Sustainability Roadmap 2020-2021

California State Lottery

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

for California State Agencies

California State Lottery

Gavin Newsom, Governor

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Erik Hornbaker, Chief, Facilities Services Section
Jake Linker, Facilities Manager, Facilities Administration Unit
Cynthia Cañas, Facilities Analyst
Edgar Sanchez, Fleet Officer
Joseph Peterson, Facilities Analyst
Veronica Rahn, Manager, Facilities Services Section
Primary Author(s)

Tiffany Donohue
Deputy Director, Operations

Alva Vernon Johnson
Director

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Executive Summary

In 1984, Proposition 37 amended the California Constitution to authorize the establishment of a statewide lottery. As an initiative statute, the California State Lottery Act of 1984 (Lottery Act) created the California State Lottery Commission (CLC) and gave it broad powers to oversee the operations of a statewide lottery. The purpose of the Lottery Act was to provide supplemental monies to benefit public education without the imposition of additional or increased taxes. The California State Lottery (Lottery) is administered by a five-person commission appointed by the Governor and confirmed by the California Senate. In the 36 years since sales began in October 1985 through June 30, 2021, the Lottery has raised more than $39.4 billion for California public education, including more than $1.8 billion in Fiscal Year 2020-21.

The Lottery is proud of the contributions it makes to California's schools, and works hard to increase funding through efficient business practices.

CLIMATE ADAPTATION

Lottery buildings are designed and built for a 40-year lifecycle, and include energy- and water-saving features, installation of HVAC and lighting time clocks, thermostat controls, and occupancy sensors. Some, but not all facilities, could be affected by the various changes in climate including precipitation, wildfires, extreme heat and cold temperatures, and sea level rise. As this report details, several Lottery facilities are in urban heat islands and disadvantaged communities. If a facility's employees are affected by climate change, there is another Lottery facility relatively close in the region they may report to in the event of a catastrophic failure to their reporting district office building.

ENERGY

The Lottery operates a portfolio of 12 owned facilities to support its ongoing statewide operations, including Sacramento Headquarters (HQ), Northern Distribution Center (NDC), Southern Distribution Center (SDC). The remaining 9 buildings are district offices (DO): Sacramento District Office (SDO), Santa Fe Springs DO (SFSDO), Fresno DO (FDO), San Diego DO (SDDO), Rancho Cucamonga DO (RCDO), Richmond DO (RDO), Chatsworth DO (CDO), Costa Mesa DO (CMDO), and Milpitas DO (MDO). The Lottery has fully executed its Facilities Master Plan thereby converting the remaining leased facility to owned (Milpitas DO) in 2020. Eight of the nine new buildings are designed to be Zero Net Energy (ZNE), Leadership in Energy and Environmental Design (LEED) Certified and incorporate resilient design when possible.

ZERO-EMISSION VEHICLES

Executive Order (EO) B-16-12 required at least 10% of fleet purchases be Zero Emission Vehicles (ZEVs) by 2015. The Lottery met that goal and remained at 10% ZEV in 2020.

Due to the uniqueness of the Lottery's operation the Lottery has been unable to transition all its fleet to ZEV. A large part of the Lottery's fleet are full-size cargo vans and minivans driven by staff who are in the field 90% of the time. These field staff require optimum mileage capacity and enough cargo space to transport products and materials. The current mileage capacity of commercial ZEV vans and electric vehicle charging infrastructure does not support the current business operations of the Lottery.

The Lottery will continue to monitor commercial ZEV options, expansion of electric vehicle charging infrastructure, and reevaluate its vehicle replacement plan to achieve additional ZEV goals

WATER EFFICIENCY AND CONSERVATION

EO B-18-12 signed by Governor Brown in 2012, requires state agencies to reduce water usage by 20% by the year 2020. In January 2014, the Governor signed into effect EO B-29-15, directing state agencies to further reduce their water usage by 25% between 2013 and February 28, 2016. At the time of these two EOs, the Lottery owned only one facility from which the baseline was established, thus, making it a challenge to meet the specific EO requirements. In fact, by mid-July 2020, the Lottery owned and occupied all twelve of its facilities in operation today. The Lottery actually achieved a 37.2% reduction, surpassing the MM 14-02 goal of reducing 2020 usage by 20% as compared to 2010 usage. However, it is going to be extremely difficult to further reduce water usage by another 15% as that would mean a 52.2% total reduction when compared to 2010.

Lottery-owned buildings are designed to include high performance water features. The Lottery will continue to reduce gallons per minute usage, when practical, and update fixtures along with monthly monitoring of water usage for its owned facilities. With the Lottery's expansion in staffing and having converted leased properties to owned facilities, overall water usage continues to increase; although the efforts the Lottery is taking to increase its energy and water efficiency are in the spirit of the executive orders.

GREEN OPERATIONS

The Lottery's Headquarters (HQ) building received Leadership in Energy and Environmental Design (LEED) "Gold" certification under the Building Design + Construction: New Construction (BD+C: NC) v2 rating system in 2012, and "Silver" certification under the Existing Buildings Operations + Maintenance (EB:OM) v.2009 in February 2016. The Lottery's Santa Fe Springs DO received LEED "Gold" certification under BD+C: NC v.2009 in November 2016. The Lottery's Southern Distribution Center (SDC) received LEED "Gold" certification

under the Commercial Interiors v.2009 in June 2017 and LEED Gold v.2009 for EB:OM in 2019. The Lottery received LEED Gold BD+C: NC v.2009 for the Fresno DO in the summer of 2018. The San Diego DO received LEED "Gold" Certification under BD+C: NC v.2009 in October 2019. The Lottery's Rancho Cucamonga DO received "Silver" Certification under BD+C: NC v.4 in December of 2019. The Milpitas DO received LEED "Gold" Certification under the BD+C: NC v.2009 rating system in December 2020. These facilities incorporate multiple sustainable features, including daylight harvesting, photovoltaic systems to support Zero Net Energy (ZNE) design, window glazing and automated window coverings--all of which reduce operating costs, improve energy efficiency, and reduce the buildings' carbon footprint. The Chatsworth and Costa Mesa District Offices are pending LEED Certification under BD+C: NC v.4

The Lottery's policies regarding buying office supplies, vehicle replacement, green cleaning, solid waste management, water fixture replacement and integrated pest management all contain requirements regarding the use of green and energy-efficient products and set forth sustainability goals.

Alva Vernon Johnson
Director

CHAPTER 1 - CLIMATE CHANGE ADAPTATION

The Energy chapter highlights the Lottery's progress in adapting to changes in California's climate across the state. This chapter illustrates CLC's efforts and plans to reduce the impact of climate change impacts/risks.

Climate Change Risks to Facilities

Lottery buildings are designed and built for a 40-year lifecycle. During this time, any given extreme climate event can pose consequences and disruptions to any of the Lottery facilities. The Lottery is prepared to address any such occurrence at a specific Lottery location resulting in building closure. The affected staff and operations can be moved to another Lottery office within proximity to the affected building, as set forth in the Business Continuity Plan for the specific location.

The nature of the Lottery's business does not pose a risk to public health and safety or critical infrastructure. As stated in the above paragraph, Lottery buildings have been designed and built for a 40-year lifecycle and have taken into account climate change. Each extreme event, in the following subsections, addresses the potential risk to Lottery facilities given their locations.

Natural Infrastructure to Protect Facilities

The Lottery will, when possible and within the city code(s) at their locations in urban areas, plant trees to ease the effects of high heat days.

Understanding the Potential Impacts of Facilities on Communities

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).

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 several 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

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. Since the Lottery has a total of 12 facilities statewide, data has been included for all of them.

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

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

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)
Fresno DO	106.2	4	31	27	60	56	27	56
Sacramento DO	103.7	4	23	19	44	40	19	40
Northern Distribution Ctr	103.1	4	23	19	43	39	19	39
Southern Distribution Ctr	102.9	3	20	17	42	39	17	39
Rancho Cucamonga DO	104.8	3	19	16	40	37	16	37
Chatsworth DO	103.4	3	20	17	39	36	17	36
Headquarters (Sacto)	103.9	4	20	16	39	35	16	35
Santa Fe Springs DO	100.4	3	13	10	29	26	10	26
San Diego DO	92	2	9	7	23	21	7	23
Milpitas DO	90.4	5	15	10	28	23	10	23
Costa Mesa DO	89.4	3	9	6	23	20	6	20
Richmond DO	89.5	2	6	4	12	10	4	10

In addition to changing average temperatures, climate change will increase the number of extreme heat events across the state and are likely to be experienced sooner than changes in average temperatures.

Table 1.2 a: Top 5-10 Facilities 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)
Chatsworth DO	78.4	83.5	5.1	87	8.6
Rancho Cucamonga DO	78.8	84	5.2	87.3	8.5
Southern Distribution Ctr	78	83.2	5.2	86.5	8.5
Fresno DO	76.8	81.7	4.9	85.3	8.5
Santa Fe Springs DO	78	82.8	4.8	86.1	8.1
Sacramento DO	74.4	79.2	4.8	82.5	8.1
Headquarters (Sacramento)	74.2	79	4.8	82.3	8.1
Northern Distribution Ctr	74	78.6	4.6	81.9	7.9
San Diego DO	72.1	76.3	4.2	79.6	7.5
Costa Mesa DO	71.3	75.3	4	78.4	7.1
Milpitas DO	68.3	72.3	4	75.4	7.1
Richmond DO	66.6	0.1	3.5	73.1	6.5

Table 1.2 b: Top 5-10 Facilities 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)
Southern Distribution Ctr	50.3	55	4.7	58.4	8.1
Rancho Cucamonga DO	51.3	55.9	4.6	59.3	8
Chatsworth DO	48.3	52.9	4.6	56.3	8
Santa Fe Springs DO	54.6	59.1	4.5	62.4	7.8
Fresno DO	49.2	53.3	4.1	56.7	7.5
Sacramento DO	48.8	53.1	4.3	56.3	7.5
Headquarters (Sacto)	49.4	53.7	4.3	56.8	7.4
Northern Distribution Ctr	48.2	52.4	4.2	55.6	7.4
San Diego DO	54	58	4	61.3	7.3
Costa Mesa DO	53.6	57.5	3.9	60.6	7
Milpitas DO	48.3	52.1	3.8	55.2	6.9
Richmond DO	50.1	53.6	3.5	56.7	6.6

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: Top 5-10 Facilities 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)
Fresno DO	2604/1795	1820/2888	1250/3751
Santa Fe Springs DO	1065/1547	473/2704	207/3712
Rancho Cucamonga DO	1507/1664	894/2788	511/3680
Southern Distribution Center	1665/1413	942/2521	538/3410
Headquarters (Sacramento)	2682/1484	1836/2474	1302/3305
Chatsworth DO	1685/1230	1009/2250	568/3121
Sacramento DO	2583/1294	1775/2270	1257/3096
Northern Distribution Center	2684/1188	1887/2139	1364/2942
San Diego DO	1429/802	708/1647	290/2531
Costa Mesa DO	1595/591	816/1335	364/2171
Milpitas DO	2758/295	1846/866	1220/1503
Richmond DO	2632/172	1681/514	1036/1093

Data for all Lottery facilities (12) is included and are listed in the order most affected by changing climate and increased temperatures. The warehouse spaces are unconditioned in the Lottery's distribution centers; however, office and breakrooms are conditioned. Extreme heat poses no risk to the structural integrity of the buildings. However, distribution center employees requiring more breaks in the air-conditioned breakroom due to extreme heat can cause low production levels; thus, employees are encouraged to drink the filtered refrigerated water available at the drinking fountains.

The two distribution centers shown in the above tables are the most critical because of sales volume and work performed at these locations. Work disruption at these locations must be avoided whenever possible. The two distribution centers are the most critically affected locations because they distribute Scratchers® ticket orders to Lottery retailers. The sale of Lottery Scratchers is dependent on distribution. Lack of distribution would affect the sale of Lottery Scratchers®. All other offices listed, except for HQ, can function out of different buildings for customer- and retailer-related issues. Security staff could operate out of their assigned vehicles at those locations.

The Lottery will adjust staff working hours accordingly if an extreme event takes place in the communities where Lottery offices are located. The Lottery District Sales Representatives and Route Service Representatives are required to drive

vehicles to Lottery retailer locations for eight hours each day. Staff may be allowed to adjust their hours and report for duty in the early morning or late evening during extreme heat situations. All affected staff would be given special consideration.

The Lottery uses energy-efficient building envelope, including high-efficiency glazing on windows, high R-value insulation in walls and ceilings, and solar panels in the design and construction of its buildings. Daylight harvesting strategies have been incorporated as well in the Lottery's distribution centers. These technologies allow the facilities to remain occupiable during normal high-heat events.

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 sunlight), cooler pavements, and other measures.

Table 1.4: Facilities Located in Urban Heat Islands

Facility Name	Located in an urban heat island (yes/no)
Headquarters (Sacramento)	No
Chatsworth DO	Yes
Costa Mesa DO	No
Fresno DO	No
Milpitas DO	No
Northern Distribution Center	No
Rancho Cucamonga DO	Yes
Richmond DO	No
Sacramento DO	No
San Diego DO	No
Santa Fe Springs DO	No
Southern Distribution Center	Yes

Three of the Lottery's 12 facilities are in urban heat islands: Rancho Cucamonga DO, Chatsworth DO and SDC. The Chatsworth DO has numerous large trees, lies within a small business park, and has 32 parking spaces. The Lottery plants trees at its facilities within the urban heat islands as allowed by city/county code and

are maintained by the Lottery's contracted landscaping vendor. The landscaping vendor is required to have an arborist assess all tree issues, including yearly trimming. The Rancho Cucamonga DO and SDC are part of business parks that provide landscaping to common areas. Trees and green spaces are part of the business park and provide some mitigation of the urban heat island effect.

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 than 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: Top 5-10 Facilities 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)
San Diego DO	11.2	10.7	-4.50%	10.3	-8%	1.152	1.227	1.259
Sacramento DO*	18.5	18.8	1.60%	19.4	4.90%	1.469	1.582	1.708
Richmond DO	22.3	22.5	0.80%	23.3	4.50%	1.67	1.77	1.885
Headquarters (Sacto)*	19.4	19.7	1.50%	20.2	4.00%	1.639	1.756	1.899
Northern Distribution Ctr	18.3	18.6	1.60%	19	3.80%	1.447	1.556	1.685
Fresno DO	12	11.8	-1.70%	11.6	-3.30%	0.901	0.965	0.987
Costa Mesa DO	11.5	11.2	-2.60%	11.2	-2.60%	1.329	1.397	1.475
Chatsworth DO	16.3	15.8	-3.10%	15.9	-2.50%	1.96	2.087	2.195
Milpitas DO	16.8	16.7	-0.60%	17.2	2.40%	1.193	1.26	1.361
Southern Distribution Ctr	14.7	14.5	-1.30%	14.4	-2.00%	1.644	1.775	1.868
Rancho Cucamonga DO	14.9	14.7	-1.30%	14.7	-1.30%	1.742	1.915	2.034
Santa Fe Springs DO	14.4	14.2	-1.40%	14.3	-0.60%	1.755	1.876	2.019

High precipitation would affect the two facilities with an asterisk (* - Headquarters and Sacramento DO) in Table 1.5 due to their location in a 100-year flood plain. There are two rivers near HQ and Sacramento DO facilities, and NDC is located near the port of West Sacramento. Operations would stop at these facilities if they were to flood. The Lottery HQ facility is built with all IT servers installed on the third floor to prevent possible damage if a flood occurred. Lottery operations would follow the Business Continuity Program in the event of a catastrophic flood and in coordination with the California Governor's

Office of Emergency Services. The program consists of a Business Continuity Plan (BCP), Technology Recovery Plan (TRP), and site-specific Emergency Response Plans (ERP).

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.

Table 1.6 : All Facilities 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)
Richmond DO	SF Bay	0	n	5	y
Milpitas DO	Alameda	0	n	6	y

The Lottery used the National Oceanic and Atmospheric Administration's Sea Level Rise Viewer to arrive at the data in Table 1.6 Additionally, according to the publication, "Climate, Drought, and Sea Level Rise Scenarios For California's Fourth Climate Change Assessment," greenhouse gas emissions for sea level at San Francisco do not reflect a significant change in sea level rise (SLR) until around 2060, which validates data in the table.

The Lottery's Milpitas DO resides in a Special Flood Hazard Area, Zone AH," flood depths of 1-3 feet (usually areas of ponding)." The SLR measurements indicate that there is no exposure to water until SLR of 6 feet, around the end of the century, exposing the facility to flooding.

The Lottery's Richmond DO backs up to a low-lying area, is relatively close to two canals: the Parr Canal and the Laurtizen Canal – both of which are shipping waterways and a part of the larger Port of Richmond. Using the same model, the Richmond DO would be subject to flooding at a SLR of 5 feet, around the end of the century, exposing the facility to damage. Additionally, the facility would be surrounded by low lying water at a SLR of nearly 4 feet, as well as the Knox freeway, making it virtually impossible to safely use the freeway to access the facility. Instead, staff reporting to work would have to use surface streets.

The Sacramento-San Joaquin Delta, would also experience inundation at various levels due to SLR, potentially affecting residential, commercial, agricultural, and recreational landscapes. The monetary damages would be astronomical.

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.

Table 1.7: Top 5-10 Facilities Most at risk to current wildfire threats

Facility Name	Fire Hazard Severity Zone (low, medium, high, very high)
San Diego DO	Incorporated area (IA)/located 1,000 feet from Very High FHSZ (VHFHSZ)
Chatsworth DO	IA/located < than 1 mile from VHFHSZ
Santa Fe Springs DO	IA/located within 3 miles from VHFHSZ
Richmond DO	IA/located within 3 miles from VHFHSZ
Southern Distribution Center	IA/located < than 4 miles from VHFHSZ
Costa Mesa DO	IA/located within 5 miles of a VHFHSZ
Rancho Cucamonga DO	IA/located < than 3 miles from MFHSZ
Milpitas DO	IA/located within 3 miles from MFHSZ
Fresno DO	IA/located within 4 miles from MFHSZ
Headquarters (Sacramento)	IA/located 16 miles from MFHSZ
Sacramento DO	IA/located 20 miles from MFHSZ
Northern Distribution Center	IA/located 24 miles from MFHSZ

All the facilities listed above are located in incorporated areas (IA) and Local Responsibility Areas (LRA), and are not considered in a Fire Hazard Severity Zone (FHSZ); however, they are also in close proximity to Very High or Moderate Fire Hazard Severity Zones (VHFHSZ or MFHSZ) located in State Responsibility Areas (SRA). They are listed in order of proximity to an FHSZ, from nearest to farthest.

Table 1.8: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Wildfire

Facility Name	Acres Burned (1961-1990)	Acres Burned (2031-2060)	Acres Burned (2070-2099)
Milpitas DO	46.2	36.3	28.8
San Diego DO	59.4	21.1	19

Most of the Lottery's district offices are not located directly in a Fire Hazard Severity Zone (FHSZ), which are typically areas that are forested and/or have heavy vegetation. Both the San Diego and Milpitas DOs registered data when queried using Cal-Adapt.org's Wildfire Interactive Map; the remainder of the Lottery's locations did not have supported data; however, as noted in Table 1.7, half of the Lottery's facilities are within five miles of Very High FHSZ areas.

Most of the utility companies that service the Lottery facilities statewide have an active Public Safety Power Shut Off (PSPS) protocol in place. The Lottery would be alerted to the potential for a PSPS in the event of extreme weather conditions, such as high risk of fires, that threaten energy systems. Lottery facilities have a backup battery system which will allow for critical systems to stay online for approximately one day without interruption of services.

In addition, the Lottery has an emergency response plan/evacuation plan in-place at all its facilities. The Lottery exercises this plan quarterly and provides the plan to all new employees as part of the new employee onboarding.

Summarizing Natural Infrastructure Actions to Protect Existing Facilities

Lottery buildings are designed and built for a 40-year lifecycle, and include energy- and water-saving features, installation of HVAC and lighting time clocks, thermostat controls, and occupancy sensors. Some, but not all facilities, could be affected by the various changes in climate including precipitation, wildfires, extreme heat and cold temperatures, and sea level rise. As this report details, several Lottery facilities are in urban heat islands. The Lottery will, where possible and meeting city codes, plant trees to mitigate effects of high heat days on buildings and employees. If a facility's employees are affected by climate change, there is another Lottery facility relatively close in the region they may report to in the event of a catastrophic failure to their reporting district office building.

Understanding the Potential Impacts of Facilities on Communities

As described at the beginning of the chapter, impacts on communities must be considered for resilience planning for State assets and buildings.

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 to or alleviate the vulnerability of these disadvantaged communities. Disadvantaged communities have CalEnviroScreen scores between 75 – 100.

Table 1.9: Facilities located in disadvantaged communities

Facility Name	CalEnviroScreen Score	Is it located in a disadvantaged community? Yes/No
Headquarters (Sacramento)	97	Y
Rancho Cucamonga DO	97	Y
Fresno DO	96	Y
Santa Fe Springs DO	92	Y
Richmond DO	85	Y
Southern Distribution Center	78	Y
Chatsworth DO	70	N
San Diego DO	53	N
Milpitas DO	52	N
Sacramento DO	52	N
Costa Mesa DO	41	N
Northern Distribution Center	30	N

Half of the Lottery facilities are in disadvantaged communities. Lottery facilities provide access for Lottery customers to submit claims for prizes and obtain information related to gaming, commitments to education, and jackpots, among other things. Additionally, retailers can come to Lottery facilities for assistance with their ticket orders and invoices. The Lottery does not provide healthcare or social services to the community. Due to strict security protocols, the Lottery's facilities cannot be used during an emergency by non-Lottery personnel to provide access to information and other resources.

The Lottery participates in local job fairs when there are hiring needs for specific jobs. Job fairs help attract a diverse group of potential hires.

Understanding Climate Risk to Planned Facilities

For all new facilities that you have planned, please complete the following tables. Use the tools identified above.

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)
N/A					

a.2

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)
N/A					

b.

Facility Name	Annual Mean Maximum precipitation (1961-1990) (in/yr)	Annual Mean precipitation (2031-2060) (in/yr)	Extreme Precip (1961-1990) (in/day)	Extreme Precip (2031-2060) (in/day)
N/A				

c.

Facility Name	Extreme heat threshold (EHT) °F	Average number of days above EHT (1961-1990)	Average number of days above EHT (2031-2060)	Increase in number of days above EHT
N/A				

d.

Facility Name	Area (California Coast, San Francisco Bay, Delta)	Sea Level Rise 0.0 m	Sea Level Rise 0.5 m	Sea Level Rise 1.0 m	Sea Level Rise 1.41 m
N/A					

e.

Facility Name	Current Fire Hazard Severity Zone (low, medium, high, very high)
N/A	

f.

Facility Name	Acres Burned (1961-1990)	Acres Burned (2031-2060)
N/A		

g.

Facility Name	Heating/Cooling Degree Days (1961-1990) (HDD/CDD)	Heating/Cooling Degree Days (2031-2060) (HDD/CDD)
N/A		

The Lottery has fully executed its Facilities Master Plan. No new facilities are planned.

Table 1.11: New Facilities and Disadvantaged Communities and Urban Heat Islands

Facility Name	Located in a Disadvantaged Community (yes/no)	Located in an urban heat island (yes/no)
The Lottery has completed its Facilities Master Plan and has no new facilities.		

Natural Infrastructure

The Lottery's Richmond DO is located a little over a half-mile from the Don Edwards San Francisco Bay National Wildlife Refuge. The Richmond DO, like those previously acquired, is built with the goal to be ZNE, and has no negative impact on the natural infrastructure, specifically the Don Edwards Refuge.

The Lottery owns all 12 of its facilities, and considered the following goals in its endeavors to own its facilities:

- long-term cost savings to the Lottery,
- ongoing operational needs,
- stability and flexibility of facilities and their operations, and
- zero net energy, if practical.

The Lottery installed solar panels wherever possible, reduced lighting demand using natural daylighting, and reduced heating/cooling demand through thermally improved building envelope. In daylighting the interior of the buildings, glass walls were installed to share daylight from one space to another, as well as the use of skylights in strategic locations to maximize the use of daylighting.

Full Life Cycle Cost Accounting

The Lottery employs life cycle accounting when analyzing new investments in owned facilities. The Lottery looks at the annual operating expense of the facility, including estimated maintenance and operational costs, over a 39-½ year depreciation timeline and compares that to existing lease and operating/maintenance expenses when applicable. The Lottery may look at payback timeframes and other lifecycle costs such as maintenance, upkeep, and repair, when analyzing other investments, such as energy upgrades.

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 1.12: 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?
Lottery Plans	Yes		The Lottery considered climate change when executing its Facilities Master Plan which was approved in November 2013.

Table 1.13: 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	Yes/No	Yes/No	Yes/No

Table 1.14: 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?
There are currently no grant or funding programs in the works.	N/A	N/A	N/A	N/A

Measuring and Tracking Progress

The Lottery monitors changing climate conditions by using CalAdapt Climate tools and Urban Heat Island Interactive maps every two years when updating the Climate Change Adaptation chapter of the roadmap. The Lottery checks all critical systems to ensure they are running properly and adjusts accordingly if an increase in climate impact is identified. Maintenance schedules may be adjusted to accommodate increased usage.

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.

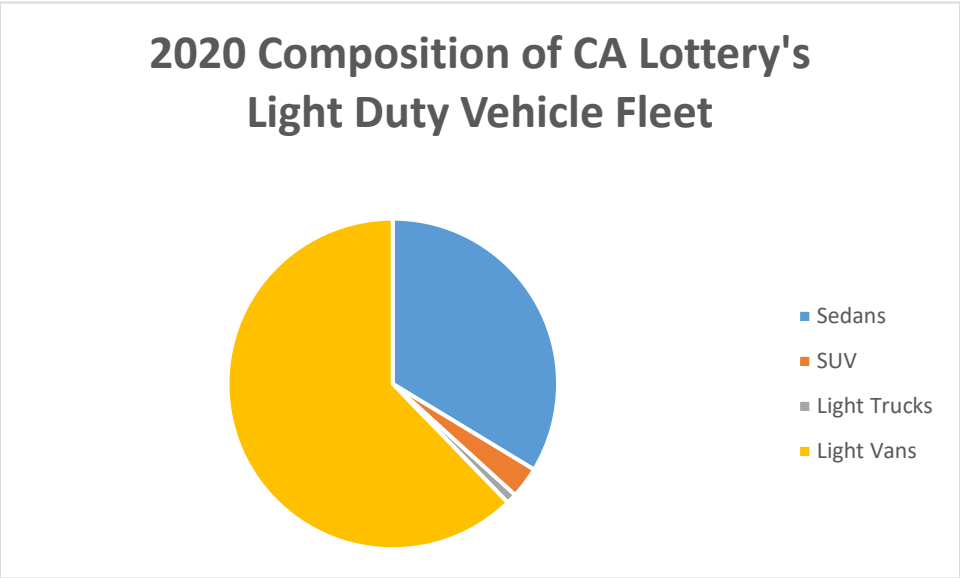
The majority of the Lottery's fleet is driven by the Sales and Marketing division, and a large percentage of the fleet is comprised of full-sized cargo vans and minivans driven by Sales representatives. This portion of the fleet is used for transporting boxes of Scratchers tickets, equipment, and point-of-sale (POS) materials. Sales representatives drive Lottery-issued vans daily to visit their assigned retailers to distribute the tickets, equipment, and materials, provide merchandising expertise, analyze data and sales activities, fill ticket inventory, and service Lottery equipment.

The remaining portion of the Lottery's fleet are sedans driven by Sales supervisors, Sales Key Account Specialists, Recruiters, and Lottery Investigators. Sales Supervisors monitor the routes of their representatives throughout the state by conducting field visits to ensure Lottery standards are being met.

Key Account Specialists utilize assigned sedans for daily sales visits during which they are responsible for marketing and promoting Lottery products to retailers, retail groups and associations. Recruiters are responsible for identifying and evaluating retailers in their respective district for a potential partnership with the Lottery. Lottery Investigators utilize assigned vehicles to conduct various duties throughout the state including criminal investigations, questioning for claims cases, retailer inspections, compliance operations, conducting employee background checks, and high-tier big winner interviews.

Lottery drivers are required to work in high-traffic areas, rural areas, and/or territories that cover a great distance.

Graph 2.1: 2020 Composition of Vehicle Fleet



The average miles per gallon (mpg) of the Lottery's Fleet for 2020 was 17 mpg. In 2018, the average was 16 mpg, and in 2016 it was 15 mpg. This data suggests a trend of improvement.

Table 2.1: Total Fuel Purchased in 2020

	Diesel	Gasoline	Renewable Diesel
Fuel Amount Gallons	204.47	135,742.56	0

Incorporating ZEVs into the State Fleet

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 larger numbers of ZEVs in their vehicle fleets. Starting in FY 17/18 the percentage of new light duty vehicles that must be ZEVs increases by 5% each year, reaching 25% in FY 19/20 and 50% in FY 24/25.

Though the greatest challenge the Lottery faces in its acquisition of more electric vehicles for its fleet continues to relate more to the vehicle types themselves, the Lottery has worked on incorporating ZEVs into its fleet where it can, working towards achievement of the 2020 and 2025 purchase requirements outlined in EO B-16-12. The Lottery's non-emergency vehicle sedan purchases for the last four fiscal years have been comprised of Battery

Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs) since there are comparable options for these types of vehicles on contract.

The greatest challenge the Lottery faces in its acquisition of electric vehicles is the lack of electric vans on state contract. Currently there are 379 active vehicles in the Lottery's fleet, 234 of those are vans. Of the 17 cargo vans available on State contract, none are pure electric. The Lottery requires cargo vans to meet our business needs of having enough cargo space to transport products and materials.

Since Lottery investigators drive vehicles which are considered emergency vehicles, the Lottery is not required to prioritize the purchasing of ZEVs for these vehicles.

All sales supervisors, key account specialists, and recruiters currently drive PHEVs or BEVs, though most currently drive PHEVs due to the lack of charging infrastructure in rural areas, work duties (described previously), and the expanse of territory travelled. The Lottery's current fleet also includes BEVs for HQ personnel who conduct business in town; (e.g., mailroom staff delivering interoffice mail, custodial and maintenance staff conducting tasks at the local DO). BEVs are assigned to sales supervisors who work at a location with available charging stations. The Lottery has charging stations at most of its owned locations and is exploring options to install chargers at the remaining locations soon. All future Lottery sedan acquisitions will consist of some ZEVs based on operational needs and availability of statewide electric vehicle charging infrastructure.

Lottery sedan drivers spend most days on the road visiting several retailer locations each day, driving 90 miles a day on average. Drivers do not have the time to wait at a public station to charge, however if there were charging stations at the retailers, vehicles could charge while they conducted business inside the retail location. Even so, Level 2 (L2) ChargePoint chargers average 40 additional miles for 3-5 hours of charge time. Vehicles with fast charging capability (Tesla Model 3, Nissan Leaf, Chevrolet Bolt) and the Level 3 (L3) ChargePoint chargers that support them are not yet widely available. The L3 chargers average 178 miles of electric drive per hour of charging, which would meet the needs of Lottery EV drivers. The introduction of ZEVs with a greater range, such as the Chevrolet Bolt, will make it easier for the Lottery to integrate ZEVs into its fleet. With a battery range of 238 miles, sedan drivers would not need to charge as often.

Vehicles over a specified mileage threshold or age are eligible for replacement. ZEVs are currently available on statewide commodity contracts in the sub-compact, compact, mid-size sedans and mini-vans vehicle classes. Of the vehicles eligible for replacement, the Lottery has 21 vehicles in its fleet that could be replaced with a ZEV.

EO B-16-12 required at least 10% of fleet purchases be Zero Emission Vehicles (ZEVs) by 2015. The Lottery met that goal and has continued to work towards the additional EO goal of 35% ZEVs by 2022.

Due to the uniqueness of the Lottery's operation the Lottery has been unable to transition all its fleet to ZEV. A large part of the Lottery's fleet are full-size cargo vans and minivans driven by staff who are in the field 90% of the time. These field staff require optimum mileage capacity and enough cargo space to transport products and materials. The current mileage capacity of commercial ZEV vans and electric vehicle charging infrastructure does not support the current business operations of the Lottery.

The Lottery will continue to monitor commercial ZEV options, expansion of electric vehicle charging infrastructure, and reevaluate its vehicle replacement plan to achieve additional ZEV goals.

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

Table 2.1: Light Duty Vehicles in Department Fleet Currently Eligible for Replacement

	Sedans	Minivans	Pickups	SUVs, 5 passengers	SUVs, 7 passengers	Total
# of vehicles eligible for replacement	**21**	**0**	**0**	**0**	**0**	**21**

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 2.2: Light Duty ZEV Additions to the Department Fleet

	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle	0	6	0	0	0
Plug-in Hybrid Vehicle	0	1	24	10	9
Fuel Cell Vehicle	0	0	0	0	0
Percent of total purchases	0%	100%	25%	43%	50%
Required ZEV Percentage	35%	40%	45%	50%	55%
Total number of ZEVs in Fleet*	40	40	40	40	40

Vehicles over 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.

Table 2.3: 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	0	0	0	0	0	0

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.

Table 2.4: ZEV Additions to the Department Fleet

	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle	0	6	0	0	0
Plug-in Hybrid Vehicle	0	1	24	10	9
Fuel Cell Vehicle	0	0	0	0	0
Percent of total purchases	0%	100%	25%	43%	50%
Required ZEV Percentage	15%	20%	25%	30%	35%
Total number of ZEVs in Fleet*	40	40	40	40	40

ZEV Take-home Vehicles

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

Vehicles that have been authorized for home storage must be charged at the district office where the charging station is available. If a driver is on leave, the vehicle must be stored at the district office to ensure that it is always adequately charged.

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.

The Lottery has installed the telematics Geotab devices in its 371-vehicle fleet. With this implementation, the Lottery has been able to track its assets as well as use the programs various reporting tools to help manage its fleet. The goal is to capture real-time data and automate data collection to utilize in analyzing vehicle usage, project future needs, and meet reporting mandates. The Lottery is currently fine tuning the program to meet its needs, and have been focusing on speeding and mileage reporting to promote driver safety as well as assist with monthly mileage reporting requirements.

Public Safety Exemption

Since Lottery investigators drive vehicles which are considered emergency vehicles, the Lottery is not required to prioritize the purchasing of ZEVs for these vehicles. However, in the spirit of the EO B-16-12, the Lottery has incorporated some plug-in hybrid vehicles into its fleet for investigators.

California State Lottery Parking Facilities

The Lottery currently owns all 12 of its facilities. All Lottery facilities host fleet vehicles to some extent.

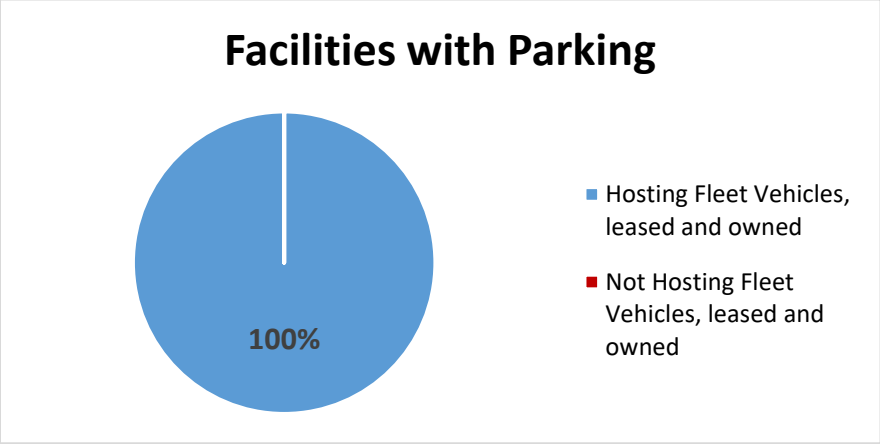
District Offices
The most common type of facilities the Lottery operates are nine DOs located statewide. They range in size from approximately 9,500 to 19,000 square feet and are typically industrial flex buildings that offer a public facing lobby, office space for staff, and warehouse space for storing and distributing Lottery tickets and POS materials. They typically have 30-50 parking spots that are usually shared among other adjacent properties as the DOs are part of business or industrial parks. Parking at DOs is mixed.

Distribution Centers
The Lottery also operates southern and northern DCs. Each facility is approximately 60,000 square feet, are mainly warehouse with some office space, and are not open to the public. The DCs are responsible for warehousing and distributing Lottery tickets and POS materials. At the DC, parking is mainly for employees but is sometimes used for temporarily parking fleet vehicles. Shipping and receiving trucks utilize temporary parking.

Headquarters

Sixty-one percent (61%) of Lottery staff is assigned to headquarters. HQ staff performs administrative functions for the Lottery. HQ offers free parking including some reserved spaces for senior level management, and non-designated spaces for employees, customers, and fleet vehicles. There is designated visitor area parking, but visitors can also park in unreserved spots. Currently, fleet vehicles, including vehicles for our Security and Law Enforcement Division, are parked in the general employee parking lot of the premises. Although HQ has a public lobby, it is not specifically public facing.

Graph 2.2: Parking Facilities



The Lottery has determined that Level 1 (L1) chargers are not needed due to the nature of the department's fleet operations, and the length of stay for visitors and employees. Level 1 (L1) chargers use a 110-volt outlet and are designed more for residential, apartment complexes and small businesses. L1 chargers deliver between 3.5 and 6.5 miles of range per hour of charging and are, therefore, unsuitable for Lottery EV driver use. As previously stated on page 18, L2 and L3 chargers are more suitable to Lottery needs. Currently the Lottery has installed 38 L2 and 5 L3 chargers at its facilities statewide.

The Lottery has estimated that the department will need an additional 9 EV chargers to adequately serve fleet vehicles and achieve the goals established in the ZEV Action Plan. This estimate is based on future ZEV fleet purchases and a count of visitor and workplace parking spaces.

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

Table 2.5: 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
Chatsworth DO	32	0	3	1	4	4
Costa Mesa DO	56	0	4	0	4	4
Fresno DO	49	0	3	1	4	4
Headquarters	485	0	10	0	10	16
Milpitas DO	50	0	3	1	0	4
NDC	53	0	0	0	0	4

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
Rancho Cucamonga DO	54	0	4	1	5	4
Richmond DO	60	0	0	0	0	4
Sacramento DO	50	0	0	0	0	4
San Diego DO	39	0	8	0	8	0
Santa Fe Springs DO	32	0	3	1	4	4
SDC	54	0	3	1	4	0
Total	964	0	38	5	43	52

Outside Funding Sources for EV Infrastructure

The Lottery's sustainability analyst reviewed available grants and special pricing through local utility companies but found the available options did not meet Lottery fiscal requirements or provide a good return on investment. The Lottery has been working with NRG EVgo, who would provide free infrastructure for additional charging stations at the southern DC, cover partial costs for additional infrastructure at Santa Fe Springs DO, and free infrastructure at the NDC. The property management and other tenants at the SDC have not given approval to proceed with additional infrastructure. The Lottery will continue working with =NRG EVgo, monitor local utility funding and rebate options, and other offers as they arise. The Lottery will reach out to DGS Office of Sustainability Transportation Unit to explore having them fund and manage new EV charging projects.

Hydrogen Fueling Infrastructure

The Lottery does not have plans to add hydrogen fuel cell vehicles to its fleet; therefore, there are no plans to install hydrogen fuel charging stations at its facilities.

Comprehensive Facility Site and Infrastructure Assessments

Site Assessments are performed to establish the cost and feasibility of installing needed EV infrastructure. Table 2.6 above lists facilities and their EVSE Status.

The Lottery has not performed a comprehensive facility site and infrastructure assessment to establish the cost and feasibility of installing needed EV infrastructure.

Although we have not conducted a full statewide assessment, as we acquired new facilities, we have assessed the infrastructure and the need for L2 and L3 charging stations to support Lottery EV charging.

Table 2.6: 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
N/A					
Total					

EVSE Construction Plan

EV charging stations have been installed in quantities and locations compliant with current building code. The Lottery will reach out to DGS Office of Sustainability Transportation Unit to explore having them fund and project manage new EV charging projects.

EVSE Operation

The Lottery does not currently use ChargePoint reporting features on Electric Vehicle Charging Stations (EVCS) usage. However, the Lottery plans to implement use of all ChargePoint reporting features to quickly access information and better assess how charging stations are being used and how they are contributing to the Lottery's operations. The Lottery will gather and analyze information such as: revenue generated by the stations, amount of gasoline saved, energy used, greenhouse gas (GHG) savings, session length and average utilization, unique drivers, and alarms associated with the charging ports (type, time, location) to identify any trends or potential issues with the ports.

Maintenance calls are responded to by a ChargePoint service partner. ChargePoint also runs weekly reports on all stations and notifies the Lottery of any resulting alerts via automatically-generated tickets. Additionally, the ChargePoint portal offers the option to receive "Batched Email Alerts" in which Network Managers can receive hourly emails containing alerts on all stations. When Lottery staff is notified of a disabled port, ChargePoint is contacted to arrange repair through their service partner. This service is covered until the warranty expires. Operations staff is currently in the process of researching a cost-effective solution to maintain and repair disabled EV charging stations once their warranties expire. Usage of these charging stations is addressed in

the Lottery's "Electric Vehicle Charger Use" corporate policy, which outlines daily time limits and the effects and consequences of exceeding these limits.

The Lottery determined usage fees by calculating anticipated usage, per kilowatt hour, and station location.

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 Department Mission and Built Infrastructure

Discuss the following topics, focusing on how they relate to the Governor's sustainability goals and the EOs implementing those goals:

- Describe the mission of your department.
- Describe the built infrastructure required to support your department's mission that consumes purchased energy (electricity, natural gas, and propane).
- Include the number and total square footage of department facilities.
- For the most recent year available, include all available information for department owned buildings where the State pays bills. This information is automatically calculated in the Workbook, Tab 3.1, based on the information entered into the Owned tab (please check calculations) This data should match the purchased energy reported on http://greenbuildings.ca.gov/.

Table 3.1: Total Purchased Energy 2020

Purchased Energy	2003 Baseline Quantity				2020 Quantity
Electricity	1,667,760	kWh	2,866,043	kWh	72%
Less EV Charging	-	kWh	(246,525)	kWh	
Natural Gas	18,349	therms	19,543	therms	7%
Propane	-	gallons	-	gallons	#DIV/0!
Fuel Oil	-	gallons	-	gallons	#DIV/0!
Steam		pounds	-	pounds	#DIV/0!
Chilled H2O		kBtu	-	kBtu	#DIV/0!
TOTALS	7,525,297	kBtu Site	10,892,117	kBtu Site	45%

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)
Headquarters	165,077	8,731,334	24,905,507	54
Northern Distribution Center	57,408	1,166,177	3,423,388	43
Southern Distribution Center	60,580	59,543	2,572,391	13
Total for Buildings in This Table	A = 283,065	B= 9,957,054 kBTU	C = 30,901,286 kBTU	---
Total for All Department Buildings	X= 410,689 ft^2	Y = 10,892,117 kBTU	Z = 38,603,082 kBTU	---
% of Totals	A/X= 69%	B/Y = 91 %	C/Z = 80 %	---

- The Lottery created a Facilities Master Plan (FMP) in 2013 that outlined replacement of its remaining nine leased facilities with owned facilities. The Lottery already owned its Sacramento area facilities including its HQ building, NDC, and Sacramento DO. The Lottery began implementing the FMP to support growth and reduce overall operating expenses after the Lottery Commission's approval of the FMP.
- The facilities throughout the state included in the FMP are eight DOs located and named: South San Francisco, East Bay (San Francisco Bay Area), Central Valley (Fresno), Van Nuys, Inland Empire (San Bernardino), Santa Fe Springs, Santa Ana, San Diego, and the Southern Distribution Center (SDC) (Rancho Cucamonga). Typical projects under the FMP program contemplate purchasing existing buildings and retrofitting them to meet Lottery operational needs. Ground up construction was

implemented for the final project in Milpitas. As of December 2019, the Lottery has completed eight projects (Santa Fe Springs DO, SDC, Fresno DO, Rancho Cucamonga DO, Richmond DO, Chatsworth DO, and Costa Mesa DO). The final remaining project (Milpitas DO) was completed in July 2020. New DO facilities have ranged in size from 11,000 to 19,000 square feet. There is an organizational goal for the projects to achieve ZNE and include efficiency and sustainability features to meet the goals outlined in EO B-18-12 and associated Green Action Plan, although not a specific goal of the FMP.

Zero Net Energy (ZNE)

The Lottery has exceeded the State ZNE goals with nine of its new facilities developed under the FMP designed to be ZNE. Over 50% of the Lottery's building area will be ZNE with the Lottery's remodel of its Northern Distribution Center, which will be designed to be ZNE. EO B-18-55, signed by Governor Brown on September 10, 2018, further establishes a statewide goal to achieve carbon neutrality "as soon as possible, but no later than 2045, and to achieve and maintain net negative emissions thereafter." This goal is in addition to already existing targets to reduce greenhouse gas emissions. The Lottery is working towards this goal as well and will consider this EO for future planning purposes.

Table 3.3: Zero Net Energy Buildings

Status of ZNE Buildings	Number of Buildings	Floor Area (ft^2)	% of Building Area
Buildings Completed and Verified	W = 8	A = 153,550	36
Building in Design or Under Construction	X = 1	B = 73,598	17
Building Proposed for Before 2025 (but not yet in design)	Y = 0	C = 0	0
Addtl. Exist. Bldg. Area within 15% w/ EE projects	Z = 0	D = 0	0
Totals for ZNE Buildings by 2025	W+X+Y+Z = 9	A+B+C+D = 227,148	
Totals for All Department Buildings by 2025	Q = 12	R = 423,670	
% ZNE by 2025	(W+X+Y+Z)/Q 75%	(A+B+C+D)/R 54%	

New Construction Exceeds Title 24 by 15%

The Lottery's facilities were designed and constructed to achieve at least 15% or more of the Title 24 requirement for new buildings or major renovations.

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	8	153,550
Under Design or Construction	1	73,598
Proposed Before 2025	0	227,148

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.

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

Year	Floor Area (ft^2)	Total Source kBTU Consumption	Department Ave. Source EUI
Baseline Year 2003	0	0	0
2013	231,635	13,412,868	58
2014	231,635	12,871,898	56
2015	244,475	11,916,079	49
2016	305,055	12,321,875	40
2017	316,690	11,790,168	37
2018	383,015	12,038,838	31
2019	413,628	34,607,012	84
2020	407,480	33,668,015	83
% Change 2003-2020	#DIV/0!	#DIV/0!	#DIV/0!

The Lottery will not be able to achieve a 20% reduction in grid-based energy purchased by 2018 as compared to the baseline because the baseline included only energy used at its headquarters property while it leased its other facilities. The Lottery now owns twelve facilities statewide where energy is being tracked. Although, in the spirit of EO B-18-12 the Lottery has committed to building and operating its facilities with sustainability and energy/water efficiency in mind as demonstrated by the number of ZNE facilities brought online. The Lottery has done and will continue to do the following with its commitment to sustainability and EO B-18-12:

- Maintain photovoltaic systems at new facilities to ensure maximum energy capture.

- Ensure that HVAC ducts, filters and equipment are inspected and maintained at maximum effectiveness.
- Use ice generated at night to cool the building during the day to reduce grid-based peak demand usage at headquarters.
- Use daylight harvesting to minimize the demand of interior lighting. Use automatic lighting controls at headquarters.
- Set building HVAC controls and temperature set points to ASHRAE standards.
- Minimize lighting and HVAC electric usage outside of normal building hours.
- Ensure that buildings take advantage of cool nighttime and morning temperatures by effectively utilizing economizer and night flush cycles.
- Purchase Energy Star rated equipment (whenever practical per Lottery Sustainable Purchasing policy).
- Permit the use of personal heaters only for approved reasonable accommodations.
- Ensure that all boilers are serviced at least annually, and that combustion efficiency is checked at least twice annually.
- Ensure that lights are turned off in all unoccupied rooms, with occupancy sensors installed in every room. Measure light levels and remove lamps or reduce wattage to provide appropriate light level for the activities in the work area affected.
- Ensure that power management software for desktop and laptop devices is fully implemented.
- Program all Lottery computers, printers, copiers, scanners and monitors not in use for up to 30 minutes to automatically go into energy-saving mode.
- Report power usage effectiveness (PUE) to the Department of Technology. The Lottery's PUE number is under 1.5 due to the Lottery's HQ data center being over 1000 square feet.
- Ensure that data centers are operated at the maximum temperature allowed by equipment manufacturers.
- Ensure that timers are installed on all equipment so the equipment will be turned off automatically during non-working hours.

The Lottery plans to continually research and implement energy-saving projects to reduce the Lottery's grid-based energy.

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	1,375,029	92,101	1%
2016	17,926,581	1,404,314	9%
2017	12,508,342	3,698,015	23%
2018	N/A	N/A	*
2019	N/A	N/A	*
2020	N/A	N/A	*
2021	N/A	N/A	*

*No energy projects were completed in these years.

Table 3.7: Energy Surveys

Year	Total Department Floor Area (sq.ft.)	Energy Surveys Under Way (sq.ft.) Level 1	Energy Surveys Under Way (sq.ft.) Level 2	Percent of Department Floor Area Level 1	Percent of Department Floor Area Level 2
2014	292,148		292,148		2%
2015	2,533,761		2,533,761		15%
2016	611,157		611,157		4%
2017	2,702,040		2,702,040		16%
2018	2,605,759		2,605,759		15%
2019	N/A				
2020	N/A				

Demand Response

Table 3.8: Demand Response

Demand Response Participation	Number of Buildings	Estimated Available Energy Reduction (kW)
Number of Buildings Participating in 2020	X =0	-
Number of Buildings That Will Participate in 2021	Y = 0	B
All Department Buildings (Totals)	Q = 12	R
All Department Buildings (Percent)	(X+Y)/Q = -%	(A+B)/R %

In the past, the Lottery's HQ building participated in a voluntary curtailment agreement with SMUD. Currently, the HQ building does not have a voluntary curtailment agreement with SMUD; however, the Lottery is researching and considering options available for its locations statewide. Also, the Lottery's peak demand is offset by energy produced during those hours with the photovoltaic systems at its offices. At HQ, peak demand is regularly reduced by utilizing the ice storage system. This system generates ice during off-demand periods to be used for cooling during peak times.

Renewable Energy

Table 3.9: On-Site Renewable Energy

Status	Number of Sites	Capacity (kW)	Estimated Annual Power Generation (kWh)	Percent of Total Annual Department Power Use
Current On-Site Renewables in Operation or Construction	P = 9	A = 477	U = 991,430	U/W = 100%
On-Site Renewables Proposed	Q = 0	B = 0	V = 0	V/W = 0
On-Site Renewables Operational or Proposed Totals	P+Q = 9	A+B = 477	U+V = 991,430	(U+V)/W = 100%
Total Department-Wide ZNE-Targeted Facilities & Energy Current & Proposed On-Site Totals	R = 9	C = 477	W = 991,430	W/W = 100%
Off-Site Renewable Current Totals	S = 0	D = 0	X = 0	X/W = 0
Off-Site Renewables Planned	T = 0	E = 0	Y = 0	Y/W = 0
Off-Site Renewables Combined Current & Planned	S+T = 0	D+E = 0	X+Y = 0	(X+Y)/W = 0
Current Combined On-Site and Off-Site Renewable Energy	P+S = 9	A+D = 477	U+X = 991,430	(X+Y)/W = 0
Additional Planned On-Site and Off-Site Renewable	Q+T = 0	B+D	V+Y = 0	(X+Y)/W = 0

The Lottery has nine buildings over 10,000 square feet that have photovoltaic panels: HQ, Santa Fe Springs DO, Fresno DO, SDC, Rancho Cucamonga DO, San Diego DO, Chatsworth DO, Costa Mesa DO, and Milpitas DO. Photovoltaic panels on the roof of these buildings are rated to harvest a variety of kWh (from 84,000 to 230,000) per year of electricity from sunlight to help reduce the energy demand for each building. The Lottery HQ uses a diesel standby generator and 100 KVA photovoltaic systems.

Monitoring Based Commissioning (MBCx)

The Lottery utilizes an Automated Logic building management system (BMS) to control the HVAC system and to provide data and energy usage via Leviton electrical submeters at its HQ building and new facilities built under the FMP. All Lottery facilities apart from NDC, Sacramento DO, and Richmond DO, use this BMS. NDC will be added to the BMS after completion of the major renovation. A project is being initiated to add the Richmond DO to the BMS and the Sacramento DO will be evaluated for addition as well. Monitoring-based commissioning has allowed the Lottery to run, monitor, and control the HVAC systems to ensure efficiency and determine when systems are not operating properly and require maintenance and repair. Also, the monitoring-based commissioning process allows the Lottery to identify and fix programming with the scheduling of lighting and other building systems before operating the facilities. The Lottery's building operators monitor the data and identify potential problems, which then requires troubleshooting by Lottery building engineers and maintenance staff to identify the specific problem and resolve the issue. Table 3.10 shows the annual cost associated with maintaining the BMS system.

Table 3.10: Planned MBCx Projects

Facility	Building Name	Location	Floor Area (sq. ft.)	EMS Make, Model, Installation/ Up-grade	EMS Year	MBCx Capable, Difficult, or No EMS	MBCx Projected To Start	MBCx Projected Cost ($)
HQ	Headquarters	Sacramento	165,077			Yes	2011	$2,175
SFSDO	Santa Fe Springs DO	Santa Fe Springs	12,840			Yes	2015	$2175
SDC	Southern Distribution Center	Rancho Cucamonga	60,580			Yes	2016	$2,175
FDO	Fresno DO	Fresno	11,635			Yes	2018	$2,175
SDDO	San Diego DO	San Diego	14,720			Yes	2018	$2,175
RCDO	Rancho Cucamonga DO	Rancho Cucamonga	13,254			Yes	2018	$2,175
CDO	Chatsworth DO	Chatsworth	13,380			Yes	2019	$2,175
CMDO	Costa Mesa DO	Costa Mesa	17,233			Yes	2019	$2,175
RDO	Richmond DO	Richmond	21,822			Yes	TBD	
SDO	Sacramento DO	Sacramento	9,489			Yes	TBD	
NDC	Northern Distribution Center	West Sacramento	57,408			Yes	TBD	
MDO	Milpitas DO	Milpitas	10,042			Yes	2021	$2,175
Totals:	12		407,480			12		$19,575

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

The Lottery retrofitted lighting fixtures at the NDC using an ESCO through PG&E subcontractors in the summer of 2015. The Lottery furnished and installed LED lamps on the exterior of its Sacramento DO through SMUD contractors in the summer of 2016. The Lottery also utilized SMUD Rebate for retrofitting parking lot lights at its HQ building.

The Lottery participated in Southern California Edison's Savings by Design program for the SDC and received money for the high efficiency lighting system that was installed.

The Lottery will continue to investigate other opportunities to utilize available financing as the need arises.

CHAPTER 4 - WATER EFFICIENCY AND CONSERVATION

This Water Efficiency and Conservation report demonstrates to the Governor and the public the progress the Lottery 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 EOs 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 filtration, 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.

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

Department Sustainability Goal and Built Infrastructure

The Lottery's sustainability goal is to reduce water use at its facilities to adhere to EO B-18-12 & MM 14-02. In fact, the Lottery achieved a 37.2% reduction,

surpassing the MM 14-02 goal of reducing 2020 usage by 20% as compared to 2010 usage. However, it is going to be extremely difficult to further reduce water usage by another 15% as that would mean a 52.2% total reduction when compared to 2010.

It had been a challenge to meet the goals of a 10% reduction by 2015 and 20% by 2020 due to the growth of square footage the Lottery has had since 2010 (the baseline year). The 2010 Benchmarking of the water usage does not provide accurate baseline water use for the HQ building since the Lottery did not occupy it until July 2011. The data in this plan is based off the following 12 facilities which the Lottery now owns and operates:

- Headquarters (HQ) – 165,077 ft^2
- Southern Distribution Center (SDC) – 60,580 ft^2
- Northern Distribution Center (NDC) – 57,408 ft^2
- Richmond District Office (RDO) – 21,822 ft^2
- Costa Mesa District Office (CMDO) – 17,233 ft^2
- San Diego District Office (SDDO) – 14,720 ft^2
- Chatsworth District Office (CDO) – 13,380 ft^2
- Rancho Cucamonga District Office (RCDO) – 13,254 ft^2
- Santa Fe Springs District Office (SFSDO) – 12,840 ft^2
- Fresno District Office (FDO) – 11,635 ft^2
- Milpitas District Office (MDO) – 10,042 ft^2
- Sacramento District Office (SDO) – 9,150 ft^2

The Lottery moved into its HQ building on July 11, 2011 which was built with the following water-saving features:

- High performance water features to reduce water usage in the restrooms by 35%.

- Water quality basins that act as planter boxes surround the building and are watered by storm water runoff.

- Irrigation controls at HQ are equipped with weather-related sensors and will not activate if it is raining outside.

The Lottery's newest facility, MDO, was also built with the above water-saving features. The SDO and NDC are both in shared complexes where the Lottery cannot control irrigation water usage or landscaping at this time.

All Lottery-owned buildings include high performance water features to reduce water usage and low maintenance/low water usage landscaping and alternative watering systems, where applicable. The Lottery will continue to monitor, assess, and work to reduce water consumption at all its facilities.

Table 4.1: 2020 Total Purchased Water

Purchased Water	Quantity	Cost ($/yr)
Potable	5,113,713	$ 52,454
Recycled Water	0	$ 0
	5,113,713 Gallons	$ 52,454

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
HQ	165,077	534	3,046,500	2,097,912	1,776
FDO	11,635	10	528,000	UNK	52,800
CMDO	17,233	15	379,900	368,042	791
SFSDO	12,840	8	317,100	UNK	39,638
MDO	10,042	25	244,613	175,044	2,783
Total for Buildings in This Table	216,827	592	4,516,113	2,640,998	3,167
Total for All Department Buildings	407,141	709	5,113,713	2,640,998	3,487
% of Totals	53%	83%	88%	100%	91%

Table 4.3: Properties with Largest Landscape Area

Building Name	Landscape Area (ft^2)
CA - LOTTERY HEADQUARTERS	78,930
SAN DIEGO DISTRICT OFFICE	11,458
MILPITAS DISTRICT OFFICE	11,342
SANTA FE SPRIGS DISTRICT OFFICE	6,644
FRESNO DISTRICT OFFICE	4,747
Total Landscaping area for Buildings in This Table	113,121 ft^2
Total Landscaping for All Department Buildings	123,387 ft^2
% of Totals that is large landscape	91.7 %

The Lottery has faced challenges working toward meeting the Governor's water efficiency goal at its shared facility complexes. The landscaping and irrigation are handled by the site property managers for most of the Lottery's facilities. The Lottery has installed water basins, drip irrigation, weather sensors for the irrigation

control, and used decomposed granite in efforts to conserve water for five facilities where the Lottery has control over landscaping and irrigation.

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	380 W	3,764,180	27.14
2020	709 W	5,113,713	19.76
2022 Goal		**4,346,656**	**16.80**

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	5,113,713	7,213
Less than 20% Reduction	No: 4,090,970	5,770
Totals		
Department-Wide Reduction		

All new facilities have high efficiency water fixtures and irrigation/landscaping, as the Lottery transitioned from leased to owned facilities. The Lottery has not analyzed potential water efficiency projects. The Lottery will be able to analyze opportunities to reduce water usage and ensure efficient use of water resources as data is collected on the new facilities. As the Lottery has relatively new facilities constructed from the ground up or done major renovations, the Lottery has not undertaken individual water efficient projects.

Building Water Management BMPS

The Lottery monitors water use through meters at each of its locations and reports monthly usage in Energy Star Portfolio Manager. The facilities analyst also alerts the Chief Engineer when there is unusually high water usage for any of its facilities. In addition, Engineering and Maintenance (E&M) staff regularly inspect and report any physical excessive water run-off, leaks, or breaks. If repairs cannot be made by E&M staff, then a plumber is contacted to complete the work.

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		No Data Available	
2015			
2016			
2017			
2018			
2019			
2020			

Building Heating and Cooling Systems BMPs

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	No Data Available	
2015		
2016		
2017		
2018		
2019		
2020		

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		No Data Available	
2015			
2016			
2017			
2018			
2019			
2020			

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		No Data Available	
2015			
2016			
2017			
2018			
2019			
2020			

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 Department of Water Resources (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 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.

The Lottery will be implementing a building inventory system to track physical characteristics and building system information at owned facilities soon. The Lottery is not currently tracking this information in an efficient manner. The Lottery hopes to have this information and be able to address this section more thoroughly in future reports, beginning 2023.

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

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
			No Data Available			

Heating and Cooling Systems Inventories Summary

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)
		No Data Available		

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.

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	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	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
6	2	1	0	0	0	0	0	0	0	0	0

Landscaping Hardware Maintenance BMPS

The Lottery has implemented the following maintenance requirements for landscaping hardware:

- Installed check valves, swing joints and replace nozzles as needed.
- Installed faucet timers for hose or hand irrigation.
- Installed 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.

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.)
120,379	3,008	0	UNKNOWN	UNKNOWN

Living Landscape BMPs

The Lottery has implemented the following living landscapes maintenance requirements:

- Prioritize and assign value to plants within a landscape.
- 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.
- Adjust the irrigation schedule for seasonal changes.
- Test irrigation system monthly to check for leaks and misalignment, and other malfunctions. Repair immediately with the correct parts. Adjust irrigation systems as needed.
- Water early in the morning or in the evening when wind and evaporation are lowest. Never water between 10am and 6pm
- 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.
- Use WUCOLS to find plant water use requirements and only water landscapes according the plant water needs.
- Plant species native to the climate zone.
- Use bio-swales and other forms of rainwater capture to keep water onsite.
- 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.

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.

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	78,930 ft^2	326,235 gal/month	The Lottery's contracted landscapers are all certified

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.)
0	0	0	0	0

No data available.

Monitoring, Reporting and Compliance

The Lottery monitors water use through meters at each of its locations and reports monthly usage in Energy Star Portfolio Manager. The Lottery reports biennially via the Sustainability Roadmap (this document). Water reduction targets are unable to be reached due to the baseline being established when the Lottery owned only three of its facilities.

The Lottery currently has and owns all 12 of its facilities statewide. Utility providers notify the Lottery when temporary water reduction efforts are in effect. The Lottery ensures that its facilities are following any water use reduction alerts in their respective regions.

CHAPTER 5 - GREEN OPERATIONS

Greenhouse Gas (GHG) Emissions

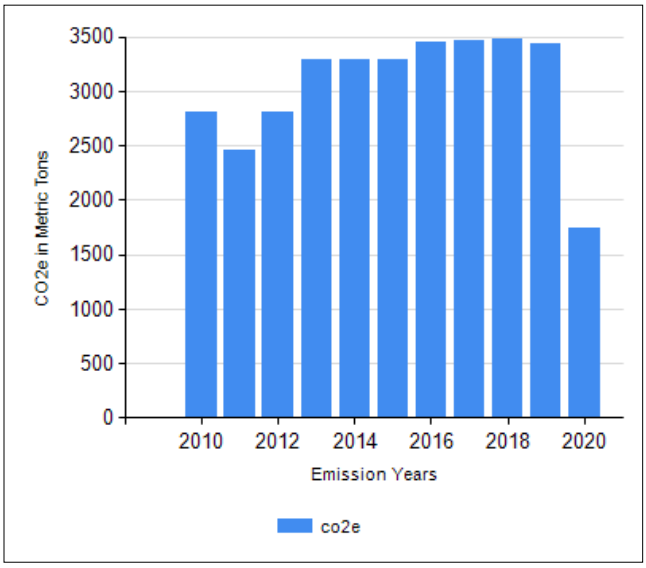
State agencies are directed to take actions to reduce entity-wide greenhouse gas emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

The Lottery's increase in real property square footage and in its vehicle fleet since the baseline year of 2010 has made it challenging to meet the reduction of greenhouse gas emissions goals of 10% by 2015 and 20% by 2020. The Lottery has and continues to do the following to achieve the 20% minimum reduction by 2020:

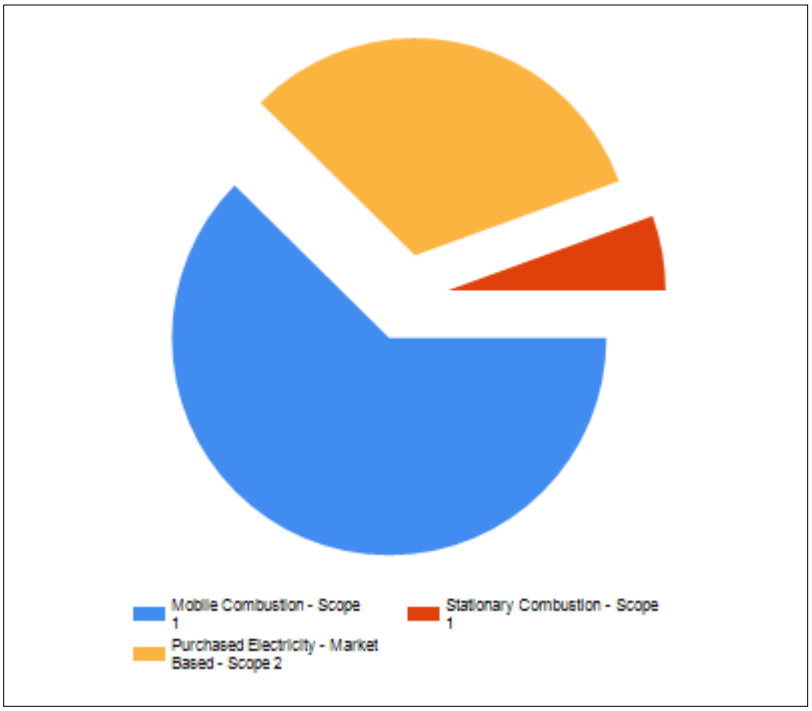
- Implement energy conservation principles at all buildings.
- Complete energy analysis and audits take consumption reduction measures, time-of-use (TOU) management, and investigate automated demand response (ADR) programs for all Lottery-owned facilities.
- Identify and pursue ZNE for all newly owned facilities.
- Identify vehicles with high fuel use for ZEV/plug-in hybrid replacements.

The Lottery had increased its use of natural gas and vehicles due to the growth in the number of facilities and staff. The Lottery has updated all fixtures in Lottery-owned buildings to energy efficient fixtures. The Lottery's Santa Fe Springs DO, Fresno DO, SDC, Rancho Cucamonga DO, San Diego DO, Chatsworth DO, Costa Mesa DO and Milpitas DO are buildings that generate electricity from onsite photovoltaic systems therefore, the Lottery's purchased electricity has decreased despite the Lottery's growth.

Table 5.1 GHG Emissions since 2010



Graph 5.1 GHG Emissions for 2020



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.

The Lottery has a Building Exterior Site Management Plan (BESMP) as part of LEED which addresses maintenance of building exteriors, roofs, hardscape, landscape, and exterior painting. Additionally, the Lottery also has a green cleaning policy and incorporates requirements into the scope of services for vendors providing exterior maintenance such as landscaping services. Custodial, engineering and maintenance, and facilities staff adhere to the Lottery's green cleaning and sustainable purchasing policy which conform to SAM Section 1821.6.

Building Design and Construction

EO 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.

The Lottery has completed eight major renovation projects over 10,000 square feet since July 1, 2012 and has obtained a LEED Gold certification for Santa Fe Springs DO, Fresno DO, SDC, Rancho Cucamonga DO, San Diego DO and Fresno DO and is in the process of certifying the remaining new buildings. The

Lottery ensures that new buildings or major renovation projects over 10,000 square feet obtain LEED Silver certification or higher by specifying that objective in the project scope. The Lottery's architect ensures the details and criteria for achieving this objective are specified in the project construction plans and specifications.

Table 5.2: New Construction since July 1, 2012

Facility Name	LEED Certification Type & Level Achieved	Commissioning Performed (Y/N)
Santa Fe Springs DO	LEED Gold New Construction	Y
Fresno DO	LEED Gold New Construction	Y
Southern Distribution Center	LEED Gold Commercial Interiors	Y
Rancho Cucamonga DO	LEED Gold New Construction	Y
San Diego DO	LEED Gold New Construction	Y
Milpitas DO	LEED Gold New Construction	Y
Chatsworth DO	LEED Certification Pending	Y
Costa Mesa DO	LEED Certification Pending	Y

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.

There is no narrative which specifically discusses steps taken to ensure new construction incorporates the IEO provisions of CalGreen Tier 1.

LEED for Existing Buildings Operations and Maintenance - EBOM

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.

The Lottery has three (3) buildings in its portfolio which meet the requirement for LEED-EBOM Silver certification per EO B-18-12. Those buildings are HQ, NDC, and SDC. However, the NDC is not eligible, per LEED, to certify for EBOM because the building cannot meet the minimum Energy Star score of 75.

The HQ building achieved LEED Silver certification under the Operations and Maintenance rating system in February 2016. The Lottery utilized a LEED consultant as well as an on-staff LEED AP to facilitate the certification. There was a brief struggle with meeting the Energy Star score of 75; however, after an energy audit and some slight modifications to the system, the Lottery met and

exceeded the threshold and became an Energy Star Certified building. The Lottery HQ building continues to maintain an Energy Star score over 75.

The SDC was opened for business in the fall of 2016. The building obtained Gold certification under the LEED Commercial Interiors rating system in June of 2017 and Gold certification under the LEED Operations and Maintenance rating system in June of 2019.

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
2	2	100%

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 using low emitting furnishings, cleaning products, and cleaning procedures.

New Construction and Renovation

The Lottery has in place a Green Cleaning Policy and Program (GCP) which encourages the purchase of environmentally preferable products when compared to competing goods that serve the same purpose. Additionally, there is a Building Exterior Site Management Plan in place. The policy states:

- Recycled paint shall be used for appropriate exterior applications where recycled paint is of a quality comparable to virgin paint.
- Low or Zero Volatile Organic Compound (VOC) paint shall be used in building interiors to improve indoor air quality.
- Adhesives and sealants applied to the exterior of the building shall have a VOC content less than the VOC content limits of SCAQMD Rule #1168.
- Sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8 Rule 51.
- Paints and coatings must have VOC emissions not exceeding the VOC and chemical component limits of Green Seal's Standard GS-11 requirements.

The Lottery ensures all new construction and renovation projects include the following by specifying CALGreen and LEED requirements in the building plans:

- Commissioning to ensure proper operation of all building systems, including delivering the required amount of outdoor air.
- All relevant mandatory and all relevant and feasible voluntary measures from CALGreen Division 5.5 and Appendix section A5.5.
- Specialized air treatment for buildings where air quality standards are routinely exceeded, including Minimum Efficiency Reporting Value (MERV) 13 or MERV 16 air filters and ozone removing air cleaning devices.
- Outdoor airflow monitoring systems.
- An Indoor Environmental Quality (IEQ) Construction Management Plan that meets CALGreen Sections A5.501.1-A5.504.

In newly constructed facilities, the Lottery maximizes daylighting by:

- Designing regularly occupied areas to have direct line of sight to the outdoors when achievable. In cases where the building cannot accommodate direct line of site outdoor views, such as in the restrooms or interior offices, the architect uses Solatube fixtures that channel outside light inside the building.
- Using the standard specified light fixtures uplight to eliminate glare and disperse light more evenly in the space. All light fixtures have photo sensor controls.

Furnishings

The Lottery recognizes the importance of purchasing sustainable products and strives to reduce the environmental impact of products used in business operations and building maintenance. The Lottery's goal is that at least 40% of the cost of goods purchased will meet standards to reduce toxic chemicals in the furnishings and comply with one or more of the following criteria:

- Contain at least 10% post-consumer and/or 20% post-industrial material.
- Contain at least 70% salvaged material from off-site or outside the organization.
- Contain at least 70% salvaged material from on-site through an internal materials and equipment reuse program.
- Contain at least 50% materials harvested, extracted, and processed within 500 miles of the facility/site.
- Consist of at least 50% Forest Stewardship Council (FSC) certified wood.

Cleaning Products

The Lottery has adopted a GCP in accordance with LEED O+M IEQ Prerequisite 3, and credit 3.1 (v.2009). The GCP indicates at a minimum of 30% based on cost, cleaning products and materials used meet sustainability requirements. Cleaning product types subject to the requirement include but are not limited to bio-enzymatic, hard floor, carpet, general purpose, specialty, odor control, disinfectants, disposable janitorial paper products, trash bags and hand soaps.

Cleaning Procedures

The Lottery has adopted a GCP in accordance with LEED O+M IEQ Prerequisite 3, and credit 3.1 (v.2009). The GCP indicates at a minimum of 30% based on cost, cleaning products and materials used meet sustainability requirements. The GCP addresses:

- Responsible Parties
- Quality Control
- Cleaning Products and Materials
- Cleaning Equipment
- Equipment Purchasing Criteria
- Equipment Record Keeping
- Hard Floor and Carpet Maintenance
- Entryway Systems Maintenance
- Hand Hygiene
- Handling and Storage of Cleaning Chemicals
- Use of Chemical Concentrates and Dilution Systems
- Dispensing Equipment Protocol
- Dispensing Equipment Maintenance
- Staffing and Training
- Vulnerable Building Occupants
- Occupant Feedback and Evaluation of New Technologies

HVAC Operation

The Lottery has ensured the HVAC systems provide no less than required minimum outdoor air requirements.

All HVAC systems are inspected annually, and all inspections and maintenance are documented in the Lottery's automated maintenance management system. The inspections include:

- Verifying minimum outdoor airflows by checking damper positions.
- Confirming that air filters are cleaned and replaced based on manufacturer's specified static pressure drop.
- Verifying air filters used have a MERV 8 pre-filter with MERV 13 bag filters.
- Performing weekly inspections during morning walk-throughs to verify that all outdoor dampers, actuators, and linkages are operating properly.
- Inspecting hot water coils on an annual basis.
- Inspecting the air handler quarterly to make sure it is clean and free of leaks.
- Ensuring a contracted company inspects cooling towers on a quarterly basis.
- Confirming cooling tower plumes are further than 25 feet from the building.

The Lottery purges the building with outdoor air enough for three complete air changes from 3:00 a.m. to 6:00 a.m. every morning and monitors the HVAC system through the Building Automation System (BAS).

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.

The Lottery has adopted an Integrated Pest Management Policy & Program in accordance with LEED IEQ standards. The following six elements are addressed in the program:

- Monitoring
- Recordkeeping
- Action Levels
- Prevention
- Tactics Criteria
- Evaluation
- Service reports from contractor are reviewed monthly.

Table 5.4: Pest Control Contracts

Pest Control Contractor	IPM Specified (Y/N)
Neighborly Pest Control – Headquarters, Sacramento District Office, Northern Distribution Center	Y
Western Exterminator – Southern Distribution Center, Rancho Cucamonga District Office, San Diego District Office, Santa Fe Springs District Office, Milpitas District Office.	Y
Terminix – Fresno District Office, Richmond District Office, Chatsworth District Office, Costa Mesa District Office	Y

Waste and Recycling Programs

California's Department of Resources Recycling and Recovery (CalRecycle) brings together 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. Every California Lottery location has 28-quart recycle bins at each workstation. All break rooms located in Lottery district offices and distribution centers have receptacles and battery recycle bins. The headquarters location has 3-stream bins (trash, recycle and compost) in all 6 break rooms.

Recycling

Recycling is the practice of collecting and diverting materials from the waste stream for remanufacturing into new products, such as recycled-content paper. Other recycling efforts include such things as beverage containers, glass, plastics (#3-7), carpet, etc. As stated above, every Lottery location has recycle bins at every workstation, breakroom, and includes battery recycling bins. This is supported by signage throughout every Lottery location, including direction on what is considered recyclable and what is not.

Waste haulers in California do not want to accept many forms of mixed paper as recyclable like in years past. This is a nationwide issue. This refers to Lottery ticket shredding. The waxy scratch-off coating is technically not recyclable; however, the Lottery's shredding contractor is able to include shredded tickets with all the other paper they collect and send to their processing facility to be recycled. The Lottery tickets make up such a low percentage that they don't go over their contamination rate threshold by including them. So, the tickets do get recycled.

Organics Recycling

State agencies must abide by AB 1826 which requires that state agencies arrange for recycling services for the following types of organic material:

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

This new law requires that each state agency recycle organic material on or by the following dates based on amount of materials generated:

- 8 or more cubic yards of organic material per week--April 1, 2016
- 4 or more cubic yards of organic material per week--January 1, 2017
- 4 or more cubic yards of solid waste per week--January 1, 2019
- 2 or more cubic yards of solid waste per week, if statewide disposal of organic waste is not decreased by half--January 1, 2020

Organics such as green waste/landscape waste are hauled by the landscape contractor to their recycle facility in accordance with SB 1383. Food scraps, food soiled paper and non-hazardous wood waste are hauled by the solid waste management contractor. There are compost bins located in the break room on each floor at headquarters for food scraps and food soiled paper. These bins are labeled with specific directions on what can/cannot be composted. We have minimal contamination due to labeled bins but if this does occur, the pieces are identified and sorted accordingly.

Hazardous Waste Materials

The Lottery uses local recyclers in the southern and northern parts of the state to recycle its e-waste. E-waste is collected from the Lottery locations and stored at both distribution center warehouses until enough has been collected to warrant a pickup by the recycler. Uninterruptible Power Supply and fire system batteries are collected by Engineering and Maintenance staff at the Lottery and are also disposed of at a local recycler. Additionally, the Lottery collects small batteries at its locations throughout the state which are then sent out for recycling.

Material Exchange

The California Lottery is not allowed to donate items or use DGS' state surplus. The Lottery's surplus office furniture is reused throughout the state or sold through a contracted auction company. The Lottery stores surplus items at the distribution centers and ships to Lottery locations that need surplus items. The Lottery also gives furniture items to other agencies when the items cannot be auctioned.

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.

See above section, Material Exchange, second paragraph, addressing exchange/reuse.

Training and Education

The Lottery notifies suppliers of our sustainability efforts by way of introduction to our LEED certification status and incorporating policy and sustainability goals into our Service Agreements/Contract Scope of Work documents. Employees are notified of Lottery sustainability efforts by way of policy, programs, signage, and education.

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
3.4	0.25	0.26	38.27	38.27	0%

Note: The California State Lottery is well below its target of 3.4 lbs. per person per day.

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.

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.

The Lottery's Sustainable Purchasing policy sets forth the following purchasing goals:

- Ongoing consumables (office supplies and paper goods) – Goal 60% by cost
- Durable goods (office equipment, electronics, furniture) – Goal 40% by cost
- Lamps – Goal 100%
- Paint Products – Goal 100%
- Janitorial Equipment – Goal 30%
- Janitorial Supplies – Goal 30%

Measure and Report Progress

The Lottery received confirmation from the Department of Resources Recycling and Recovery (CalRecycle) in November 2010 that based upon the statutes noted in the Lottery Act, it is not subject to the State Agency Buy Recycled Campaign (SABRC) reporting requirements of the Public Contract Code. It was also determined that the State Agency requirements of AB 75 (located in the Public Resources Code) are not impacted by this exemption. The Lottery does not track the expenditures listed in Table 5 and does not have the information available due to this exemption.

Table 5.6: State Agency Buy Recycled Campaign 2020Performance

Product Category	SABRC Reportable Dollars	SABRC Compliant Dollars	% SABRC Compliant
Antifreeze	Not applicable. See above.		
Compost and Mulch			
Glass Products			
Lubricating Oils			
Paint			
Paper Products			
Plastic Products			
Printing and Writing Paper			
Metal Products			
Tire Derived Products			
Tires			

Table 5.7: Commodities Categories with the Greatest Potential to Green

Commodity	2018 Total Spend ($)	2018 Percent EPP Spend (%)	EPP Target (%)
N/A Facilities has not been tracking IT purchases.			

Sustainability Development and Education

The Lottery does not have a Sustainable Purchasing expert nor a single purchasing process. The Procurement Services Section (PSS) is the main unit responsible for securing bids for contracts, service agreements and purchasing of goods. PSS works cooperatively with various Program Divisions to procure items that fall under the sustainable purchasing policy whenever possible. Other program divisions submit procurement requests to the PSS in Operations which ensures all appropriate rules and regulations are followed, processes the documents, and obtains required approvals. Training is determined by the buyer's knowledge, goals, etc., and their management's requirements. Recent hires will be scheduled for training courses in 2022 to provide education in Sustainable Purchasing. The course selected for education is: Environmentally Preferable Purchasing offered through the California Department of General Services.

The Lottery currently does not have one or more procurement staff dedicated to environmentally preferable products.

Total Number of Employees Assigned as Buyers: **356***

Table 5.8: Buyers who have completed EPP Training

CalHR Classification	Total Number of Buyers	Percent Completing EPP Training	Commitment to have buyers complete EPP training (%)
AGPA	4	0	100
SSA	1	0	100

* This number includes Lottery Cal-Card holders.

This discussion is covered in the previous paragraphs under Sustainability Development and Education section.

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.

The Lottery's goal is that the average location efficiency score for all new leases be 10% higher than our average on January 1, 2017.

The Lottery purchased facilities to replace its leased facilities. The Lottery took into consideration if the building's location is near public transportation, main streets and close to freeway access when searching for new facilities. The Lottery has not entered any new leases. Therefore, in Table 5.8 the Lottery will report on the new buildings it has built since 2017.

Table 5.9 shows the Smart Location Score for the facilities indicated. In all but one instance, the Smart Location Index (SLI) reflected an increase in location efficiency. Only in Fresno, did the smart score decrease (previously 59). The SLI ranges from 0-100, where 0 indicates least location efficient site in the region, and 100 indicates the most location efficient site.

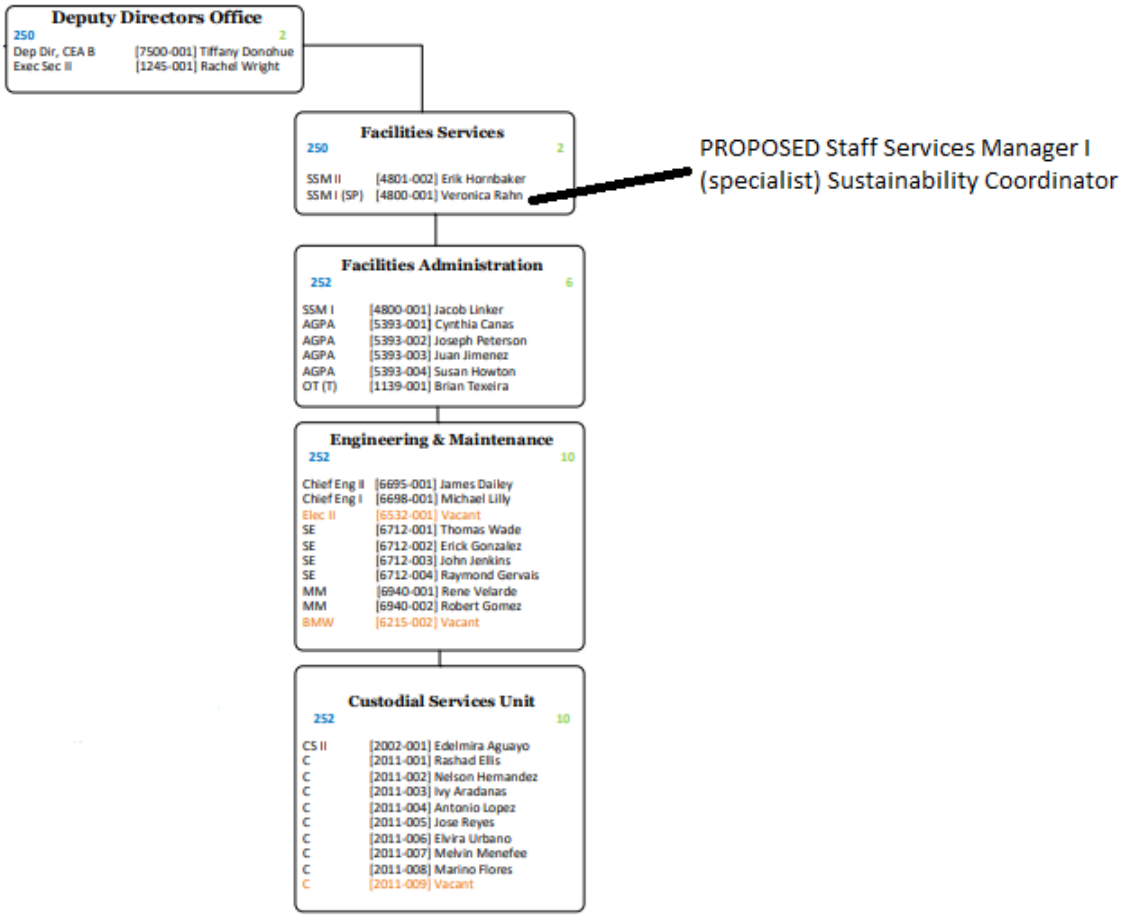
Table 5.9: Smart Location Score for Lottery-owned Buildings

Facility Name	Smart Location Calculator Score
Fresno	57
Rancho Cucamonga	85
Richmond	92
San Diego	74
Costa Mesa	70
Chatsworth	86
Milpitas	61
Santa Fe Springs	66
Sacramento	63
Southern Dist Center	89
Northern Dist Center	73
Headquarters	74
Average	74
Baseline	
% change from Baseline	

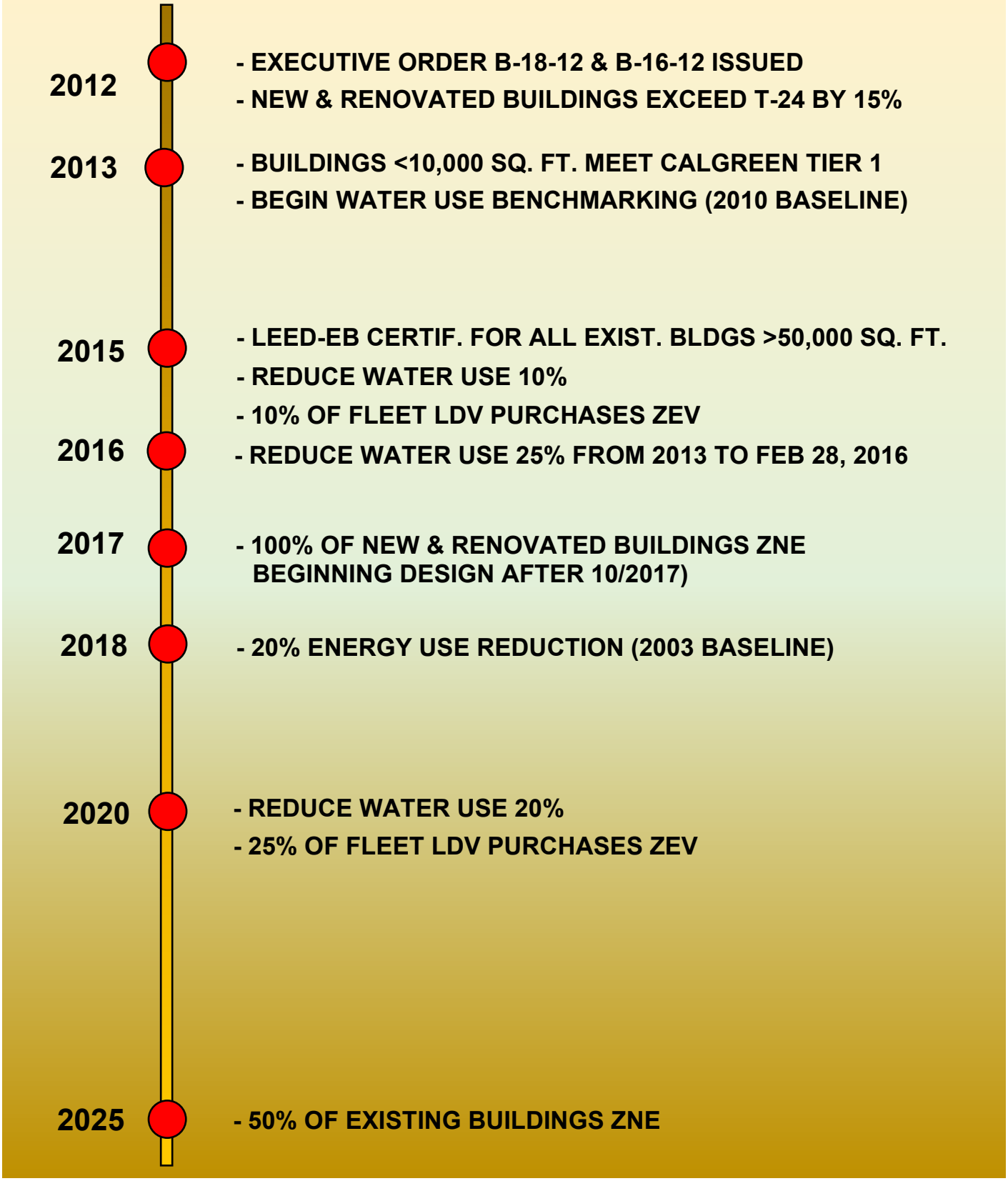
Table 5.10: Lowest Smart Location Score Leases

Facility Name	Smart Location Calculator Score
N/A	

Appendix A – Sustainability Leadership



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 completed

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.

- ☐ Discuss 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	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Understanding Climate Risk at Planned Facilities	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Integrating Climate Change into Department Planning and Funding Programs	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Measuring and Tracking Progress	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Zero Emission Vehicles

Incorporating ZEVs Into the Department Fleet	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Telematics	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Public Safety Exemption	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Outside Funding Sources for ZEV Infrastructure	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Hydrogen Fueling Infrastructure	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Comprehensive Facility Site and Infrastructure Assessments	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

EVSE Construction Plan	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

EVSE Operation	
Operations Division	Dan Minard, Manager, Business Services Unit Edgar Sanchez, Fleet Officer, Fleet Management

Energy

Zero Net Energy (ZNE)	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Veronica Rahn, Manager, Facilities Development Cindy Cañas, Facilities Analyst, Facilities Administration Unit

New Construction Exceeds Title 24 by 15%	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit

Reduce Grid-Based Energy Purchased by 20% by 2018	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Server Room Energy Use	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Demand Response	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Renewable Energy	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Monitoring Based Commissioning (MBCx)	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Veronica Rahn, Manager, Facilities Development Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Financing	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Water Efficiency and Conservation

Indoor Water Efficiency Projects In Progress First initiative	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Joe Peterson, Facilities Analyst, Facilities Administration Unit

Boilers and Cooling Systems Projects In Progress	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Joe Peterson, Facilities Analyst, Facilities Administration Unit

Landscaping Hardware Water Efficiency Projects In Progress	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Joe Peterson, Facilities Analyst, Facilities Administration Unit

Living Landscaping Water Efficiency Projects In Progress	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Joe Peterson, Facilities Analyst, Facilities Administration Unit

Buildings with Urban Water Shortage Contingency Plans In Progress	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Joe Peterson, Facilities Analyst, Facilities Administration Unit

Green Operations

Greenhouse Gas Emissions	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Cindy Cañas, Facilities Analyst, Facilities Administration Unit

Building Design and Construction	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Veronica Rahn, Manager, Facilities Development

LEED for Existing Buildings Operations and Maintenance	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Veronica Rahn, Manager, Facilities Development

Indoor Environmental Quality	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Veronica Rahn, Manager, Facilities Development

Integrated Pest Management	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Veronica Rahn, Manager, Facilities Development

Waste Management and Recycling	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Jake Linker, Manager, Facilities Administration Unit Veronica Rahn, Manager, Facilities Development

Environmentally Preferable Purchasing	
Operations Division	Rachel Weninger, Chief, Acquisition Administration Section Ivan Jen, Manager, Procurement Services & Support

Location Efficiency	
Operations Division	Erik Hornbaker, Chief, Facilities Services Section Cindy Cañas, Facilities Analyst, Facilities Administration Unit

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