

Sustainability Roadmap 2022-2023 Department of Fish and Wildlife

Sustainability Master Plan
and Biannual Progress Report on Legislative
Sustainability Mandates and the
Governor's Sustainability Goals
for California State Agencies
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DEPARTMENT OF FISH AND WILDLIFE ROADMAP

Sustainability Road Map 2022-2023

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EXECUTIVE SUMMARY

The Governor's Sustainability Roadmap is both a progress report and an action plan for implementing sustainable practices within California's state government. "Sustainability" as defined by the roadmap includes acting across five target areas: adapting to the anticipated impacts from climate change, zero-emission vehicles (ZEVs), energy efficiency, water conservation, and green operations.

California Department of Fish and Wildlife's (CDFW) mission is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFW is responsible for over 1,000,000 acres of fish and wildlife habitat, managed through 722 properties throughout the State, primarily occurring at Fish Hatcheries (FH), Ecological Reserves (ER), and Wildlife Areas (WA). These properties provide habitat for a rich diversity of fish, wildlife, and plant species and comprise habitats from every major ecosystem in the State. In addition to managing WAs and ERs, CDFW operates 24 FHs to provide sportfish stock for anglers in California. CDFW is also responsible for other programs, such as private lands conservation programs that assist landowners with the management of wetlands, riparian habitats, native grasslands, and wildlife-friendly farmlands.

Due to the variety of programs and services CDFW offers, its portfolio is very diverse. CDFW has a variety of properties throughout the State, including health labs, FHs, ERs, WAs, field offices, and many more. There are approximately 576 structures located on CDFW owned lands; some of these structures include small hunter check stations, residences, and large offices. Of the 722 properties, CDFW owns 86 facilities and leases 141 spaces (including offices, labs, warehouses, mini storages, Connex boxes, boat berths and aircraft hangers). The rest of the properties are open WAs/ERs with no structures or personnel attached.

CDFW has continued its efforts to take action to save energy and water, increase use of renewable energy, and reduce Green House Gas (GHG) emissions. The five areas in which CDFW continues these efforts are detailed below and presented within this Roadmap.

Climate Change Adaptation

CDFW has many building operations throughout the State; therefore, the Department faces many challenges related to climate change, some of which include rising temperatures, increased precipitation, drought, wildfires, and sea

level rise. Given the variety of challenges, CDFW will need to be prepared to adapt its building management practices accordingly. Where feasible, leased space relocation may be an option; however, CDFW is somewhat limited with relocation, as staff need to be where wildlife lives and thrives.

To assist with preparedness, CDFW has been working with the California Natural Resources Agency (CNRA) and various other partners to address climate change impacts on California wildlife and is a contributor to the Safeguarding California Climate Adaptation Strategy. CDFW is working to incorporate climate science and climate adaptation strategies into its own programs and resource management activities. CDFW is also addressing climate risks to facilities by adapting its operational practices in ways that will reduce its overall carbon footprint and help to mitigate the sources of climate change.

Zero-Emission Vehicles

CDFW employees utilize vehicles in a variety of applications for law enforcement, emergency response, land management, FH support, scientific research, and administrative functions. Common vehicle usage includes, but is not limited to, traveling long distances to remote sites, towing equipment over one thousand pounds, planting fish, and transporting wildlife on remote off-road terrain.

CDFW is making strides in moving away from gasoline and diesel by increasing its ZEV Fleet by 5% each year and has made significant progress in developing EVSE infrastructure at its facilities and increasing the number of charging ports at locations across the State.

Energy

CDFW has three main types of locations, FHs, ERs, and WA. Many of the ERs and WAs have large pumps for wildlife that consume large amounts of energy. The FHs often operate 24 hours and use large chillers that are necessary for fish health and safety. Despite these challenges, and due to the diligent conservation work of staff, CDFW has already met the mandated 20% reduction target and is currently planning a new reduction goal. CDFW understands that conserving resources is extremely important and is committed to reducing energy use and greenhouse gas emissions as much as possible by significantly reducing energy use across the Department.

Water Efficiency and Conservation

Drought conditions require CDFW's increased collaboration with Federal and State water and fish agencies to coordinate overall water operations to reduce impacts to aquatic resources and listed species. This includes frequent coordination meetings, monitoring in-river conditions, evaluating risk of water

operation decisions, collaborative drought contingency planning for the State Water Project and Central Valley Project, participating in State Water Board hearings, and evaluating water operations modeling exercises to address impacts to fish and wildlife.

In addition, CDFW staff is increasing its workload in the review of requests for permit modifications, development of drought voluntary flow agreements with local landowners to reduce water demand, enforcement actions related to illegal diversions and permit violations, and participating in State Water Board hearings related to Temporary Urgency Change Petitions, variance requests to reduce existing instream flow requirements, curtailments, and emergency regulations.

Green Operations

CDFW has been involved in completing 22 projects in Coastal Wetlands, Inland Seasonal Wetlands (including vernal pools), Sacramento-San Joaquin Delta Wetlands, and Mountain Meadows. Roughly 7,477 acres have been restored or enhanced, and approximately 999,950 metric tons of CO₂-equivalent have been sequestered (equal to 8.8 million gallons of gasoline). Of the \$39.2M investments, \$20.35M has directly benefitted priority populations.

Moving Forward

The responsibility for incorporating sustainability into practices, planning, and operations is shared throughout CDFW. In addition to adaptation practices, CDFW has taken many steps to reduce its carbon footprint. Roughly half of its owned buildings have updated to LED lighting and the Department is continuing to look for ways to improve efficiency and energy savings in operations of its FHs and land operations.

CDFW is currently in the process of auditing sites for use of variable frequency drives on many of the Department's pumps which save both energy and water. CDFW has contracted for five solar projects to be completed over the next two years, with an expected energy reduction of 17%.

CDFW is making positive strides towards achieving and exceeding sustainable goals for future generations.

CHAPTER 1 – CLIMATE CHANGE

Department Mission and Climate Change Adaptation

CDFW's mission is to protect California's wildlife and other natural resources, as well as assessing the risk that climate change poses, which has a huge impact on natural lands. When considering how the Department's assets will be affected by a changing climate, CDFW must not only consider its developed infrastructure but also the wildlife and open lands that it manages.

CDFW has been working to address climate change impacts on California ecosystems by integrating climate science and adaptation strategies into its management efforts and decision-making processes wherever possible. At the statewide level, CDFW coordinates with CNRA and others State agencies on climate change adaptation and mitigation-related planning efforts such as the Safeguarding California Climate Adaptation Strategy, the Extreme Heat Action Plan, the Natural and Working Lands Climate-Smart Strategy, and the Scoping Plan. Across Department functions and programs, CDFW is striving to address climate change within the context of species management, conservation planning, grants, science and research, land management, and more.

To support climate adaptation on State-owned lands, CDFW is continuing to incorporate climate change planning into its Land Management Plans (LMPs) using updated guidance for developing LMPs, which includes a section on how to incorporate climate change-related strategies. CDFW is also establishing a long-term climate and biodiversity monitoring network across Department lands, called the [Sentinel Site Network](#). This Network will help the Department evaluate climate impacts to biodiversity on State lands and detect emerging climate-related threats. As part of this project, weather stations will be placed on 39 properties across the State to ultimately assess the pace and magnitude of climatic change, and to further evaluate wildfire and drought risks at these properties and beyond. Data collected through this effort will help verify some of the risk-related rankings provided in this roadmap, which are based on modeled climate projections for the future and will support climate-smart land and facilities management going forward.

Since CDFW has other ways of addressing climate change within wildlife and habitat management, most of this document will focus on the facilities located at these sites. For more information on what CDFW is doing to manage wildlife in these changing conditions, please refer to CDFW's [climate change website](#) or the [California Climate Adaptation Strategy](#).

Climate Change Risks to Facilities

Climate Change Risk Process

DEPARTMENT CLIMATE RISK ASSESSMENT COMPLETED

Assessing Risk from Changing Extreme Temperatures:

Under a changing climate, air temperatures are expected to increase. As a result, facilities will experience higher maximum temperatures and increased minimum temperatures. The following tables list CDFW facilities most affected by changing temperatures.

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)
IDR 6 - BALDWIN LAKE ER	84.7	4.4	39.5	35.1	68.7	64.3
CR 4 - KERN RIVER FH	98.0	4.4	38.0	33.6	67.3	62.9
CR 4 - CANEBRAKE ER	100.8	4.4	36.1	31.7	64.6	60.2
IDR 6 - HOT CREEK FH	86.0	4.4	35.9	31.4	70.7	66.3
CR 4 - HUNTINGTON LAKE PATROL CABIN	76.6	4.4	35.8	31.4	70.5	66.1
CR 4 - SAN JOAQUIN RIVER ER	106.8	4.4	34.7	30.2	63.6	59.2
IDR 6 - MOJAVE FH	103.6	4.4	33.5	29.1	60.6	56.2
IDR 6 - IMPERIAL WA	113.8	4.3	33.3	29.0	64.3	60.0
IDR 6 - FISH SPRINGS FH	100.3	4.4	33.3	28.8	63.4	59.0
CR 4 - NORTH GRASSLANDS WA	103.7	4.4	32.8	28.5	61.5	57.1

Table 1.2: 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)
NCR 2 - HALLELUJAH JUNCTION WA	62.4	68.3	6.0	72.8	10.4
IDR 6 - FISH SPRINGS FH	71.4	77.3	5.9	81.4	10.0
IDR 6 - SLINKARD/LITTLE ANTELOPE WA	58.6	64.4	5.8	68.9	10.3
NR 1 - HONEY LAKE WA	64.9	70.6	5.7	75.3	10.4
IDR 6 - MOJAVE FH	75.7	81.4	5.7	85.4	9.6
CR 4 - CANEBRAKE ER	73.5	79.2	5.6	82.9	9.4
CR 4 - KERN RIVER FH	71.0	76.6	5.6	80.3	9.3
IDR 6 - CAMP CADY WA	81.4	86.9	5.6	90.8	9.4
IDR 6 - BLACK ROCK SPRINGS FH	74.6	80.2	5.5	84.2	9.6
IDR 6 - HOT CREEK FH	58.9	64.4	5.5	68.7	9.8

Table 1.3: 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)
NCR 2 - HALLELUJAH JUNCTION WA	30.0	36.0	6.0	40.6	10.6
CR 4 - HUNTINGTON LAKE PATROL CABIN	27.5	33.5	6.0	38.1	10.5
IDR 6 - SLINKARD/LITTLE ANTELOPE WA	26.3	31.8	5.6	36.5	10.3
IDR 6 - BALDWIN LAKE ER	30.3	35.8	5.5	40.0	9.7
NR 1 - BUTTE VALLEY WA	25.0	30.4	5.5	35.2	10.3

Assessing Risk from Heating Degree Days (HDD) and Cooling Degree Days (CDD)

Table 1.3a: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Heating Degree Days (HDD)

Facility Name	Heating Degrees 1961-1990	Average Modeled Heating Degrees (year), 2031-2060	Change in HDD Historical to Mid-Century	Average Modeled Heating Degrees (year), 2070-2099	Change in HDD Historical to End-Century
CR 4- HUNTINGTON LAKE PATROL CABIN	9424.3	7175.5	-2248.8	5973.2	-3451.1
IDR 6 - SLINKARD/LITTLE ANTELOPE WA	8283.9	6192.9	-2091.0	5057.2	-3226.7
NR 1 - BUTTE VALLEY WA	8971.8	7019.1	-1952.7	5871.1	-3100.7
NCR 2 - HALLELUJAH JUNCTION WA	7020.2	5093.1	-1927.1	4184.4	-2835.8
IDR 6 - HOT CREEK FH	7402.5	5528.1	-1874.4	4524.9	-2877.6

Table 1.3b: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Cooling Degree Days (CDD)

Facility Name	Cooling Degrees 1961-1990	Average Modeled Cooling Degrees (year), 2031-2060	Change in Cooling Degree Days Historical to Mid-Century	Average Modeled Cooling Degrees (year), 2070-2099	Change in Cooling Degree Days Historical to End-Century
IDR 6 - IMPERIAL WA	3958.3	5501.0	1542.7	6597.9	2639.6
IDR 6 - CAMP CADY WA	2795.7	4109.3	1313.5	4993.5	2197.7
IDR 6 - SAN JACINTO WA	1637.7	2841.4	1203.7	3678.3	2040.6
CR 4 - SAN JOAQUIN RIVER ER	1723.8	2875.4	1151.6	3648.8	1925.1
CR 4 - SAN JOAQUIN FH	1639.2	2785.3	1146.1	3556.6	1917.3
CR 4 - LOS BANOS WA	1500.0	2627.2	1127.2	3424.2	1924.2
CR 4 - NORTH GRASSLANDS WA	1531.7	2658.8	1127.1	3452.9	1921.2
CR 4 - LA GRANGE FIELD HABITAT OFFICE	1314.7	2433.1	1118.4	3194.9	1880.2

(Tuolumne River Restoration Center)					
NCR 2 - NORTH CENTRAL HQs – (with American River FH)	1440.5	2524.0	1083.5	3308.0	1867.5
NCR 2 - SUTTER BYPASS WA	1507.4	2578.7	1071.3	3359.6	1852.2

Reporting Narrative on HDD and CDD

CDFW determined which sites are of the greatest concern with regards to Heating Degree Days (HDD) and Cooling Degree Days (CDD) by utilizing climate predicting software tools provided by Cal-Adapt. This analysis enabled CDFW to sort the list of sites by the magnitude of change in HDD or CDD respectively. CDFW then revised the list by focusing on sites which will have a greater ecological impact and/or sites that are the most critical to CDFW operations.

This analysis demonstrated that there are two categories of facilities CDFW operates that are of the greatest concern when evaluating predictive models for changes in HDD and CDD: FHs and WAs/ERs. Rising temperatures and an increase in extreme heat events combine to present a host of issues that require mitigation. For FHs, rising temperatures and an increase in extreme heat events lead to an increased effect on operations. Maintaining habitable water temperatures for fish/spawning activities will be made difficult by hotter temperatures and will require additional energy use. For WAs and ERs, rising temperatures and an increase in extreme heat events, combined with other climatic changes, can lead to negative impacts to wildlife such as direct, physiological stress to species, decreased food and water availability, habitat degradation, accelerated spread of certain pathogens, diseases, or invasive species, and more.

When evaluating this data to glean out trends for specific geographic regions CDFW can draw conclusions regarding CDD and HDD. When evaluating the predictive model for CDD, it appears that CDFW Regions 2 (North Central Region) and 4 (Central Region) are the most at risk. Region 2 contains the North Central Valley and Region 4 contains the remainder of the Central Valley. These areas of the State with the highest population density combined with highest average temperatures are the areas that CDFW will see the greatest increase in CDD. CDFW observed a similar (though inverse) trend when evaluating predictive data forecasts for HDD: The regions which populate this list are predominantly Region 1 (Northern Region), containing the coldest and most mountainous parts of California. The other sites on that list are in areas that also experience severe cold temperatures. In a similar but inverted pattern, the data

shows that the areas that experience the coldest climates are predicted to see the greatest increase in HDD.

Plan to Mitigate HDD and CDD

CDFW has not yet developed a plan to specifically mitigate the effects of increased HDD and CDD. However, individual facilities may have mitigation strategies incorporated into their operating procedures or LMPs to address climate change more broadly, including the effects of increased extreme temperatures and HDD/CDD. Several of the properties listed here are “Sentinel Sites” where CDFW is launching joint climate and biodiversity monitoring, so CDFW will have more data on these properties in the future.

Planning Outline PO1:a: Plan for Top 5-10 Facilities HDD and CDD Mitigation

Facility Name	2030
CR 4- HUNTINGTON LAKE PATROL CABIN	No Plan
IDR 6 - SLINKARD/LITTLE ANTELOPE WA	No Plan
NR 1 - BUTTE VALLEY WA	No Plan
NCR 2 - HALLELUJAH JUNCTION WA	No Plan
IDR 6 - HOT CREEK FH	No Plan
IDR 6 - BALDWIN LAKE ER	No Plan
NR 1 - ASH CREEK WA	No Plan
NR 1 - HONEY LAKE WA	No Plan
NR 1 - MOUNT SHASTA FH	No Plan
NR 1 - SOUTH SPIT WA-FAY SLOUGH	No Plan

Planning Narrative to Mitigate HDD and CDD

CDFW contributed to the State's plan for mitigating the effects of extreme heat events, titled “[Protecting Californians From Extreme Heat: A State Action Plan to Build Community Resilience](#).” Among other actions, this plan calls for CDFW to: “Identify relevant heat-related risks to the state's fish hatcheries and upgrade facilities accordingly to operate efficiently under extreme heat and drought conditions while protecting vulnerable fish populations; provide support for tribal hatcheries seeking to undertake these actions.” CDFW has already taken steps to implement this plan and to respond to and prepare for extreme heat and drought-related stressors to hatcheries and ecosystems. For more information on these activities, refer to [CDFW's Drought-Related Actions website](#).

CDFW has not developed a separate plan to mitigate the effects of increased HDD and CDD. However, CDFW will collaborate with other State agencies, including the Department of General Services (DGS), to determine which actionable steps would be the most effective and appropriate for our facilities,

consistent with the goals laid out in the Extreme Heat Action Plan and existing efforts to plan for drought and extreme heat events. CDFW will have this plan established by the publishing of the next Roadmap in 2025.

Assessing Risk from Urban Heat Islands

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

Table 1.4: Facilities in Urban Heat Islands

Facility Name	Located in an Urban Heat Island (Yes or No)	sq. ft. of Surrounding Hardscape or Pavement if greater than 5000 sq. ft.
NO FACILITIES AT RISK		

Reporting Narrative on Urban Heat Islands

Twenty-four percent of CDFW-owned facilities are in Urban Heat Islands but do not have greater than 5000 sq. ft. of surrounding hardscape or pavement. Of these locations, about half are WAs/ERs. These locations are generally wide-open undeveloped spaces with a small building footprint, and therefore, contribute very little to the Urban Heat Island. For leased buildings there is little that CDFW has control over, but when the lease agreements are up for renewal, CDFW can request the landlords modify buildings to increase energy efficiency. It is also possible to request some of these improvements in new lease agreements. CDFW's owned facilities are very small and have much less of a contribution to the Urban Heat Islands. Nonetheless, CDFW will continue to do its part whenever possible to incorporate these strategies.

Planning Outline for Urban Heat Islands Mitigation:

CDFW is partnering with DGS and Enersponse (a vendor that reduces energy usage during peak periods) in a Demand Response Strategy. Currently, PO1:b is still under determination.

Planning Outline PO1:b: Plan for Urban Heat Islands Mitigation

Facility Name	Mitigation or Plan	Est. Implementation Date
TO BE DETEREMINED		

Planning Narrative for Urban Heat Islands Mitigation

CDFW is obtaining a list of all CDFW sites that will benefit from a Demand Response Strategy, which will assist in implementing a plan for Urban Heat Islands.

Assessing Risk from Changes in Precipitation

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)
BDR 3 - EDEN LANDING ER	16.3	18.2	1.9	19.8	3.5	3.7	3.3	3.8
BDR 3 - KNOXVILLE WA	24.9	30.9	0.2	33.6	0.4	5.4	6.9	8.3
IDR 6 - BLACK ROCK SPRINGS FH	4.6	5.6	0.2	6.5	0.4	3.5	4.0	5.4
IDR 6 - SLINKARD/LITTLE ANTELOPE WA	19.5	23.8	0.2	26.8	0.4	5.2	6.5	7.4
IDR 6 - MOUNT WHITNEY FH	5.5	6.7	0.2	7.8	0.4	3.7	4.6	6.0
BDR 3 - NAPA FO (Silverado Fisheries Base)	33.3	40.1	0.2	44.2	0.3	7.4	8.6	11.6
NR 1 - MOUNT SHASTA FH	44.7	53.3	0.2	55.5	0.2	7.6	8.5	9.3
BDR 3 - WARM SPRINGS FH	50.2	59.7	0.2	64.8	0.3	9.4	10.6	11.9
BDR 3 - DELTA OPERATIONS BASE	12.9	15.4	0.2	16.4	0.3	3.3	2.8	3.4
BDR 3 - PETALUMA MARSH WA	25.4	30.0	0.2	33.2	0.3	6.0	6.5	7.4

Reporting Narrative on Precipitation Impacts

Predictive modeling shows an increase in precipitation across nearly all CDFW facilities. When it comes to CDFW-owned facilities, the two types that stand to be the most heavily affected by increasing precipitation are FHs and WAs/ERs.

WAs/ERs are heavily impacted by precipitation. When there is not enough rainfall, these types of facilities suffer in several ways. Most notably, wildlife populations are destabilized as the supply of potable water decreases. Decreased rainfall is also associated with lower reservoir levels and reduced flow, which translates to less habitat for fish and waterfowl in WAs/ERs. Drier conditions also create fuel for wildfires, which can quickly endanger an entire CDFW facility. Given the State's recent history of drought, we predict that in the short-term increases in precipitation will result in primarily net positive changes across these types of facilities.

However, if predictive models do not accurately forecast the level of change, or if the trend continues too long without correction, the result could become net negative. An overabundance of rainfall in WAs/ERs could lead to flooding which has numerous negative effects: loss of habitat, loss of access to facilities, damage to structures, risks to occupant health and safety and soil erosion are just some of the potential dangers.

Planning Outline to Mitigate Precipitation Changes

Planning Outline PO1:c: Plan for Top 5-10 Facilities Most Impacted by Projected Changes in Precipitation

Facility Name	Extreme Precip (2030) Plan or strategy
CR 4 - SAN JOAQUIN RIVER Salmon Restoration Program	No Plan
NR 1 - ASH CREEK WA	No Plan
IDR 6 - FISH SPRINGS FH	No Plan
CR 4 - KERN RIVER FH	No Plan
NCR 2 - OROVILLE WA	No Plan

Planning Narrative on Precipitation Changes Mitigation Plan

There are many actions CDFW is taking to mitigate the effects of precipitation increases. One such action is creating rain capture systems. For example, one of the WAs, where salt contamination is a current threat, has created an extensive roof rain capture system that feeds into a large capture pond that is used for watering the facilities and water for wildlife. The pond can hold two years' worth of water. Other locations are using or investigating rain capture systems as well.

Another action CDFW can take is to locate facilities on higher ground to protect them from flooding, especially where expensive equipment is stored. Consideration will be given to relocating leased sites; however due to specific habitat needs of wildlife, alternative sites may not be available.

Assessing Risk from Sea Level Rise

Table 1.6: All Facilities at Risk from Rising Sea Levels

Facility Name	Tide Chart Region	2050 Water Level (ft)	Exposed in 2050? (y/n)	2100 Water Level (ft)	Exposed at 2100? (y/n)
BDR 3 - PETALUMA MARSH WA	San Francisco Bay	1.80	2.24	3.02	3.53
BDR 3 - EDEN LANDING ER	San Francisco Bay	1.80	2.24	3.02	3.53
BDR 3 - NAPA-SONOMA MARSHES	San Francisco Bay	1.80	2.24	3.02	3.53

Reporting Narrative on Sea Level Rise Impacts

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.

Like the flooding that occurs from increased precipitation, sea level rise has the potential to cause flooding that would require relocation of CDFW sites or other adaptation actions. Additionally, rising seas can lead to saltwater intrusion into freshwater systems and resources, altering salinity levels. CDFW is placing two tide gauges at coastal properties (Upper Newport Bay ER and Napa-Sonoma Marshes WA) to help monitor and document sea level-rise along these areas of the coast and inform conservation planning efforts at these locations.

Planning Outline to Mitigate Sea Level Rise Impacts

Planning Outline PO1:d: Planning for Sea Level Rise impacts Mitigation

Facility Name	Tide Chart Region	Plan 2030
NO DATA		In progress - TBD

Planning Narrative of Sea Level Rise Impact

In 2022, the State produced the [State Agency Sea-level Rise Action Plan for](#)

[California](#). CDFW was a contributor to this plan, which outlines several important actions for agencies to take to minimize the impacts of sea-level rise on State resources. Included for CDFW is a plan to: “Evaluate relative climate vulnerability of coastal wildlife areas and ecological reserves, including sea-level rise-related risks to biodiversity (including endangered and threatened species) and state infrastructure.” CDFW will work with partners to complete this evaluation as it may inform adaptation actions at high-risk properties.

Unfortunately, it is not possible to relocate all projects and locations that fall in these at-risk areas, as this is where wildlife lives. However, measures can be taken to minimize the effects, such as locating buildings and other sensitive equipment on higher ground and elevation of natural and manmade infrastructure to accommodate the projected rise. As mentioned before, climate change adaptation has been incorporated into CDFW wildlife planning for some time. An example of this is a project that required repairing an earthen wall for a wetland restoration. When it was rebuilt, the project took consideration of how the sea level would rise in that area and built the wall higher than was previously projected to accommodate the rise. CDFW is beginning to incorporate this planning on the facilities side as has already been done with wildlife projects. Managed retreat (planned retreat of facilities away from the shore) and living shorelines are other strategies that may need to be employed at coastal properties.

Assessing Risk from Wildfire

Table 1.7: Top 5-10 Facilities Most at Risk to Current Wildfire Threats by Fire Hazard Severity Zone

Facility Name	Fire Hazard Severity Zone Designation (low, medium, high, very high)
IDR 6 - FILLMORE FH	NO DATA
BDR 3 – YOLO BYPASS WA	NO DATA
BDR 3 - EDEN LANDING ER	Moderate
NCR 2 - THERMALITO ANNEX	Moderate
CR 4 - MERCED RIVER SPAWNING HABITAT FH	Moderate
NR 1 - SMITH RIVER HOUSE	Moderate
NR 1 - DEER CREEK (FISH SCREENS)	High

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

Facility Name	Acres Burned (1961-1990)	Acres Burned (2031-2060)	Acres Burned (2070-2099)
CR 4 - HUNTINGTON LAKE PATROL CABIN	4.1	22.6	105.5
CR 4 - CARRIZO PLAINS ER	18.1	21.0	18.3
SCR 5 - RANCHO JAMUL ER	13.0	19.7	26.1
NR 1 - CRYSTAL LAKE FH	13.0	17.9	24.0
NR 1 - TRINITY RIVER FH	10.5	17.7	37.1
SCR 5 - SAN FELIPE VALLEY WA	14.2	17.6	17.4
NR 1 - DEER CREEK (FISH SCREENS)	11.3	16.7	33.7
IDR 6 - FILLMORE FH	12.2	16.0	14.8
NR 1 - IRON GATE FH	14.5	15.5	11.3
BDR 3 - EDEN LANDING ER	5.1	15.3	23.0

Reporting Narrative on Wildfire Risks

Wildfires pose a serious threat to many CDFW facilities. In the cases of FHs, wildfires have the potential to completely devastate an operation. The damage caused by intense heat and smoke can easily destroy an entire breeding season, essentially nullifying an entire year's worth of operations. In the cases of WAs/ERs, wildfires can consume large tracts of habitat, which has numerous deleterious effects: less food for herbivorous animals means lower populations, which then reverberates up the entire food chain. This issue is compounded by the reduction in habitat for wildlife populations which remain.

Reduced wildlife populations and damaged habitat result in a decrease in the ability of a WA/ER to perform its function. A WA/ER with damaged habitat cannot perform the function of preserving ecosystems nor can it provide recreational wildlife opportunities to the public. Lastly, wildfire also creates health and safety hazards for site occupants at all types of facilities by rapidly and violently altering the landscape, resulting in new undiscovered hazards such as partially felled trees which create not only a safety hazard but also can impact facility access. Smoke inhalation from wildfire also poses a noteworthy danger to occupant health.

The nature of our mission statement and operational infrastructure places CDFW at an elevated risk of wildfire damage because so many of our facilities are in isolated areas. This not only increases the likelihood of damage by wildfire, but

also increases their potential damage severity due to the difficulty of fighting fires in remote locations.

Planning Outline to Mitigate Wildfire Risks

Planning Outline PO1:e: Plan for Mitigating Wildfire Risk by Acres Burned for Top 5-10 Facilities Most at Risk

Facility Name	Plan 2023-2030
CR 4 - HUNTINGTON LAKE PATROL CABIN	YES
CR 4 - CARRIZO PLAINS ER	YES
SCR 5 - RANCHO JAMUL ER	YES
NR 1 - CRYSTAL LAKE FH	YES
NR 1 - TRINITY RIVER FH	YES
SCR 5 - SAN FELIPE VALLEY WA	YES
NR 1 - DEER CREEK (FISH SCREENS)	YES
IDR 6 - FILLMORE FH	YES
NR 1 - IRON GATE FH	YES
BDR 3 - EDEN LANDING ER	YES

Planning Narrative of Wildfire Risk Mitigation Plan

Wildfires pose a serious risk to CDFW, as many of our facilities are in remote locations. Several of our sites are in high fire risk areas. Even if the area is not located in the immediate fire risk area, several locations are located far enough out of major urban areas that smoke may still pose a serious problem. Due to wildfires in past years, many of CDFW's sites had to shut down or reduce operations because of dangerous smoke levels. This impacts operations and the health and safety of staff. In 2020-2021 there were a total of 30 properties burned by wildfires with a total acreage burned for CDFW of roughly 43,610 acres.

Further, to decrease the risk of fire, the utilities are implementing power safety shutdowns where they will preemptively shut down power due to high risk of wildfire. These shutdowns can last anywhere from a couple hours to up to a week. These power shutdowns cause loss of productivity, hardships to the staff that live in these areas, and force CDFW to use more fossil fuels to power generators. Further, several of the areas at risk are FHs that need to maintain operations 24 hours per day to keep the fish alive. Routine back up power at these sites is usually limited to approximately 48 hours, and anything longer

means contingencies must be put in place. Power shutdowns to these sites can be especially dangerous and costly.

A CDFW task force was created in 2019 to address and plan for emergencies, especially wildfire situations. In addition, CDFW is researching longer term solutions such as Microgrid technology to decrease reliance on the grid and ensure self-sufficiency should the need arise.

In January 2021, Governor Newsom released the [California Wildfire and Forest Resilience Action Plan](#). The plan provides a framework, strategy, and specific goals that must be achieved to improve wildfire resilience and forest health throughout the State. To support the recommendations in the Action Plan, over \$80 million has been directed to CDFW to increase the pace and scale of wildfire resiliency actions. Activities carried out with this funding will increase resiliency of Department lands to wildfire and help protect associated facilities and infrastructure investments as a result.

The types of actions taken with this funding include investing in new and upgraded fuels management equipment, restoring native vegetation, and reintroducing low intensity fires as a form of fuel management. Examples of actions already taken to date include working with the California Department of Forestry and Fire Protection to create fuel breaks whereby dense vegetation is trimmed, piled, and burned to reduce wildfire risk to nearby homes and increase growth success for rare plants, as well as the implementation of grazing by cattle, sheep, and goats to reduce wildfire risk on grasslands. For more information visit the Department's [Wildfire Resiliency Initiative website](#).

Understanding Climate Risk to Planned Facilities

CDFW does not currently have a formal climate risk assessment process for planned facilities, where facilities refer to buildings or built infrastructure. However, CDFW considers climate change-related risks during the land acquisition process. The Department's land acquisition guidelines include considerations for how climate change might impact key wildlife and habitat values and/or facilitate adaptation of species and habitats. During the acquisition process, an evaluator will consider many of the climate variables listed below as part of a holistic approach to determining whether and how climate change may affect a property and the natural resources it supports before pursuing acquisition.

Tables 1.9: a-g: Climate Risks to New Facilities

a.1 Annual Mean Max. Temperature

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031- 2060)	Annual Mean Max Temp. (2070- 2099)	Change from Historical to Annual Mean Max. Temp (2070- 2099)
NO NEW FACILITIES					

a.2 Annual Mean Min. Temperature

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)
NO NEW FACILITIES					

b. Annual Mean Max. Precipitation

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)
NO NEW FACILITIES				

c. Largest Increase in Extreme Heat Events

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
NO NEW FACILITIES				

d. Sea Level Rise

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
NO NEW FACILITIES					

e. Wildfire Risks by Fire Hazard Severity Zone

Facility Name	Current Fire Hazard Severity Zone (low, medium, high, very high)
NO NEW FACILITIES	

f. Wildfire Risk by Acres Burned

Facility Name	Acres Burned (1961-1990)	Acres Burned (2031-2060)
NO NEW FACILITIES		

g. Risk from HDDs/CDDs

Facility Name	Heating/Cooling Degree Days (1961-1990) (HDD/CDD)	Heating/Cooling Degree Days (2031-2060) (HDD/CDD)
NO NEW FACILITIES		

Planning Narrative for Understanding Climate Risks to Planned Facilities

CDFW is currently taking climate change into consideration during the acquisition evaluation process for new land. CDFW utilizes climate data from Cal-Adapt to further assess possible future conditions at planned facilities where needed. This may include data on future temperature HDD, CDD, drought, wildfire risk, and sea-level rise where applicable.

Understanding climate risk to planned properties and addressing that risk within the context of investment and land acquisition decisions is inherently challenging. A property might be considered for acquisition because it supports sensitive species or habitats that are vulnerable to a variety of stressors, including climate change. The same climate factors that act as stressors to these species and habitats are likely to impact the facility itself as well. However, CDFW is committed to minimizing both climate risks and risks to long-term investments by supporting its decisions with the best available science and information.

Understanding the Potential Impacts of Facilities on Communities

Reporting on Facilities located in Disadvantaged Communities

Table 1.10: Facilities Located in Disadvantaged Communities

Facility Name	CalEnviroScreen Score	Is it located in a disadvantaged community? Yes/No
CR 4 - NORTH GRASSLANDS WA	80-90%	Yes
CR 4 - LOS BANOS WA	80-90%	Yes
CR 4 - MENDOTA WA	80-90%	Yes
CR 6 – IMPERIAL WA	80-90%	Yes

Planning Narrative for Facilities in Disadvantaged Communities

Eleven percent of CDFW's owned facilities are in disadvantaged communities based on [California Office of Environmental Health Hazard Assessment's \(OEHHA\) CalEnviroScreen](#) scores. CDFW interacts with the communities in many ways, providing recreation, access to natural lands and wildlife, and education. In addition, through hunting and fishing, CDFW provides communities access to food. CDFW also supports the communities by assisting with mitigation of Urban Heat Islands through the addition of greenspaces and natural infrastructure. CDFW also provides the communities with education on the natural environment, climate change, and actions that individuals can take to help mitigate the problem. In the event of an emergency, CDFW will assist however possible, but it is likely in the event of flooding and such, these locations will be the first to flood. In addition, CDFW is increasing solar projects in these areas, which will also help to decrease greenhouse gas emissions.

Finally, several of CDFW grant programs fund projects that directly and/or indirectly benefit Disadvantaged Communities (DACs) (e.g., Prop 1 and the Wetland/GHG program). This information is usually collected during project proposal submission (as a question in the project guidelines and potentially as a scoring criterion).

New Facilities and Disadvantaged Communities and Urban Heat Islands

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)
No New Facilities		

Integrating Climate Change into Department Funding Programs

Table 1.12: Integration of Climate Change into Department Planning

Name of Plan	Have you integrated climate? Yes/No	If no, when will it be integrated? Date
Safeguarding California	Yes	CDFW contributed to this collaboration
Land Management Plan (LMP)	Yes	
2015 State Wildlife Action Plan	Yes	
2025 State Wildlife Action Plan	No	This plan is in progress. Date is TBD

Reporting Narrative for Integrating Climate Change into Department Planning Process

CDFW has integrated climate change into its LMP efforts by developing guidance for staff on how to address climate change in LMPs within its "Guide and Annotated Outline for Writing Land Management Plans." This internal guidance document calls for each LMP to include a discussion of climate change-related impacts and risks to the property and the inclusion of climate change adaptation strategies to minimize said risks. Guidelines were developed and are maintained by the Department's Land Management Program. Regional land management staff are responsible for drafting new LMPs.

CDFW has also integrated climate change into the [State Wildlife Action Plan \(SWAP\)](#), which is a statewide blueprint for conservation in California. This plan includes many strategies for minimizing the impacts of climate change in all aspects of natural resource management. The first SWAP was developed in 2005 and is updated every 10 years. The Department's Science Institute will oversee the 2025 revision to the plan.

Planning Narrative for Integrating Climate Change into Department Planning Process

CLIMATE CHANGE INTEGRATION INTO DEPARTMENT PLANNING PROCESS
ACHIEVED. 2025 SWAP update will be incorporated, once completed.

Community Engagement and Planning Processes

Table 1.13: Community Engagement and Planning Processes

Name of Plan	Does this plan consider impacts on vulnerable populations? Yes/No	Does this plan include coordination with local and regional agencies? Yes/No	Does this plan prioritize natural and green infrastructure? Yes/No
Natural Community Conservation Planning	Yes	Yes	Yes
Regional Conservation	Yes	Yes	Yes
Investment Strategies Program	Yes	Yes	Yes

Reporting Narrative for Community Engagement and Planning Processes

Natural Community Conservation Plans (NCCPs) are permits and are subject to CEQA. The NCCP Act (Fish and Game Code §§ 2800-2835, as amended) requires establishment of a public participation process through plan development and review, including public review and comment periods and outreach, “...for persons interested in the plan, including landowners, with an emphasis on obtaining input from a balanced variety of affected public and private interests, including state and local governments, county agricultural commissioners, agricultural organizations, landowners, conservation organizations, and the general public.” While anyone may undertake NCCP, it must be in cooperation with a local agency that has land use permit authority over the activities. CDFW Regional staff serve as the leads on coordinating and developing NCCPs, and typically have a primary plan contact.

NCCPs are broad-based regional plans, which would facilitate efficient natural/green infrastructure planning. They focus on early coordination and

cooperation between public agencies, landowners, and other interests and provide the opportunity to coordinate on minimizing and addressing impacts.

Planning Narrative for Community Engagement and Planning Processes

COMMUNITY ENGAGEMENT AND PLANNING PROCESSES ACHIEVED

Climate Change Implementation Planning in Funding Programs

Table 1.14: Climate Change Implementation Planning in Department Funding Programs

Name of Grant or Funding Program	Have you integrated climate change into program guidelines? Yes/No	If no, Date it be integrated?	Does this Funding Program consider impacts on vulnerable populations? Yes/No	Does this Funding Program include coordination with local and regional agencies? Yes/No
Fisheries Restoration Grant Program (FRGP)	YES	N/A	N/A	YES
Greenhouse Gas (GHG) Reduction Grant Program	YES	N/A	N/A	YES
Proposition 1 Restoration Grant Program	YES	N/A	N/A	YES
Proposition 68 Restoration Grant Programs	YES	N/A	N/A	YES
Water Storage Investment Program	YES	N/A	N/A	YES

Reporting Narrative for Climate Change Implementation Planning in Funding Programs

CDFW has integrated climate change into many of its grant program guidelines and project scoring criteria. For more information visit the CDFW's [Watershed Restoration Grants Branch website](#).

Planning Narrative for Climate Change Implementation Planning in Funding Programs

NO GRANT OR OTHER FUNDING PROVIDED

Measuring and Tracking Progress

Reporting Narrative on Measuring and Tracking Progress

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

Even though CDFW has been incorporating climate change analysis into LMPs and other projects for wildlife there is more to be done. Tracking resilience and adaptation can be tricky given that the results are happening over long periods of time, however measuring how species are thriving in the WAs in general is a way to track progress. Depending on the type of wildlife and location, there are different targets, goals, and plans to ensure that species are thriving. The Department is still in the early stages of implementing life cycle cost into planning and implementing adaptation measures for facilities. On the facilities side, CDFW intends to continue using the current tracking systems [Energy Star Portfolio Manager](#) for energy and water usage and [The Climate Registry Information System \(CRIS\)](#) for GHG emissions to assess progress. CDFW will incorporate new technology as it becomes available and is cost effective.

CHAPTER 2 – ZERO-EMISSION VEHICLES

Department Mission and Fleet

This Zero Emission Vehicle (ZEV) Report and Plan demonstrates to the Governor and the public the progress CDFW has made toward meeting the Governor's Sustainability Goals related to ZEVs and reduction of GHGs. This report identifies successful accomplishments, ongoing and future efforts, and outstanding challenges.

CDFW employees utilize vehicles in a variety of applications for law enforcement, emergency response, land management, FH support, scientific, and administrative functions. Common vehicle usage includes, but is not limited to, traveling long distances to remote sites, towing equipment over one thousand pounds, planting fish, and transporting wildlife on remote off-road terrain.

CDFW Law Enforcement Division (LED) officers and Office of Spill Prevention and Response (OSPR) employees use 4-wheel drive pickups and sport utility vehicles (SUVs) to access remote areas of the State, patrol the back country, respond to oil spills and other deleterious materials, and ensure regulatory compliance with federal and State laws. Additionally, vehicles are often used to tow trailered boats, all-terrain vehicles (ATVs) and snowmobiles for patrol and response on the State's 1,100 miles of coastline, 30,000 miles of streams, and other State and public off-road lands not accessible by standard vehicles.

Scientific and non-scientific field employees also use 4-wheel drive pickups and SUVs to access remote areas of the State. Their duties consist of conducting field studies of fish and wildlife populations, assessing the impacts of activities with potential impacts to habitat, conducting surveys of hunters and anglers, transporting supplies, and a variety of additional activities. CDFW staff at FHs would use their vehicles for transporting equipment and deploying fish into lakes or other waterways. Vehicles are used daily in peak season and less often during off-season. Vehicles may tow trailered boats, ATVs, snowmobiles, sprayers, pumps, and a variety of scientific equipment.

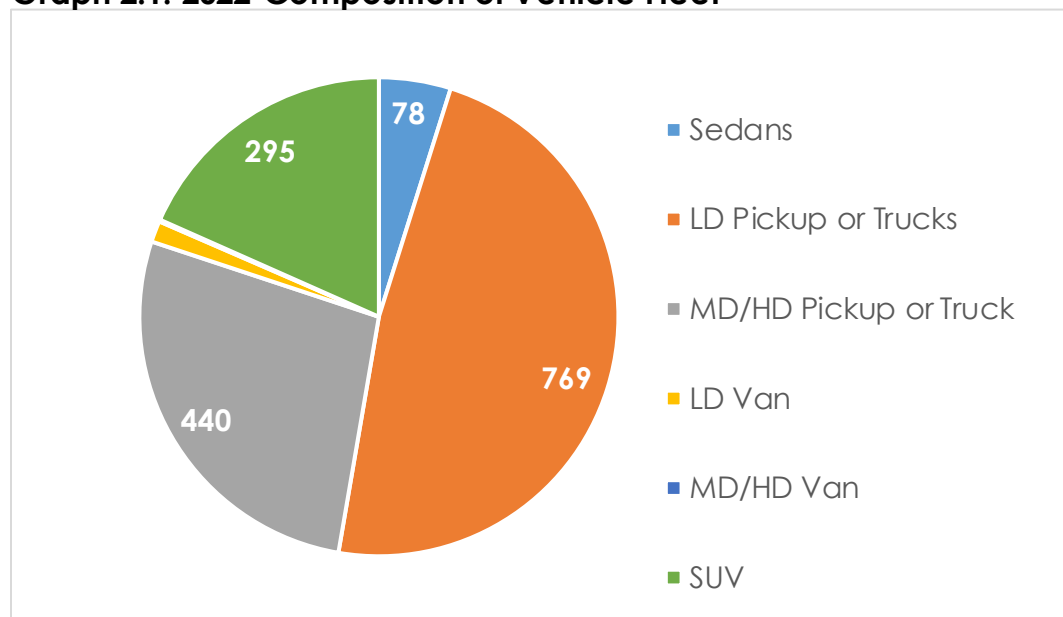
Administrative staff working from regional headquarters and field offices use sedans, SUVs, and vans to perform routine day-to-day functions (e.g., travel to meetings, site visits, and trips to local post-offices, and banks to conduct CDFW Administrative duties). These vehicles are pooled and are also used by scientific staff when needed.

CDFW staff that access remote areas or go off-road face various road conditions. Off-road conditions vary by climate, weather, and topography. Common road conditions include dirty or dusty roads, wet mud, flooded surfaces, uneven surfaces, snow, and rocky or sandy roads. Along with the poor road conditions, hauling or carrying equipment or supplies can exceed one-way distances over 200 miles.

The following graphs show the breakdown of CDFW's fleet by composition as well as a deeper look at the individual categories of light duty, medium duty, etc.

Composition of Vehicle Fleet

Graph 2.1: 2022 Composition of Vehicle Fleet



Fuel Types

Reporting on Total Fuel Use by Fuel Type.

Table 2.1: Total Fuel Purchased in 2022

Year	Diesel (Gallons)	Gasoline (Gallons)	Renewable Diesel (Gallons)
2022	229,159	944,961	0

Reporting Narrative on Fuel Type Selections

Fuel choice selections are made based on availability. Currently, CDFW fleet vehicles are still primarily fueled by traditional gasoline/diesel because these are

the most commonly available fuels on the market. CDFW is making strides in moving away from gasoline and diesel by increasing its ZEV Fleet by 5% each year wherever feasible.

CDFW does not currently have a policy regarding fuel types. However, the Department is interested in learning more about what a typical fuel type policy looks like and, if applicable, could draft a similar policy for CDFW.

CDFW has had internal discussions on hydrogen as an alternative fuel source. The result of the discussions and analysis is that while there is great potential in this area, the technology is not yet mature enough to provide sufficient vehicle choices or fueling infrastructure. Still, we have identified the following locations as the best starting points to install hydrogen refueling stations, should this technology mature enough to meet our needs:

Sacramento Area:

- 1515 S. River Road, West Sacramento, CA 95691
- 6141 Greenback Lane, Citrus Heights, CA 95621

Belmont Office Area:

- 248 South Airport Boulevard, South San Francisco, CA 94080

San Diego Office Area:

- 3060 Carmel Valley Road, San Diego, CA 92130

Ontario Office Area:

- 1850 Holt Boulevard, Ontario, CA 91761

Rightsizing the Fleet

Teleworking, Mission Changes, and Technology Changes

Teleworking:

Many vehicle-dependent duties performed by CDFW staff are not affected in the long term by the introduction of teleworking. In many cases, the duties our staff perform with their vehicles cannot be completed remotely. For example, a scientific aid who is monitoring a wildlife population or managing an ER must be on site to perform those duties. Similarly, an LED warden cannot patrol their assigned area remotely, they must be in the field using their vehicle to accomplish their mission. When it comes to routine functions such as office visits or errands, telework during the initial phases of the COVID-19 pandemic did result in a decrease in miles traveled in the short term, but we have already seen that trend reversed and expect our total miles traveled annually to return to pre-pandemic levels within 2-5 years.

Mission Changes:

There has not been a change to the mission of CDFW through legislation or changing circumstances. CDFW's mandate remains the same: to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and their use and enjoyment by the public.

Technology Changes:

In recent years, electric vehicle technology has matured to the point of presenting a viable option to power some of our fleet with a fuel type other than fossil fuels. CDFW is embracing this technology and actively working to acquire more EVs and build out as many Electric Vehicle Supply Equipment (EVSE) as possible, working directly with the Department of General Services (DGS) to accomplish this. While this technology has significant benefits to be realized, such as reduced fuel cost and lowered carbon output, at this time we are not observing a reduction of our fleet size in response to this technology in terms of number of vehicles nor number of miles traveled. Simply put, accomplishing our mission requires us to rely heavily on vehicles to traverse wide swaths of California.

Telematics

Implementation Status

Reporting Narrative on Telematics Implementation Status

CDFW implemented its Telematics Program in March 2021 and executed its Telematics Policy (Business Management Branch (BMB) MM 21-05) in October 2021, in accordance to State Administrative Manual (SAM) §4122 (Telematics) and pursuant to Executive Order (EO) B-2-11. Notably, all telematics activities were suspended by order of DGS on May 18, 2022, and only recently lifted on April 4, 2023.

Asset Type	Estimated % Telematics Equipped	Target Completion Date
Over the Road (OTR) Vehicles (i.e., sedan, pickup, SUV, van)	75%	January 2, 2024
Select Non-OTR Vehicles (i.e., heavy equipment, boat, etc.)	50%	January 2, 2024
Select Non-Self-Propelled Assets (i.e., trailer, mobile equipment, etc.)	35%	January 2, 2024

Asset Type	Estimated % Telematics Equipped	Target Completion Date
Over the Road (OTR) Vehicles (i.e., sedan, pickup, SUV, van)	100%	July 1, 2024
Select Non-OTR Vehicles (i.e., heavy equipment, boat, etc.)	100%	July 1, 2024
Select Non-Self-Propelled Assets (i.e., trailer, mobile equipment, etc.)	100%	July 1, 2024

Planning Narrative for Telematics Data

By utilizing telematics reporting capabilities, CDFW Fleet Management may monitor, track, and report CDFW progress in transitioning from internal combustion engines (ICE) to Zero Emission Vehicles (ZEV) and the related benefits. Available telematics reporting capabilities through the current telematics contractor (Geotab USA Inc.) system provides, but is not limited to, the following fleet asset details that CDFW fleet management may base ongoing ZEV integration analysis:

- ICE fuel consumption (i.e., level of decrease with number of ZEV deployed).
- ZEV recharging cycles (i.e., study new cost of charging a ZEV).
- Fleet asset description (i.e., number of fleet asset by type description).
- Travel time by fleet asset.
- Travel distance by fleet asset.
- Current ICE to ZEV asset mix.
- Current ICE to ZEV asset mix by type of vehicle (i.e., pickup truck, sedan, van, etc.)

Existing Fleet Description

Light Duty Fleet Vehicles

The most common use for our light duty fleet is for day-to-day administrative activities or site visits. Typical duties that are accomplished with these vehicles include going to the bank and post office to conduct CDFW administrative functions and facilitating land travel between offices for CDFW staff. These vehicles primarily operate on pavement in a mix of city and highway environments. Typically, light duty vehicles are used for short distance trips. Situations where staff must be on the road all day in light duty vehicles is very rare for CDFW.

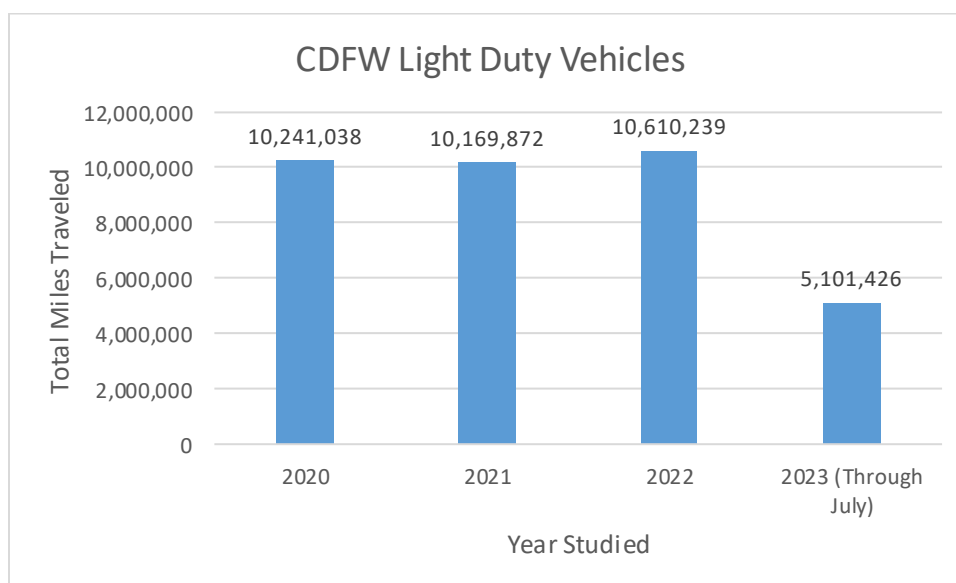
Reporting On Total Miles Traveled

Table 2.2: Total Miles Traveled

Year	2017	2018	2019	2020	2021	2022
Total Miles	12,217,097	12,730,574	13,197,882	10,241,038	10,169,872	10,610,239

Reporting Narrative on Total Miles Traveled

The annual mileage usage of CDFW light duty fleet is relatively stable, averaging approximately 10,340,383 miles per year from year 2020 to 2022, with a statistical range of 440,367 miles and average deviation of 146,789 miles per year.



The average number of light duty vehicles in CDFW's fleet is 1,600, which averages 6,463 miles per year. Notably, the year 2023 is on pace to meet the previous year's average, based on 5,101,426 miles driven within the first six months.

The implementation and integration of telematics into fleet management practices and protocols will increase the accuracy, efficiency, and effectiveness of fleet asset tracking and reporting. Through telematics, light duty vehicle's travel distances and frequency of use can be analyzed by individual fleet asset, designated program, or assigned driver. This will help CDFW manage fleet assets for optimal usage and maximize the operational life of a fleet asset. Automated recording and reporting of fleet asset usage by telematics will increase accuracy and improve timing of scheduled asset replacement or deferred replacement practices. This will contribute to improved planning and

more accurate budget forecasts and Fleet Acquisition Plan (FAP) data. The labor time saved through automated asset usage (mileage) tracking through telematics will allow valuable time to be redirected to support other mission critical activities.

Reporting On Miles Per Gallon

Table 2.3: Miles per Gallon

Total Miles	2017	2018	2019	2020	2021	2022
6,325,868	1,282,778	1,254,779	1,254,779	1,152,066	1,244,205	1,174,121

Reporting Narrative on Miles Per Gallon

While striving to transition fleet assets from ICE to ZEV, CDFW continues to promote fuel efficiency and decreased consumption of fossil fuel by ensuring the proper maintenance and operational conditions of all ICE vehicles to maximize miles per gallon of fuel. CDFW also continues its best practice of domiciling fleet assets locally and in proximity to assigned programs, and regional offices, to control the travel radius to optimize travel time and fuel consumption. These policies, combined with an increase in the percentage of ZEVs in our fleet, have contributed to an increase in fuel efficiency from 2021-2022.

Composition of Light Duty Vehicle Fleet

Graph 2.2: Composition of Light Duty Vehicle Fleet

Light Duty Take-Home Vehicle Fleet Status

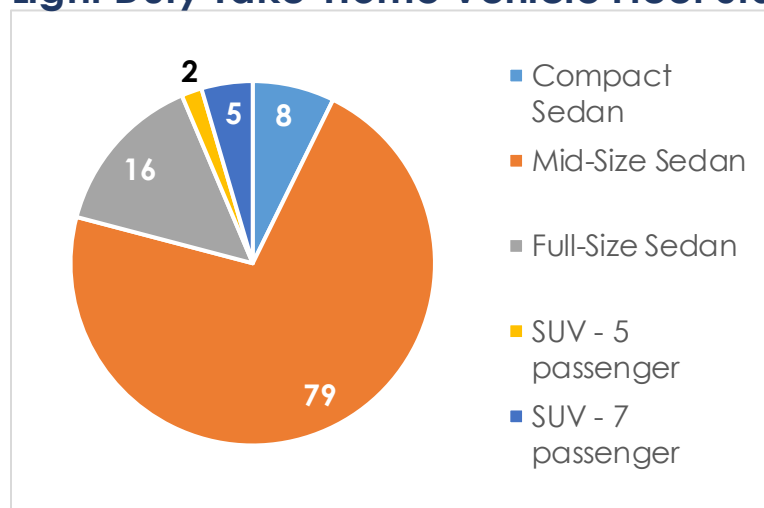


Table 2.4: “Take Home” Vehicle Fleet Status

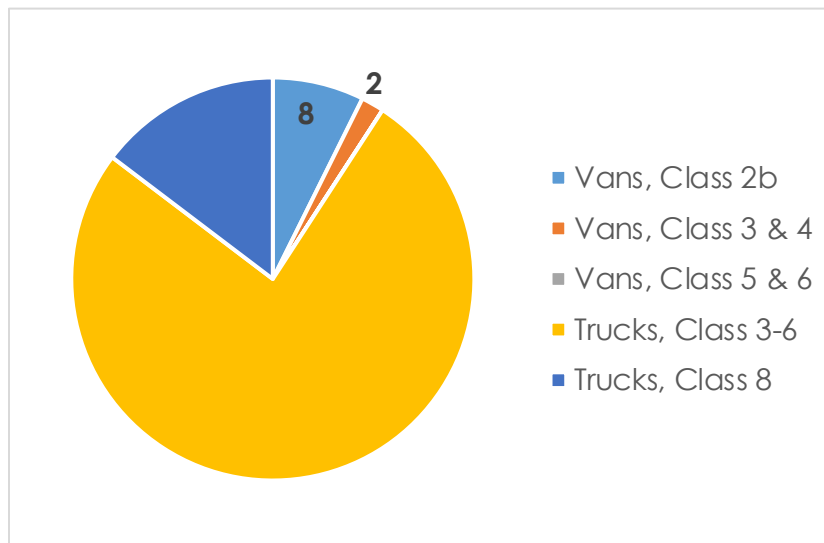
Vehicle Type	Sedans	LD Pickup or Trucks	MD/HD Pickup or Truck	LD Van	MD/HD Van	SUV
Totals	0	315	50	1	0	61

Planning Narrative on Integrating the Take Home Vehicle Program with Telework and Emissions Reduction Strategies

Incorporating telework and emissions reduction strategies, for home storage permits, might involve promoting remote work to reduce commuting, required mandate of electric or hybrid vehicles, and implementing policies to optimize energy usage during charging. As displayed on table above (2.4 “Take Home” Vehicle Fleet Status), 315 of the 429 take home vehicles are light duty. CDFW will continue to provide the same like-type assets while utilizing the ZEV thresholds.

Medium and Heavy-Duty Fleet Vehicles

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



Incorporating ZEVs into the State Fleet

Light-Duty ZEV Adoption

Table 2.4: Light Duty Vehicles in Department Fleet Currently Eligible for Replacement

# of Vehicles eligible for replacement	Sedan	LD van	LD pickup	SUVs, 5 psngr	SUVs, 7 psngr	SUVs, 8 psngr	Total
Totals	59	9	506	77	87	0	738

Table 2.6: Plan for Light Duty ZEV Additions to the Department Fleet

ZEV Category	21/22	22/23	23/24	24/25
Battery Electric Vehicle (BEV)	24	21	32*	
Plug-in Hybrid Vehicle (PHEV)	3	4	0	
Fuel Cell Vehicle	0	0	0	
Percent of total purchases	36.90%	41.30%	47.8%*	
Required ZEV Percentage	35%	40%	45%	50%
Total number of ZEVs requested	86	111	143*	
*Includes all BEV, PHEV, Fuel Cells after requests				

Reporting Narrative for Light Duty ZEV Additions to the Department Fleet.

Current ZEV offerings can only fill the role of a single use case for CDFW: the use case of traveling on paved roads to perform administrative functions such as travel to CDFW and partner agency offices for meetings, performing contract oversight functions at various sites, delivering mail and packages, and other miscellaneous tasks. For performing these types of tasks with ZEVs, the main challenge for CDFW is ensuring access to adequate charging infrastructure. Battery Electric Vehicles (BEV) are useful for performing tasks that only require local travel due to their limited range, while Plug-in Hybrid Electric Vehicles (PHEV) are more useful for longer drives to further facilities. Typically, ZEVs being used for this type of purpose would be administrative staff such as analysts or managers. Unfortunately, these types of vehicles are not the most beneficial for CDFW. The majority of CDFW's fleet are composed of trucks and SUVs equipped for driving off-road and hauling; current ZEV offerings are unable to fill those needs. There are no vehicle classes missing that CDFW requires to fulfill our mandate. CDFW does not currently own or operate any hydrogen fuel cell vehicles.

Planning Narrative for Integrating ZEVs into Take-Home Vehicles

CDFW will ensure home storage permits will use the State Administrative Manual (SAM) section 4121 (ZEV and Hybrid First Purchasing Mandate) as the continued requirement meeting ZEV replacement thresholds.

Medium-Heavy-Duty ZEV Adoption

Medium and Heavy-Duty Vehicles in Department Fleet currently Eligible for Replacement

Table 2.5: MD/HD Vehicles in Department Fleet Currently Eligible for Replacement

Vehicle Type	Vans, Class 2b	Vans, Class 3 & 4	Vans, Class 5 & 6	Trucks, Class 3-6	Truck, Class 8	Total
Totals Eligible for Replacement	25	0	0	0	0	25

Table 2.6: Planned Medium/Heavy Duty ZEV Additions to the Department Fleet

Table Header Format	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle (BEV)	0	0	9	15	10
Plug-in Hybrid Vehicle (PHEV)	0	0	10	4	3
Fuel Cell Vehicle	0	0	0	0	0
Percent of total purchases	42%	48%	83%	61%	68%
Total number of ZEVs in Fleet	39	60	73	92	111

Reporting Narrative for Medium-Heavy Duty ZEV Adoption

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

There are currently no medium duty ZEV offerings on the market which fill the roles that CDFW requires MD vehicles to fill. The main challenge is that current market offerings for MD ZEVs do not meet CDFW's needs for off-road and towing capability. CDFW does not use any medium duty ZEVs; the typical use case for one in CDFW cannot be described. MD vehicles are typically driven either by scientific staff to perform various types of field work or by law enforcement staff to patrol public lands and enforce the Fish and Game code. The types of MD/HD vehicles most beneficial to CDFW's fleet are vehicles that have off-road and towing capability.

ZEV Public Safety Exemption

Reporting Narrative for ZEV Public Safety Exemption

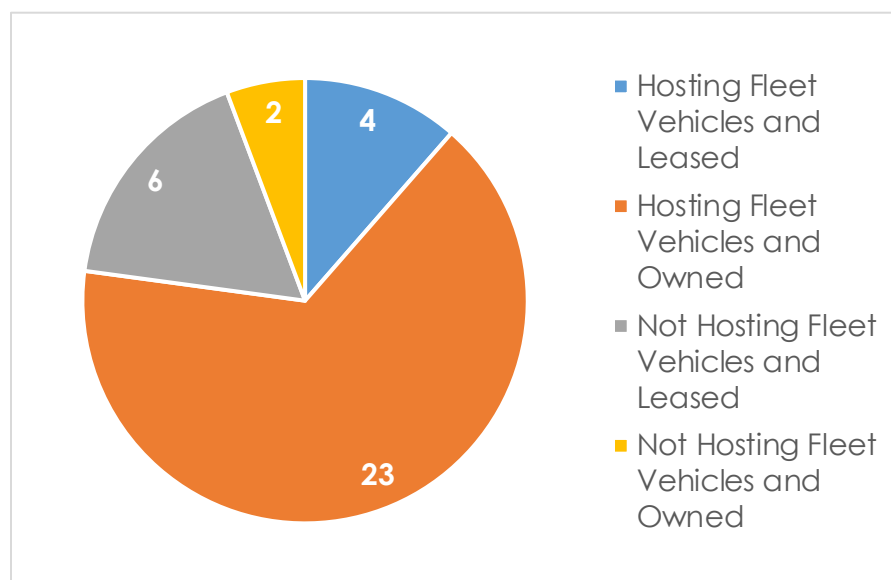
CDFW has no plans for Law Enforcement Division (LED) officers to utilize ZEVs. CDFW's LED is exempt from these requirements due to the unique demands of their role.

Planning Narrative for ZEV Public Safety Exemption

CDFW does not currently have plans to incorporate ZEVs into its public safety fleet. Due to the nature and breadth of our mandate, it is essential that our public safety fleet retains off-road and towing capability. Current ZEV offerings on the market do not adequately compete with the level of utility offered by ICE vehicles in this area, yet. However, the market for ZEVs is evolving rapidly. The next step for CDFW to consider adding ZEVs to our public safety will be when there is an affordable ZEV on the market that provides the level of utility and durability required by our Public Safety officials.

CDFW's Parking Facilities

Graph 2.4: Parking Facilities



Reporting Narrative on Parking Facilities

CDFW's facilities consist of three basic types: offices/labs, WAs/ERs, and FHs. Owned facilities represent 58% of CDFW facilities whereas leased facilities represent 42%.

Offices and labs are generally mixed use and house scientific, LED and administrative staff. Larger main offices have dedicated, secured lots for CDFW fleet and open mixed parking for employees and visitors. Parking at smaller facilities is generally mixed across all parking types. Visitors include those purchasing hunting and fishing licenses, staff attending meetings, public bid openings and various other short-term needs. All office and lab facilities host fleet vehicles. Some offices/labs have physically separated areas for fleet vehicles, but most do not.

WAs/ERs owned by CDFW are managed by lands staff that perform habitat restoration and maintenance projects year-round. These facilities are open to the public for their use and enjoyment, with some requiring a permit. Staffed CDFW lands host fleet vehicles and the parking is mixed use among CDFW fleet, employees, and visitors. Visitors stay anywhere from 30 minutes to all day depending on the use type – hunting, wildlife viewing, studies, meetings, and other miscellaneous recreational activities. Many of the lands do not have paved lots or marked stalls.

FHs are operated by staff that breed and rear fish from eggs to fingerlings to be planted in California's lakes and streams. There are 24 FHs, which are open to the public for viewing and for educational purposes. All FHs host fleet vehicles, and the parking is a mixed use among CDFW fleet, employees, and visitors. Visitors stay anywhere from 30 minutes to two hours, depending on the time of year.

Reporting on Status of EVSE Projects

Table 2.7: Status of EV Charging Projects

Facility Name	Total Parking Spaces	Existing L1 Charging Ports (2023)	Existing L2 Charging Ports (2023)	Existing L3 Charging Ports (2023)	Total Charging Ports (2023)	EV Charging Ports Needed by 2026
Arcata Field Office	0	0	2	0	2	0
Eureka Field Office	0	0	4	0	4	0
R1 HQ (Redding)	0	0	4	0	4	15
American River FH	0	0	5	0	5	0
Stockton Field Office	30	0	4	0	4	0
West Sac Complex (1010)	66	0	4	0	4	8
West Sac Complex (960)	0	0	2	0	2	0
West Sac Complex (980)	11	0	8	0	8	0
Yolo Bypass WA	0	0	8	0	8	0
Elkhorn Slough ER (Watsonville)	0	2	0	0	2	0
R3 HQ (Fairfield)	38	0	2	0	2	4
Grizzly Island WA	5	0	0	0	0	4
Marine Mammal Lab (Santa Cruz)	0	0	2	0	2	0
Monterey Field Office	0	0	4	0	4	0
Napa Field Office	25	0	4	0	4	4
La Grange Field Office	0	0	2	0	2	8
Los Banos Field Office - Bio	6	0	2	0	2	13
Los Banos Field Office – Shop	13	0	2	0	2	2
Mendota WA	0	0	0	0	0	4
R4 HQ (Fresno)	15	2	0	0	2	8
San Luis Obispo Field Office	3	0	2	0	2	0
Fillmore FH	0	0	0	0	0	0
Newport	0	0	4	0	4	0
R5 HQ (San Diego)	25	0	4	0	4	0

R6 HQ (Ontario)	0	3	0	0	3	0
Victorville Field Office	0	0	0	0	0	0
Seal Beach HQ (Los Alamitos)	28	4	0	0	4	0
Total	265	11	69	0	80	70

EV Charging Site Assessments

Reporting on 2022 Facility Site and Infrastructure Assessments

Table 2.8: 2022 EV Charging Infrastructure Site Assessments Conducted

Facility Name	L1 EVSE Project Assessments	L2 EVSE Project Assessments	L3 EVSE Project Assessments	Entity that Conducted the Site Assessment
Butte Basin	0	6	0	DGS
Fillmore FH	0	8	0	SCE
Grizzly Island WA	0	2	0	DGS
Hot Creek FH	0	7	0	SCE
Kern River FH	0	9	0	SCE
Lakeview	0	6	0	SCE
Mojave FH	0	12	0	SCE
Mount Shasta	0	5	0	DGS
Newport Beach	0	14	0	SCE
Ontario (Leased)	0	4	0	DGS-RELPS
Oroville WA	0	6	0	DGS
Red Bluff	0	3	0	DGS
Yreka Field Office	0	6	0	DGS
TOTALS	0	88	0	

Planning Narrative on EVSE Construction Plan

CDFW has made significant progress in developing EVSE infrastructure at our facilities. DGS Office of Sustainability - Clean Transportation Unit (OS-CTU) handles the contracting and bidding for these projects, and our plan is to continue collaborating with that team to install chargers in support of our growing ZEV fleet. CDFW Sustainability is working closely with Fleet and Facilities teams to determine the best locations to target in the calendar year 2024 and onward. Additionally, in working with DGS OS-CTU, CDFW is taking advantage of utility programs to build EV charging infrastructure and will continue to do so in the future, particularly for MD/HD charging and ZEVs.

On-going EVSE Charging Operations and Maintenance

Public EV Charging Policies

Reporting Narrative on Public EV Charging Policies

CDFW does not have a Public EV Charging Policy. Our EV Chargers are not intended for Public Use; they are for Fleet Use Only.

Planning Narrative on Public EV Charging Policies

CDFW does not have a Public EV Charging Policy. Our EV Chargers are not intended for Public Use, they are for Fleet Use Only.

Employee EV Charging Policies

Reporting Narrative on Employee EV Charging Policies

CDFW does not have an Employee EV Charging Policy. Our EV Chargers are not intended for Employee charging, they are for Fleet Use Only.

Planning Narrative on Employee EV Charging Policies

At this time, CDFW does not allow employees to utilize EV chargers for personal use, as stated in BMB Memo 23-07, therefore an Employee Charging Policy is not required.

Fleet EV Charging Policies

Reporting Narrative for Fleet EV Charging

NO FLEET EV CHARGING POLICIES

Planning Narrative for Fleet EV Charging

At present, measurable impact of the Telematics Program to fleet management is pending availability of adequate data and full implementation of telematics to all CDFW fleet assets subject to SAM §4122 (Telematics). However, the anticipated benefits will come in the form of increased fleet asset management efficiencies through automated fleet usage, maintenance, and location logging, tracking, monitoring, alerting, and reporting telematics system capabilities. Additionally, the DGS is currently working to bridge the gap between the current telematics contractor system to the DGS, Office of Asset and Fleet Management reporting system with accordance to [SAM §4120.1](#)

[\(Fleet Asset Reporting\)](#) and pursuant to [Public Resources Code \(PRC\) §25722.5](#) to further automate manual fleet asset reporting practices.

By utilizing telematics reporting capabilities, CDFW fleet management may monitor, track, and report CDFW progress in transitioning from internal combustion engines (ICE) to ZEV and the related benefits. Available telematics reporting capabilities through the current telematics contractor (Geotab USA Inc.) system provides, but is not limited to, the following fleet asset details upon which CDFW fleet management may base ongoing ZEV integration analysis:

- ICE fuel consumption (i.e., level of decrease with number of ZEV deployed).
- ZEV recharging cycles (i.e., study new cost of charging a ZEV).
- Fleet asset description (i.e., number of fleet asset by type description).
- Travel time by fleet asset.
- Travel distance by fleet asset.
- Current ICE to ZEV asset mix.
- Current ICE to ZEV asset mix by type of vehicle (i.e., pickup truck, sedan, van, etc.)

Hydrogen Fueling Infrastructure

Planning Narrative for Hydrogen Fueling Infrastructure

CDFW does not currently have plans to utilize hydrogen fueled vehicles. There are two main reasons for this. The first is that hydrogen fuel cell infrastructure is lacking in the State of California, which creates a potential obstacle in keeping our fleet operational. The second is that current market offerings for hydrogen fueled vehicles do not meet CDFW needs in terms of vehicles that are off-road and towing capable. However, CDFW remains optimistic about the maturation of this technology to a point where it would present a feasible alternative to current fuel sources.

CHAPTER 3 – ENERGY

Department Mission and Building Infrastructure

Reporting Narrative for Department Mission and Building Infrastructure:

CDFW's portfolio is large and diverse. The Department manages many types of facilities throughout all of California and exist in different climates and terrains.

CDFW is the steward of over 1,000,000 acres of land managed on 722 properties throughout the State; 71 of these properties are owned by CDFW and include structures of various types and uses.

There are 576 structures located on these 71 sites with an approximate combined square footage of 1,107,416 square feet. CDFW has a variety of types and functions of its structures. More than half of these structures have purchased energy, and many also purchase some form of fuel for heating, which may include natural gas or propane. Roughly 1,215 structures, such as pump sheds, restroom facilities and garages, have electricity but are not heated.

Many of the facilities rely on large pumps to pump water for wildlife. These pumps consume a lot of energy, including FHs that operate 24 hours a day.

Finally, CDFW has many labs used for wildlife conservation purposes and oil spill prevention activities that require temperatures to remain constant, which may increase energy use.

Total Purchased Energy

Table 3.1: Total Purchased Energy 2021 and 2022

Purchased Energy	2003 Baseline Quantity	Unit	2021 Quantity	2022 Quantity	% Qty Change 2003-22
Electricity	Unknown	kWh	20,174,016	35,919	-36%
Less EV Charging	Unknown	kWh	0		
Natural Gas	Unknown	therms	26,057.30	33,240	-48%
Propane	Unknown	gallons	0	0	
Fuel Oil	Unknown	gallons	0	0	
Steam	Unknown	pounds	0	0	
Chilled H2O	Unknown	kBtu	0	0	
TOTALS		kBtu Site			

Department Energy Use

Reporting High Energy Use Buildings

Table 3.2 identifies CDFW's largest energy users, most of which are FHs. The reason these locations use so much energy is they are 24-hour facilities, that must use pumps to recirculate the water and/or have larger chillers to keep water at the optimal temperature for fish. As funding allows, tank improvements and other energy and water saving upgrades will be made to increase energy efficiency.

Table 3.2: Properties with Largest 2022 Energy Consumption

Building Name	Floor Area (ft ²)	Site Energy (kBTU)	Source Energy (kBTU)	Source EUI (kBTU/ft ² -yr)
NCR 2 – NORTH CENTRAL HQ & AMERICAN RIVER FH	66,667	6,546,875	20,622,657	309
NR 1 – ASH CREEK WA	41,131	670,706	2,112,723	51
CR 4 – MOCCASIN CREEK FH	36,926	657,687	2,071,714	56
NR 1 – NORTHERN HQs	20,275	498,382	1,569,904	77
IDR 6 – IMPERIAL WA	30,514	480,751	1,514,365	50
BDR 3 – FISH SPRINGS FH	17,189	412,949	1,300,788	76
NR 1 – YREKA SCREEN SHOP	12,309	286,124	901,290	73
CR 4 – LA GRANGE FIELD HABITAT OFFICE	7,740	176,937	557,353	72
IDR 6 – BLACK ROCK SPRINGS FH	6,601	158,468	499,176	76
NR 1 – LAKE EARL WA	23,414	89,220	281,043	12
Total for Buildings in This Table	262,766	13,091,798	31,431,010	852
Total for All CDFW Buildings	1,247,613	0	31,695,625	852
% of Totals	21%	Unknown	99%	

FHs have been discussed, but CDFW also has other main types of facilities, including WAs/ERs, and offices/labs. Each has its own challenges. WAs operate pumps that can consume large amounts of energy, as do facilities that operate 24 hours for wildlife conservation purposes and facilities located in very remote locations.

CDFW does not have the resources for design and construction of major projects and therefore relies on the DGS OS. The only new or major renovation on the five-year plan currently under construction is a new FH that will be used for aquaculture. CDFW is also exploring a concept for a second proposed new FH that will be used to recover Coho Salmon in Santa Cruz County.

CDFW relies on DGS to ensure that the building for that project meets all environmental standards and mandates. The building is less than 50,000 square feet. Since CDFW will not be building new structures, the focus on sustainability will be related to existing buildings.

Energy Efficiency Solutions for Largest Energy Using Buildings

Planning Outline PO3a: Planning for Buildings with Largest Energy Use

Building Name	Proposed Energy Efficiency Solutions
BDR 3 – YOLO BYPASS WA	Solar System Installation
CR 4 – LOS BANOS WA	Solar System Installation
CR 4 -MENDOTA WA	Solar System Installation
NCR 2 – GRAY LODGE WA	Solar System Installation
NR 1 – DARRAH SPRINGS FH	Solar System Installation

Narrative for Building Energy Efficiency

Zero Net Energy (ZNE)

Reporting on Existing Building ZNE

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

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

The Governor has set forth the following milestones for State zero net energy buildings:

- 2020 – 50% of new construction & major renovations will be ZNE
- 2025 – 100% of new construction & major renovations will be ZNE
- 2025 – 50% of total existing building area will be ZNE

CDFW does not have any ZNE buildings. CDFW is planning on using renewable energy for larger sites, where it is cost feasible to use utility Power Purchase Agreements (PPA) as a form of payment. To further complicate the situation, CDFW has many sites where the PPA model is not cost effective based on size of renewable energy. CDFW is always searching for grants and other funding opportunities to buy systems when looking at smaller sites.

CDFW does not currently meet the criteria for ZNE, therefore, Table 3.3 does not apply.

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	0	0	0%
Building in Design or Under Construction	0	0	0%
Building Proposed for Before 2025 (but not yet in design)	0	0	0%
Addtl. Exist. Bldg. Area within 15% of ZNE target EUI and have EE projects planned	0	0	0%
Totals for ZNE Buildings by 2025	0	0	0%
Totals for All Department Buildings by 2025	0	0	0%
% ZNE by 2025	0%	0%	0%

Planning Narrative of Table 3.3: Zero Net Energy Buildings

ZNE STATUS ACHIEVED

New Construction Exceeds Title 24 by 15%

Table 3.4: New Building Construction Exceeding Title 24 by 15%

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

CDFW will use available funding mechanisms and utility programs/audits to achieve all energy reductions possible and is currently working with Pacific Gas and Electric (PG&E) and San Diego Gas and Electric (SDGE) to conduct energy efficiency audits for all facilities in their territories. Other utility providers and the

DGS's Efficiency Program have been engaged to see what assistance and services they can offer. CDFW is also working with DGS' solar team to determine feasibility of renewable energy within the portfolio. CDFW has some possible opportunities and is hoping to add as much onsite renewable energy generation as possible to offset energy use.

Existing Buildings Energy Efficiency

Reporting on Energy Efficiency for Existing Buildings

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

Year	Floor Area (ft ²)	Total Source kBTU Consumption	Department Ave. Source EUI (Source kBtu/sq. ft.)
Baseline Year 2003	0	0	0
2013	1,287,635	218,931,422	170
2014	1,287,635	212,856,861	165
2015	1,299,465	217,233,377	167
2016	1,299,465	263,594,661	203
2017	1,299,465	237,709,521	183
2018	1,299,465	255,163,232	196
2019	1,299,465	284,647,181	219
2020	1,299,465	235,586,666	181
2021	1,299,465	205,362,300	158
2022	1,299,465	220,449,406	170
% Change 2003-2020			

Narrative for Table 3.5: Department-Wide Energy Trends

A look at CDFW energy trends shows that CDFW is reducing or maintaining its energy use. To get a better understanding of CDFW's portfolio, the following summary gives a quick look at its makeup. CDFW's owned facilities have a total building area of 1,247,612 square feet. Of these facilities, 91% of the square footage consists of WAs/ERs and FHs, which may be in remote places. The remaining 9% are screen shops, offices, labs, and other services mainly located in cities. The total purchased site energy consumption for 2018 is 63.4 million kBtu. CDFW average source energy use intensity (EUI) is 137 (kBtu/ft²). Since 2003,

CDFW has been reducing energy consumption as well as EUI. The lower the EUI, the more efficient the building.

CDFW's leased facilities have a total building area of 683,940 ft². Of the leased square footage, 80% are offices, while the remaining facilities are warehouses and other types of buildings. Energy consumption data is currently not available for leased facilities.

Facilities often serve multiple functions, which include but are not limited to visitor centers, residential spaces, home offices, and/or educational centers. In 2018, FHs accounted for 57% of CDFW's total energy consumption, WAs/ERs 38%, and other types of facilities, 5%. Average source EUIs (kBtu/ft²) for FHs is 206, WAs and ERs is 34, and others is 91.

Even though CDFW has met the mandated goals, when comparing to national mediums, the Department is higher on average. CDFW is looking for opportunities to decrease energy use intensity across the portfolio and is putting an emphasis on FHs as they tend to have higher energy use. No cost data is available, so a cost comparison cannot be made at this time. Since CDFW has met its energy goals, new goals are being established to continue reducing energy usage.

Energy Savings Projects

Table 3.6: Summary of Energy Savings Projects 2021-2022

Year Funded	Estimated Energy Savings (kBtu/yr)	Floor Area Retrofit (sq.ft.)	Percent of Department Floor Area
2021	34,767,755	1,077,373	1.4%
2022	1,118,150	142,378	0.2%
Total	35,855,905	1,219,751	1.6%

Planning Narrative for Table 3.6 Energy Savings Projects 2021-2022

Retrofits in 2020 and 2021 were completed as needed because items needed to be replaced or updated. Most of these retrofits were completed on State owned houses occupied by CDFW staff. Some of these projects include:

Complete housing retrofit and replacement including addition of energy efficient appliances, windows, and lighting fixture at several houses across multiple CDFW locations.

Upgraded pumps to include variable frequency drives which decrease water use and increase energy efficiency and the addition of six soft start water pumps that save energy in water treatment systems.

Installation of 15 Seasonal Energy Efficiency Ratio (SEER) rated HVAC units over multiple sites, and upgrade for each site from a rated 17 or lower to 19. This constitutes about 14% savings or more per unit depending on the rating of the unit. Some of these units were installed in State owned houses and others in operational buildings with significantly greater square footage.

Energy Audits/Surveys Completed or In-Progress

Table 3.7: Energy Audits/Surveys Completed or In-Progress

Year	Total Department Floor Area (sq. ft.)	Energy Audits/ Surveys Under Way (sq. ft.)	Percent of Department Floor Area
2021	N/A		
2022	N/A		

Planning Narrative for Table 3.7 Energy Audits/Surveys Completed or In-Progress

CDFW is currently in the process of conducting an energy audit for all State properties. This effort is just getting underway. The completion date is currently unknown.

Demand Response (DR)

Participating in DR Utility Programs & Participating in DR Events

Table 3.8: Demand Response (DR) Program Participation

DR Program Participation	Number of Buildings	Estimated Available Energy Reduction (kW)	Actual Curtailment (kW)
Number of Buildings Participating in 2021	0	N/A	N/A
Number of Buildings Participating in 2022	0	N/A	N/A
Planned Number of Buildings that will Participate in 2023	10	N/A	N/A
Total Number of CDFW Buildings	10	N/A	N/A
2022 Department Buildings Participating (%)	0	N/A	N/A

Planning Narrative for Table 3.8: Demand Response (DR) Program Participation

CDFW is in the beginning stages of enrolling into the Demand Response (DR) Program and hoping to have it established by the end of 2024.

Renewable Energy

CDFW is in the final stages of contracting on five pilot sites that will host new solar generation systems. In accordance with DGS, a PPA method will be used to fund the systems. It is the hope that once these systems are completed it will establish a model to follow for future sites. Please see table 3.9 for a breakdown of renewable energy projects. Please note that this is just a pilot project with the goal of expanding to additional sites after the process is completed. Though the number of sites may only account for 11% of the total CDFW State-owned sites, the sites chosen are some of the largest energy users.

Table 3.9: On-Site and Off-Site Renewable Energy

Status	Number of Sites	Capacity (kW)	Estimated Annual Power Generation (kWh)	Percent of Total Annual DGS Power Use
Current On-Site Renewables in Operation or Construction	0	0	0	0
On-Site Renewables Planned	3	TBD	TBD	TBD
On-Site Renewables Totals	0	0	0	0
Department-Wide Total Energy Use (kWh equivalent)	0	TBD	3,935,388	TBD

Current Off-Site Renewables	2	39,000	TBD	TBD
Planned Off-Site Renewables	3	0	TBD	TBD
Off-Site Renewables Combined Current & Planned	0	39,000	TBD	TBD
Current Combined On-Site and Off-Site Renewable Energy	8	78,000	3,935,388	TBD
Additional Planned On-Site and Off-Site Renewables	0	0	0	0

Planning Narrative for Table 3.9, for all Existing Building Renewable Energy

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

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

A microgrid has multiple benefits including reduced GHG emissions (due to use of clean energy), monetary savings, and long-term resiliency against grid interruptions. FHs are the main priority as they are 24-hour facilities that support life. CDFW has been impacted multiple times in 2019 due to utility companies power safety shutdowns. These shutdowns can last anywhere from 24 hours to multiple days. It is important that CDFW sites have a dependable source of power, with all these power interruptions, in addition to the real threat of wildfire, which resulted in facilities being shut down more often in the past three years. While CDFW is continuing to research this option, currently, it is cost prohibitive.

Monitoring-Based Commissioning (MBCx)

CDFW does not currently have an installed energy management control system (EMCS) or current MBCx activities. Many of the locations are smaller buildings that do not have a need for a large energy management system. Per MM15-04, the following facilities meet the criteria for requiring MBCx. CDFW is evaluating these sites to determine the feasibility of implementing MBCx, with recommendations being made by the end of 2024.

Table 3.10: Current & Potential MBCx Projects

Building Name	Location	Floor Area (ft²)	EMS Year	MBCx Capable, Difficult, or No EMS	EMCS Exists? (MBCx Capable, MBCx Difficult, No EMCS)	MBCx Projected to Start	Projected Cost (\$)
NR 1 - BUTTE VALLEY WA	MACDOEL	26,798	TBD	TBD	No EMCS	TBD	TBD
IDR 6 - FILLMORE FH	FILLMORE	24,423	TBD	TBD	No EMCS	TBD	TBD
IDR 6 - FISH SPRINGS FH	BIG PINE	17,189	TBD	TBD	No EMCS	TBD	TBD
NCR 2 - GRAY LODGE WA	GRIDLEY	34,089	TBD	TBD	No EMCS	TBD	TBD
BDR 3 - GRIZZLY ISLAND WA	SUISUN CITY	29,282	TBD	TBD	No EMCS	TBD	TBD
HONEY LAKE WA	WENDEL	35,685	TBD	TBD	No EMCS	TBD	TBD
LOS BANOS WA	LOS BANOS	21,162	TBD	TBD	No EMCS	TBD	TBD
MAD RIVER FH	ARCATA	50,819	TBD	TBD	No EMCS	TBD	TBD
MARINE WILDLIFE VET CARE & RESEARCH CENTER	Santa Cruz	19,400	TBD	TBD	No EMCS	TBD	TBD
MENDOTA WA	MENDOTA	13,111	TBD	TBD	No EMCS	TBD	TBD
MOJAVE FH	VICTORVILLE	21,508	TBD	TBD	No EMCS	TBD	TBD
NORTH GRASSLANDS WA	GUSTINE	17,433	TBD	TBD	No EMCS	TBD	TBD
R2 - NORTH CENTRAL HQs	RANCHO CORDOVA	66,667	TBD	TBD	No EMCS	TBD	TBD
UPPER BUTTE BASIN WA	BUTTE CITY	13,994	TBD	TBD	No EMCS	TBD	TBD
WARM SPRINGS FH	GEYSERVILLE	54,810	TBD	TBD	No EMCS	TBD	TBD

YOLO BYPASS WA	DAVIS	44,544	TBD	TBD	No EMCS	TBD	TBD
Totals		490,914	TBD	TBD	No EMCS	TBD	TBD

Planning Narrative for Table 3.10: MBCx Status of Buildings

CDFW is evaluating these sites to determine feasibility to implement MBCx.

Building Controls

Reporting on EMS/BMS/Controls Building Capability

Table 3.11: Building Controls

Equipment Controls	% of Buildings Controlled Remotely Offsite	% of Buildings with Controls Onsite	% of Total Buildings
Lighting	0	100	100
HVAC: EMS/BMS	0	0	0
HVAC: Smart Thermostats	100	0	100
Other: _____	0	0	0

Planning Narrative for Table 3.11: EMS/BMS/Controls Building Capability

EMS/BMS CONTROLS ACHIEVED

Energy Reduction Strategies - Best Management Practices (BMPs)

Planning Narrative) for Energy Reduction Strategies in Department Buildings Best Management Practices (BMPs)

CHAPTER 4 - WATER EFFICIENCY AND CONSERVATION

Department Mission and Water Use

Reporting on Total Purchased Water

Table 4.1: Total Purchased Water

Purchased Water	2021 Quantity	2022 Quantity	2021 Cost (\$/yr.)	2022 Cost (\$/yr.)
Potable	38,074,100	35,280,900	Not Available	Not Available
Recycled Water	0	0	Not Available	Not Available

Reporting on Properties with Largest Purchased Water Use per Capita.

Table 4.2: Properties with Purchased Largest Water Use Per Capita

Building Name	Area (ft2)	# of Building Occupants	Total 2022 Gallons	Total 2022 Irrigation in Gallons (if known)	Gallons per Capita
NR 1 – CRYSTAL LAKE FH	27,486	UNKNOWN	6,236,500		
SCR 5 – RANCHO JAMUL ER	12,117	UNKNOWN	3,807,600		
CR 4 – SAN JOAQUIN FH	31,317	UNKNOWN	3,160,800		
NR 1- MAD RIVER FH	50,819	UNKNOWN	2,351,400		
IDR 6 – FISH SPRINGS FH	17,189	UNKNOWN	2,332,600		
Total for Buildings in This Table	138,928	UNKNOWN	17,888,900		---
Total for All CDFW Buildings	1,299,465	UNKNOWN	29,194,300		---
% of Totals	11%		61%		---

Reporting on Properties with Largest Landscape Area Using Purchased Water

Table 4.3: Properties with Largest Landscape Area Using Purchased Water

Building Name	Landscape Area (ft2)
See Narrative Below	

Total Landscaping area for Buildings in This Table	
Total Landscaping for All Department Buildings	
% of Totals that is large landscape	

Reporting on the Department's Purchased Water Use Trends from 2010 to Present

Table 4.4: Department Wide Purchased Water Use Trends

Year	Total Occupancy /year	Total Amount Used (Gallons/year)	Percent Change From 2010 Baseline	Per capita Gallons per person per day
Baseline Year 2010	552	54,442,900		
2018	UNKNOWN	42,852,100	-21%	
2019	UNKNOWN	43,072,900	-21%	
2020	UNKNOWN	34,219,800	-37%	
2021	UNKNOWN	38,074,100	-30%	
2022	UNKNOWN	35,280,900	-35%	
2024 Goal		29,086,830	-47%	

Reporting Narrative on Purchased Water Use Trends from 2010 to Present

For CDFW, per capita is not as useful as a metric because employee numbers are often disproportionate to water use at sites because the water used for wildlife is not always separately measured. Additionally, most water used is estimated and not metered. Furthermore, it is not useful to measure and compare locational water consumption between locations as locations have very different functions and are in different geographic regions. Some locations also have more visitors during peak fishing or hunting seasons. The table assesses water use over time across each location and displays the locations with the largest increase. CDFW will investigate the increase as well as make comparisons to like type locations (FHs, WAs, ERs, other) and across like geographic areas (inland desert, coastal, central valley, etc.)

CDFW-owned facilities had a 20% reduction goal (from the 2010 baseline) and achieved that goal by reducing its water use by 29% for 2018. Gallons per person per day has also been reduced by 76 gallons per person per day.

In 2013, EO B-29-15 set a special reduction mandate for the timeframe of 2013-2016 for a 25% reduction. CDFW took the mandate seriously and significantly reduced water across the Department; however, some sites had to add extra tanks and water systems for the purpose of rescuing fish stranded by drought conditions. While this water use is considered exempt from reporting, it cannot always be separated from total water use at these locations, and therefore, was included which skewed the Department's reporting for this mandate.

Reporting on Total Purchased Water Reductions from 2010 to Present

Table 4.5: Total Purchased Water Reductions Achieved in Gallons

2010 Baseline totals (Gallons)	2021 Totals (Gallons)	2022 Totals (Gallons)
54,442,900	38,074,100	35,280,900
+ or -Gallons Compared to Baseline Year	-16,368,800	-19,162,000
Department- Wide Reduction as a % from 2010 baseline	-30%	-35%

Department Indoor Water Use

Fixtures and Water Using Appliances Needs Inventories

Reporting on Building Indoor Water Fixtures and Water Using Appliances Needs

Table 4.6: Building Indoor Water Fixtures and Water Using Appliances Needs Inventories Summary

# of toilets to be replaced	# of urinals to be replaced	# of faucet aerators to be replaced	# of showerheads to be replaced *	# of clothes washers to be replaced	# of garbage disposals to be replaced	# of pre-rinse valves to be replaced
No Data	No Data	No Data	No Data	No Data	No Data	No Data

Planning Narrative for Indoor Building Water Fixtures and Water Using Appliances Needs

Most projects completed at CDFW facilities are maintenance, repairs, or replacements on an as-needed basis. CDFW replaces water fixtures with more

efficient models to the extent possible. In 2015, CDFW inventoried its facilities for indoor water fixtures and received funding through the DGS Drought Grant to replace all fixtures with more efficient ones. Starting September 2015 and ending in 2017 for all indoor water fixture replacements, CDFW has replaced 626 toilets, 59 urinals, 965 faucet aerators, and 419 showerheads for an estimated water savings total of three million gallons after all fixtures are replaced, annually.

CDFW has met the 2010 goal, and so has set a new goal of 40% reduction by 2030 and is committed to conservation and saving water which is essential to the mission. New strategies and projects are being assessed for potential water savings. A proposed list of projects is being compiled for when funding becomes available.

As mentioned, much of the infrastructure is aging and funding is always a challenge. CDFW is leveraging utility programs and other grant programs to increase pump efficiency and finance pump upgrades.

Water Conservation and Water Efficiency Projects for Purchased Water

Reporting on Current Indoor Water Efficiency Projects 2020- Present

Table 4.7: Summary of Current Indoor Water Efficiency Projects Completed 2020-Present or In Progress

Completed Projects per Year	Water Saved (Gallons/yr.)	Number of Indoor Water Efficiency Projects Completed	Cost Savings per Year
NO CURRENT PROJECTS			

Planning for Future Indoor Water Efficiency for the Next 5 Years- Building Priority Projects

Planning Outline PO4:a: Building Indoor Water Efficiency Priority Projects for the Next 5 Years

Building Name	Type of Project	Est Water Savings	Est. Start Date
Statewide	Install meters on wells	Estimated 15%-30%	
Fish Springs FH	Upgrade equipment to reduce ground water pumped by approximately 25%	200,000,000	Fall 2024

American River FH	Upgrade equipment to reduce ground water pumped by approximately 25%	1,415,435,544 gallons/ 4343.81 ac/ft per year	No groundwater wells used. Evaluation is ongoing. Hope to have hatchery reports by Oct 2024, then select alternative to proceed with. Reuse water to expand production.
Mojave River FH	Upgrade equipment to reduce ground water pumped by approximately 25%	200,000,000	DGS is designing. Assigned to DGS Project Director. No further info available until DGS selects consultant for review.
Fillmore FH	Upgrade equipment and install VFD to reduce ground water pumped by approximately 25%	200,000,000	Mid 2024-early 2025. Mid 2024-early 2025. DGS is designing. Not assigned to PD. No further info available until DGS assigns then selects consultant for review.
Silverado Fish Base	Silverado Fish Base- Upgrade equipment to reduce ground water pumped by approximately 25%	236,520,000	No groundwater wells used. Evaluation is ongoing. Hope to have hatchery reports by Oct 2024, then select alternative to

			proceed with. Reuse water to expand production.

Planning Narrative for Future Indoor Water Efficiency - Building Priority Projects

CDFW is in the process of upgrading various FHs. Most are still in evaluation or design phases. However, most projects are scheduled to begin in late 2024 or early 2025 with a goal of reducing ground water pump by at least 25%.

Planning Narrative on General Water Management BMP

GENERAL WATER MANAGEMENT BMP ACHIEVED

Planning Narrative on Leak Detection and Repair BMP

LEAK DETECTION AND REPAIR BMP ACHIEVED

Planning Narrative on Kitchen Water Conservation BMPs, Fixtures

KITCHEN WATER CONSERVATION BMPS ACHIEVED

Planning Narrative on Laundry Facilities Water Conservation BMPS

LAUNDRY FACILITIES CONSERVATION BMPS ACHIEVED

Department Total Non-Purchased Water

Reporting on Total Non-Purchased Water Excluding Water Reuse or Recycling

Table 4.8: Department-Wide Non-Purchased Water Use

Year	Groundwater Basin(s) Name	Number of Domestic or Irrigation Wells	Groundwater Use in Gallons	Surface Water Use in Gallons	Total (Gallons/Year)
Baseline Year 2020	NO DATA				
2021	NO DATA				
2022	NO DATA				

Reporting Narrative for Non-Purchased Water

NON-PURCHASED WATER NOT USED

Reporting Narrative for Non-Purchased Water Use Trends

NON-PURCHASED WATER NOT USED

Planning Narrative for Non-Purchased Water Unavailability.

NON-PURCHASED WATER NOT USED

Department Water Energy Nexus Reporting

Reporting on Annual Amount of Boiler Makeup Water Used

Table 4.9: Annual Amount of Boiler Makeup Water Used

Boiler Water Use	Year 2021	Year 2022
Amount of Water Used for Makeup (Gallons)	NO DATA	NO DATA
Amount of Water Currently Reused. (Gallons)		
Remaining additional water suitable for other purposes (Gallons)	= (row 1 - Row 2)	(row 1-Row 2)
Totals for all Facilities		

Planning Narrative on Boiler Water Reuse Opportunities

BOILER WATER USE EFFICIENCY ACHIEVED

Planning Narrative for Boiler Efficiency

BOILER EFFICIENCY ACHIEVED

Reporting on Cooling Towers' Water Use

Table 4.10: Cooling Tower Water Use

Cooling Tower Water Use	Year 2021	Year 2022
Amount of Water Used for Make-up (Gallons)	NO DATA	NO DATA
Totals for all Facilities		

Planning Narrative on Cooling Tower Water Use

NO DATA

Planning Narrative for Cooling Tower Water Reuse

NO DATA

Planning for Narrative for Cooling Tower Efficiency

COOLING TOWER WATER USE DATA IS COMPLETE, [Reporting on Boilers Needs Inventories Summary](#)

CDFW's owned locations do not have boilers.

Table 4.11: Summary of Boilers Needs Inventory

Number of meters to purchase and install	Water Treatment	Other
Totals	NO BOILER WATER TREATMENT NEEDS	

Planning Narrative for Boilers Needs

CDFW's owned locations do not have boilers, and there is no data available at this time on chillers. The chillers on most of the sites are too small to qualify for utility optimization programs. Units are replaced with more efficient ones as needed.

[Reporting on Cooling Systems Needs Inventory Summary](#)

Table 4.12: Summary of Cooling System Needs Inventory

Equipment Needed	Equipment Totals for all Facilities
Meters	NO COOLING SYSTEMS NEEDS
Water Treatment	NO COOLING SYSTEMS NEEDS
Other	NO COOLING SYSTEMS NEEDS

Planning Narrative for Cooling Systems Needs

The chillers on most of the sites are too small to qualify for utility optimization programs. Units are replaced with more efficient ones as needed.

Reporting on Efficiency Projects for Boilers and Cooling Systems 2020-Present

Table 4.13: Summary of Efficiency Projects for Boilers and Cooling Systems

Project Type	Water Saved (Gallons/yr.)	Number of Completed Projects	Number of Projects in Progress
2020	NO CURRENT PROJECTS		
2021	NO CURRENT PROJECTS		
2022	NO CURRENT PROJECTS		

Planning Narrative for BMPs for Building Boilers and Cooling Systems

CDFW's owned locations do not have boilers, and there is no data available at this time on chillers. The chillers on most of the sites are too small to qualify for utility optimization programs. Units are replaced with more efficient ones as needed.

Department Outdoor Water Use

Reporting on Outdoor Irrigation Hardware Inventory

Table 4.14: Summary of Outdoor Irrigation Hardware Needs Inventory

Irrigation Hardware Type	Total Hardware Needed
Separate meters or sub-meters	NO DATA
Irrigation controllers required with weather or soil moisture adjustment and flow sensing capabilities	NO DATA
Backflow prevention devices	NO DATA
Flow sensors to be purchased and installed	NO DATA
Automatic rain shut-off devices	NO DATA
New pressure regulators	NO DATA
New hydro-zones	NO DATA
New valves	NO DATA
Filter assemblies	NO DATA
Drip irrigation emitters	NO DATA
Booster pumps	NO DATA
Rotary nozzles or other high efficiency nozzles	NO DATA

Planning Narrative for Outdoor Irrigation Hardware Needs

CDFW's landscaped areas are very small. For the few places with landscapes and systems installed, a best practices list is provided. Due to the small size of CDFW's landscaped areas, no inventory was conducted/needed.

Even though CDFW may not have a large, landscaped area, there are many sites that have pumps and irrigation controls associated with watering for wildlife. CDFW's infrastructure is often very old so site managers must be diligent in checking and repairing leaks. There are also projects in place to reduce spills on wetland ponds.

Reporting on Outdoor Irrigation Hardware Water Efficiency Projects

Table 4.15: Summary of Outdoor Hardware Water Efficiency Projects Completed 2020-Present or In Progress

Year Funded	Water Saved (Gallons/yr.)	Completed Hardware Water Efficiency Projects	Hardware Water Efficiency Projects in Progress
2020	NO CURRENT PROJECTS		
2021			
2022			

Planning Narrative for Irrigation Hardware Water Efficiency Projects

CDFW's landscaped areas are very small. For the few places with landscapes and systems installed, BMPs are reviewed and updated as necessary. Due to the small size of CDFW's landscaped areas, no inventory was conducted/needed.

Planning Narrative on Irrigation Hardware Maintenance BMPS

CDFW's landscaped areas are very small. For the few places with landscapes and systems installed, BMPs are reviewed and updated as necessary. Due to the small size of CDFW's landscaped areas, no inventory was conducted/needed.

Reporting on Living Landscape Inventory

Table 4.16: All Facilities With > 500 sq. ft. of Living Landscape Inventory

Facilities with Landscape >500 Sq.	Total Turf (sq. ft.)	Number Of Historic Sites or Memorials MWELo Landscape Area (sq. ft.)	Climate Appropriate Landscape Area (sq. ft.) Groundwater Basin Name	Irrigation Source is Groundwater (Yes or No)	Irrigation source is Surface Water (Yes or No)
		MWELo LANDSCAPE ACHIEVED			

Reporting Narrative on Living Landscape Inventory

Due to the nature of the types of owned locations, CDFW has often kept the areas around the buildings as close to their natural state as possible, or they have been restored to their natural state for ecological purposes. At these locations, the emphasis is on natural or native landscaping, rather than creating a landscape for aesthetic purposes. As a result, there is little to no turf or other non-native plants installed. Instead, CDFW maintains current landscaping or enhances what is intended to be there. For the few areas in a more urban setting, trees were kept to the extent possible.

Reporting on Living Landscape Upgrades for the Next 5 Years

MWELo LANDSCAPE ACHIEVED

Planning Outline PO4.II: Planned Projects for Living Landscape Upgrades for the Next 5 Years

Landscape >500Sq. ft.) Facility Name	Replace Turf (Sq. ft.)	MWELo landscape area Upgrade (sq. ft.)	Climate appropriate landscape Upgrade area (sq. ft.)	Date for Achieving Upgrades
MWELo LANDSCAPE ACHIEVED				

Planning Narrative on Living Landscape Upgrades for the Next 5 Years

Due to the nature of the types of owned locations, CDFW has often kept the areas around the buildings as close to their natural state as possible, or they have been restored to their natural state for ecological purposes. At these locations, the emphasis is on natural or native landscaping, rather than creating a landscape for aesthetic purposes. As a result, there is little to no turf or other

non-native plants installed. Instead, CDFW maintains current landscaping or enhances what is intended to be there. For the few areas in a more urban setting, trees were kept to the extent possible.

Planning Narrative for Remaining non MWELO Compliant Living Landscape Upgrades

Please see response above.

Reporting on Living Landscape Water Efficiency Projects 2020 – Present

Table 4.17: Summary of Completed Living Landscaping Water Efficiency Projects

Year Funded	Est Annual Water Savings (Gallons)	Sum of MWELO Landscape installed (sq. ft.)	Sum of Climate Appropriate Landscape Installed (sq. ft.)
2020	NO CURRENT PROJECTS		
2021			
2022			

Planning Narrative on Living Landscape BMPs

CDFW's landscaped areas are very small. For the few places with landscapes and systems installed, BMPs are reviewed at least quarterly and updated as necessary.

Reporting on Large Living Landscape Inventory (>20,000 sq. ft.)

Table 4.18: Large Landscape Inventory and Water Budget Requirements

Name of Facility Sites/Locations with > 20,000 sq. ft. of Landscaping	Landscape Area per Facility	Water Budget per Facility	EPA WaterSense or Irrigation Association Certified Staff per Facility
NO LARGE LANDSCAPES			

Reporting on Achieving Large Living Landscape Requirements

Table 4.19: Achieving Large Living Landscape Area Requirements

Facility Name	Landscaping sq. ft. to be upgraded to MWELO standards	Water Budget per Facility in Gallons	Ground Water Basin	# of staff Needing EPA WaterSense certification	Date for Achieving
NO LARGE LANDSCAPES					

Planning Narrative on Achieving Large Living Landscape Requirements

NO LARGE LANDSCAPES

Critically Over Drafted Groundwater Basins and Water Shortage Contingency Plans

Reporting on Buildings in Critically Over Drafted Groundwater Basins

Table 4.20: Buildings in Designated Critically Over Drafted Groundwater Basins

Building Name	Basin Name	Amount of water Used 2021 (Gallons)	Amount of water Used 2022 (Gallons)
NO FACILITIES			

Reporting on Buildings with Urban Water Shortage Contingency Plans

Table 4.21: Buildings with Urban Water Shortage Contingency Plans

Building Name	Name of Water Supplier with Urban Water Shortage Contingency Plans	Year of Publication or Update
NO BUILDINGS SUBJECT TO PLANS		

Planning Narrative for Urban Water Shortage Contingency Plans

NO BUILDINGS SUBJECT TO PLAN

Reporting Narrative on Department's Contingency Plan

NO BUILDINGS SUBJECT TO PLAN

Planning Narrative on Department's Contingency Plan

CDFW is updating incubation and rearing enclosures as well as water treatment and monitoring systems to many of the State's over 80-year-old FHs to be resilient to climate-change, warming temperatures, and drier conditions for recreational and conservation hatchery production programs. In addition, specialized rearing enclosures are also needed to provide temporary safe havens for a growing number of native fish species in danger of losing their habitat to drought. CDFW has also implemented additional contingencies and mitigation measures to minimize the adverse impacts of drought on hatchery fish, as identified on the [CDFW Drought Related Actions page](#).

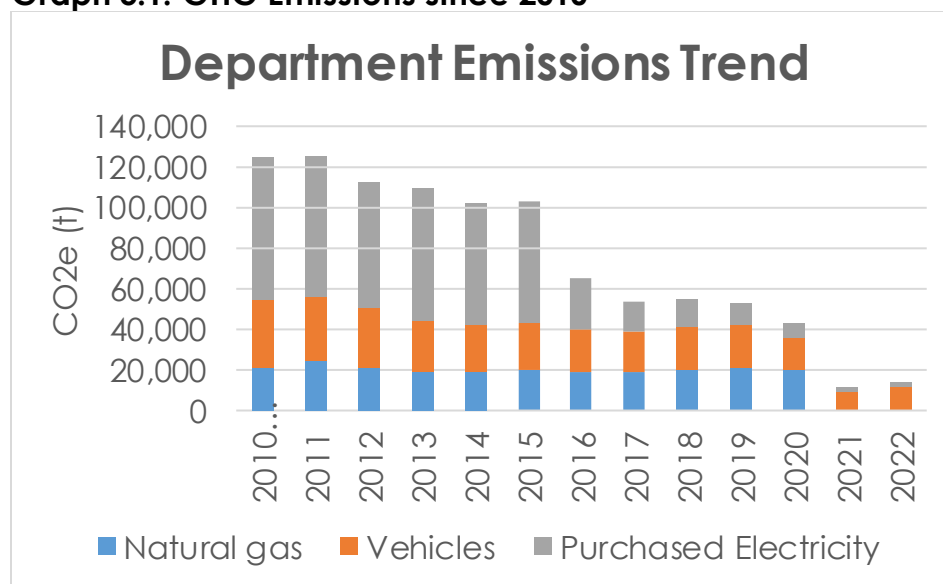
CHAPTER 5 – SUSTAINABLE OPERATIONS

Greenhouse Gas Emissions

Table 5.1: GHG Emissions since 2010 (Metric Tons)

Emissions Source	Natural gas	Vehicles	Purchased Electricity	Total
2010 Baseline	21,556	33,588	70,272	125,416
2011	23,962	31,380	70,225	125,567
2012	20,587	29,461	62,340	112,388
2013	18,516	25,251	65,778	109,545
2014	19,233	23,165	59,956	102,354
2015	19,741	22,954	59,870	102,565
2016	18,996	21,460	24,234	64,690
2017	19,210	19,901	14,570	53,681
2018	20,361	20,533	13,956	54,850
2019	20,841	21,533	9,717	52,091
2020	19,906	16,214	6,938	43,058
2021	138	9,785	2,009	11,932
2022	187	11,899	1,647	13,733
Percent Change since Baseline	-100%	-100%	-100%	-100%

Graph 5.1: GHG Emissions since 2010



Planning Narrative for Current GHG Reduction Goals and 2035 Reduction Goals Strategies

Natural gas is staying relatively the same, but there have been decreases in both vehicle and purchased electricity emissions for 2022. Please note that 2022 emissions data is in part impacted due to the change in utilization resulting from the pandemic and Emergency Telework. It is anticipated future utilization will differ from pre-pandemic utilization, and CDFW plans to continue to evaluate this change and how to continue to reduce GHG.

Though CDFW has exceeded its goal, it understands how important it is to reduce GHG emissions, and therefore has set new internal goals.

CDFW has set a 50% reduction in GHG emissions by 2030, using the 2010 baseline tracked in the Climate Registry Information System (CRIS). To meet the ambitious goal, CDFW has set new goals for energy and fleet reduction as well. CDFW's new goals are:

- ▶ **Reduce GHG emissions by 50%**
 - ▶ Reduce energy use by 70%
 - ▶ Reduce fleet emissions by 30%

CDFW currently needs to reduce emissions by 6007.5 metric tons to achieve the 50% goal. GHG emissions are broken out into three categories in the CRIS database: vehicles, electricity, and heating fuel.

Planning Narrative for Carbon Inventory Worksheet

In preparation for CDFW decarbonization plans, an initial step in preparation for planning details of efforts toward zero emissions, is to take an inventory of all CDFW carbon emitting equipment and systems. CDFW will conduct a Department-wide survey, helping to identify upcoming renovations, equipment conditions, future facility obsolescence, and plans for upgrades.

Building Design and Construction

New Building LEED Certification

Table 5.2: New Building Construction since July 1, 2012

Building Name	LEED Certification Type & Level Achieved	Commissioning Performed (Y/N)
WEST SAC 1010 CAMPUS	Gold	
FILLMORE FH	N/A	Under Construction

Planning Narrative of Table 5.2: New Building Construction since July 1, 2012

Since 2012, CDFW has only had one new building, currently under construction and one leased space with major renovation. The leased space received a Gold, Leadership in Energy and Environmental Design (LEED) certification for the interior. There are no other buildings planned, but CDFW will adhere to all mandates should the need arise again.

LEED for Existing Buildings Operations and Maintenance (EBOM)

Table 5.3: Large Building LEED Certification for Existing Buildings

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. that have achieved LEED EBOM
NO BUILDINGS EXCEED 50,000 SQ.FT.		0

Planning Narrative for Table 5.3 Large Building LEED Certification

CDFW does not have any LEED-EBOM certified buildings, as all owned buildings are under 50,000 ft².

Indoor Environmental Quality (IEQ)

Daylighting in New Construction

CDFW does not have any plans for new buildings. However, should an opportunity arise, all mandates will be adhered to.

Planning Narrative for CALGreen Tier 1 Indoor Environmental Quality Measures

INDOOR ENVIRONMENTAL QUALITY, CAL GREEN MEASURES ACHIEVED

Planning Narrative for IEQ-New Buildings and Renovation Measures

Due to the size and limitations of the lands/maintenance section, CDFW relies on DGS for all major renovations and new construction, and therefore expects that mandates will be adhered to.

Planning Narrative for Compliance with Furnishing Standards

FURNISHING STANDARDS ACHIEVED

CDFW utilizes existing furniture for building projects whenever possible. CDFW purchases products from California Prison Industry Authority (CalPIA), whenever feasible. CalPIA offers recycled products and received the highest standard of certification for sustainability under the Business and Institutional Furniture Manufacturers Association (BIFMA), a leader in creating international standards for the creation and safety of furniture products.

Additionally, CDFW has a Recycled First Policy that will help increase and ensure Environmental Preferred Purchasing (EPP) in all procurement, when feasible. EPP training is provided by CDFW's BMB Procurement Unit.

Planning Narrative on Using Green Seal Cleaning Products

CDFW does not have specific language mentioning "Green Seal Certified", however it is a requirement that all products are environmentally and human safe. Additionally, paper products must be made of at least 50% recycled materials.

Planning Narrative for Cleaning Procedures – Various Standards

CLEANING PROCEDURES STANDARDS ACHIEVED

Planning Narrative for Cleaning Procedures – Title 8, Section 3362

TITLE 8 SECTION 3362 CLEANING PROCEDURES STANDARDS ACHIEVED

Planning Narrative for HVAC Operations

BMPs guides are reviewed quarterly. As equipment needs to be replaced, more efficient units are provided. Since most of the owned locations are small, CDFW does not have many large HVAC units.

Planning Narrative for HVAC Inspection Requirements

HVAC INSPECTION REQUIREMENTS ACHIEVED.

Integrated Pest Management (IPM)

Reporting on IPM plans

Table 5.4: Integrated Pest Management Contracts

Pest Control Contractor	IPM Specified (Y/N)
Hunter Services, Inc.	Y
Epic Pest Control	Y
EcoTech Pest Management	Y
Allpro Pest Services	Y
Advanced Integrated Pest Management	Y
EagleShield Pest Control	Y
California Pest Management	Y
EcoGuard Pest Management	Y
Newport Exterminating	Y
Big Time Pest Control	Y

Planning Narrative for Pest Control Contracts

CDFW does not have a formal policy or integrated pest management plan in effect or as part of the pest control contracts. The different regions and locations utilize contracts specific to their areas and deal with a variety of challenges that may not quite fit into the guidance put forth in the DGS California BMPs Manual for offices. Most of the facilities are in areas reserved for

wildlife and therefore, critters and insects are present. CDFW tries where possible not to use spray pesticides, especially because it could harm wildlife and other sensitive nature areas present.

Fossil Fuel Landscaping Equipment Replacement with Low Emitting Landscaping Equipment

Planning Narrative for Replacing Fossil Fuel Landscaping Equipment

California regulators voted to ban the sale of new gas-powered leaf blowers and lawn mowers starting in 2024 and portable generators by 2028, the latest step in the State's aggressive effort to reduce harmful pollutants and transition toward a carbon-free economy.

Waste and Recycling Programs

Designated Waste and Recycle Coordinator and Program Basics

Reporting Narrative on Designated Waste and Recycle Coordinator and Program Basics

CDFW is currently coordinating Department-wide efforts to identify and meet BMPs.

Planning Narrative on Designated Waste and Recycle Coordinator and Program Basics

CDFW is currently coordinating Department-wide efforts to identify and meet BMPs.

SARC Report

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

Per Capita Disposal Rate	2021	2022	Total Waste 2021	Total Waste 2022	% Change from 2021/2022
2.1	1.63	.27	887.74	122.85	151.37%

Planning Narrative on SARC Report on Total Waste per Capita

PER CAPITA BASELINE ACHIEVED

Recycling Program and Practices

Reporting Narrative on Recycling Program and Practices

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products, at every opportunity, when purchasing goods that fall under the 16 SABRC reportable categories.

Buyers will incorporate templated language into Request for Quotations (RFQs) and solicitations for quotes, requesting that vendors supply recycled content alternatives that are equivalent to requested items where feasible and practical. Templated language has been included in CDFW's RFQ template and Written Quotes script. These are located on the Procurement intranet page under the General tab.

Additionally, buyers must follow Assembly Bill 661, which allows for vendors that offer products meeting the minimum Post Consumer Recycled Content (PCRC) percentages to be awarded a bid, even when their bid is the higher bid, if it is no more than 10% higher than the other bid(s) not offering products meeting the minimum PCRC percentages.

Planning Narrative on Recycling Program and Practices

RECYCLING PRACTICES ACHIEVED

Organics Recycling

Reporting Narrative on Organic Recycling Program and Practices

CDFW does not currently have an Organics Recycling Program.

Planning Narrative on Organic Recycling Program and Practices

CDFW is currently working on an Organics Recycling Program. The program is expected to be implemented by the end of 2024.

Reporting on Edible Food Recovery Program

Table 5.6: Edible Food Recovery Program Elements

Building Name	Cafeteria ≥ 5,000 Square Feet (Enter sq. ft.)	Cafeteria +250 Seats (Enter actual number of seats)	WAs Cafeteria Open in 2022?	Food Recovery Agreement Yes, No or Unknown
NO EDIBLE FOOD RECOVERY PROGRAM REQUIRED				

Reporting Narrative on Edible Food Recovery Program

NO EDIBLE FOOD RECOVERY PROGRAM REQUIRED

Planning Narrative on Edible Food Recovery Program

NO EDIBLE FOOD RECOVERY PROGRAM REQUIRED

Reporting on Food Service Items Program

Table 5.7: Food Service Concessionaire Items Program Elements

Building Name	Prepared Food Service Operations Type	Food Service Packaging Meets Requirements	Process in Place for selecting Food Services that meet Packaging Requirements
NO FOOD SERVICES			

Planning Narrative on Food Service Items Program

NO EDIBLE FOOD RECOVERY PROGRAM REQUIRED

Hazardous Waste Materials

Reporting on Hazardous Waste Materials

Table 5.8: Hazardous Waste Materials

Department -Wide Hazardous Material Name	Department Total Hazardous Material Amount (lbs.)
NO HAZARDOUS WASTE MATERIALS PRODUCED	

Reporting Narrative for Hazardous Waste Materials

NO HAZARDOUS WASTE MATERIALS PRODUCED

Planning Narrative for Hazardous Waste Materials

NO HAZARDOUS WASTE MATERIALS PRODUCED

Universal Waste

Reporting on Department-Wide Universal Waste Materials

Table 5.9: Reporting on Department- Wide Universal Waste Materials

Category	Universal Waste Contract in Place YES or NO
Electronic Waste	YES
Batteries	YES
CRTS	YES
CRT glass	YES
Lamps	YES
Mercury Wastes	YES
Non-empty aerosol cans	YES
PV Modules	YES

Planning Narrative for Department-Wide Universal Waste Materials

DEPARTMENT WIDE UNIVERSAL WASTE MATERIALS DISPOSAL ACHIEVED

Material Exchange

Reporting Narrative on Department-Wide Material Exchange

CDFW provides all surplus property requests to the DGS for approval. Approvals include reutilization to be delivered to the DGS-OFAM warehouse and items to be sold at auction, which includes an online auction or donation to acceptable recipients, such as schools. CDFW only adheres to the surplus property of Information Technology (IT) and Non-IT equipment, as prescribed in the State Administrative Manual (SAM). CDFW is not aware of any materials exchange program sanctioned by DGS or any other oversight agency, however, routinely adheres to the SAM for proper asset disposal, sale, reutilization, or donation.

Planning Narrative on Department-Wide Material Exchange

CDFW participated in instances of asset disposal, sale, reutilization, or donation as prescribed by SAM. CDFW receives official direction from DGS to identify any acceptable material exchange activities and will implement new policies and procedures in compliance with any new direction from DGS, as necessary.

Waste Prevention Program

Reporting Narrative on Department-Wide Waste Prevention

DEPARTMENT-WIDE WASTE PREVENTION ACHIEVED

Planning Narrative on Department-Wide Waste Prevention

DEPARTMENT-WIDE WASTE PREVENTION ACHIEVED

Reuse Program

Reporting Narrative for Department-Wide Material Reuse

CDFW reuses all materials, whenever feasible, either for its original intended purpose or a similar purpose, without significantly altering the physical form of the object or material.

Planning Narrative for Department-Wide Material Reuse

CDFW reuses all materials, whenever feasible, either for its original intended purpose or a similar purpose, without significantly altering the physical form of the object or material. Items are stored in a warehouse environment until they can be distributed to locations in need.

Employee Waste and Recycling Training and Education

Reporting Narrative for Employee Waste and Recycle Training and Education

Pursuant to AB 2812 (Gordon, Chapter 530, Statutes of 2016), CDFW provides adequate receptacles, signage, education, and staffing, and arranges for recycling services consistent with existing recycling requirements for each office building. At least once per year, the adequacy and condition of receptacles for recyclable material and of associated signage, education, and staffing is reviewed.

Additionally, the CDFW BMB Acquisitions Support Unit (ASU) provides annual training to educate their employees by providing guidance on products that contain recycling content.

Planning Narrative for Employee Waste and Recycle Training and Education

EMPLOYEE EDUCATION AND TRAINING ACHIEVED

Environmentally Preferred Purchasing (EPP)

Reporting Narrative for Measure and Report Progress on EPP Spend

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products at every opportunity when purchasing goods that fall under the 16 SABRC reportable categories.

Buyers will incorporate templated language into -the RFQs and solicitations for quotes, requesting that vendors supply recycled content alternatives that are equivalent to requested items where feasible and practical. Templated language has been included in CDFW's RFQ template and Written Quotes script. These are located on the Procurement intranet page under the General tab.

Additionally, buyers must follow Assembly Bill 661, which allows for vendors that offer products meeting the minimum PCRC percentages to be awarded a bid, even when their bid is the higher bid, if it is no more than 10% higher than the other bid(s) not offering products meeting the minimum PCRC percentages.

Planning Narrative for Measure and Report Progress on EPP Spend

EPP SPEND ACHIEVED

Goods and Services Categories with the Greatest Potential to Green:

Reporting on Goods and Services Categories with the Greatest Potential to Green

Table 5.10: Goods and Services Categories with the Greatest Potential to Green

Good or Service	2022 Total Spend (\$)	2022 Percent EPP Spend (%)	EPP Target (%)
ALL GOODS AND SERVICES CATEGORIES MEET EPP, NO FURTHER POTENTIAL TO GREEN			

EPP BMPs

Reporting Narrative for EPP BMPS

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products at every opportunity when purchasing goods that fall under the 16 SABRC reportable categories.

Planning Narrative for EPP BMPs

EPP BMP's ACHIEVED

Reporting on EPP Training and Outreach

Table 5.11: 2022 EPP Basic Training Completions

CalHR Classification	Total Number of Staff	EPP Basic Training Completion	Percent Trained	2023 EPP Training Goal
Various		382		AS NEEDED

5.122: Buyers Who Have Completed EPP Intermediate Training

Classification	Total number of staff	EPP Intermediate Training Completions	Percent Trained	2023 EPP Training Goal (%)
Various		382		AS NEEDED

Table 5.13: 2022 EPP Executive Training Completions for Executive Members at CDFW

Executive Member	Title	Date Completed
UNKNOWN		AS NEEDED

Reporting Narrative on EPP Training and Education

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products at every opportunity when purchasing goods that fall under the 16 SABRC reportable categories.

Additionally, CDFW BMB ASU provides annual training to educate their employees by providing guidance on products that contain recycling content.

Planning Narrative on EPP Training and Education

EPP TRAINING AND EDUCATION ACHIEVED

Reporting on State Agency Buy Recycled Campaign (SABRC) and Reducing Impacts

Reporting on SABRC Progress

Table 5.14: State Agency Buy Recycled Campaign (SABRC) FY 21/22 Performance`

Product Category	SABRC Reportable Dollars	SABRC Compliant Dollars	% SABRC Compliant
Antifreeze	\$704.67	\$0.00	0.00%
Carpet	N/A	N/A	N/A
Compost and Mulch	\$1,543.65	\$1,430.96	92.70%
Glass Products	\$54,955.58	\$2,784.14	5.07%
Erosion Control Products:	N/A	N/A	N/A
Lubricating Oils	\$22,311.35	\$12,441.95	55.77%
Paint	\$6,216.32	\$2,062.72	33.18%
Paper Products	\$23,185.12	\$15,755.55	67.96%
Pavement Surfacing	N/A	N/A	N/A
Plastic Products	\$783,449.62	\$108,517.76	13.85%
Printing and Writing Paper	\$112,702.67	\$68,819.12	61.06%
Metal Products	\$4,156,689.09	\$1,028,722.47	24.75%
Soil Amendments and Soil Toppings	N/A	N/A	N/A
Textiles	N/A	N/A	N/A
Tire Derived Products	\$11,276.21	\$157.74	1.40%
Tires	\$46,235.91	\$0.00	0%

Planning Narrative for Measure and Report SABRC Progress

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products at every opportunity when purchasing goods that fall under the 16 SABRC reportable categories.

Buyers will incorporate templated language into the RFQs and solicitations for quotes, requesting that vendors supply recycled content alternatives that are equivalent to requested items where feasible and practical. Templated

language has been included in CDFW's RFQ template and Written Quotes script. These are located on the Procurement intranet page under the General tab.

Additionally, buyers must follow Assembly Bill 661, which allows for vendors that offer products meeting the minimum PCRC percentages to be awarded a bid, even when their bid is the higher bid, if it is no more than 10% higher than the other bid(s) not offering products meeting the minimum PCRC percentages.

Reducing Impacts

Reporting Narrative for Reducing Impacts

Pursuant to BMB Memo 23-08, CDFW programs shall make every effort to select recycled content products at every opportunity when purchasing goods that fall under the 16 SABRC reportable categories.

Buyers will incorporate templated language into the RFQs and solicitations for quotes, requesting that vendors supply recycled content alternatives that are equivalent to requested items where feasible and practical. Templated language has been included in CDFW's RFQ template and Written Quotes script. These are located on the Procurement intranet page under the General tab.

Additionally, buyers must follow Assembly Bill 661, which allows for vendors that offer products meeting the minimum PCRC percentages to be awarded a bid, even when their bid is the higher bid, if it is no more than 10% higher than the other bid(s) not offering products meeting the minimum PCRC percentages.

Location Efficiency

Smart Location Score for New Leases after January 1, 2020

Table 5.15: Smart Location Score for New Leases after January 1, 2020

Facility name	Smart Location Calculator Score
CDFW Headquarters	83
Alta Sea (Port of Los Angeles)	24
Old Ranch (Seal Beach)	2
Weaverville (R1)	77
West Sacramento Campus (960 Riverside)	1

Planning Narrative Instructions for Smart Location Score after January 1, 2020

LOCATION EFFICIENCY ACHIEVED

Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score

Table 5.16: Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score

Facility name	Smart Location Calculator Score
NO DATA	

CHAPTER 6 - FUNDING OPPORTUNITIES

Funding Opportunity Climate Change Adaptation

Table 6.1: Climate Change Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
NO PRIORITIES		Choose an item.		

Funding Opportunities for ZEVs and EV Infrastructure

Table 6.2: EV Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
NO PRIORITIES		Choose an item.		

Funding Opportunities for Building Energy Conservation and Efficiency

Table 6.3: Building Energy Conservation and Efficiency Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
NO PRIORITIES		Choose an item.		

Funding Opportunities for Water Conservation and Efficiency

Table 6.4: Water Conservation and Efficiency Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
NO PRIORITIES		Choose an item.		

Funding Opportunities for Sustainable Operations

Table 6.5: Sustainable Operations Priorities

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
NO PRIORITIES	Choose an item.	Choose an item.		

Full Life Cycle Cost Accounting

Reporting on Life Cycle Cost Accounting

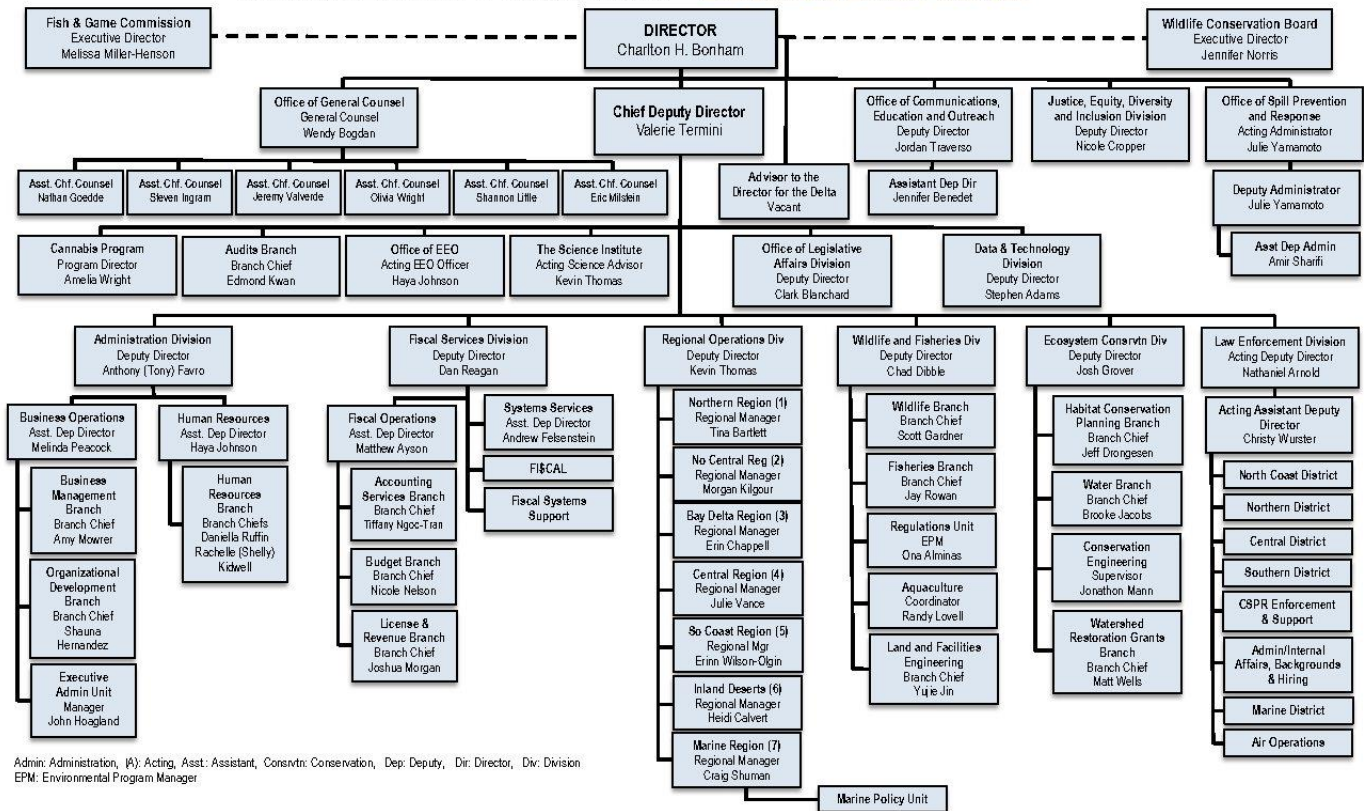
NO INFRASTRUCTURE INVESTMENTS

Planning for Implementing Life Cycle Cost Accounting

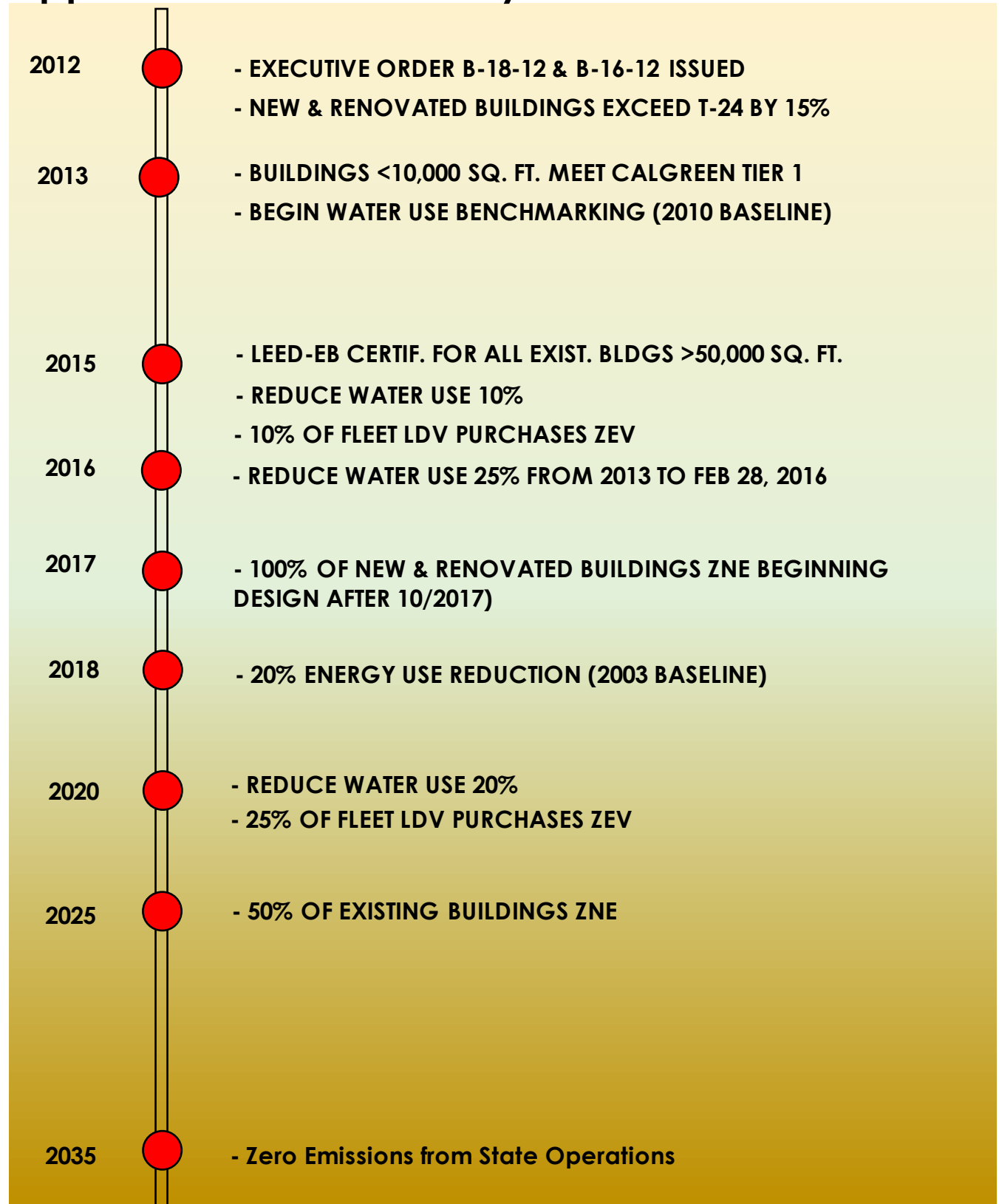
NO INFRASTRUCTURE INVESTMENTS

APPENDIX A – SUSTAINABILITY LEADERSHIP

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE EXECUTIVE OVERVIEW 11/01/2023



Appendix B - Sustainability Milestones & Timeline



APPENDIX C – ACRONYMS

AB	Assembly Bill
ADR	Automated Demand Response
AMB	Asset Management Branch (at DGS)
ASU	Acquisition Support Unit (at CDFW)
BB	Budget Branch (at CDFW)
BMB	Business Management Branch (at CDFW)
BMP	Best management practices
CA	California
CALGREEN	California Green Building Code (Title 24, Part 11)
CEA	Career Executive Assignment
CEC	California Energy Commission
DGS	Department of General Services
DOF	Department of Finance
DTD	Data Technology Division (at CDFW)
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
ER	Ecological Reserve
ESCO	Energy service company
ESPM	Energy Star Portfolio Manager
ETS	Enterprise Technology Solutions (at DGS)
EUI	Energy use intensity (source kBtu/sq. ft.)

EVSE	Electric vehicle supply equipment (charging equipment)
EXEC	Executive Division (at CDFW)
FH	Fish Hatchery
FMD	Facilities Management Division (at DGS)
GCM	Global circulation model
GHG	Greenhouse gas
GHGe	Greenhouse gas emissions
GSP	Groundwater Sustainability Plan
ICE	Internal Combustion Engines
IEQ	Indoor environmental quality
kBTU	Thousand British thermal units (unit of energy)
LCM	The Landscape Coefficient Method
LEED	Leadership in Energy and Environmental Design
LFU	Leased Facilities Unit (at CDFW)
LMP	Land Management Plan
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
ODB	Organizational Development Branch (at CDFW)
OFAM	Office of Fleet and Asset Management (at DGS)
OS	Office of Sustainability (at DGS)
OSPR	Office of Spill Response (at CDFW)
PCRC	Post Consumer Recycled Content
PMDB	Project Management and Development Branch (at DGS)
PPA	Power purchase agreement

PUE	Power usage effectiveness
RCP	Representative Concentration Pathway
RELPS	Real Estate Leasing and Planning Section (at DGS)
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
SWAP	State Wildlife Action Plan
WA	Wildlife Area
WFD	Wildlife and Fisheries Division (at CDFW)
WMC	Water Management Coordinator
WRGB	Watershed Restoration Grants Branch (at CDFW)
VHSP(s)	Vehicle home storage permits
WUCOLS	Water Use Classifications of Landscape Species
ZEV	Zero-emission vehicle
ZNE	Zero Net energy

APPENDIX D – GLOSSARY

Backflow – 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, Boilers – 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.

Blowdown, Cooling Towers – Water discharged to remove high mineral content system water, impurities, and sediment.

Best Management Practices (BMPs) – Ongoing actions that establish and maintain building water use efficiency. BMPs can be continuously updated based on need and tailored to fit the facility depending on occupancy and specific operations.

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).

Cooling Degree Day (CDD) – 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.

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 – 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 – 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.

Heating Degree Day (HDD) – 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.

Hydrozone – 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) – A method of estimating irrigation needs of landscape plantings in California. It is intended as a guide for landscape professionals.

Landscape Water Budget – The calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance.

Lifecycle Cost Accounting – Includes initial investment costs, as well as lifetime operation and maintenance costs under changing climate conditions, including changing average conditions and increases in extreme events. It may involve applying non-market evaluation methods such as travel cost, avoided costs or contingent valuation to capture hard to quantify benefits and costs.

Make Up Water – Makeup water, or the water replacing evaporated or leaked water from the boiler, is first drawn from its source, whether raw water, city water, city-treated effluent, in-plant wastewater recycles (cooling tower blowdown recycle), well water, or any other surface water source.

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. The latest update to MWELO was in 2015. MWELO applies to all state agencies' landscaping.

Mulch – 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.

Natural Infrastructure – The “preservation or restoration of ecological systems or the utilization of engineered systems that use ecological processes to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but need not be limited to, flood plain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days” (Public Resource Code Section 71154I(3)).

Non-Purchased Water – Water used that does not come from a 3rd party supplier. It may be water from domestic wells owned by the department or water that is taken from a river, lake, canal, or other source and used by a department. The water may be returned to its source after use.

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 – 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 – 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.

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

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% of California's energy use is related to water use with nearly 10% 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.

WUCOLS – Water Use Classification of Landscape Species. WUCOLS are used to help determine water budgets and irrigation schedules. Use this link to access the necessary information for your landscaping needs. [WUCOLS Plant Search Database \(ucdavis.edu\)](http://wucols.ucdavis.edu)

Zero Net Energy (ZNE) – Energy Efficient building that produces as much clean renewable energy as it consumes over the course of a year, when accounted for at the energy generation source.

APPENDIX E – 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	
AD/BMB	Amy Mowrer, Branch Manager
Science Institute	Lisa Bays, Assistant Branch Manager
	Whitney Albright, Sr. Environmental Scientist (Specialist)

Understanding Climate Risk at Planned Facilities	
AD/BMB	Amy Mowrer, Branch Manager
Science Institute	Lisa Bays, Assistant Branch Manager
	Whitney Albright, Sr. Environmental Scientist (Specialist)

Integrating Climate Change into Department Planning and Funding Programs	
WRGB	Randi Adair, Environmental Program Manager I
Science Institute	Matt Wells, Branch Manager
	Whitney Albright, Sr. Environmental Scientist (Specialist)

Measuring and Tracking Progress	
AD/BMB	Amy Mowrer, Branch Manager
Science Institute	Lisa Bays, Assistant Branch Manager
	Whitney Albright, Sr. Environmental Scientist (Specialist)

Zero Emission Vehicles

Incorporating ZEVs Into the Department Fleet	
AD/BMB	Amy Mowrer, Branch Manager
	Don Ronalter, Assistant Branch Manager
	Tim Uhls, Fleet Manager

Telematics	
AD/BMB	Amy Mowrer, Branch Manager
	Don Ronalter, Assistant Branch Manager
	Sammy Wong, Telematics Manager

Public Safety Exemption	
LED AD/ODB OSPR	Nathanial Arnold, Deputy Director, Law Enforcement Division Shauna Hernandez, Branch Manager Amir Sharifi, Career Executive Assignment (CEA)

Outside Funding Sources for ZEV Infrastructure	
AD/BMB	Amy Mowrer, Branch Manager Don Ronalter, Assistant Branch Manager Tim Uhls, Fleet Manager

Hydrogen Fueling Infrastructure	
AD/EXEC	Anthony Favro, Deputy Director Melinda Peacock, Assistant Deputy Director
AD/BMB	Amy Mowrer, Branch Manager Don Ronalter, Assistant Branch Manager Tim Uhls, Fleet Manager
Engineering	Yujie Jin, Branch Manager

Comprehensive Facility Site and Infrastructure Assessments	
Engineering	Yujie Jin, Branch Manager
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

EVSE Construction Plan	
AD/EXEC	Anthony Favro, Deputy Director Melinda Peacock, Assistant Deputy Director
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

EVSE Operation	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Energy

Zero Net Energy (ZNE)	
Engineering	Yujie Jin, Branch Manager
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

New Construction Exceeds Title 24 by 15%	
Engineering	Yujie Jin, Branch Manager

Reduce Grid-Based Energy Purchased by 20% by 2018	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Server Room Energy Use	
DTD	Stephen Adams, Deputy Director

Demand Response	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Renewable Energy	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Monitoring-Based Commissioning (MBCx)	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Financing	
WRGB	Matt Wells, Branch Manager
AD/BB	Nicole Nelson, Branch Manager
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Water Efficiency and Conservation

Indoor Water Efficiency Projects in Progress First initiative	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Boilers and Cooling Systems Projects in Progress	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Landscaping Hardware Water Efficiency Projects in Progress	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Living Landscaping Water Efficiency Projects in Progress	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Buildings with Urban Water Shortage Contingency Plans in Progress	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Green Operations

Greenhouse Gas Emissions	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Building Design and Construction	
ENGINEERING AD/BMB	Yujie Jin, Branch Manager Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

LEED for Existing Buildings Operations and Maintenance	
ENGINEERING AD/EXEC	Yujie Jin, Branch Manager Anthony Favro, Deputy Director Melinda Peacock, Assistant Deputy Director
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Indoor Environmental Quality	
AD/ODB AD/BMB	Shauna Hernandez, Branch Manager Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

Integrated Pest Management	
CDFW WFD	Chad Dibble, Deputy Director

Waste Management and Recycling	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager Chelsea Tippin, Assistant Branch Manager Christina Ellis, Staff Services Manager I

Environmentally Preferable Purchasing	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager Chelsea Tippin, Assistant Branch Manager Christina Ellis, Staff Services Manager I

Location Efficiency	
AD/BMB	Amy Mowrer, Branch Manager Lisa Bays, Assistant Branch Manager

APPENDIX F – SUSTAINABILITY STATUTORY REQUIREMENTS. EXECUTIVE ORDERS AND MANAGEMENT MEMOS 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.

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 14-09**](#): 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

Recent 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 the California Natural Resources Agency (CNRA) updates 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)
- [**Senate Bill \(SB\) 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)

Other Legislative Actions

- [**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.
- [**Assembly Bill \(AB 32\) 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.
- [**Assembly Bill \(AB 2583\)**](#) ([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.

- [**Assembly Bill \(AB\) 75:**](#) Implement an integrated waste management program and achieve 50 percent disposal reduction target. State Agencies report annually on waste management programs.
- [**Senate Bill \(SB\) 1106:**](#) Requires at least one designated waste management coordinator. Report annually on how your designated waste and recycling coordinator meets the requirement.
- [**Assembly Bill \(AB\) 2812:**](#) Provides adequate receptacles, signage, education, staffing, and arrange for recycling services. Report annually on how each of these is implemented.
- [**Assembly Bill \(AB\) 341:**](#) Implement mandatory commercial recycling program (if meet threshold). Report annually on recycling program
- [**Assembly Bill \(AB\) 1826:**](#) Implement mandatory commercial organics recycling program (if meet threshold). Report annually on organics recycling program.
- [**Senate Bill \(SB\) 1383:**](#) Requires 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.
- [**Senate Bill \(SB\) 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**](#): 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.

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