhouse gas emissions, managing energy and water use, improving indoor air quality, generating on-site renewable energy when feasible, implementing environmentally preferable purchasing, and developing the infrastructure for electric vehicle charging stations at state facilities. The Green Building Action Plan also established two oversight groups – the staff-level Sustainability Working Group and the executive-level Sustainability Task Force – to ensure these measures are met. Agencies annually report current energy and water use into the Energy Star Portfolio Manager (ESPM).
- **Executive Order B-29-15**

  EO B-29-15 directs state agencies to take actions in response to the ongoing drought and to the state of emergency due to severe drought conditions proclaimed on January 17, 2014. Governor Brown directed numerous state agencies to develop new programs and regulations to mitigate the effects of the drought, and required increased enforcement of water waste statewide. Agencies were instructed to reduce potable urban water use by 25 percent between 2013 and February 28, 2016.
- **Executive Order B-30-15**

In 2015, the governor issued EO B-30-15, which declared climate change to be a "threat to the well-being, public health, natural resources, economy and environment of California." It established a new interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 and reaffirms California's intent to reduce GHG emissions to 80 percent below 1990 levels by 2050. To support these goals, this order requires numerous state agencies to develop plans and programs to reduce emissions. It also directs state agencies to take climate change into account in their planning and investment decisions and employ life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. State agencies are directed to prioritize investments that both build climate preparedness and reduce GHG emissions; prioritize natural infrastructure; and protect the state's most vulnerable populations.

- **Executive Order B-37-16**

  EO B-37-16 builds on what were formerly temporary statewide emergency water restrictions in order to establish longer-term water conservation measures, including permanent monthly water use reporting; new permanent water use standards in California communities; and bans on clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes. The EO focuses on using water more wisely and eliminating water waste by taking actions to minimize water system leaks. The California Department of Water Resources (DWR) estimates that leaks in water district distribution systems siphon away more than 700,000 acre-feet of water a year in California – enough to supply 1.4 million homes for a year.

  The EO further strengthens local drought resilience and looks to improve agricultural water use efficiency and drought planning. State agencies are to cooperate with urban water management plans, which include plans for droughts lasting for at least five years by assuring that the water efficiency and conservation plan has drought contingency actions.

State Administrative Manual & Management Memos

The following section of the State Administrative Manual (SAM), and associated Management Memos (MMs) currently impose sustainability requirements on the department under the governor's executive authority:

- **SAM Chapter 1800**: Energy and Sustainability
- **MM 14-02:** Water Efficiency and Conservation
- **MM 14-05**: Indoor Environmental Quality: New, Renovated, And Existing Buildings

- **MM 14-07**: Standard Operating Procedures for Energy Management in State Buildings
- **MM 14-09**: Energy Efficiency in Data Centers and Server Rooms
- **MM 15-03**: Minimum Fuel Economy Standards Policy
- **MM 15-04**: Energy Use Reduction for New, Existing, and Leased Buildings
- **MM 15-06**: State Buildings and Grounds Maintenance and Operation
- **MM 15-07**: Diesel, Biodiesel, and Renewable Hydrocarbon Diesel Bulk Fuel Purchases
- **MM 16-07**: Zero-Emission Vehicle Purchasing and EVSE Infrastructure Requirements
- **MM 17-04**: Zero Net Energy for New and Existing State Buildings

Legislative Actions

Several pieces of legislation were signed in 2015-16 that codified several elements of the executive orders, or provided further requirements included in the policies. These include the following:

- **Assembly Bill (AB) 1482** (Gordon, 2015): Requires that the California Natural Resources Agency (CNRA) update the state's adaptation strategy safeguarding California every three years. Directs state agencies to promote climate adaptation in planning decisions and ensure that state investments consider climate change impacts, as well as the use of natural systems and natural infrastructure. (Public Resources Code Section 71153)
- **Senate Bill (SB) 246** (Wieckowski, 2015): Established the Integrated Climate Adaptation and Resiliency Program within the Governor's Office of Planning and Research to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change. (Public Resources Code Section 71354)
- **AB 2800** (Quirk, 2016): Requires state agencies to take the current and future impacts of climate change into planning, designing, building, operating, maintaining and investing in state infrastructure. CNRA will establish a Climate-Safe Infrastructure Working Group to determine how to integrate climate change impacts into state infrastructure engineering. (Public Resources Code Section 71155)
- **Assembly Bill (AB) 4**: Passed in 1989. The State Agency Buy Recycled Campaign (SABRC) statutes are in Public Contract Code Section 12153-12217. The intent of SABRC is to stimulate markets for materials diverted by California local government and agencies. It requires state agencies to purchase enough recycled-content products to meet annual targets, report on purchases of recycled and nonrecycled products, and submit plans for meeting the annual goals for purchasing recycled-content products.
- **AB 32 Scoping Plan**: The scoping plan assumes widespread electrification of the transportation sector as a critical component of every scenario that leads to the mandated 40 percent reduction in GHG by 2030 and 80 percent reduction by 2015.
- **AB 2583** (Blumenfield 2012) **Public Resources Code §25722.8**: Statute requires reducing consumption of petroleum products by the state fleet compared to a 2003 baseline. Mandates a 10 percent reduction or displacement by Jan. 1, 2012 and a 20 percent reduction or displacement by Jan. 1, 2020.

- **AB 75** – Implement an integrated waste management program and achieve 50 percent disposal reduction target. State Agencies report annually on waste management program

- **SB 1106** – Have at least one designated waste management coordinator. Report annually on how your designated waste and recycling coordinator meets the requirement.

- **AB 2812** - Provide adequate receptacles, signage, education, staffing, and arrange for recycling services. Report annually on how each of these is being implemented

- **AB 341** – Implement mandatory commercial recycling program (if meet threshold). Report annually on recycling program

- **AB 1826** – Implement mandatory commercial organics recycling program (if meet threshold). Report annually on organics recycling program

- **SB 1383** - 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020, a 75 percent reduction by 2025, and 20 percent of currently disposed edible food is recovered for human consumption by 2025.
    - Agencies already in compliance with AB 1826 may need to further expand their organic waste recycling service to comply with the new requirements
    - Jan. 1, 2024, Tier 2 Commercial Edible food Generators will be required to donate edible food to a recovery organization.

- **SB 1335** - requires food service facilities located in a state-owned facility, a concessionaire on state-owned property, or under contract to dispense prepared food using reusable, recyclable, or compostable. food service packaging

Action Plan

- **2016 Zero-Emission Vehicle Action Plan**

  The plan establishes a goal to provide electric vehicle charging to 5 percent of state-owned parking spaces by 2022. It also advances the ZEV procurement target to 50 percent of light-duty vehicles by 2025.

State Resources and Guidance Documents

California has invested significant resources in understanding the risks of climate change, water efficiency, strategic growth, and state actions available to respond to and reduce these risks. These include the following:

- **Safeguarding California**: The state's climate adaptation strategy organized by sector. Each sector identifies risks from climate change and actions to reduce those risks.
- **Safeguarding California Implementation Action Plans**: Directed under EO B-30-15, the Implementation Action Plans outline the steps that will be taken in each sector to reduce risks from climate change.
- **Planning and Investing for a Resilient California**: Prepared under direction of EO B-30-15, this document provides a framework for state agencies to integrate climate change into planning and investment, including guidance on data selection and analytical approach.
- **California's Climate Change Assessments**: California has completed three comprehensive assessments of climate change impacts on California. Each assessment has included development of projections of climate impacts on a scale that is relevant to state planning (i.e., downscaled climate projections). These data are available through **Cal-Adapt**, an online data visualization and access tool.
- **Water Use Reduction Guidelines and Criteria**: Issued by the California Department of Water Resources February 28, 2013, pursuant to Executive Order B-18-12. Each applicable agency was required to take actions to reduce water use in facilities and landscapes that are operated by the state, including owned, funded or leased facilities. State-operated facilities are defined as facilities where the agency has direct control of the buildings' function, maintenance and repair. For leased facilities, the Green Building Action Plan directed at that time that new and renegotiated leases include provisions for water conservation, reporting water use, and installation of sub-meters to the extent possible and economically feasible.
- **Strategic Growth Council (SGC) Resolution on Location Efficiency:** Location efficiency refers to the greenhouse gas emissions arising from the transportation choices of employees and visitors to a building as determined by the Smart Location Calculator. Adopted on December 6, 2016, the resolution directs members of the SGC to achieve a 10 percent improvement in the Smart Location Score of new leases compared to the average score of leased facilities in 2016.

Table G-1: Background References and Applicable Roadmap Chapters

	Climate Adaptation	ZEV	Energy	Water	Green Operation
Executive Orders:					
EO B-16-12		X			X
EO B-18-12		X	X	X	X
EO B-29-15				X	
EO B-30-15	X	X	X		X
EO B-37-16				X	
Management Memos					
MM 14-02				X	
MM 14-05			X		X
MM 14-07			X		X
MM 14-09			X		
MM 15-03		X	X		
MM 15-04			X		X
MM 15-06			X	X	X
MM 15-07		X			
MM 16-07		X			
MM 17-04			X		
Legislative Actions					
SB 246	X				
SB 2800	X				

SB 1106					X
SB 1383					X
AB 4					X
AB 32		X			X
AB 75					X
AB 341					X
AB 1826					X
AB 2812					X
AB 1482	X				
Action Plans					
2016 ZEV Action Plan		X			
State Resources and Guidance Documents					
Cal-Adapt	X				
California's Climate Change Assessments	X				
Public Resources Code §25722.8		X			
Planning and Investing for a Resilient California	X				
Safeguarding California	X				
Safeguarding CA Implementation Action Plan	X				
Sustainable Groundwater Management Act of 2014				X	

Appendix I - List of Tables & Graphs