Sustainability Roadmap December 31, 2021 California Department of Corrections and Rehabilitation

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

California Department of Corrections and Rehabilitation
Gavin Newsom, Governor

Department of Corrections and Rehabilitation Sustainability Roadmap 2021

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The California Department of Corrections and Rehabilitation's (CDCR) infrastructure includes more than 43 million square feet of state building space on more than 23,000 acres of land. CDCR currently operates 36 state-owned adult and youth institutions.

The 2021 CDCR Sustainability Roadmap outlines the Department's progress and future plans to achieve sustainability goals set forth in the state of California's Executive Orders (EOs), policies, and procedures related to five specific areas: climate change adaptation, zero emission vehicles (ZEVs), energy, water efficiency and conservation, and green operations.

Several CDCR facilities are located in climate zones that experience extreme heat or cold in summer and winter months and others are located in remote locations that may suffer from monsoonal rains, wildfires, depletion of local water supplies, or similar climate-related concerns. As a Department with a vast footprint, CDCR has become an innovator in the area of sustainability that aims to alleviate the adverse effects of a changing climate on the operations of CDCR and establish a leadership position in environmental stewardship. Since 2008, CDCR's Energy and Sustainability Section (ESS), together with other key Department stakeholders and a myriad of professionals, has implemented substantial changes to CDCR's operations and continues to identify the potential effects of climate change and pursue efforts to prevent or mitigate them.

CDCR is the largest department in State government and has one of the largest State fleets, with approximately 10,000 total fleet assets including leased vehicles and mobile equipment. These fleet assets serve a number of operational needs from large buses to transport incarcerated populations between institutions, to high-pursuit vehicles used by parole agents and fugitive apprehension teams, to sedans and trucks serving localized areas, to name a few examples. Well over a decade ago, CDCR purchased hundreds of electric carts for use within prison property that reduces the numbers of gas-fueled vehicles within CDCR fleet. Since 2014, CDCR has been incorporating low-emission vehicles into its statewide fleet and has worked aggressively to secure funding from grants and incentive/rebate programs offered by the Investor Owned Utilities (IOUs) for ZEV infrastructure and charging station equipment. To date, CDCR has installed nearly 300 ports for fleet and employee electric vehicle charging.

Since 2008, CDCR has engaged in a collaborative effort through the California IOU/CDCR Energy Efficiency Partnership Program to improve energy efficiency. To date, CDCR has completed 115 energy efficiency projects that have yielded an annual cost savings of approximately $9 million. CDCR has been a leader within State government in accomplishing the objectives set forth in EO B-18-12

for State buildings using clean on-site power generation, such as solar photovoltaic and wind power generation. Through third-party Solar Power Purchase Agreements, CDCR has completed 22 on-site renewable solar generation projects at 17 institutions generating more than 50 megawatts (MW) of power and three wind turbine projects generating 5.5 MW. CDCR has managed the design and construction of 71 new buildings that have achieved U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED®) certification of a Silver level or higher. In addition, CDCR occupies eight LEED®-certified leased buildings.

In the area of water conservation, CDCR has implemented a number of water conservation and water efficiency projects. Water efficiency projects have included the installation of water efficiency fixtures, plumbing controls, as well as commercial grade equipment. One of the most significant water savings achieved by CDCR, for example, was through its installation of flush-regulating devices installed on toilets of the incarcerated population starting in 2006, which regulate how often toilets may be flushed. These devices, resulted in water savings of 40% or more. More recent water conservation efforts have included changes to operational procedures to further reduce water consumption through CDCR's continuing implementation of statewide Water Conservation and Management Plans (WCMPs) and Best Management Practices (BMP).

CDCR's emphasis on building "green" has carried through into its operations. The Department has established a number of green practices throughout its facilities, from improved waste diversion and enhanced waste reduction and recycling, to establishing less toxic methods to control pests through integrated pest management practices, and utilizing environmentally preferred purchasing methods for typical purchases such as office supplies and cleaning. The statewide installation of electric vehicle charging stations supports the Department's incorporation of ZEVs into its fleet, and encourages employees to use emission-free vehicles in their daily commutes that, when combined with on-site renewable generation, will reduce greenhouse gas emissions.

This report outlines CDCR's efforts achieved through December 2020 and planned through 2023, unless otherwise noted. Additional information on CDCR Sustainability efforts can be found at the following link:

http://www.green.ca.gov/Buildings/department/CDCR.

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CHAPTER ONE
CLIMATE CHANGE ADAPTATION

CHAPTER 1: CLIMATE CHANGE ADAPTATION

The state of California is challenged by the effects of climate change, including shifts in seasons, increasing temperatures, changes in precipitation levels and rising sea levels. California has issued executive orders and enacted legislation aimed at addressing these challenges. Several CDCR facilities are located in climate zones that experience extreme heat or cold in summer and winter months and others are located in remote locations that may suffer from extreme rain events, wildfires, depletion of local water supplies, or similar climate-related concerns. As a department with a vast footprint, CDCR has become an innovator in sustainability that aims to alleviate the adverse effects of a changing climate on the operations of CDCR and establish a leadership position in environmental stewardship. One of the Department's earliest efforts was to install solar arrays at one of its correctional facilities in 2006 to reduce carbon emissions, a prototype installation to test and later install at many more sites. In 2008, CDCR created ESS within the Division of Facility Planning, Construction and Management (FPCM) dedicated to its growing renewable energy and sustainability program. This section, together with other key stakeholders, has worked to implement substantial changes to CDCR operations and will continue to identify the potential effects of climate change and pursue efforts to prevent or mitigate them.

FIRST CALIFORNIA STATE AGENCY
To measure carbon emissions in partnership with the Carbon Footprint Registry

The Department has already incorporated climate action planning into its required *Master Plan Annual Report* (MPAR) and *Five-Year Infrastructure Plan* for the last several years.

Beginning in 2007, CDCR undertook an ambitious effort as the first California State agency to measure its carbon emissions and report on these emissions in partnership with The Climate Registry. The Climate Registry was established in 2007 by states within the US and Canadian provinces. The Carbon Footprint Registry is governed by a Board of Directors comprised of senior officials from 41 US states, the District of Columbia, 13 Canadian provinces and territories, 6 Mexican states, and 4 native sovereign nations. The Carbon Footprint Registry is a nonprofit Greenhouse Gas Emission (GHGe) registry for North America that provides organizations with tools to help them calculate, verify, report, and manage their GHGe in a publicly transparent and credible way. The information gathered from this analysis has been used to guide the Department in various resource efficiency and emission reduction strategies.

EO B-30-15 directs State Agencies to integrate climate change into all planning and investment. Planning and investment includes the following:

- Infrastructure and Capital Outlay Projects
- Economic Analysis
- Development of Strategic and Functional Plans
- Permitting
- Purchasing and Procurement
- Guidance Development
- Regulatory Activity
- Outreach and Education

Climate Change Risks to Facilities

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

The effects of climate change can be described in terms of primary exposure to various physical changes in the climate and environment caused by global climate change such as temperature, precipitation, and sea level rise, as well as stresses experienced by facilities as a result of these exposures (e.g., reduced water supply, impacts on structures from erosion and sea level rise, increased frequency and duration of heat waves). These vary considerably from region to region within California.

The application by CDCR of this screening process will depend upon the type of project planned. New and renovation projects planned for CDCR follow the requirements of the California Green Building Standard Code part II, title 24, California code of Regulations, also known as CALGreen and, where appropriate, executive order directives for LEED®[1] and Zero Net Energy (ZNE) construction. The Department also developed uniform standards and guidance documents for its project architects and engineers to meet these directives. Its own Design and Construction Policy Guidelines outlines, among other things, requirements to consider and mitigate GHGe, improve energy and water efficiency, improve indoor air quality, implement on-site renewable generation, utilize

1 USGBC® and LEED® are trademarks owned by the U.S. Green Building Council and are used with permission.

environmentally preferable construction materials, and develop on-site electric vehicle charging stations. As of December 2021, CDCR has completed 71 new LEED®-certified buildings, has one LEED® Silver project in design phase and has completed construction of its first project specifically designed to achieve ZNE the Health Care Administration and Health Records Building at Chuckawalla Valley State Prison. Projects designed to be LEED®-certified and ZNE have features that reduce the project's carbon footprint and are more reflective of existing climate conditions and/or include features that are more adaptive to the climate.

Most often, CDCR Capital Outlay and Infrastructure Repair Projects, these projects include small new or renovated structures at an existing correctional facility. Additionally, all project impacts, including emissions, waste, and natural habitat impacts, are already studied as required by the California Environmental Quality Act (CEQA). To offset the impacts of its projects, CDCR has preserved over 800 acres of wildlife breeding/foraging habitats and funded the restoration or creation of nearly 2,500 acres of natural habitat and farmland, resulting in over 3,300 acres to be held in perpetuity by natural resource agencies, land conservancies, or other environmental stewardship organizations.

115 ENERGY EFFICIENCY PROJECTS
Have yielded a combined GHGe reduction of 73,032 metric tons per year

Beyond infrastructure repairs and capital improvements, CDCR's operations also include a number of other areas that could be impacted by the effects of climate change. CDCR's leased portfolio is located in communities throughout California and is managed by the Department of General Services (DGS). CDCR has encouraged DGS to identify new lease opportunities that meet the same sustainability goals as CDCR promotes for its State-owned portfolio Additionally, CDCR manages an extensive fleet of 4,072 owned vehicles, 2,046 leased vehicles, and 4,066 mobile equipment assets, such as electric carts and forklifts. The Department has worked with DGS to replace a portion of its fleet with ZEVs and has installed electric vehicle charging stations at sixteen facility locations with many more planned over the next several years. CDCR has doubled its use of renewable diesel by 2016, with all applicable CDCR programs purchasing bulk renewable diesel fuel for fleet use. CDCR also recycles and purchases recycled materials and other environmentally preferable products for use in its facilities.

Understanding Climate Risk to Existing Facilities

Risk from Increasing Temperatures

Under a changing climate, temperatures are expected to increase – both at the high and low end. As a result, facilities will experience higher maximum temperatures and increased minimum temperatures. Average temperatures in California have already increased 1.8 degrees Fahrenheit (° F) over the past century. Extreme heat days and nights as well as heat waves have become more frequent since 1950. While heat waves have been highly variable, nighttime heat waves have shown a significant increase since 1950 California Natural Resources Agency (CNRA) 2018a. Statewide, temperatures are projected to increase substantially by the end of the 21st century with a projected increase of approximately 4.3° F to 6.0° F above 1990 averages by 2050 (Cal-Adapt 2018c). The anticipated increase in average temperatures may also be characterized by extreme heat events such as more frequent and longer-lasting heat waves. Higher increases in temperature are projected to be more prominent further inland and closer to desert regions.

For consistency in planning for climate impacts, CDCR uses the latest climate change information from Cal-Adapt, which is the most updated source of climate change data. Cal-Adapt uses Global Circulation Models (GCMs) to project future climate conditions. Models project future climate conditions under different future emission scenarios that are called Representative Concentration Pathways (RCPs). Different RCPs represent more or less rates and magnitudes of global GHGe reduction.

Table 1 reflects those correctional facilities that are projected to experience the highest estimated maximum temperatures in years 2070-2099. In addition to changing average temperatures, climate change will likely increase the number of extreme heat events across the State.

Table 1- Top Five Facilities Most Affected by Changing Temperature (Degrees Fahrenheit)

Facility Name*	Annual Mean Maximum Temperature (1961-1990)	Projected Annual Mean Maximum Temperature (2031-2060)	Projected Annual Mean Maximum Temperature (2070-2099)	Annual Mean Minimum Temperature (1961-1990)	Projected Annual Mean Minimum Temperature (2031-2060)	Projected Annual Mean Minimum Temperature (2070-2099)
CAL	88	93	97	97	97	67
ISP	87	92	96	96	96	69
CEN	88	92	96	96	96	66
CVSP	87	92	96	96	96	68
CRC	79	84	88	88	88	59

*Sorted data by Estimated Average Max Temp 2070-2099

Table 2 - Top Five Facilities that Will Experience the Largest Increase in Extreme Heat Events

Facility Name*	Extreme heat threshold (EHT)	Average # of days above EHT (1961-1990)	Projected Average # of days above EHT (2031-2060)	Projected Average # of days above EHT (2070-2099)	Projected Increase in # of days above EHT by mid-century (2031-2060)	Projected Increase in average # of days above EHT by end of century (2070-2099)
CAL	113	4	34	30	69	65
VSP	104	4	35	31	67	63
CCWF	104	4	35	31	67	63
CEN	112	4	29	24	62	57
LAC	104	4	37	33	60	55

*Sorted by Increase in Average Number of Days above Extreme Heat Threshold by end of century 2070-2099

Table 2 reflects those correctional facilities with the highest forecasted extreme heat events as measured by the Extreme Heat Threshold (EHT).

The nature of CDCR's operations dictates the need for very sturdy shell construction (i.e., concrete, concrete block, metal framing, and structural steel) that has a typically longer lifecycle than other types of construction (i.e., wood framing, etc.). CDCR structures tend to withstand the harsh effects of solar rays, wind and rainstorms, and even fire events because of these materials. However, many of the critical support systems contained within and around these structures remain susceptible to climate conditions. Approximately half of CDCR's adult correctional facilities are in areas of the State that have moderate to high summer temperatures. This includes several correctional facilities in the eastern and southeastern deserts, the lower San Joaquin Valley, Antelope Valley, and Inland Empire. Accordingly, CDCR has had long experience in the adaptation of the operation of correctional facilities in areas with periods of high daily temperatures. CDCR has traditionally used evaporative cooling for the majority of incarcerated population housing and program areas, which can provide little relief in extreme heat events; only a small portion of each facility typically has refrigerated cooling. However, all facilities regardless of their cooling systems are required to have a heat plan protocol to help reduce the harm to staff and the incarcerated population from extreme conditions.

During new construction and renovation projects, CDCR considers efficient cooling technologies recommended by the IOUs as part of the Department's energy efficiency partnership with the utilities and Savings by Design programs. As an example, a project to replace all of the evaporative cooling with a centralized chiller that will serve the cooling needs of Ironwood State Prison (ISP) is scheduled for completion in September 2022. ISP is listed in **Table 2** on the previous page. This is also one of the Department's first ZNE projects, designed to address the goal of EO B-18-12 to achieve 50% ZNE at existing buildings. The Department is also

improving the livability of correctional facilities through a multiyear roof replacement program by adding insulation to its roofing systems as they are replaced to help reduce interior daytime temperatures.

While increased temperatures will add challenges to the operations of buildings in deserts and other similar terrain, it will also accelerate deterioration of building systems – especially mechanical systems – if repair/renovation projects are delayed or deferred. Recent increases to CDCR's correctional facilities maintenance funding will help reduce deferred maintenance going forward. Furthermore, a number of one-time infusions of deferred maintenance funding, is helping reduce the deferred maintenance backlog.

Increased temperatures also add to water demands. The effect of increased temperatures on water availability was pronounced during the drought years of 2013-2017 and in current year 2021. During the previous drought, CDCR took steps to reduce its water use through both operational (conservation) practices and installation of water efficiency measures, exceeding the 25% statewide conservation goal set by the Administration. In response to current drought conditions, CDCR monitors and tracks water usage on a monthly basis, comparing 2021 usage to 2020 water usage and strives to meet the voluntary 15% reduction in alignment with EO N-10-21.

Figure 1- Solar Canopy Installation at PVSP

CDCR has over 54 MW of solar generation and is in design or construction at several locations, for a planned total of approximately 91 MW of renewable generation by the close of 2022. These solar installations assist CDCR to substantially reduce its total carbon footprint.

Other sustainability measures incorporated into CDCR projects to assist with temperature impacts beyond LEED® and ZNE efforts include its Cool Roof program designed to minimize on-site heat buildup, the installation of solar parking canopies (**Figure 1**) and cool (reflective) pavements to help reduce the heat island effect in CDCR parking facilities, and the installation of misting systems at several facilities to help mitigate temperature issues during outside recreation hours.

Risk from Changes in Precipitation

Table 3 - Facilities that will be Most Impacted by Projected Changes in Precipitation (Inches)

Facility Name	Annual Mean Max. Precip. (1961-1990)	Annual Mean Precip. (2031 - 2060)	Percent Change by mid-century	Annual Mean Precip. (2070-2099)	Percent change by end of century	Extreme Precip. (1961-1990)	Extreme Precip. (2031-2060)	Extreme Precip. (2070-2090)
SOL	22	27	24%	30	40%	12	8	10
CMF	22	27	24%	30	40%	12	8	10
CTF	9	11	25%	12	35%	2	2	3
SVSP	9	11	25%	12	35%	2	2	3
CCC	13	15	21%	17	34%	4	4	5

*Sorted by largest percentage change in precipitation in inches by end of century. Extreme precipitation data in Table 3 pulled from Cal-Adapt.

Only a few existing State correctional facilities are located in settings where increased precipitation could affect ongoing operations and/or the physical safety of the facilities. Some correctional facilities in Los Angeles, Riverside, and San Joaquin Counties are situated adjacent to major drainage systems that if not maintained by the respective local agency could pose occasional flooding problems within the affected facilities. CDCR may need to take the lead in modifying these facilities to prevent and/or lessen inundation of State properties. In addition, while **Table 3** shows the top five CDCR facilities that will experience increased precipitation, several more are impacted by already high precipitation levels in their respective climate zone. The impacts from 2017's historic precipitation was widespread among CDCR facilities, with several facilities, not listed above, inundated with severe rains and accompanying winds that caused roofs to fail and water intrusion in parking and driving areas, making navigation to and around the facility difficult. Even if improvements within CDCR facilities are made, the lack of companion improvements in the surrounding community can adversely affect operations. Large transportation routes inundated with water have the potential to shut off access for extended periods of time, posing safety hazards to staff and the public trying to access the institutions or worse, transporting ill persons to local hospitals. Other outside systems that provide CDCR with the continuity of operations can be severely impacted. Two circumstances the Department had to deal with in the aftermath of the storms of 2017: the potential breach of flood levees surrounding and protecting two of its prisons and the potential spillover of reservoirs on CDCR property that became inundated with rainwater. It is essential CDCR work with its local partners to maintain awareness of climate preparation strategies to mitigate excess precipitation.

Changes in precipitation related to a warming climate, more often than not, lead to reduced precipitation as was experienced in the State's recent multi-year

historic drought. As a result of reduced, nearly every region within California experienced some level of reduced groundwater and potable water supply availability. Even prior to the drought conditions in California, proactive steps were taken by CDCR to reduce its water consumption in recognition that some of its facilities are located in regions with limited water supplies. In response to continued water shortages and prolonged drought conditions, CDCR implemented additional water rationing and conservation at all of its facilities in accordance with Executive directives. In 2021, CDCR updated its statewide WCMP, previously known as "Drought Action Plan" and required each institution to update their site-specific WCMP as well. In response to EO N-10-21, CDCR closely monitors water usage at each institution to meet the 15% voluntary water reduction as compared to 2020 levels. Each institution has a designated Water Conservation Manager (WCM) water usage and leads efforts in water conservation and water efficiency projects. Each WCM works closely with water suppliers to ensure coordination, especially at institutions located in critical groundwater basins. The WCMs also work to maintain water shortage contingency plans. The Department continues to emphasize water conservation and pursue water conservation retrofit projects to reduce its consumption of both potable and non-potable water.

CDCR requires construction projects that exceed one acre of disturbance to have a Stormwater Pollution Prevention Plan to comply with the National Pollution Discharge Elimination System Permit Program. Each facility also has a Sewer System Management Plan to help manage and mitigate stormwater runoff. During the design and construction of the California Health Care Facility, CDCR incorporated landscape elements (bioswales) to remove silt and pollution from surface runoff water, which will also facilitate recharge of groundwater to reduce climate impacts on groundwater supply. In another of its facilities, CDCR installed a permeable paved parking lot that also allowed surface water to percolate through the asphalt and into the water table below to recharge the table and avoid water runoff.

Risks from Sea Level Rise

Increasing global temperatures are contributing to rising sea levels. Rising sea levels will result in an inundation of water to coastal areas and increased flooding due to storm surges. The California Ocean Protection Council (OPC) has issued the State of California Sea-Level Rise Guidance (Guidance) for State Agencies on the range of sea level rise to consider. The Guidance provides estimates of sea level rise for the California Coast for all active tide gauges based on a range of emission trajectories, which are based on the report, Rising Seas in California: An Update on Sea Level Rise Science, and recommends projections for use in low, medium-high, and extreme risk aversion decisions.

An accompanying OPC resolution recommends that departments base analyses on estimates of sea level rise in the upper two-thirds of the range.

Global climate change is already contributing to sea level rise, which is projected to accelerate as warming continues. Along California's coastline, the average sea level rose approximately seven inches during the 20th century (CEC 2012). Assuming sea level rise along the California coast continues to track global trends, projected sea levels along the State's coastline south of Cape Mendocino are expected to increase from 12 to 61 cm (5 to 24 in.) by 2050, and 42 to 167 cm (17 to 66 in.) by 2100, as compared to 2000 levels. North of Cape Mendocino, geologic forces are causing much of the land to uplift, resulting in a slower projected rate of sea level rise than California's coastline to the south. Between 2000 and 2100, sea level north of Cape Mendocino is projected to rise approximately 10 to 143 cm (4 to 56 inches) OPC 2013). Accelerating sea level rise, especially at the increasing rates projected for the 21st century, may result in the loss of substantial areas of coastal land area. Erosion and inundation from rising sea levels would threaten structures, roads, and other supporting infrastructure located along the coastline and at nearby low elevations.

According to Cal-Adapt data, there are no CDCR correctional facilities at risk from rising sea levels; however, CDCR has identified one of its two correctional facilities situated near coastal zones, San Quentin State Prison (SQ), which it believes could be impacted by sea level rise and potential flooding along the coastline and delta. SQ is situated on a low bluff on the shoreline of San Francisco Bay and has experienced erosion of its protective seawall over the years. An improvement project fortifying SQ's seawalls was completed several years ago. Changes in sea level could result in destruction of some support areas outside of SQ's main grounds and the influence of storm waves could require further fortification of the existing perimeter seawall. Sea level rise could also disrupt major transportation routes, such as State Route 580 and U. S. Highway 101, which are main thoroughfares for transporting the incarcerated population, visitor trips, employee commutes, and vendor deliveries. CDCR's Pelican Bay State Prison (PBSP) in Del Norte County is located in a coastal zone; however, it is well inland of tidal influence and is situated at base land elevations (20-70 feet) above sea level. While PBSP is not currently considered at risk of sea rise, CDCR remains cognizant of the potential for seawater rise influences and will continue to evaluate the risks associated with this location.

Risks from Wildfire

Wildfire is a serious hazard in California. Several studies have indicated that the risk of wildfire will increase with climate change. By 2100, if GHGe continue to rise, one study found that the frequency of extreme wildfires would increase and the average area burned statewide would increase by 77%. To start to understand

how wildfire could affect facilities, **Table 4** was completed using data from Cal-Adapt. In identifying facilities most at risk, considerations can include: location, operations, impacts of current precipitation events, the impact of disruption, and criticality of the facility and/or its operations.

Table 4 - Top Facilities Most at Risk to Current Wildfire Threats

Facility Name	Fire Hazard Severity Zone (low, moderate, high, very high)
SCC	Very High
CCI	High
CMC	Moderate
CCC	Moderate
RJD	Moderate
SQ	Moderate
LAC	Moderate
HDSP	Moderate

Table 5 - Top Five Facilities that will be Most Impacted by Projected Changes in Wildfire

Facility Name	Hectares Burned (1961-1990)	Projected Hectares Burned (2031-2060)	Projected Hectares Burned (2070-2099)
RJD	9	21	24
CMC	15	21	21
PBSP	11	17	18
CTF	6	17	15
SVSP	3	17	15

*Sorted by largest hectares burned 2031-2060. Hectares burned data in Table 4 pulled from Cal-Adapt.

Areas burned by wildfires have increased with rising average temperatures. California forests have been changing, showing a decrease in number of pine trees and an increase in small trees and oaks in response to decreasing water availability and warmer temperatures (CNRA 2018a). Areas burned by wildfire are expected to increase because of climate change throughout California. This increase in risk is caused by several climatic changes, including expected earlier snowmelt, higher temperatures, and longer dry periods resulting in a longer fire season. Potential climate-related changes in vegetation (e.g., reduced moisture content in vegetation) and ignition potential from lightning may indirectly contribute to increases in wildfire risk.

Longer fire season trends over the last three decades and increased number of large, intense wildfires are projected to continue due to changes in precipitation and temperature. This would increase the risk of localized air quality effects due to smoke generated by wildfires that can affect both incarcerated population and employees, especially during outdoor operations. Stresses on indoor air filtration systems could also occur.

Wildfires may also affect accessibility of facilities located in remote areas that may only be accessed through forested land or lands otherwise susceptible to wildfires.

Table 5 identifies the top five CDCR facilities that have the potential to be most impacted by projected changes in wildfires.

In addition, the following facilities located adjacent to or within a Wildland Urban Interface (WUI) area (CALFIRE 2003) may also be considered at-risk.

- Avenal State Prison
- California Correctional Center
- California Correctional Institution
- California State Prison, Corcoran
- Substance Abuse Treatment Facility and State Prison
- High Desert State Prison
- Mule Creek State Prison
- Pleasant Valley State Prison
- California State Prison, Sacramento
- California State Prison, Solano
- California Medical Facility
- Sierra Conservation Center

Most CDCR institutions have on-site fire departments capable of providing fire response. Furthermore, some institutions have adjacent California Department of Forestry and Fire Protection (CALFIRE) conservation camps and/or agreements with local fire departments that can provide additional wildfire response support.

In addition, through CDCR's partnership with IOU, the Department keeps up to date on Wildfire Mitigation Plans and Public Safety Power Shutoff (PSPS) protocols. As wildfires have increased over the years, the utilities PSPS programs have enhanced accordingly. New guidelines require electric IOU to take a results-based approach to improve notification and mitigate the impacts of PSPS events.

CDCR maintains utility protocols for shut downs, rolling blackouts, repair work, etc. Each institution also has back-up generator power for essential operations. In the event back-up power is insufficient, CDCR proceeds with the Emergency Contract process for additional generator equipment.

Heating and Cooling Degree Days

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

Table 6 - Top Five Facilities that will be Most Impacted by Projected Changes in HDDs

Facility Name	Heating Degree Days (1961-1990)	Heating Degree Days (2031-2060)	Heating Degree Days (2070-2099)
CCC	6,308	4,644	3,806
HDSP	6,308	4,644	3,806
CCI	4,770	3,566	2,849
PBSP	4,322	3,048	2,167
SCC	3,079	2,052	1,546

*Sorted by projected HDD 2031-2060. HDD data in Table 5 pulled from Cal-Adapt.

Table 7- Top five Facilities that will be Most Impacted by Projected Changes in CDDs

Facility Name	Cooling Degree Days (1961-1990)	Cooling Degree Days (2031-2060)	Cooling Degree Days (2070-2099)
ISP	4,077	5,622	6,718
CVSP	3,968	5,494	6,578
CAL	3,744	5,276	6,353
CEN	3,706	5,131	6,160
NKSP	2,036	3,037	3,794

*Sorted by projected CDD 2031-2060. CDD data in Table 6 pulled from Cal-Adapt.

Table 6 and **Table 7** identify the top five CDCR facilities most impacted by projected changes in heating and cooling degree days. Some of the adaptation activities that CDCR has engaged in to date include:

- Installing solar parking canopies and reflective pavements in parking lots to minimize heat island effects for staff and visitors.
- Replacing roofs with cool roof materials that reduce building temperatures and cooling requirements.
- Constructing facilities to ZNE standards to reduce cooling requirements and reduce operating costs during hot days.
- Developing heat plan protocols to reduce harm to building occupants during extreme heat events.

Natural Infrastructure to Protect Existing Facilities

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

As described above, climate change may increase the risks of impacting institutional operations and some of the strategies mentioned above serve to guard against these risks. Reducing the heat island effect within a recreational yards at correctional facilities is also under way, as the Department has completed several gardens inside various facilities. These gardens are also meant to be therapeutic, provide vital rehabilitation skills, and will serve to help educate the incarcerated population about the value of preserving the natural environment. Other natural infrastructure solutions to combat the effects of climate change include assisting with the funding of levee improvements to widen and raise an existing earthen levee protecting two of CDCR's correctional facilities in the Central Valley that were at risk of flooding during the 2017 historic rains.

Understanding the Potential Impacts of Facilities on Communities

CDCR facilities are often located in remote rural locations where their presence is significant in terms of population, footprint, and/or as an economic driver in that location. Climate change that could lead to a prison closure could potentially cripple the economic stability of some of these areas. As mentioned earlier, CDCR has created a substantial renewable portfolio that reduces reliance on the electricity grid as one key area in which CDCR can mitigate its operational effects and the effects climate change will have on operations within its local communities.

Vulnerable Populations

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

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

CDCR's incarcerated population is varied. A significant number of individuals in the Department's care have either mental or medical health issues or learning disabilities. This population is more likely to have experienced some neglect prior to being housed with CDCR. Some of these individuals may be prescribed medications that affect their body's ability to handle extreme heat conditions. Because these individuals are within the care and custody of CDCR, the unique needs and circumstances of this population are addressed as part of the standard offering of services, including provision of food, housing and education, or as part of their case management plan. Once released and/or paroled, these same individuals may once again be subject to risks other vulnerable populations experience. However, CDCR is trying to combat this cycle of vulnerability by emphasizing rehabilitation and employment-building skills during incarceration. These efforts are intended to reduce the chances of an offender reoffending and returning to CDCR custody, but also are intended to provide the means to live in a self-sustaining manner after they have served their sentence.

CDCR staff and the incarcerated population have also recognized that the community at large, and particularly within proximity to some of the Department's correctional facilities, may struggle with issues of poverty, incarcerated parents, mental health issues and the like, and have volunteered thousands of hours and raised substantial sums of money to assist these vulnerable populations in dealing with a myriad of issues affecting their quality of life.

Disadvantaged Communities

Many State programs that have Disadvantaged Communities (DACs) funding requirements use CalEnviroScreen, a tool that ranks census tracts based on a combination of social, economic, and environmental factors to identify DACs. While it does not capture all aspects of climate vulnerability, it is one tool that is available and includes several relevant characteristics. In many cases, DACs are more likely to suffer damage under changing climate conditions, including extreme events. CDCR recognizes that the Department's facilities located in these communities can contribute or alleviate the vulnerability of these communities.

Table 8 - Facilities Located in Disadvantaged Communities

Facility Name	CalEnviroScreen Score	Is it located in a disadvantaged community? Yes/No
CHCF	90-100%	Yes
KVSP	90-100%	Yes
NKSP	90-100%	Yes
NCYCC	90-100%	Yes
ASP	70-80%	Yes
CCWF	70-80%	Yes
VSP	70-80%	Yes

Figure 2- Solar Parking Canopy Installation at VSP

As evidenced in **Table 8**, several CDCR facilities are located within a DAC as identified by CalEnviroScreen. In total, approximately 19% of the Department's institutional portfolio is located in a DAC. As mentioned earlier, many of CDCR's facilities are located in remote and/or rural areas.

CDCR is often the largest employer within the region of a correctional facility. To afford local residents the opportunity to obtain employment with CDCR, the Department holds both job recruitment and procurement fairs to provide additional opportunities for local residents to find employment or provide services. These on-site hiring fairs have continued at facilities throughout the State. CDCR also has mutual aid agreements with local first responder organizations to assist as needed in public service emergencies.

Urban Heat Islands

Urban heat islands are areas with localized spikes in temperature that impact human health, increase pollution, and increase energy demand. Urban heat islands typically 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 reduced through tree planting and greening measures, cool roofs (e.g., lighter roofing materials that reflect light), cooler pavements, and other measures.

Table 9 - Top Five Facilities Located in Urban Heat Islands (UHI) (Sorted by highest UHII)

Facility Name	Located in an urban heat island (yes/no)
CIM	Yes
CIW	Yes
CMF	Yes
CRC	Yes
SOL	Yes

CDCR facilities have large portions of the property that are covered in paved areas and structures. A typical correctional facility can include up to 1,000 acres and house 3,000-5,500 incarcerated individuals, 2,000-5,000 staff at a given site. **Table 9** lists CDCR's top five facilities located in UHIs.

As mentioned earlier, CDCR has already undertaken a number of measures to reduce the heat island effect through design features such as solar-equipped parking canopies and cool roofs. Reductions to heat islands also include installing more energy efficient systems and installing renewable generation with zero carbon emissions.

Natural Infrastructure Solutions for Planned Projects

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

In instances where CDCR projects are unable to fully avoid effects to natural resources, off-site mitigation is typically implemented through purchase of conservation credits within various habitat preserves. In addition to mitigation required for the direct effects of new or expanded facilities, the Department

previously secured habitat to compensate for the loss of wildlife as a result of its perimeter security systems. Through the later program, CDCR has preserved over 800 acres of wildlife breeding/foraging habitats and sensitive ecosystems through direct land acquisition, funding conservation easements, purchasing mitigation credits at state/federal agency approved mitigation banks, and has funded the restoration/creation of nearly 2,500 acres of various natural habitats and farmland; this approximately 3,300 acres is held in perpetuity by natural resource agencies, land conservancies, or other environmental stewardship organizations.

Integrating Climate Change into Department Planning and Funding Programs

Full Life Cycle Cost Accounting

EO B-30-15 directs State Agencies to employ full life cycle cost accounting in all infrastructure investment. Lifecycle cost accounting includes:

- Considering initial investment costs, as well as lifetime operation and maintenance costs under changing climate conditions, including changing average conditions and increases in extreme events.
- Applying non-market evaluation methods such as travel cost, avoided costs or contingent valuation to capture hard to quantify benefits and costs.

Table 10 and **Table 11** provides information on CDCR's integration of Climate Change and engagement in planning processes. Unlike more traditional real property that may have an identified timeline of 30-50 years, often coincident with either its financing scheme or the life of its major systems, CDCR does not consider its existing correctional facilities to have a specific end-of-life term. While the majority of existing State correctional facilities have been built since 1985, the Department currently has two correctional facilities over 125 years old yet remain serviceable for housing and programs. CDCR is able to continue operation of the entire span of historic and contemporary facilities through periodic upgrades/replacements of infrastructure, housing units, and program support areas. The design standards of all renovation projects, and for replacement/expansion projects, are the requirements of the State Building Code and, if feasible, additional commitments that exceed these standards such as those of LEED®.

For all third-party energy conservation/generation projects, such as new on-site solar photovoltaic installations, CDCR performs life cycle costing to account for all costs related to construction, operation, maintenance, and disposal at the end of the useful life of a structure. Economic metrics used for energy efficiency projects include: Simple Payback, Return on Investment, Life Cycle Cost Analysis, Savings to Investment Ratio, Net Present Value, and Internal Rate of Return. CDCR leverages a formal partnership with California's IOUs to identify and implement

energy efficiency projects that utilize rebates and low interest loans to realize cost savings.

Table 10 - Integration of Climate Change into Department Planning

Plan	Have you integrated climate?	If no, when will it be integrated?	If yes, how has it been integrated?
CDCR Sustainability Roadmap Chapter 1 Climate Change Adaptation	Yes - In progress	N/A	See below

Table 11 - Engagement and Planning Processes

Plan	Does this plan consider impacts on vulnerable populations?	Does this plan include coordination with local and regional agencies?	Does this plan prioritize natural and green infrastructure?
CDCR Sustainability Roadmap Chapter 1 Climate Change Adaptation	As necessary	TBD	Yes

Funding of Projects to Reduce Climate Risks

State agencies have multiple financing and project delivery mechanisms available to achieve executive order goals including, but not limited to: State revolving loan funds, utility On-Bill Financing (OBF), Power Purchase Agreements (PPAs), Green Seal (GS) $Mart, Energy Service Contractors, or other available programs.

CDCR has been successful in implementing many of the State mandates of energy efficiency and sustainability goals by seeking out various funding opportunities as they become available. CDCR is proactive in promoting additional funding opportunities by participating in policy discussions on topics such as OBF and On-Bill Repayment (OBR).

CDCR has utilized and will continue to explore multiple funding opportunities for projects that aid in climate adaptation including GS $Mart loans, OBF, municipal utility company loan and incentive programs, American Recovery and Reinvestment Act (ARRA) loans, Department of Water Resources loans and grants, and Solar or Wind PPAs.

Measuring and Tracking Progress

For the last several years, CDCR has incorporated climate action planning into its *Five-Year Infrastructure Plan and Master Plan Annual Report*. Carbon emissions data has been tracked since 2007. The Department also regularly reports its electricity consumption data in the Energy Star Portfolio where its progress can be tracked on a public-facing website.

CDCR recognizes the importance of understanding the current and future impacts of climate change in the State when planning, designing, building, operating, maintaining, and investing in correctional facilities and infrastructure. Proactive planning for future climate change is necessary for resiliency and protection of the Department's assets, as well as providing a better use of resources, improving self-sufficiency, and maximizing the efficient use of fuel, water, and other resources while carrying out the CDCR mission and vision.

CHAPTER TWO
ZERO EMISSION VEHICLES

CHAPTER 2: ZERO EMISSION VEHICLES

Department Mission and Fleet

CDCR is the largest department in State government and over the past decade has been a leader in meeting or exceeding the Administration's energy and sustainability goals and objectives. CDCR also has one of the largest State fleets with more than 10,180 total assets, including leased vehicles and mobile equipment.

700+ HYBRID AND ZERO EMISSION VEHICLES

These fleet assets serve a number of operational needs, from large buses to transfer the incarcerated population to high-pursuit vehicles used by parole agents and fugitive apprehension teams, to more standard sedans and trucks serving localized areas, just to name a few. Well over a decade ago, CDCR purchased hundreds of electric carts to be used within its correctional facilities, reducing the number of gas-fueled vehicles serving this purpose. Since 2014, CDCR has been incorporating low-emission vehicles into its statewide fleet and has worked aggressively to explore funding opportunities for grants and incentive/rebate programs offered by the IOUs for ZEVs charging station infrastructure and equipment. However, CDCR's main challenge in incorporating ZEV assets has been the limited availability of ZEV vehicles to meet specialized needs, limited driving range of ZEVs, and higher initial purchase costs. Although CDCR has been able to identify program areas that can utilize the vehicle models available through the State contract, the options are still not sufficient to meet all the Department's wide-ranging operational needs. CDCR will continue to work closely with DGS in increasing its ZEV procurement in an effort to reach the target of 50 percent of light duty vehicles by 2025. From 2017 through June of 2019, CDCR worked with NRG Energy Inc. (an integrated American power company engaged in producing, selling, and delivering electricity, related products, and services) to install "no-cost" infrastructure for up to 10 Level 2 charging stations at 10 institutions within the IOU territories. This was as a result of a settlement between NRG and the CPUC. In FY 16/17, CDCR worked with DGS to incorporate ZEV charging stations during office lease negotiations resulting in the installation of several charging stations, and more planned at its office locations.

Fleet Vehicles

CDCR operates adult correctional institutions and juvenile facilities as well as other divisional programs aimed at public safety and service operations throughout the State of California. The Department's mission "to facilitate the successful reintegration of the individuals in our care back to their communities equipped with the tools to be drug-free, healthy, and employable members of society by providing education, treatment, rehabilitative, and restorative justice programs,

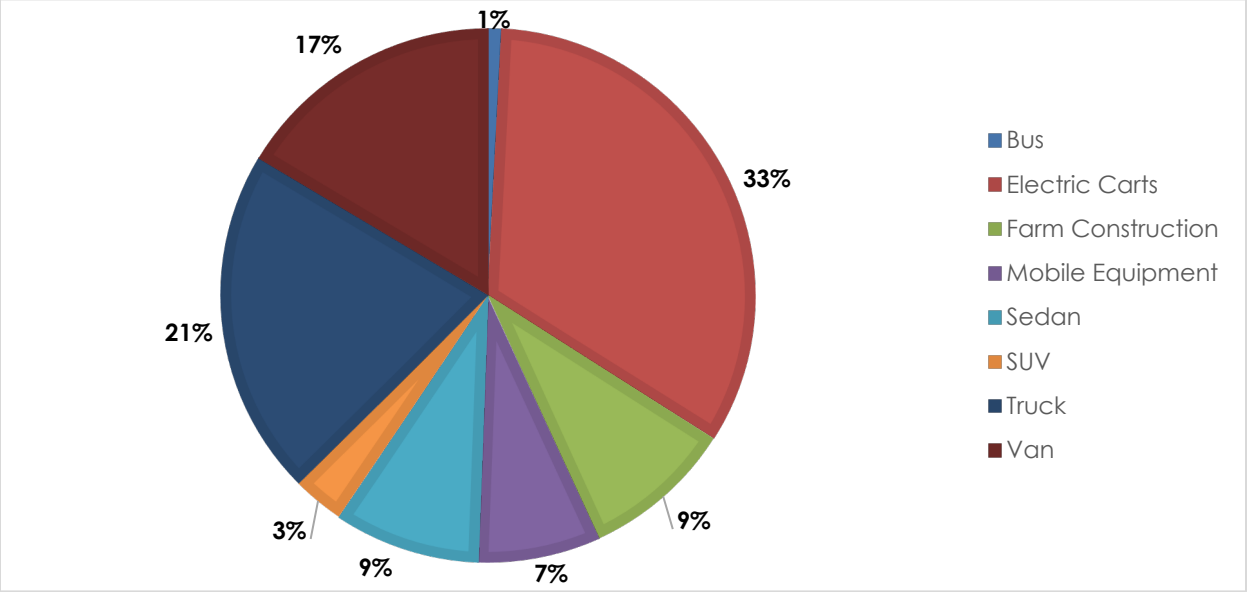
all in a safe and humane environment" is accomplished with critical fleet assets necessary for such operations.

CDCR has 8,138 State-owned fleet assets and 2,046 leased vehicles, as identified in the DGS Fleet Asset Management database as of September 2021. The increase to the CDCR fleet from last year's report is attributed to better fleet reporting from all statewide CDCR programs based on enhanced oversight and field education. This fleet total includes heavy- and light-duty vehicles. Also included in this total, CDCR's fleet has 4,066 mobile equipment assets, such as electric carts and forklifts. CDCR fleet vehicles are used to perform a variety of functions, including transport of staff and the incarcerated population, plant operations, construction, correctional education, food and pharmacy delivery, hazardous materials handling, information technology operations, materials and supplies transport, perimeter security, and waste management. At the adult institution and juvenile facility level, there is a wide variety of vehicles as these assets are in turn used by a number of different functional programs within a facility. **Figure 3** and **Figure 4** provide a breakdown of CDCR's fleet.

1. Sedan-type vehicles – These are most often used for functions such as staff transport or pool vehicles, transport services to courts or medical appointments, high security transport and mutual aid support services, as well as custody and law enforcement services for either the incarcerated population or parolees. These vehicles may require "high-speed pursuit" capabilities and/or be heavily modified with radio and security improvements to meet the unique needs of a correctional agency. They may also be required to be utilized at a moment's notice to deal with emergency situations.
2. Sport Utility Vehicles (SUVs) – These are used to perform site security and plant operation functions, perimeter patrol and pursuit, as well as transport services for incarcerated individuals to courts or medical appointments. CDCR programs require the use of SUVs to include security transportation modifications for transport purposes. The additional interior capacity space within SUVs provides the ability to transport multiple incarcerated individuals, as well as the necessary tactical gear and equipment required by custody staff.
3. Vans and Trucks – These vehicle types are highly versatile for CDCR operations. Vans are used for incarcerated individual, staff, or visitor transport both on and off facility grounds. They are also used as paratransit and ambulance vehicles. Some of these vehicles include modifications to meet correctional needs. Trucks are used for several different operations on CDCR facility grounds, including grounds maintenance and warehouse services, supply transports, food delivery services, and security patrol.

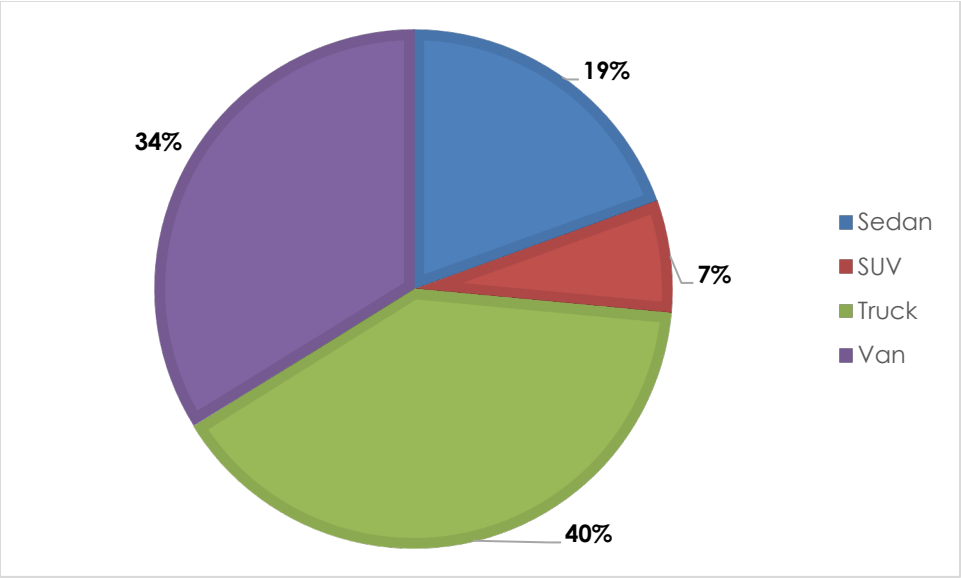
4. Buses – CDCR currently operates more than 60 buses servicing all institutions for the transportation of the incarcerated population to mission critical assignments and work projects.
5. Fire Engines – CDCR currently operates approximately 60 fire engines that serve institutions and are used in mutual aid agreements with local entities and other State agencies for emergency response services.
6. Farm and Construction Vehicles – CDCR operates several different types of farm and construction vehicle assets to carry out these services, including tractors, excavators, front loaders, outdoor forklifts, and utility carts to maintain surroundings, buildings, and perform minor and major construction or renovation at all facilities.
7. Electric Carts – CDCR uses electric carts daily to transport incarcerated individuals, supplies, and medications within an institution.
8. Mobile Equipment – CDCR uses a variety of mobile equipment assets for grounds maintenance and plant operation services to transport materials, supplies, and equipment across facility grounds.

Figure 3- CDCR's Fleet Vehicle Type Breakdown



Divisional headquarters programs use vehicles in other capacities. The Office of Correctional Safety, Office of Internal Affairs, Division of Adult Parole Operations, and Board of Parole Hearings, among others, routinely travel throughout the State to monitor field operations and conduct other important work. These programs typically utilize sedan-type assets due to the amount of travel involved with their operations; however, some of these programs also use other vehicle types to aid in covert operations and criminal apprehension services.

Figure 4- Composition of Department's Light-Duty Fleet



As CDCR operates programs throughout the entire state of California, vehicles are used in all types of environments and road conditions. CDCR facilities are often located in rural and/or remote parts of the State, some in desert locations. CDCR's fire camp program may require travel across difficult terrain and non-paved roads. Additionally, because of the significant distances between facilities, some vehicles will have to travel hundreds of miles on isolated roadways to reach their destination. Conversely, a few prisons are located in urban areas with high-congestion traffic that can benefit from the high-occupancy vehicle exemption for commute purposes.

Many of CDCR's divisional headquarters programs have shifted their vehicle models from the standard full-size sedan vehicle to mid-size hybrid vehicles. This shift has allowed CDCR to not only comply with green fleet measures and State and federal mandates, but to also achieve greater fuel efficiency, enhance operational efficiency, and realize substantial cost savings to the State.

Table 12- Total Purchased Fuel in 2020

Purchased Utility	Quantity* Gallons	Cost*
Gasoline	1,351,193	$3,167,093
Diesel	0	0
Renewable Diesel	552,815	$1,495,176
Total GGE	**1,904,008**	**$4,662,269**

*Totals include bulk fuel purchases only

Incorporating ZEVs into the State Fleet

Pursuant to EO B-16-12, State departments are required to increase the number of ZEVs within their State fleet.

Light-Duty ZEV Adoption

A widespread shift to ZEVs is essential for California to meet its GHGe reduction goals. State departments are now required to incorporate and prioritize a larger number of light-duty ZEVs in their vehicle fleets. Starting in FY 17/18 the percentage of new light-duty vehicles that must be ZEVs began increasing by 5% each year, reaching 35% in FY 21/22 and 50% in FY 24/25.

CDCR has identified applications that can be served with light-duty ZEV vehicles, including on-grounds operations such as administrative, plant and maintenance operations, and staff and visitor transport operations on facility grounds. Provided the appropriate vehicle classification to serve such needs, these operations are able to optimize the use of battery-electric and plug-in hybrid electric vehicles. Light-duty sedan ZEV vehicles are prime candidates for administrative vehicles needing to travel on or off grounds, while ZEV trucks and vans are the optimal vehicle classifications needed for plant and maintenance operations, and staff and visitor transport operations. Such vehicles are required to be able to transport multiple people across grounds, or to have the size and capability to be retrofitted with appropriate modifications to haul and transport materials and equipment across facility grounds. To meet such needs, medium-duty and heavy-duty ZEV trucks and vans are required for such operations. **Table 13** summarizes CDCR's light duty fleet vehicles eligible for replacement.

Table 13 - Light-Duty Vehicles in Department Fleet Currently Eligible for Replacement

	Sedans	Minivans	Pickups	SUVs 5 passenger	SUVs 7 passenger	Total
# of Vehicles Eligible for Replacement	568	10	984	114	18	1,694

Table 14 shows the estimated number of ZEVs that have been or are anticipated to be added to the CDCR fleet in coming years.

Table 14 - Light-Duty ZEV Additions to the Department Fleet

	21/22*	22/23*	23/24*	24/25*	25/26**
Battery Electric Vehicle	3	8	7	5	UNK
Plug-in Hybrid Vehicle	9	7	6	4	UNK
Fuel Cell Vehicle	0	0	0	0	0
Percent of Total Purchases*/** **	35%	16%	24%	11%	UNK
Required ZEV Percentage	35%	40%	45%	50%	UNK
Total Number of ZEVs in Fleet* **	123	143	164	184	UNK

*Applied LD asset totals and percentages are in conjunction with projected MD/HD ZEV purchasing requirements beginning FY 21-22
**Current ZEV Policy Percentages are outlined through FY 24/25 only
***Leased Fleet Total only included in FY 21/22, unable to project additional leased ZEV totals
****Percentages account for total projected annual purchases, not only those assets subject to ZEV mandate

Medium- and Heavy-Duty ZEV Adoption

Similar to the light-duty purchasing policy above, the adoption of Medium-Duty (MD) Heavy-Duty (HD) ZEVs is essential to meet GHGe 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, 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.

As stated above in light-duty ZEV adoption, CDCR has identified applications that could be served with medium-duty and heavy-duty ZEV vehicles. Such applications include on-grounds operations and plant and maintenance operations. Medium-duty and heavy-duty trucks and vans are the optimal vehicle classifications needed for plant and maintenance operations. Such vehicles are required to have the size and capability to be retrofitted with appropriate modifications to haul and transport materials and equipment across facility grounds. **Table 15** summarizes CDCR's MD/HD vehicles eligible for replacement.

Table 15 - MD/HD Vehicles in Department Fleet Currently Eligible for Replacement

	Vans, Class 2b	Vans, Class 3 & 4	Vans, Class 5 & 6	Trucks, Class 3-6	Truck, Class 8	Total
# of Vehicles Eligible for Replacement	744	7	2	140	88	981

Table 16 below shows the estimated number of MD/HD ZEVs that have been or are anticipated to be added to the department fleet in coming years.

Table 16 - MD/HD ZEV Additions to the Department Fleet

	21/22*	22/23*	23/24*	24/25*	25/26**
Battery Electric Vehicle	0	5	8	11	UNK
Plug-in Hybrid Vehicle****	0	0	0	0	UNK
Fuel Cell Vehicle	0	0	0	0	0
Percent of Total Purchases*/***	0%	5%	13%	15%	UNK
Total Number of ZEVs in Fleet* **	123	143	164	184	UNK

*Applied MD/HD asset totals and percentages are in conjunction with projected LD ZEV purchasing requirements beginning FY 21-22
**Current ZEV Policy Percentages are outlined through FY 24/25 only
***Leased Fleet Total only included in FY 21/22, unable to project additional leased ZEV totals
****All MD/HD ZEV available on state contract are full-battery electric vehicles (BEV)
*****Percentages account for total projected annual purchases, not only those assets subject to ZEV mandate

Public Safety Exemption

As CDCR employs sworn peace officers, the updated rules for public safety vehicles will, in fact, affect the number of ZEVs that can be incorporated into the fleet due to the nature of the Department's operations. ZEVs cannot be consistently used in the course of CDCR peace officer duties. Such vehicles are required to be able to house peace officer equipment, weaponry, and provide enough capability to serve in pursuit and apprehension operations. Vehicles that are limited in size, range, and efficiency are not capable to serve in such capacities. Further, such vehicles often require security modifications and radio outfitting for law enforcement duties, which further prohibits the use of ZEVs in such operations. CDCR is actively seeking all opportunities to place available ZEV vehicle types within its operations, where applications and cost may allow for such acquisitions. CDCR will need to continue to review and determine if ZEV medium-duty fleet options will be capable of supporting peace officer needs, and if such vehicle types are able to accommodate the after-market security modifications that are required for most peace officer operations.

CDCR Parking Facilities

CDCR's State-owned facilities include over 43 million square feet of building space on over 23,000 acres of land statewide. CDCR leases approximately 1.7 million square feet and contracts for an additional 489,000 square feet for a leased correctional facility. All of these properties have associated surface-level parking of varying sizes, in addition to the listed square feet used for employees, contractors, visitors of the incarcerated population, and other members of the public. **Figure 6** provides a breakdown. The parking is primarily located outside the secured perimeter fence. The total number of parking spaces at juvenile

facilities ranges from 150 to 300, while at adult institutions the parking spaces range from 500 to 2,500. There are also a minimal number of parking spaces located inside the secured perimeter fence adjacent to some of the facilities essential buildings.

Based on extensive operational needs, as described earlier in this Chapter, fleet vehicles are located at nearly all CDCR State-owned correctional facilities and leased facilities. Fleet parking locations are determined by the parking layout at each facility. Fleet parking is typically located adjacent to or to the rear of workplace parking and is secured. Employee and public spaces are usually in the same lot, but separately designated through signage. Accessible (i.e., Americans with Disabilities Act compliant) spaces are typically not distinguished between employee and public.

Figure 5 - Electrical Wiring for EV Charging Station at CIW

Based on CDCR estimates of future ZEV fleet purchases and a count of workplace parking spaces, it has been determined the Department will need 46 Electric Vehicle Supply Equipment (EVSE) for fleet vehicles and 460 EVSE for workplace parking through 2025, which brings the total additional EV charging ports needed to 506.

Figure 6 - Facilities with Parking

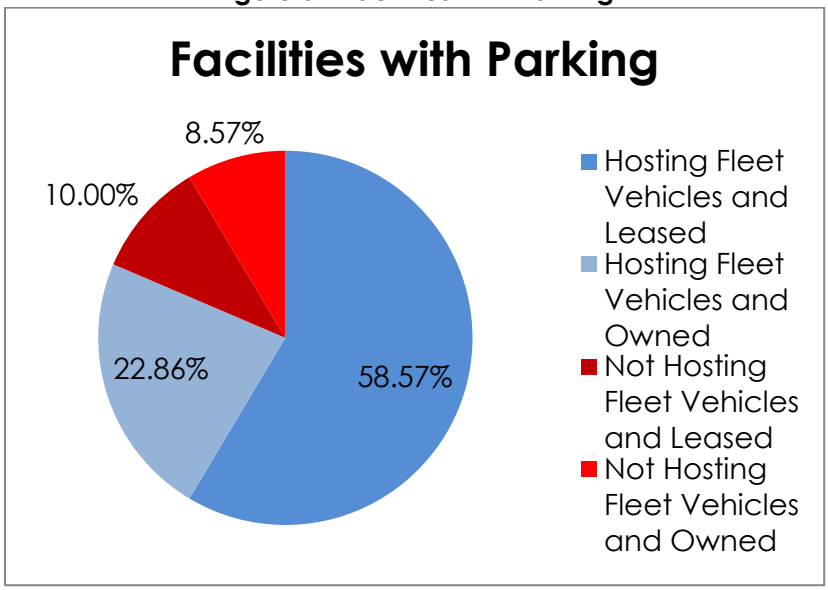


Table 17 - High Priority EVSE Projects

Facility Name	Total Employee & Fleet Parking Spaces	Employee EV Charging Ports Needed (5% of Total Employee Spaces)	Existing Employee L2 EV Charging Ports	Fleet ZEVs at Site (Projected Through 2025)	Existing Fleet EV Charging Ports	Additional EV Charging Ports Needed
ASP	1,154	33	6	2	0	29
CAL	1,274	40	0	4	0	44
CCI	1,343	42	0	4	0	46
CIW	645	22	6	2	0	18
CMF	1,411	67	0	3	0	70
COR	1306	42	30	5	0	17
CTF	1,245	50	0	1	0	51
HDSP	1,011	44	0	3	0	47
KVSP	1693	54	10	2	0	46
LAC	1223	36	12	4	0	28
NKSP	1018	29	10	3	0	22
SCC	700	31	0	10	0	41
SOL	1199	38	18	2	0	22
SQ	788	32	8	1	0	25
Total	**16,010**	**560**	**100**	**46**	**0**	**506**

CDCR prioritized the facilities in **Table 17** based on existing ZEV fleet inventory, projected electric vehicle purchasing, and funding opportunities for the installation of EVSE. CDCR's requirement is projected at 46 through 2025.

Outside Funding Sources for EV Infrastructure

CDCR established a formal partnership with the IOUs to help identify and implement a number of CDCR's sustainability initiatives more than a decade ago. The CDCR/IOU partnership facilitates ongoing communications on funding opportunities for grants and incentive/rebate programs offered for installation of ZEV infrastructure and charging station equipment. This is an ongoing process

based on availability as the funding opportunities and utility programs open or close.

Comprehensive Facility Site and Infrastructure Assessments

Site Assessments are performed to establish the cost and feasibility of installing needed EV infrastructure. CDCR has compiled detailed site assessment surveys for its statewide facilities. The site assessment surveys include existing information including: parking layout, electrical, photos, maps, and proposed electric vehicle charging station locations. CDCR utilizes the site assessments to develop cost estimates, feasibility, and planning for incorporating ZEVs into the Department's fleet and for meeting the target requirements for 5% of parking spaces to be workplace charging spaces. CDCR prioritizes EVSE projects based on fleet purchasing.

Electric Vehicle Supply Equipment Construction Plan

Since 2017, CDCR has worked with DGS on the installation of statewide EVSE at the Department's institutions. The DGS EV Charging program is funded through the State's General Fund via Budget Change Proposals to support statewide electric vehicle fleet and workplace infrastructure projects. Through this partnership, CDCR has installed over 200 EV ports and has multiple EV charging projects at various stages of project development currently underway across the state. **Figure 5** shows electrical wiring for EV charging at CIW during construction phase.

PBSP – In 2021, twenty-four Level 2 dual port charging stations were installed to support fleet charging. Refer to **Figure 7** for construction progress photo.

Figure 7 - Fleet Electric Vehicle Charging Stations - PBSP

CRC – In 2021, fourteen Level 2 dual port charging stations were installed to support fleet charging. Refer to **Figure 8** for construction progress photo.

Figure 8 - Fleet Electric Vehicle Charging Stations - CRC

SAC – In 2021, forty-three Level 2 dual port charging stations were installed to support workplace and fleet charging. Refer to **Figure 9** for construction progress photo.

Figure 9 - Workplace Electric Vehicle Charging Stations – CSP-SAC

Richard A. McGee Correctional Training Center (CTC) – In 2021, eighteen Level 2 dual-port charging stations were installed to support workplace charging. Refer to **Figure 10** for construction progress photo.

Figure 10 - Workplace Electric Vehicle Charging - CTC

CDCR was selected to receive one BEAM EV Arc (solar powered electric vehicle charging and emergency generator system) funded through a grant from the Office of Emergency Services. The EV Arc system was delivered and set up at Folsom State Prison in November 2021. Refer to **Figure 11** for construction progress photo.

Figure 11- Workplace Beam Arc EV – FSP

In addition, through the NRG claims settlement, CDCR completed electrical infrastructure to support EVSE at the following 10 facilities: California State Prison Solano, California State Prison-Los Angeles County, Kern Valley State Prison, North Kern State Prison, California State Prison-Corcoran, Chuckawalla Valley State Prison, Ironwood State Prison, and Ventura Youth Correctional Facility. The DGS program funded the purchase and installation of the charging station equipment and these EV charging stations are all fully operational.

Electric Vehicle Supply Equipment Operation

There are several divisions within CDCR with overlapping roles and responsibilities for the installation of EV charging infrastructure, installation, and operation of charging station equipment and ZEV purchasing such as the Energy and Sustainability Section, Office of Business Services, and the Division of Adult Institutions. CDCR developed a statewide ZEV parking policy to standardize the use of electric vehicle charging stations. CDCR also designated Electric Vehicle Parking Coordinators at each institution to monitor compliance with the Department's Electric Vehicle Parking Policy.

CHAPTER THREE
ENERGY

CHAPTER 3: ENERGY

Department Mission and Built Infrastructure

Since 2008, CDCR has engaged in a collaborative effort through the IOUs/CDCR Energy Efficiency Partnership Program to improve energy efficiency at its existing facilities. As of 2020, CDCR has completed 115 energy efficiency and projects that have yielded a combined GHGe reduction of 73,032 metric tons per year and an annual cost savings of $9,171,565.

DECREASED ENERGY USE
At 33 of 39 sites since 2013

CDCR has been a leader within State government accomplishing the objectives set forth in EO B-18-12 for State buildings using clean on-site power generation, such as solar photovoltaic and wind power generation through third-party SPPAs. As of December 2020, CDCR has completed 23 on-site renewable solar generation projects at 17 institutions totaling 52 MW and awarded 14 projects, which will provide an additional 34 MW of solar energy. CDCR also operates three wind turbine projects that provide 5.5 MW of renewable wind energy. CDCR's statewide renewable energy portfolio is positioned to exceed 91 MW by the end of 2022.

To facilitate energy efficiency at its newest facilities, CDCR has managed the design and construction of 71 new buildings that have achieved USGBC LEED® Certification of a Silver level or higher. In addition, CDCR occupies five LEED®-certified leased buildings. CDCR has identified an additional two projects that will be designed to meet or exceed the LEED® Silver certification standards. There are also over 35 Health Care Facility Improvement Program (HCFIP) sub-projects currently being constructed that are designed to meet CALGreen standards. Finally, CDCR has identified several potential ZNE building projects that are currently in design, construction, or are in the certification process.

These programs, partnerships, and overall CDCR efforts have led to a 13% decrease in grid-based energy purchases and a 23% decrease in the overall Energy Usage Index (EUI) rate since 2003, despite a 27.5 percent increase in the total institutional footprint.

- **Table 18** below details the types of energy purchased by CDCR in 2020.

Table 18 - Total Purchased Energy 2020 (excluding Renewables)

Purchased Energy	2003 Baseline Quantity	2003 Cost ($)	2020 Quantity	2020 Cost ($)	% Qty. Change	% Cost Change
Electricity	618,146,519 kWh	$61,325,942	511,648,697 kWh	$57,911,273	-17%	6%
Natural Gas	44,077,892 therms	$25,683,588	36,176,908 therms	$21,054,855	-18%	-18%
Propane	N/A	N/A	27,564 gallons	$34,539	N/A	N/A
TOTALS	**6,339,377,948 kBtu Site**	**$87,009,530**	**547,853,170 kBtu Site**	**$79,000,667**	**-17%**	**-9%**

Table 19 - CDCR Institutions with Largest Energy Consumption (including Renewables)

Building Name	Floor Area (ft^2)	Site Energy (kBTU)	Source Energy (kBTU)	Source EUI ($kBTU/ft^2$-yr)
SAC	1,359,429	356,125,249	540,123,077	275
COR	1,652,257	335,449,522	615,536,152	244
RJD	1,610,317	312,504,957	390,620,007	195
CMF	1,187,955	306,755,976	437,772,593	261
CIM	1,774,872	285,522,134	504,772,615	179
CCC	762,814	274,553,428	367,055,627	368
SQ	1,739,250	219,109,591	334,048,955	128
MCSP	2,037,379	202,640,544	434,759,844	103
CMC	1,494,987	200,593,240	307,916,863	137
CCI	1,550,893	182,806,883	251,211,586	138
Total for Buildings in This Table	**15,170,153**	**2,676,061,522**	**4,183,817,319**	**---**
Total for All Department Buildings	**50,251,246**	**5,022,894,062**	**8,372,568,348**	**---**

CDCR's Challenges in Meeting State Goals

- Security – CDCR's mission to improve public safety through law enforcement that provides for the safe and secure incarceration of the State's most serious and violent offenders and to provide parole supervision and develop and implement rehabilitative strategies to successfully reintegrate offenders back into their communities is the first priority of the Department. Security requirements sometimes limit the energy efficiency options available to the Department. One example is that LED lighting is not used in cells of the incarcerated population because the metal strips found within the lamps can

be used as weapon stock. CDCR follows Design Criteria Guidelines (DCG) and policies that provide safety and security for the incarcerated population, staff, and the public. All new technologies must be analyzed, reviewed, and approved by CDCR.

- Needs of 24-hour operations – Unlike typical office environments that have limited hours of operation, CDCR operates on a 24-hour basis, which is much longer than many other State Agencies.
- Unique utility drivers – The size of CDCR institutions has created a need to function independently of typical city-provided services. Unlike typical office building environments, CDCR operates water and wastewater plants serving its facilities. These systems are often expensive to replace with higher efficiency systems, leading to increased costs until sufficient funding is identified.
- Financing – CDCR has sought out various funding opportunities as they become available and has taken the lead in promoting additional funding opportunities by participating in policy discussions on topics such as OBF and OBR. CDCR has utilized multiple funding opportunities including GS $Mart loans, OBF, loans, Energy Conservation Assistance Act (ECAA) loans, and SPPAs.
    - Challenges to the existing OBF program is funding limitation caps per site and/or utility account. CDCR has had to limit the scope of energy efficiency projects to remain under established loan caps. The IOUs are working with the California Public Utilities Commission (CPUC) to raise OBF loan caps where feasible.

Some examples of CDCR's promotion of the State's energy and sustainability goals include:

- CDCR actively promotes these goals through its Sustainability Program website and involvement of these goals at the highest levels of the Department, in addition to participating in many programs that promote sustainability goals.
    - US EPA Green Power Partnership member
    - Carbon Footprint (previously known as Climate Registry) member
    - Governor's Sustainability Task Force member
- 71 new LEED® certified buildings completed.
- CDCR's FPCM produces a monthly executive briefing document of all energy projects, planned or in progress, to keep CDCR executives are actively engaged in the Department's commitment to the State's energy and sustainability goals. This report tracks CDCR's progress in meeting these goals and also identifies any challenges so they can be resolved accordingly.

- To date, CDCR is the only State Agency/department to solicit and award wind-generated power for its facilities, with three wind turbines totaling 5.5 MW fully operational since 2019.
- CDCR includes a third-party sustainability consultant as well as a commissioning agent on its major construction projects to manage compliance with its sustainability goals.

CDCR's Five-Year Capital Improvement Program

CDCR prepares a *Five-Year Infrastructure Plan* (Plan) that provides a narrative report summarizing the Department's Capital Outlay priorities that are anticipated over the next five years. The Plan is submitted along with the fully developed Capital Outlay Budget Change Proposals for the first year represented in the Plan, along with Budget Concept Statements for each proposal for which funding will be pursued in the four subsequent out-years. The Plan includes the following sections: Infrastructure, Facility Maintenance, Energy, and Categorized Proposals (Fire/Life/Safety, Health Care, Housing, Adult Programs, Security, Support Services, and Utilities).

CDCR also develops MPAR. This report includes proposed projects contained in the Department's most current Plan, active and completed projects within the reporting period, and narrative sections on population, , infrastructure, housing needs, healthcare, and institution project summaries.

CDCR's efforts in energy management, sustainability, and conservation to meet EOs, existing laws, and regulations are documented within these reports.

Per California Penal Code Section 7000 and 7001 (provided below), CDCR has the authority to plan and construct facilities and renovations included within the Department's Plan. Depending on workload, CDCR may delegate a portion of these projects to DGS, some of which may be energy-related projects. CDCR and DGS project teams conduct ongoing meetings to monitor this workload.

California Penal Code Section 7000

a) The Department of Corrections and Rehabilitation shall prepare plans for, and construct facilities and renovations included within, its master plan for which funds have been appropriated by the Legislature.
b) "Master plan" means the department's "Facility Requirements Plan," dated April 7, 1980, and any subsequent revisions.

California Penal Code Section 7001

Any power, function, or jurisdiction for planning or construction of facilities or renovations pursuant to the master plan, which is conferred by statute upon DGS, shall be deemed to be conferred upon the department.

Zero Net Energy (ZNE)

The Administration has set forth ZNE goals for State buildings

- Any project for new construction, major renovations and build-to-suit leases beginning design after October 23, 2017, are to achieve ZNE
- Also, by December 2025, half of total existing building area will be ZNE

CDCR seeks to achieve ZNE at its institutions by reducing energy demand and maximizing on-site energy generation, where feasible, without jeopardizing CDCR's Mission.

Table 20 (below) provides an overall review of the CDCR portfolio while **Table 21** details each ZNE project at each institution.

Table 20 - Zero Net Energy Buildings

Status of ZNE Buildings	Number of Institutions	Floor Area (ft^2)
Buildings Completed and Verified	0	0
Buildings in Design (50-Bed MH Crisis Facility-- CIM)	1	69,051
Under Construction or Completed (portion of ISP campus, HCFIP: CCI, CCWF, CMC, COR, CTF, CVSP, FSP, LAC, MCSP, NKSP, RJD, SAC, SOL, SVSP, WSP)	16	602,157
Totals for Institutions' ZNE Buildings by 2025	**17**	**671,208**

Table 21- Zero Net Energy Projects

Institution	Project Name	Building Name	Status	Floor Area (SF)
CIM	50-Bed MH	50-Bed Mental Health Crisis Facility	In Design	69,051
CCI	HCFIP SP#2	New Pharmacy and Laboratory Building	Construction Complete	2,205
	HCFIP SP #5	Facility D Primary Care Clinic	Construction Complete	3,876
CCWF	HCFIP SP#4	New Pharmacy	Construction Complete	2,244
CMC	HCFIP SP#1	New West Facility Primary Care Clinic	Construction Complete	5,268
	HCFIP SP#4	New East Facility Primary Care Clinic and Health Care Administration Building	Construction Complete	13,091

Institution	Project Name	Building Name	Status	Floor Area (SF)
	HCFIP SP#5	New Pharmacy and Laboratory Building	Construction Complete	3,000
	HCFIP SP#6	New East Facility ASU Primary Care and ASU-EOP Mental Health Clinic	Construction Complete	10,795
COR	HCFIP SP#2	New ASU Primary Care Clinic	In Construction	2,559
CTF	HCFIP SP#1	New Facility A Primary Care Clinic	Construction Complete	3,468
	HCFIP SP#4	New Facility C Primary Care Clinic	Construction Complete	4,400
CVSP	HCFIP SP#3	New Health Care Administration and Health Records Building	Construction Complete	2,880
FSP	HCFIP SP#1	New Minimum Support Facility Primary Care Clinic	Construction Complete	3,072
	HCFIP SP#2	New Building 1 Primary Care Clinic	Construction Complete	3,268
	HCFIP SP#3	New Central Health Services Building and Education Annex Building	Construction Complete	17,945
ISP	HVAC	Portion of Campus - Facilities A & B	In Construction	375,000
LAC	HCFIP SP#1	New ASU Primary Care Clinic	Construction Complete	2,594
	HCFIP SP#2	New Complex Primary Care Clinic (Facilities A & B)	Construction Complete	5,573
	HCFIP SP#3	New Complex Primary Care Clinic (Facilities C & D)	Construction Complete	5,573
	HCFIP SP#5	New Health Care Administration and Health Records Building	Construction Complete	5,921
	HCFIP SP#2	New Clothing Exchange Buildings (Facilities A, B and C) (3 buildings)	Construction Complete	5,357
	HCFIP SP#3	New ASU Primary Care and ASU-EOP Mental Health Clinic	Construction Complete	611
	HCFIP SP#4	New Pharmacy and Laboratory Building	Construction Complete	2,471

Institution	Project Name	Building Name	Status	Floor Area (SF)
NKSP	HCFIP SP#2	New Facility B Primary Care Clinic	Construction Complete	2,873
	HCFIP SP#3	New Facility C Primary Care Clinic	Construction Complete	4,835
	HCFIP SP#4	New Facility D Primary Care Clinic	Construction Complete	3,873
	HCFIP SP#5	New Medication Distribution Rooms (Facilities B & D, 2 each) (4 buildings)	Construction Complete	2,111
	HCFIP SP#8	New Correctional Case Management Building	Construction Complete	5,038
RJD	HCFIP SP#1	New ASU Primary Care and ASU-EOP Mental Health Clinic	Construction Complete	9,880
	HCFIP SP#3/8	New Pharmacy and Dialysis Unit Building	Construction Complete	8,389
	HCFIP SP#4	New Health Care Administration Building	Construction Complete	7,680
SAC	HCFIP SP#1	New Facility A PSU-ASU Primary Care Clinic	Construction Complete	6,578
	HCFIP SP#3	New Central Health Services Building	Construction Complete	27,676
SOL	HCFIP SP#1	New Complex Facility Clinic	Construction Complete	12,258
SVSP	HCFIP SP#1	New ASU Primary Care Clinic	Construction Complete	2,687
WSP	HCFIP SP#3	New Facility C Primary Care Clinic	Construction Complete	4,835
	HCFIP SP#4	New Facility D Primary Care Clinic	Construction Complete	4,236
	HCFIP SP#5	New Medication Distribution Rooms (Facilities B & D, 2 each)	Construction Complete	2,111
	HCFIP SP#8	New Correctional Case Management and Health Care Administration Building	Construction Complete	6,983

CDCR is evaluating the potential for ZNE projects primarily consisting of completed construction projects at statewide institutions. As of September 2021, there is one mental health crisis facility in design, two buildings in construction, and 38 buildings that have completed construction for a total of 41 potential ZNE certifications.

New Construction Exceeds Title 24 by 15 Percent

Pursuant to EO B-18-12 new State building and major renovations beginning design after July 1, 2012 are required to exceed the current California Code of Regulations (CCR) Title 24 energy requirements by at least 15%.

71 USGBC® CERTIFIED BUILDINGS
All LEED Silver® level or higher

Although prisons are specifically exempted under Title 24 (Part 6, California Energy Code for Non-Residential Buildings, current edition, Institutional Group I buildings) due to their unique construction characteristics, CDCR nonetheless intends to adhere to Title 24 and, in certain instances, adhere to the 15% greater efficiency goal. Refer to **Table 22** for summary.

Table 22 - New Construction/Major Renovations Exceeding Title 24 by 15%

Projects Exceeding Title 24 by 15%	Number of Institutions with Projects	Floor Area (ft^2)
Completed Since July 2012	24	1,677,278
Under Design or Construction	23	362,273
Proposed Before 2025	7	8,955

The following project design has been approved by the State Fire Marshal construction is anticipated to begin in 2022.

- California Institution for Men (CIM) Mental Health Crisis Facility (MHCF). Refer to **Figure 12** for conceptual design.
    - LEED® v4 EA Prerequisite 2: Minimum Energy Performance and CREDIT 2: Optimize Energy Performance documentation projects 26.9% performance better than ASHRAE 90.1-2010.
    - Five EEMs implemented into the final design include:
        - High Performance HVAC: High IPLV Air Cooled Chiller
        - Optimized Envelope: Increased Wall and Roof Insulation
        - Reduced Lighting Power Density: High Efficacy Lighting Design
        - High Performance HVAC: Custom Air Handling Unit
        - High Performance HVAC: High Efficiency Boilers

Figure 12 - 50-Bed Mental Health Crisis Facility Conceptual Design - CIM

Design and Construction Guidelines on Exceeding Title 24

As mentioned previously, the unique nature of correctional facility construction exempts CDCR facilities from Title 24. However, CDCR has incorporated energy-efficiency requirements into its DCG. New construction and major renovation projects in CDCR's *Plan* that are not exempted from Title 24 will be designed to exceed current Title 24 energy requirements by 15%.

As previously stated, the SDG establishes general sustainable design principles for the design of correctional facilities for CDCR and serves as a reference in regard to LEED® and ZNE certification, regulatory requirements, CDCR policies, and Title 24 requirements, among other things.

- The SDG requires energy modeling to demonstrate that the project meets energy targets established by EOs, CDCR, LEED® energy-efficiency prerequisites and credits, and requirements for SBD incentive applications.
- Design decisions must be based on energy modeling and life-cycle cost analysis.

Reduce Purchased Grid-Based Energy 20 Percent by 2018

EO B-18-12 requires State Agencies to reduce grid-based energy purchased by 20 percent by 2018, compared with a 2003 baseline.

CDCR is reducing its grid-based energy purchases through a variety of efforts, ranging from energy-efficiency programs to LEED® certification, renewable-energy installations to environmentally preferred purchasing, and operation practices to maintenance. All of these are integral to reducing CDCR's load on the grid.

Institutional Operations and Maintenance

CDCR's ESS maintains ongoing communications with all institutions to ensure that each is to raise awareness of the *Green Building Action Plan* requirements. Beginning in 2019, CDCR has designated Sustainability Coordinators at each institution. The Sustainability Coordinators are the primary point of contact working directly with ESS to achieve sustainability goals and requirements set forth by the Administration. The ESS regularly updates the institutions on changes to energy and sustainability mandates. CDCR annually distributes Standard Operating Procedures for Energy Management in State Buildings to remind employees of their role in achieving energy management goals.

CDCR's Department Operations Manual (DOM) and the FPCM provide the operations and maintenance policies and procedures for all institutions. Each institution is responsible for developing and updating a Plant Operations Manual. Included in that Manual are detailed instructions for implementing a comprehensive maintenance program in accordance with the specific needs of the facility. CDCR's Computerized Maintenance Management System (CMMS) generates and tracks preventive maintenance and reparative work on the physical plant and associated equipment *(electrical and plumbing systems, mechanical equipment, heating/cooling systems, etc.)*. Preventive maintenance schedules are established to comply with manufacturers' recommendations, regulatory requirements, departmental policies, and industry standards.

Department-wide Energy Trends

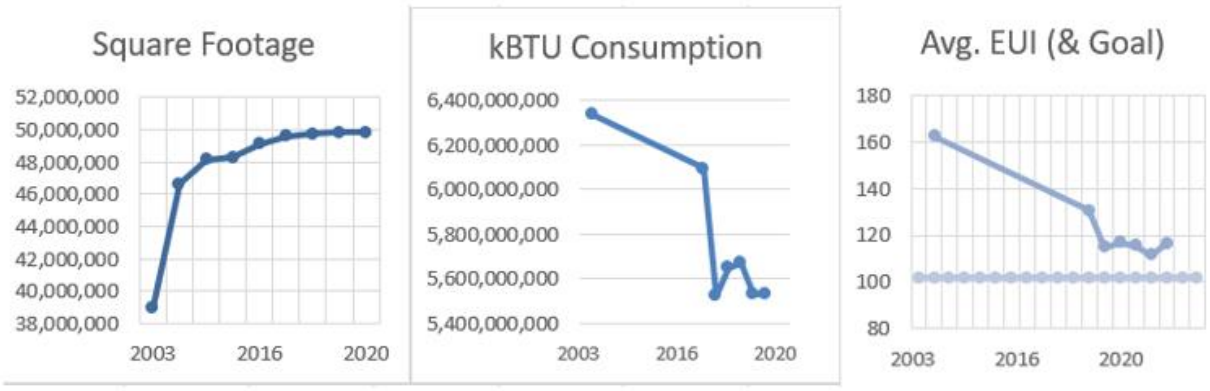
Compared to the baseline year of 2003, CDCR as of December 31, 2020, had an approximate 20% increase to the Department's overall building area. The total energy consumption for the Department is over 5.5 billion kBTU with a site average EUI of 110.

For 2020, the energy usage decreased for 32 of CDCR's State-owned facilities, increased for 12 facilities, and one facility had no EUI trend as it was new and has no 2003 baseline. As shown on Table 23, this represents a reduction of over half-a-billion kBTU's and a 13 percent decrease when compared to the 2003 baseline. In light of increases in 2015, 2016 and 2018, the Department's average site EUI has decreased from 163 in 2003 to 101.

CDCR has saved millions of dollars given the two-prong approach taken to meet the goals of EO B-12-18, including reducing consumption through energy-efficiency projects and securing low-price supply by entering into third party PPAs. These methods provided cost savings to CDCR through permanent energy reductions and securing pre-determined rates when purchasing renewable energy.

Table 23 - Department-wide Energy Trends (without Renewables)

Year	Floor Area (ft^2)	Total Site kBTU Consumption excluding Renewables	Department Average Site EUI
Baseline Year 2003	38,998,597	6,339,377,948	163
2013	46,644,879	6,097,589,607	131
2014	48,163,049	5,526,135,269	115
2015	48,291,977	5,650,116,677	117
2016	49,091,627	5,671,969,324	116
2017	49,599,347	5,531,545,404	112
2018	49,725,763	5,533,243,601	117
2019	49,814,752	5,071,397,364	106
2020	49,857,165	4,897,400,680	101
2021 Goal	49,880,173	5,071,502,358	101



As **Table 23** and the corresponding graphs indicate, the CDCR's footprint has grown by over 10.8 million square feet from 2003 to 2020. Despite this increase, CDCR has consistently reduced energy consumption through extensive conservation and retrofit efforts.

Table 24- 2020 Energy Reductions Achieved (without Renewables)

Purchased Energy Compared to Baseline	Number of Facilities	Floor Area (ft^2)	Current Year kBTU Consumption	Percent of Total Energy
20% Reduction Achieved	17	19,298,555	1,475,278,784	30%
Less than 20% Reduction	24	25,396,282	3,189,482,760	65%
Unspecified Baseline (if any)	4	5,185,336	232,639,136	5%
Totals	**45**	**49,880,173**	**4,897,400,680**	**100%**
Department-wide Reduction	**13%**			

CDCR plans to continue to develop and implement energy efficiency projects through the CDCR/IOU Partnership program, special repair, grants, and other opportunities. CDCR and the IOUs have developed a statewide energy efficiency audit schedule in the IOU territories **Table 24**. These audits will be used for planning future energy efficiency projects. Additionally, ESS utilizes its Architectural/Engineering pool to conduct energy efficiency audits in non-IOU territories.

Energy Efficiency Program

CDCR leverages existing resources using strategic partnerships with California's IOUs to assess and implement energy efficiency projects, utilize rebates, and obtain zero-percent loans through the partnership, as administered by the CPUC for energy saving projects. CDCR also locates and secures grants, loans, incentives, and rebates for energy efficiency projects. **Table 25** summarizes energy savings achieved through energy efficiency projects.

Table 25 - Summary of Energy Savings Achieved through Energy Efficiency Projects Completed by Year

Year Funded	Energy Savings (kBTU/yr.)
2010-2012	188,762,876
2013	32,324,937
2014	68,117,968
2015	18,588,481
2016	10,836,062
2017	51,741,664
2018	4,945,547
2019	19,549,743
2020	29,926,328

Since the start of the CDCR/IOU Partnership program in 2006, CDCR has completed 115 energy efficiency projects. The total cost of these energy efficiency projects was approximately $81 million, which were funded from support funds, loans and/or grant programs. The IOUs paid over $19 million in incentives, and CDCR achieved annual savings of $8.5 million. These savings are used to repay the grant or loan programs; after these debts are retired, these projects provide ongoing energy and cost savings. **Figure 13** shows construction progress photos for a lighting retrofit project.

Figure 13 - High Pressure Sodium Fixtures vs. Energy Efficient LED Fixtures Before and After

Leadership in Energy and Environmental Design

The USGBC developed green building rating systems to advance energy, material efficiency, and sustainability known as LEED® for Building Design and Construction (LEED® BD+C), LEED® for Building Operations and Maintenance (LEED® O+M), and LEED® Interior Design and Construction (LEED® ID+C). EO B-18-12 and the *Green Building Action Plan* require new State buildings and major renovations of 10,000 square feet or more to be designed, constructed, and certified at LEED® Silver or higher; also new State buildings under 10,000 square feet must meet applicable CALGreen Building Standard's Tier 1 measures.

CDCR has made significant progress in designing and constructing new Capital Outlay Projects to meet the LEED® BD+C Silver or Gold rating. LEED® certification details were noted previously in the Green Operations Building Design and Construction section. There are two additional projects in various phases of design or construction that are projected to meet a minimum of LEED® Silver rating. The SOL HCFIP Sub-Project 1 project is pending LEED® Silver certification.

Additionally, the *Green Building Action Plan* requires all existing State buildings over 50,000 square feet to complete LEED® O+M certification and meet an Energy Star rating of 75 (or an alternate energy standard established by the California Energy Commission) to the maximum extent that such certification is cost-effective.

Figure 14 - Central Health Services - SQ

CDCR has identified 23 buildings that are eligible for LEED® O+M certification but obtaining this certification is challenging. Currently, most CDCR prisons have only one master utility meter installed. Sub-meters must be installed on eligible buildings to obtain an Energy Star rating needed to meet the requirements for LEED® O+M certification.

In addition, Energy Star ratings currently do not exist for correctional buildings throughout the country. CDCR is in the process of installing sub-meters on two qualifying buildings – the Shared Services Building at CHCF and the new Central Health Care Services Building at SQ (**Figure 14**) – to collect one year's data to fulfill the prerequisite baseline information and to help develop the standards for a correctional facility Energy Star rating. Both buildings are anticipating LEED® O+M certification. CDCR has allocated funding to award a phased contract for building sub-metering for the remaining 21 buildings. CDCR is planning to evaluate the LEED® O+M Volume Certification Program based on the results of the two pilot projects. In 2019, CDCR completed a comprehensive Energy and Water Survey working with the US Department of Energy (US DOE), the Association of State Correctional Administrators, the American Correctional Association's Sustainability Committee, Green Prisons.org, and the Lawrence Berkeley National Laboratory, in an effort to create an energy star category for correctional facilities that will be recognized by the Energy Star rating criteria. The US DOE is optimistic that the US EPA will grant the addition of this category, allowing CDCR and others to make better progress in measuring and improving upon existing building performance levels.

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 PPAs.

Although there are no specific kW goals for renewable energy, renewable energy does count towards meeting the ZNE goal for 2025 and grid-based energy use reduction goals.

As of December 2020, CDCR has installed solar photovoltaic arrays at 17 institutions: CAL, CCI, CCWF, CEN, CIW, COR, CTF, CVSP, FSP, ISP, LAC, NKSP, PVSP, SAC, SOL, SVSP, and WSP. CDCR generates approximately 114 million kWh of power annually, which is roughly equivalent to the electricity required to power at least 13,000 homes. Refer to **Figure 15** for an aerial view of the solar canopy system at CSP-SAC.

Figure 15- Solar Canopy System – CSP-SAC

These solar arrays were constructed by a third-party vendor at its expense in exchange for CDCR purchasing the electrical power from the solar field operator at discounted rates, allowing CDCR to significantly reduce projected energy costs over the next 20 years. CDCR has also installed several smaller solar arrays (5-25 kW) on several newly constructed buildings to meet the energy demands of these buildings and to achieve higher levels of LEED certification.

Thirteen additional solar projects have been awarded, eight are in construction at CCI, CMC, CTF, KVSP, LAC, PVSP, RJD, SVSP and VSP with completion expected in 2022. Five projects are in the design phase at CMC, CVSP, ISP, MCSP, and SOL. These projects are estimated to bring an additional 32 MW into CDCR's renewable energy portfolio.

Figure 16- Wind Turbine and Solar - CTF

Wind energy has also been incorporated into CDCR's renewable energy portfolio. Wind turbines were installed at CTF, LAC and SVSP. Refer to Figure 16 for photo of a wind turbine and solar at CTF. These wind projects increase the Department's renewable energy portfolio by approximately 5.4 MW which contributes to CDCR's overall renewable energy portfolio and assisted the Department in meeting power grid reductions specified in EO B-18-12.

Based on the current plan, over 27 percent of CDCR's total power is expected to be powered by renewable energy.

Table 26- On-Site Renewable Energy

Status	Number of Projects	Capacity (MW)	Estimated Annual Power Generation (kWh)
Renewables in Operation	26	57.36	115,565,030
Renewables in Design or Construction	8	32.05	64,577,010
Renewables Proposed	**1**	**2.0**	**3,649,532**
Renewable Totals[2]	**37***	**91.41**	**183,791,572**
			Total Electrical Usage
Department Wide Totals	**N/A**	**N/A**	**115,565,010**
Department Wide Renewable Percent (2020)	**N/A**	**N/A**	**17%**
Department Wide Renewable Percent (Including Proposed, in design and in construction)	**N/A**	**N/A**	**27%**

*37 projects at 22 sites

The CDCR has made significant progress in reducing energy usage at its facilities statewide and meeting the State's sustainability goals related to energy.

[2] A number of the proposed sites are already included in the operating/in-construction site count.

CHAPTER FOUR
WATER EFFICIENCY AND CONSERVATION

CHAPTER 4: WATER EFFICIENCY & CONSERVATION OVERVIEW

California experiences extreme variability in yearly precipitation. In 2015, California had record low statewide mountain snowpack of only 5% of average and 2012-14 were the three driest consecutive years of statewide precipitation in the historical record. The 2017 water year (October 1, 2016 - September 30, 2017) was the wettest year on record in the Sacramento River and San Joaquin River watersheds and close to becoming the wettest year in the Tulare Basin. In 2021, California was in a second consecutive year of dry conditions resulting in extreme or exceptional drought conditions throughout most of the State. These year-to-year wide swings in precipitation show why California must simultaneously prepare for extreme precipitation events and sustained drought conditions. .

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

CDCR's construction program has improved efficiency of key water systems through its CALGreen and LEED® certification efforts. Changes in operational practices have also enhanced water conservation of its water efficiency projects includes the installation of water efficiency fixtures and plumbing controls. For example, CDCR has installed devices on toilets of the incarcerated population that regulate the number of flushes in a specified time frame. These devices, resulted in water savings of approximately 40% at institutions statewide. More recent water conservation efforts include changes to operational procedures to further reduce water consumption as required through CDCR's implementation of updated Water Conservation and Management Plans and Best Management Practices checklist.

CDCR will continue to investigate opportunities to realize further water savings where possible, CDCR pairs an infrastructure repair or replacement project with a water efficiency opportunity to address both critical needs. CDCR actively pursues financing or grants for water efficiency projects for CDCR facilities.

Thus far, CDCR has decreased its water usage by 37%, more than 4.2 billion gallons, since 2003. EO B-18-12 requires State Agencies to reduce agency-wide water use 10% by 2015 and 20% by 2020 as measured against a 2010 baseline. CDCR's water needs are often served through its own on-site wells, reservoirs and/or water treatment plants.

CDCR's total water usage has been declining steadily since the baseline year of 2003. See **Table 27** for actual usage.

Table 27- Historical Annual Water Usage

Year	Gallons Used	Water Savings compared to 2003 Gallons	Water Savings compared to 2003 %
2003	11,386,443,127	N/A	N/A
2010	8,809,269,814	2,577,173,313	23%
2013	8,452,234,392	2,934,208,735	26%
2014	7,121,071,080	4,265,372,048	37%
2015	6,287,053,223	5,099,389,904	45%
2016	6,220,281,222	5,166,161,905	45%
2017	6,642,924,539	4,743,518,588	42%
2018	7,076,466,305	4,309,976,822	38%
2019	6,999,887,367	4,419,407,297	39%
2020	7,173,946,194	4,201,783,394	37%

The institutions with the largest per capita water use are shown in **Table 28.**

Table 28- Institutions with Largest Water Use Per Capita in 2020

Facility Name	Building Area (ft^2)	Total Gallons	Gallons per Capita*
SAC	1,359,429	**222,809,522**	240
ISP	1,120,203	**287,198,000**	238
COR	1,652,257	**385,431,000**	236
CMC	1,494,987	**322,780,000**	201
CEN	1,677,422	**251,696,000**	200
Total for Buildings in This Table	**7,304,298**	**1,469,914,522**	**24,421**
Total for All Department Buildings	**49,857,165**	**7,173,946,194**	**164,889**
Percent of Totals	**15%**	**20%**	**15%**

*Includes incarcerated individuals and staff

CDCR's largest landscape areas, including turf and landscaping, as shown in **Table 29** below.

Table 29- Institutions with Largest Landscape Area

Institution	Landscape Area (ft^2)
MCSP	3,475,090
PVSP	3,013,145
SQ	2,580,391
CIM	1,895,526
CMF	1,780,548
Total Area for Institutions in this Table	**12,744,000**
Total Area for All Institutions	**36,682,490**
% of Totals	**35%**

As shown in **Table 30**, the water usage reductions have resulted in lower per-capita usage as well.

Table 30 - Department-wide Water Use Trends - Baseline Years 2010 and 2013

Baseline Year	Total Occupancy/year	Total Amount Used (Gallons/year)	Per Capita Gallons per Person per Day
2010	202,530	8,809,269,814	119
2013	173,769	8,452,234,392	133
2020	162,965	7,173,946,194	120

Table 31 - Total Water Reductions Achieved in 2020 Compared to Baseline Years

Total Water Use Compared to 2010 Baseline	Total Amount Used (gallons per year)
20% Reduction Achieved	1,635,323,620
25% Reduction Achieved	147,333,196
Department-Wide Reduction	**1,782,656,816**

CDCR has been successful in obtaining grants through DGS and utilizing existing funding to complete water efficiency projects. Between 2014 and 2020, CDCR completed water conservation projects at 33 institutions for a total annual water savings of about 150 million gallons. Most of these projects replaced toilets, faucets, and showerheads, but some included new high efficiency scullery equipment like the new dishwasher at Avenal State Prison in **Figure 17** photo.

Figure 17- New Dishwasher - ASP

CDCR institutions utilize boilers for hot water and steam production. Through the IOU partnership, various loans, and utilizing the ESCO pool, CDCR has completed many energy efficiency projects that also realized substantial water savings. Refer to **Table 31** for total water reduction achieved in 2020.

Water Shortage Contingency Plans and Critical Groundwater Basins

Urban water suppliers are required to maintain Water Shortage Contingency Plans that are customized to local conditions. These Plans include a staged response to water shortages and droughts lasting up to three years. When implementing the stages of the Water Shortage Contingency Plan, the water supplier will require increasingly stringent reductions in water use. Refer to Table 32 for summary of institutions with urban water shortage contingency plans and number of institutions in critical groundwater basins.

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

CDCR addressed the Administration's emergency proclamation orders and EO N-10-21 during the 2021 drought and has continued to maintain water conservation directives. CDCR updated its statewide WCMP and required each institution to develop a site-specific plan as well. Each institution's WCM reports water usage on a monthly basis and works closely with their water suppliers and with DWR, especially at institutions located in critical groundwater basins. The WCMs also worked with CDCR's FPCM to validate water shortage contingency plans were in place.

Table 32- Institutions with Urban Water Shortage Contingency Plans and in Critical Groundwater Basins

Number of Institutions with urban water shortage contingency plans.	45
Number of Institutions in critical groundwater basins	12
Total Amount of water used by buildings in critical groundwater basins (Gallons)	1,260,883,941

Moving forward, CDCR will continue to evaluate the BMPs and make modifications to incorporate other water conservation methodologies such as grass-cycling, rainwater harvesting, using mulch and compost, and other new technologies to improve water quality and promote plant growth and health as they become available.

Building Inventories Summary

Since 2015, CDCR has completed major water retrofits for most of its institutions. CDCR has spent over $6 million on the projects and equipment purchases detailed in **Table 33**. The initial walk-through of each institution provided information that was used to make the purchase for each site. These projects were completed between 2016 and 2018. CDCR received a grant from the San Diego County Water Authority for $670,000 to complete water efficiency retrofits for the Richard J. Donovan Correctional Facility (RJD) in San Diego. CDCR has also replaced antiquated dishwashers at several institutions with high efficiency dishwashers utilizing grant funding and/or incorporating equipment replacement into energy efficiency projects. The department addresses laundry equipment upgrades during energy efficiency projects for additional water savings when feasible. **Table 33** summarizes the total building inventories less the parts previously replaced to provide a replacement schedule.

Table 33- Summary of Department Inventory Needs

Item	Original Inventory	Previously Retrofitted	Replacement Need
Number of toilets to be replaced with 1.28 gallon per flush	30,868	4,207	26,661
Number of faucets to be replaced	56,128	7,449	48,679
Number of toilet/sink combo units to be replaced	29,168	943	28,225
Number of showerheads to be replaced at 2.0 gpm	25,030	3,746	21,284

Best Management Practices

CDCR originally developed BMPs for water conservation in 2008, most recently updated in 2021. Each institution has developed site-specific water conservation practices based upon a statewide template. During the 2014 drought, CDCR developed a Statewide Drought Action Plan. In response to the Administration's emergency proclamations and EO N-10-21, the Department re-enforced its statewide water conservation efforts and in 2021, updated and renamed the plan to a SWMP. Each institution updated their site-specific plan and utilized their designated WCM to post materials to communicate and promote water conservation throughout their facilities. This effort also required the institutions to update their site specific BMPs. After the BMPs were updated, institution staff are tasked on an on-going basis.

Moving forward, CDCR will continue to evaluate the BMPs and make modifications to incorporate other water conservation methodologies such as grass-cycling, rainwater harvesting, using mulch and compost, and other new technologies to improve water quality and promote plant growth and health as they become available.

Monitoring, Reporting, and Compliance

Each State Agency is responsible for monitoring water use and reporting baseline and annual water use for compliance with the water use reduction targets. Water use is measured at facilities that have meters and sub meters.

CDCR monitors and records water data from each institution on a monthly basis and the data is entered into the Energy Star Portfolio Manager (ESPM) regularly. CDCR internally tracks and reports the average water usage at institutions and the percentage of water savings compared to the 2003, and 2010 Baseline Usage as required by EOs B-18-12 and B-29-15. Following EO N-10-21, CDCR continues to track and compare monthly 2021 water usage to 2020 water usage to monitor for reaching the target voluntary reduction of 15%. In addition, CDCR has developed streamlined automated processes to collect the water usage data directly from the users. This data is regularly reviewed and anomalies are investigated.

CHAPTER FIVE
GREEN OPERATIONS

CHAPTER 5: GREEN OPERATIONS - OVERVIEW

CDCR's emphasis on "building green" has also carried through into its operations. The Department has established a number of green practices throughout its facilities. Examples include:

- Waste diversion and enhanced waste reduction and recycling.
- Maintenance methods aimed at improving indoor air quality, such as enhanced filtration.
- Less-toxic methods to control pests through integrated pest management practices.
- Utilizing environmentally preferred purchasing methods for typical purchases, such as office supplies and cleaning products.
- Offering more plant-based alternatives in the dietary menu of the incarcerated population, and reducing purchases of red meat products.

Planned installations of electric vehicle charging stations will enable staff to use emission-free vehicles in their daily commutes, and when combined with on-site renewable generation will help to improve air quality.

These programs and partnerships along with CDCR efforts overall have led to a 20% decrease in grid-based energy purchases and a 23% decrease in the overall EUI rate since 2003, despite a 27.5% increase in the total institutional building area. From August 2014 through December 2020, CDCR has diverted approximately 43,000 tons of organic waste from landfills in accordance with Assembly Bill 1826. CDCR exceeded the 20% GHGe reduction goal by achieving a 26% reduction in 2020.

Through the continued efforts of CDCR's programs, projects, and objectives, the Department is on track to meet or exceed the overall GHGe reduction, energy, and renewables goals and objectives set forth by the Administration.

Greenhouse Gas (GHG) Emissions

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

GREENHOUSE GAS EMISSIONS
Reduced by 26% since 2010

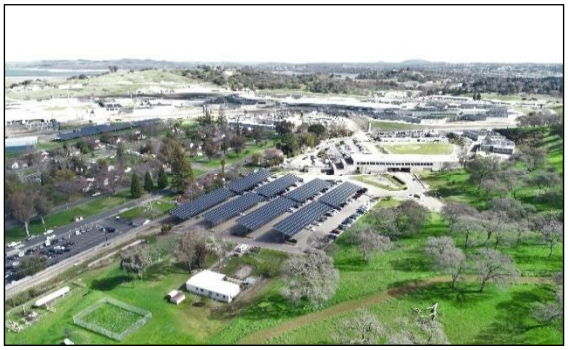
CDCR exceeded the 20 percent goal by achieving a 26% reduction in 2020 based upon the 2010 baseline.

Energy Efficiency

CDCR has engaged in a collaborative effort through the IOU/CDCR Energy Efficiency Partnership Program to improve energy efficiency since 2008. As of December 2021, CDCR has completed 108 energy efficiency projects in existing buildings and new construction that have yielded a combined GHGe reduction of 69,891 metric tons per year and an annual cost savings of approximately $8.7 million.

CDCR will continue to utilize energy efficiency projects to reduce GHGe. From 2019 through 2022, CDCR has a total of 51 energy efficiency and projects that are either in development or included in future projections. These projects are expected to provide additional GHGe reductions of over 6,500 metric tons per year.

Figure 18- Solar Arrays - SAC



On-Site Renewable Energy

Through third-party SPPAs, CDCR has completed 23 on-site renewable solar generation projects at 17 institutions totaling approxmitely 52 MW and three wind turbines at three institutions totaling 5.5 MW as of December 2020. Figure 18 shows construction complete of solar canopy arrays at CSP-SAC.

Several solar projects, totaling approximately 34 MW, are in design and construction and scheduled to be complete in 2022. An additional solar project has been awarded and is planned for construction during 2022. This project is estimated to bring an additional 2 MW into CDCR's renewable energy portfolio.

CDCR will continue to utilize renewable energy projects where feasible to reduce GHGe. CDCR's statewide renewable energy portfolio is positioned to exceed 91 MW by the end of 2022 as shown in **Table 34**.

Table 34- CDCR Renewable Energy Portfolio

Institution	Completed Solar (MW)	Completed Wind Turbines (MW)	Solar In Construction (MW)	Solar In Design (MW)
CAL	6.00	N/A	N/A	N/A
CCI	2.33	N/A	4.00	N/A
CCWF	4.50	N/A	N/A	N/A
CEN	6.00	N/A	N/A	N/A
CIW	1.00	N/A	N/A	N/A

Institution	Completed Solar (MW)	Completed Wind Turbines (MW)	Solar In Construction (MW)	Solar In Design (MW)
CMC	N/A	N/A	2.00	2.00
COR	5.00	N/A	N/A	N/A
CTF	1.00	1.79	2.00	N/
CVSP	4.94	N/A	N/A	2.00
FSP/SAC	1.30	N/A	N/A	N/A
ISP	5.00	N/A	N/A	1.00
KVSP	N/A	N/A	3.00	N/A
LAC	2.00	1.85	2.40	N/A
MCSP	N/A	N/A	N/A	2.00
NKSP	5.00	N/A	N/A	N/A
PVSP	1.22	N/A	2.00	N/A
RJD	N/A	N/A	3.00	N/A
SOL	1.13	N/A	N/A	3.00
SVSP	2.00	1.79	3.50	N/A
VSP	N/A	N/A	2.15	N/A
WSP	3.50	N/A	N/A	N/A
Totals	**51.92**	**5.43**	**24.05**	**10.00**

Purchased Renewable Energy

To date, CDCR has relied on the use of renewable energy produced on-site due to its substantial landholdings but is considering purchasing renewable energy from other providers (Sacramento Municipal Utility District and Marin Clean Energy) to increase its total energy delivered through renewable resources. CDCR is participating in three Community Choice Aggregate programs: SQ is enrolled in Marin Clean Energy's Light Green program receiving 50% renewable energy, SVSP and CTF are enrolled in Monterey Bay (MB) Community Power's MB Choice program receiving 100% renewable energy, and LAC is enrolled in Lancaster Choice Energy receiving 38% renewable energy. CDCR also has the following facilities served by the Western Area Power Administration (WAPA) that transmits hydroelectric power: CMF, FSP, OHCYCF, NACYF, CHCF, and SCC.

Fuel Efficient Vehicles and Zero Emission Vehicles

CDCR's light-duty fleet has increased the number of fuel-efficient vehicles over the last several years. CDCR has approximately 600 traditional hybrid vehicles, 100 plug-in hybrids vehicles and 10 battery electric vehicles (BEV), as reflected in the DGS Fleet Asset Management System database and DGS Fleet Operations Lease Vehicle Reports. The ESS seeks out utility companies' grant programs and other funding sources, to install electric vehicle charging infrastructure and charging station equipment and has already installed charging stations at several institutions with more planned over the next several years.

In addition to the State-owned fleet, CDCR supports employee use of ZEVs through the installation of electric vehicle charging stations at state-owned and leased facilities.

Looking forward, fuel-efficient vehicle purchases will continue to increase, per the Department's Fleet Acquisition Plan, and opportunities to support these charging needs will continue to be implemented as the need increases.

Biofuels

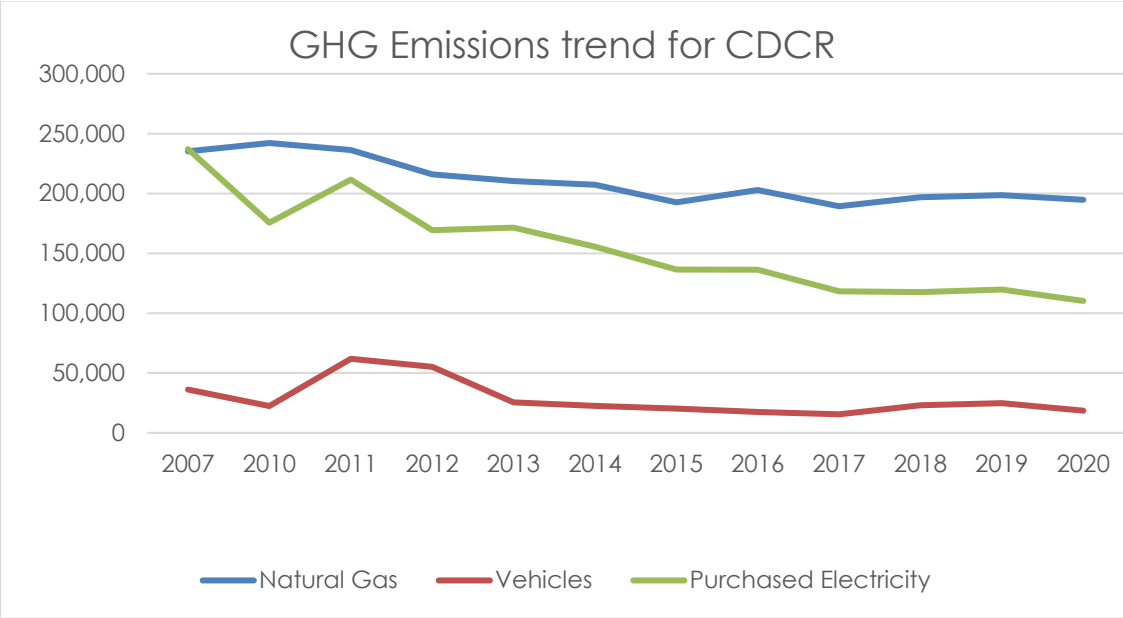
CDCR operates a number of vehicles, equipment, and buildings systems that rely on diesel fuel. The Department continues to increase its renewable diesel and other biofuel purchases where feasible and will continue to explore additional opportunities to increase the Department's usage. For example, in 2020, CDCR purchased over 552,000 gallons of renewable diesel, an increase of approximately 10% from the previous year of 2019.

All of the above efforts in combination with and others discussed in this report have led to substantial reductions in the Department's carbon footprint. **Table 35** and **Figure 19** below show the GHGe reductions that CDCR has realized since 2007.

Table 35- GHG Emissions Since 2007

	Natural Gas	Vehicles	Purchased Electricity	Total
2007 Baseline	235,247	36,122	237,127	**508,460**
2010 Baseline	242,165	22,414	175,570	**440,150**
2011	236,345	61,861	211,632	**509,839**
2012	215,931	55,144	169,331	**440,405**
2013	210,379	25,424	171,434	**407,237**
2014	207,314	22,582	155,553	**385,449**
2015	192,601	20,222	136,501	**349,324**
2016	202,194	17,381	136,289	**356,584**
2017	189,337	15,483	118,310	**323,130**
2018	196,821	23,107	117,577	**337,505**
2019	198,595	24,851	119,686	**343,132**
2020	194,740	18,571	110,229	**323,540**
Percent Change since 2007 Baseline	83%	51%	46%	64%
Percent Change since 2010 Baseline	80%	83%	63%	74%

Figure 19- GHG Emissions Trend for CDCR



Building Design and Construction

EO B-18-12 requires that all new buildings, major renovation projects, and build-to-suit leases over 10,000 square feet shall obtain LEED® Silver certification or higher. All new buildings smaller than 10,000 square feet shall meet applicable CALGreen Tier 1 Measures.

Since July 1, 2012, CDCR has 18 LEED® MBCx BD+C certified new construction projects involving 71 buildings (totaling 14 Gold and 57 Silver certifications). Additionally, CDCR renovated one existing building that earned LEED®-Commercial Interior Silver certification.

All new buildings and renovations built since July 1, 2012 and the associated LEED® level achieved, along with post-construction commissioning (Cx) completed or planned, are listed in **Table 36**.

Table 36- New Construction Since July 1, 2012

Project Name	LEED Level Achieved	Commissioning Performed (Y/N)
CIW - 45-Bed Mental Health Crisis Facility	1 Building, LEED BD+C Silver, 2013	Y
SAC - Enhanced Outpatient Program	1 Building, LEED ID+C Silver, 2013	Y
CMF - 64-Bed Mental Health Crisis Facility	1 Building, LEED BD+C Silver, 2013	Y
CMF - Enhanced Outpatient Program	1 Building, LEED BD+C Silver, 2013	Y
COR - ASU Enhanced Outpatient Program	1 Building, LEED BD+C Gold, 2014	Y
LAC - ASU Enhanced Outpatient Program	1 Building, LEED BD+C Gold, 2014	Y
CMC - 50-Bed Mental Health Crisis Facility	1 Building, LEED BD+C Gold, 2014	Y
SAC - Psychiatric Services Unit	1 Building, LEED BD+C Gold, 2014	Y
SVSP - Enhanced Outpatient Program	1 Building, LEED BD+C Gold, 2014	Y
CHCF - Materials Service Center	1 Building, LEED BD+C Gold, 2014	Y
CHCF - Central Utility Plant	1 Building, LEED BD+C Gold, 2014	Y
CHCF - Various	31 Buildings, LEED BD+C Silver, 2014	Y
CHCF - Enhanced Outpatient Program	1 Building, LEED BD+C Silver, 2015	Y
CHCF – Facility E Material Unit Transfer	1 Building, LEED BD+C Silver, 2015	Y
MCSP - Level II Dorm Complex	12 Buildings, LEED BD+C Silver, 2016; 2 Buildings, LEED BD+C Gold, 2016	Y
SAC - HCFIP (Sub-project 3)	1 Building, LEED BD+C Gold, 2018	Y
RJD - Level II Dorm Facility	6 Buildings, LEED BD+C Gold, 2021	Y
ISP - Central Chiller Plant	1 Chiller Plant, LEED BD+C Silver, 2020	Y
CMC - HCFIP (Sub-project 4)	1 Building, LEED BD+C Gold, 2020	Y
CMC - HCFIP (Sub-project 6)	1 Building, LEED BD+C Gold, 2020	Y
FSP - HCFIP (Sub-project 3)	1 Building, LEED BD+C Gold, 2020	Y
SOL - HCFIP (Sub-project 1)	In Progress, Goal of LEED BD+C Silver (1 Building)	Cx Planned
CIM - 50-Bed Mental Health Crisis Facility	In Progress, Goal of LEED BD+C Silver (1 Building)	Cx Planned

State agencies, such as CDCR, are required to implement mandatory measures and relevant and feasible voluntary measures of the CALGreen, Part 11, related to Indoor Environmental Quality (IEQ) that are in effect at the time of new construction or alteration and shall use adhesives, sealants, caulks, paints, coatings, and aerosol paints and coatings that meet the Volatile Organic Chemical (VOC) content limits specified in CALGreen.

CDCR implements EO B-18-12, LEED®, CALGreen Tier 1, and commissioning requirements by incorporating these requirements in new construction projects. The Department mandates its contracted architects follow EO B-18-12, including the *Green Building Action Plan*, and CALGreen SDGs. In addition, CDCR's (Design Criteria Guidelines Manual – Volume II – Appendix J) provides additional information outlining the requirements for LEED® Silver or higher certification for new and major renovations greater than 10,000 square feet, commissioning for new construction and renovations greater than 5,000 square feet with an Energy Usage Index (EUI) of 50 kBTU/saure foot or larger, and for all new construction and renovations greater than 10,000 square feet.

CDCR provides design consultants with Standard Design Document (SDD) specification sections for use on a project. The SDD specifications include the requirements for LEED® submittals and certification. CDCR's standard sustainable design specification include the general requirements and procedures for compliance with LEED® on certain projects. In addition, Construction Waste Management and Disposal as well as SDD specifications regarding Indoor Air Quality Protection Before Occupancy include CALGreen requirements. CDCR also has two SDD specifications that address recycled content, which require the contractor to track and report recycled-content products for procured materials and submit Waste Reduction Reports.

LEED® for Existing Buildings Operations and Maintenance (LEED® O+M)

All state buildings over 50,000 square feet are required to complete LEED® O+M certification and meet an Energy Star rating of 75 to the maximum extent cost effective.

CDCR has identified 23 buildings over 50,000 square feet that require LEED® O+M certification as summarized in **Table 37**. However, there are multiple challenges in achieving this goal:

- The United States Department of Energy, which established the Energy Star program, does not have established energy star criteria for correctional facilities. Without this, CDCR cannot achieve any energy star rating and hence a LEED® O+M designation. This requires a change at the federal level, which CDCR is pursuing along with other state correctional agencies. In 2019, CDCR completed an Energy and Water Survey developed by the Association of

State Correctional Administrators (ASCA), American Correctional Association's Sustainability Committee, GreenPrisons.org, the United States Department of Energy and the Lawrence Berkeley National Laboratory. The ASCA survey results helped CDCR identify opportunities for energy and water usage and associated costs, as well as the development of a correctional facility type in the ESPM system, which is a step towards prisons receiving an Energy Star score and meeting requirements to pursue LEED® O+M.

- USGBC LEED® O+M Minimum Energy Performance Prerequisite requires that each building's energy use must be metered for a full 12 months of continuous operation. CDCR institutions commonly have only one utility meter for the entire institution so building sub-meters would need to be installed before pursuing LEED® O+M.

Despite these challenges, CDCR is working closely with an ESCO, institution staff, and CDCR's Enterprise Information Services and has begun the process of installing sub-meters at select buildings with others planned in the future.

Table 37- LEED for Existing Buildings and Operations

Number of Buildings over 50,000 sf and eligible for LEED O+M	23
Number of Building over 50,000 sf that have achieved LEED O+M	0 (3 in process)
Percentage of buildings over 50,000 sf required to achieve LEED O+M that have achieved it	0

Moving forward, CDCR will continue to install building sub-meters at the remaining 20 LEED® O+M eligible buildings contingent upon funding availability. Additionally, CDCR includes the installation of building sub-meters in the design of all new construction and rehabilitation projects, which will facilitate future LEED® O+M certification.

Indoor Environmental Quality (IEQ)

When accomplishing alterations, modifications, and maintenance repairs of its buildings, and when relevant and feasible, State agencies shall implement the mandatory and voluntary measures of the CALGreen, Part 11, related to IEQ. IEQ must also be maintained by using low-emitting furnishings, cleaning products and cleaning procedures.

Incorporating IEQ Provisions of CALGreen Tier 1

CDCR's sustainable guidelines help designers understand project requirements in relation to sustainability. CDCR's sustainable guidelines state that all relevant and feasible voluntary measures from Divisions A4.5 and A5.5 of CALGreen should be implemented.

Voluntary measures for Tier 1 for EQ CALGREEN include increased testing of indoor air quality, more stringent formaldehyde requirements, VOC limits and verification for acoustical ceilings and wall panels, use of entryway systems and isolation of

pollutant sources, more efficient air filtration , additional lighting and thermal comfort controls, increased consideration for additional daylight and view requirements, no hydrochlorofluorocarbons (HCFCs), and requirements for hydrofluorocarbons (HFCs). Mandatory Tier 1 measures include additional requirements for resilient flooring and thermal information together with verification of code compliance.

Figure 20- IEQ Monitoring During Construction - PVSP

Specific updates made to Sections 01 81 13 – Sustainable Design Requirements and 01 81 22 – Indoor Air Quality Protection Before Occupancy also support the Environmental Quality (EQ) provisions of CALGREEN Tier 1 to include no additional formaldehyde, VOC limits and verification for acoustical ceilings and wall panels, thermal insulation improvements and verification, and building flush-out. These were the CALGREEN Tier 1 measures identified for the program as being relevant and feasible.

Tier 1 measures that were identified as not feasible in a correctional environment included entryway systems, daylight, and views requirements. CDCR will continue to explore Tier 1 measures that can be incorporated in select buildings that are not correctional in nature and/or are outside of the secure perimeter in future projects. **Figure 20** shows a photo of IEQ monitoring during construction project at PVSP.

Furnishings

CALPIA manufacturing and associated products are compliant with DGS' Purchasing Standard and Specifications (Technical Environmental Bid Specification 1-09-71-52). CALPIA systems furniture has been third party certified to meet the most aggressive standards for VOC emissions. We tested our products through SCS Global. Indoor Advantage Gold certification is SCS Global Services' highest level of indoor air quality performance for furniture. The certification assures that furniture products support a healthy indoor environment by meeting strict chemical emission limits for VOCs.

DGS has a Modular Systems Furniture (MSF) specification (DGS 7110-3045 REV. 6 Engineering & Environmental Specification) which, under Section 5 Environmental specifications, establishes the requirements for implementation of Environmentally Preferable Purchasing (EPP) as mandated by the California Public Contract Code (PCC), Division 2, Part 2, Chapter 6, Sections 12400-12404, and required by EO B-18-12. For seating, the State has DGS Purchasing Standard 56112100 Seating, which in a similar manner sets out the EPP Requirements in line with EO B-18-12.

Cleaning Products

CDCR utilizes 'California Green' cleaning products manufactured by CALPIA. CALPIA products meet the Green Seal™ standard.

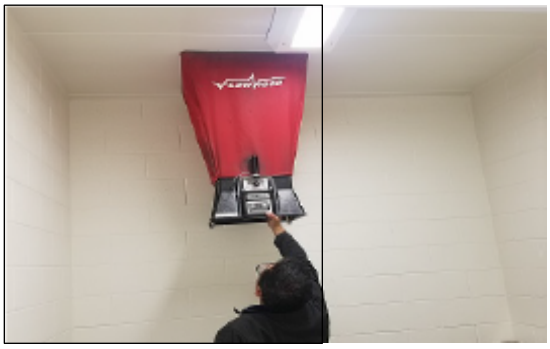
Cleaning Procedures

CDCR employs incarcerated individuals at its facilities to provide general cleaning. CDCR has also been using CALPIA and incarcerated individuals under its employ at all health care facilities statewide through its Healthcare Facilities Maintenance (HFM) program. HFM provides reliable, comprehensive, and innovative cleaning services for California Correctional Health Care Services and meets all federal and California healthcare environmental standards. The CALPIA team focuses on infection prevention and germ control by using a comprehensive program, which includes training and hands-on supervision. CALPIA uses quality specialized cleaning products, which conform to environmental services best practices and International Sanitary Supply Association (ISSA) guidelines.

HVAC Operation

During normal operations, CDCR Plant Operations staff at each institution perform HVAC system maintenance and repair tasks per the schedules set in each prison's Computerized Maintenance Management System (CMMS), a computer-based system that tracks institution maintenance and work orders. The CMMS details work activities required based typically on manufacturer's recommendations. These activities include:

Figure 21- IAQ Monitoring During Construction at CSP-SAC



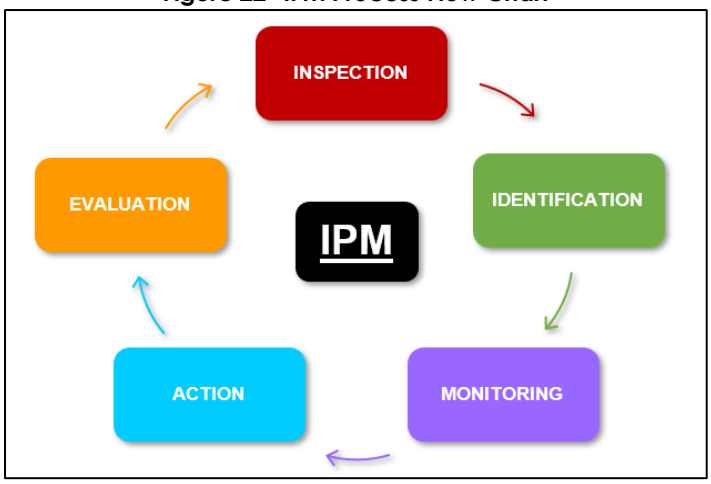
- Verification of minimum outdoor airflows using hand-held airflow measuring instruments. **Figure 21** shows a photo of IAQ monitoring during construction project at CSP-SAC.
- Confirmation that air filters are clean and replaced based on the manufacturer's specified interval.
- Air filters should have the highest MERV rating that the equipment will allow.
- Verification that all outdoor dampers, actuators, and linkages operate properly.
- Checking conditions of all accessible heat exchanger surfaces for fouling and microbial growth, with action taken if growth is found.
- Checking the first 20 feet of ductwork downstream of cooling coils for microbial growth, with action taken if growth is found.

- Verifying that cooling towers are properly maintained and that records of chemical treatment are kept.
- FPCM provides Preventive Maintenance work order development support and technical assistance when it is identified routine job tasks are not fully understood or not being performed by industry standards.

Integrated Pest Management (IPM)

Department staff and contracted pest management companies are required to follow an integrated pest management (IPM) strategy that focuses on long-term prevention of pest problems through monitoring for presence of pests, improving sanitation, and using physical barriers and/or other nonchemical practices. Refer to **Figure 22** IPM Process Flow Chart. If nonchemical practices are ineffective, Tier 3 Pesticides may be used, progressing to Tier 2 and then Tier 1 if necessary.

Figure 22- IPM Process Flow Chart



CDCR has long-term pest management strategies in place either through a statewide contract or at the individual institution level. Pest management strategies are consistent with IPM, beginning with monitoring, improved sanitation, and installing physical barriers such as caulk before moving on to the use of chemicals. Waste and Recycling Programs

Public Resources Code (PRC) Section 42926 requires each State agency and large State facility to submit an annual WM Report to CalRecycle. Requires a simplified measure of jurisdictions' performance, a disposal-based indicator – the per capita disposal rate that uses only two factors; a jurisdictions' population and its disposal as reported by disposal facilities.

The target for CDCR's annual per capita disposal is to be less than the 0.4 disposal target. The annual per capita disposal, in comparison with the disposal target, is not the sole determination of compliance. It also evaluates agencies/facilities on the waste reduction, reuse, recycling, composting, and buy recycle programs.

CDCR's 2020 WM report for Headqaurters (HQ) leased facilities utilizes the methodology created in 2016 by CalRecycle to determine a more accurate

pounds per person. Based on this methodology, the 2020 annual per capita disposal for CDCR HQ's leased facilities increased from 0.38 in 2018, 0.42 in 2019 to 0.44 in 2020, which exceeds the requirement. HQ leased facilities organic recycling reported generating less than 4 cubic yards per week.

DIVERTED FROM LANDFILLS
43 thousand tons of food and organic waste between 2014-2020, enough to fill 5,639 dump trucks

Recycling

Recycling is the practice of collecting and diverting materials from the waste stream for remanufacturing into new products, such as recycled-content paper.

Stewardship programs help collect and recycle carpet, paint, and mattresses.) requires businesses and public entities that generate four cubic yards or more of commercial solid waste per week to arrange for recycling services under the goal of source reducing, recycling, or composting 75% of solid waste generated statewide.

CDCR has established a number of green practices throughout its facilities, from improved waste diversion and enhanced waste reduction and recycling to utilizing environmentally preferred purchasing methods for typical purchases, such as office supplies and cleaning products, to ensure goods and services meet stringent standards

Organics Recycling

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

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

This new requires that each state agency recycle organic material if they generate 2 or more cubic yards of solid waste per week. CDCR is working with the CalRecycle to establish a comprehensive program aimed at diverting food and green waste from landfills. CDCR has a master services contract to provide food and green waste recycling services statewide. In addition, RJD utilizes vermiculture to compost organic waste instead of diverting to the landfill.

Food Service Items

SB 1335 (Allen, Chapter 610, Statutes of 2018) requires food service facilities located in a state-owned facility, operating on or acting as a concessionaire on

State-owned property, or under contract to provide food service to a state agency to dispense prepared food using food service packaging that are reusable, recyclable, or compostable. The new law requires CalRecycle to adopt regulations by January 1, 2021, to establish the process and criteria to determine what types of food service packaging are reusable, recyclable, or compostable. CalRecycle must also publish a list of food service packaging that meets these criteria within 90 days of the regulation going into effect. Food service facilities will only be allowed to purchase food service packaging from the approved list, which will be updated at least once every five years.

CDCR is participating in a Commercial Generator-Based Food Waste Characterization Study with CalRecycle to gather accurate and representative data to measure food discarded in California to assist in the implementation of SB 1383. CDCR identified CSP-Solano and CMF as pilot sites for this study. CalRecycle has hired a Consultant to collect samples from the disposal and organic bins of these facilities to analyze and collect data to develop correctional facilities as an industry group.

The types of food service operations at CDCR include:

Cook-Serve System

This is the traditional food service system. All food is cooked just prior to each meal. Few items are prepared one day ahead of service, such as pudding and gelatin. Typically, the meal is cooked to coordinate 30 minutes ahead of serving time, which is usually when the institutional count clears. This process is repeated throughout the day. Kitchens that utilize the cook-serve system, rarely cook food to place in inventory, because all food is consumed within hours of production.

Cook-Chill System

This is a departure from the traditional cook-serve method of institutional food preparation, in that meals are not prepared individually on the day of consumption. Instead, large quantities of individual items are prepared by a centralized "production kitchen" and placed in cold storage for three to five days. For example, the production kitchen staff will prepare all the entrees for several days on Monday morning and during the afternoon they may prepare all the hot cereal, etc. The two-inch pans are essential for this method to be successful. The food is held up to five days, beginning with the day of production. Most blast-chillers used by CDCR are built as walk-through units. Each rack of food then moves in the front door and is pulled directly into the bulk storage refrigerator after blast chilling is completed.

Cafeteria Service

Cafeteria service is the most common form of meal service used in California prisons. The open line and the closed line are the two types of cafeteria services

used by CDCR. In open line service, incarcerated population are allowed to see what the server is placing on their trays. In close line service, incarcerated population are not able to see the servers and the tray is provided through an opening in the wall of the serving line. Many correctional facilities are implementing the closed line service because it affords better control. Arguments and pilferage are held to a minimum. The meals are served on re-usable plastic safety trays which are returned to the Main Kitchen scullery to be cleaned, rinsed, and sanitized and ready to use for the next meal service.

Cell Feeding

Cell feeding is commonly used in CTC, administrative segregation (Ad Seg) and security housing units (SHU). Two meal delivery systems are commonly used, including delivery of food items in volume and delivery of prepared trays to the celled units. These meals are served on re-usable insulated food serving trays which are accounted for after each meal and returned to the main kitchen scullery to be cleaned, rinsed, sanitized and ready to use for the next meal service.

The pre-made box lunches and kosher meals are served in compostable, biodegradable material, and wrapped in food grade plastic.

Environmentally Preferable Purchasing

State agencies are required to purchase and use EPP that have a reduced effect on human health and the environment when compared with competing goods that serve the same purpose, per Public Contract Code (PCC) 12200-12217.

The State Agency Buy Recycled Campaign (SABRC) is a program that requires the reporting of all purchases made within 11 specified product categories. All State agencies are required to verify the recycled content of all products purchased within each of these categories. All businesses shall certify in writing to the contracting officer the minimum percentage, if not exact percentage, of Postconsumer Recycled-Content (PCRC) material in the products, materials, goods, or supplies offered or sold to the State regardless of whether the product meets the minimum content requirements specified in law.

Reducing Impacts

The environmental impact of the goods purchased by CDCR can sometimes be larger than the impact of Department operations given its significant size and volume of transactions. CDCR is committed to reducing the environmental impact of the goods and services purchased.

CDCR purchasers are encouraged to purchase green/EPP-compliant goods and goods with post-consumer-recycled content whenever feasible. Additionally, service contracts require contractors to self-certify that they will comply with PCC 12200.

CDCR makes extensive and continued efforts to improve SABRC compliance and reporting accuracy. The Department's Office of Business Services (OBS) is committed to continued participation in the DGS PES workgroup to enhance and share knowledge and understanding of EPP purchasing standards and contract language for use in solicitations. Additionally, OBS has committed to participate in the Sustainable Purchasing Leadership Council (SPLC) Benchmark Cohort Pilot to keep CDCR buyers up-to-date on the latest in supply chain sustainability. OBS believes the SPLC Benchmark Cohort Pilot will assist buyers to understand how to efficiently and accurately incorporate sustainability in their procurement decisions.

OBS encourages EPP purchasing through statewide using SABRC-compliant products. OBS will continue to provide EPP training as needed.

CDCR purchases are EPP-compliant for the following categories:

- Paint (i.e. master painter's institute certified paint and recycled paint)
    - Purchasers are encouraged to utilize the Green/EPP-compliant statewide contract for recycled paint whenever feasible.
- Janitorial supplies and cleaners (EcoLogo, Green Seal certified cleaners, DGS_471318A Purchasing Standard compliant)
    - CALPIA cleaning products (janitorial, laundry, and kitchen) the EPP Green Seal standard, and consolidated annual ordering reduces the need for small on-demand deliveries.
- Janitorial supplies, paper products (i.e., SABRC compliant and DGS_141117A Purchasing Standard Compliant)
    - OBS conducts quarterly consolidated solicitations on behalf of participating institutions for toilet paper and paper towels. All of the toilet paper and paper towels purchased through the consolidated ordering process are SABRC compliant.
- Desk Lamps (DGS-391115-A Purchasing Standard compliant)
    - CDCR buyers are encouraged to purchase Green/EPP compliant goods and goods with post-consumer recycled content, whenever feasible (per policy).
- Office equipment (i.e. Electronic Product Environmental Assessment Tool (EPEAT) compliant and EnergyStar rated printers, copiers and DGS_432121A Purchasing Standard compliant for high-end multifunctional devices) and paper products (i.e. Sustainable Forestry Initiative certified, SABRC-compliant copy paper, DGS-441200-A Purchasing Standard compliant)

- CDCR purchases Green/EPP/SABRC-compliant equipment and copy paper from the DGS statewide contract.

- Remanufactured toner cartridges (available from CALPIA and statewide contract ID/Number: 1-15-75-61)
  - CDCR purchases SABRC-compliant toners from the statewide contract and CALPIA whenever feasible.

Measure and Report Progress

Institutions utilize contracted vendors for diversion of their organic waste. Monthly tonnage is reported to the ESS by each vendor based on that month's weight receipts from each pick up. ESS uses this information to track the total amount of waste diverted from each institution.

Extensive and continued efforts have been put forth to improve CDCR's SABRC compliance. OBS facilitates and includes SABRC training in annual training efforts. Training documents and user guides are published on the OBS Procurement Intranet page for staff to reference. OBS also has an analyst tasked with oversight of SABRC compliance for all CDCR entities with sub-delegated purchasing authority.

OBS requires all entities with sub-delegated purchasing authority to submit individual SABRC reports annually to CalRecycle. OBS verifies and monitors each entity's SABRC data and overall compliance. This process enables OBS to identify and address non-compliant categories more efficiently. The OBS SABRC analyst provides individual training on an as-needed basis to assist entities with sub-delegated purchasing authority in SABRC compliance.

CDCR's ongoing strategies to achieve the 50-75 % minimum goal in each category is to:

- Work with the EIS team to enhance reporting capabilities and accuracy in SAP.
- Monitor locations with sub-delegated purchasing authority through a quarterly review process.
- Research commonly purchased non-SABRC compliant commodities and identify comparable SABRC compliant products.
- Inform buyers of the research results and encourage them to purchase the SABRC compliant products.

These strategies, in conjunction with the use of SABRC compliant specifications and DGS Purchasing Standards, will assist CDCR in achieving the 50-75 % annual SABRC goal.

Sustainability Development and Education

CDCR promotes the understanding and advancement of sustainable procurement both internally and with external suppliers by including language in all service contracts to make bidders/contractors are aware of the EPP requirements. The following language is required by DGS in their General Terms and Conditions, Exhibit C, and is also included in all CDCR contracts:

> "RECYCLING CERTIFICATION: The Contractor shall certify in writing under penalty of perjury, the minimum, if not exact, percentage of post-consumer material as defined in the Public Contract Code Section 12205, in products, materials, goods, or supplies offered or sold to the State regardless of whether the product meets the requirements of Public Contract Code Section 12209. With respect to printer or duplication cartridges that comply with the requirements of Section 12156(e), the certification required by this subdivision shall specify that the cartridges so comply with Public Contract Code Section 12205."

EPP training is available through the California Procurement and Contract Academy (CALPCA) online for staff to complete. All CDCR procurement staff are required to complete CALPCA training as part of their continuing education.

In addition to these efforts, CDCR has established sustainability coordinators at each of its institutions and developed a website and other educational materials to promote a greater understanding of CDCR's sustainability efforts amongst its staff and how they can contribute in these efforts.

Location Efficiency

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

Location Efficiency is determined by the use of the Smart Location Calculator, which can be found here: Smart Location Calculator. The Calculator provides a Smart Location Index (SLI), which ranges in value from 0-100, where 0 indicates the least location-efficient site in the region, and 100 indicates the most location-efficient site. These scores are relative to the region and should not be compared across regions.

DGS is the leasing authority for real property for State Agencies. When working with DGS, CDCR must take into account many factors when selecting new lease locations and is faced with several constraints. The California Penal Code places

limitations on the locations of parole offices, such as maintaining a set number of miles away from schools, parks and victim residences. In addition, parole offices should be in close proximity to the parolees being served, or at least accessible by public transit.

The state of California currently offers partial reimbursements for State employees using commuter buses or regional transit to encourage reducing commuter traffic, particularly in urban areas. CDCR's headquarters operations is located in Sacramento's downtown core, immediately adjacent to the city's transit line which makes this means of commuting were attractive to the Department's employees. This location also includes vehicle charging stations and includes on-site showers and bike storage for employees using this transit option. CDCR also has a free Bike Share program available to employees at its headquarters' location to use to travel in and around the city during the weekday.

CDCR continues to seek opportunities to integrate and expand its green practices at state-owned and leased facilities.

APPENDICES

APPENDIX A – LIST OF TABLES

APPENDIX B – LIST OF FIGURES

APPENDIX C – LIST OF ACRONYMS

AB	Assembly Bill
AC	Alternating Current
ACA	American Correctional Association
ADR	Automated Demand Response
A/E	Architects and Engineers
AP	Action Plan
ARRA	American Recovery and Reinvestment Act
ARB	Air Resources Board
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASP	Avenal State Prison
ASU	Administrative Segregation Unit
BIS	Business Information Systems
BMP	Best Management Practices
CAC	California City Correctional Facility
CAL	Calipatria State Prison
CALGREEN	California Green Building Code (Title 24, Part 11)
CALPCA	California Procurement and Contract Academy
CALPIA	California Prison Industry Authority
CCC	California Correctional Center
CCHCS	California Correctional Health Care Services
CCI	California Correctional Institution
CCWF	Central California Women's Facility
CDCR	California Department of Corrections and Rehabilitation
CDs	Construction Documents
CEC	California Energy Commission
CEN	Centinela State Prison
CEQA	California Environmental Quality Act
CHCF	California Health Care Facility

CIM	California Institution for Men
CIW	California Institution for Women
CMC	California Men's Colony
CMF	California Medical Facility
CMMS	Computerized Maintenance Management System
COBCP	Capital Outlay Budget Change Proposal
COR	California State Prison, Corcoran
CPP	Centralized Procurement Program
CPPS	Capital Planning and Project Services Branch
CPUC	California Public Utilities Commission
CRC	California Rehabilitation Center
CTC	Richard A. McGee Correctional Training Center
CTF	California Training Facility
CVSP	Chuckawalla Valley State Prison
DAC	Disadvantaged Communities
DCG	Design Criteria Guidelines
DD	Design Development
DESS	Design and Environmental Services and Standards Branch
DGS	Department of General Services
DWR	Department of Water Resources
ECAA	Energy Conservation Assistance Act
EEM	Energy Efficiency Measure
EHT	Extreme Heat Threshold
EIR	Environmental Impact Report
EIS	Enterprise Information Services
EMS	Energy Management System
EO	Executive Order
EPEAT	Electronic Product Environmental Assessment Tool
EPP	Environmentally Preferred Purchasing

ESCO	Energy Service Company
ESPM	Energy Star Portfolio Manager
ESS	Energy and Sustainability Section
EUI	Energy Usage Index
EVgo	EVgo Services LLC
EVSE	Electric Vehicle Supply Equipment (charging equipment)
FAMB	Facilities Asset Management Branch
FPCM	Facility Planning, Construction and Management
FSP	Folsom State Prison
FY	Fiscal Year
GCM	Global Circulation Model
GFMR	General Facilities Maintenance and Repair
GGE	Gasoline Gallon Equivalent
GHG	Greenhouse Gas
GHGe	Greenhouse Gas Emission
GO-Biz	Governor's Office of Business and Economic Development
GPS	Global Positioning System
GS	Green Seal
GSP	Groundwater Sustainability Plan
GVWR	Gross Vehicle Weight Rating
HCAB	Health Care Administration Building
HCFC	Hydrochlorofluorocarbons
HCFIP	Health Care Facility Improvement Program
HDSP	High Desert State Prison
HFC	Hydrofluorocarbons
HFM	Healthcare Facility Maintenance
HVAC	Heating, Ventilation, and Air Conditioning
IAQ	Indoor Air Quality
IEQ	Indoor Environmental Quality
IOU	Investor-Owned Utility

IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
ISP	Ironwood State Prison
kBTU	Thousand British Thermal Unit
KVSP	Kern Valley State Prison
kWh	Kilowatt hour
LAC	California State Prison, Los Angeles County
LCM	Landscape Coefficient Method
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design®
LEED BD+C	LEED® for Building Design and Construction
LEED ID+C	LEED® for Interior Design and Construction
LEED O+M	LEED® for Building Operations and Maintenance
MAWA	Maximum Applied Water Allowance
MBCx	Monitoring Based Commissioning
MCSP	Mule Creek State Prison
MERV	Minimum Efficiency Reporting Value
MM	Management Memo
MPAR	Master Plan Annual Report
MPG	Miles Per Gallon
MW AC	Megawatts Alternating Current
MW	Megawatt
MWELO	Model Water Efficient Landscape Ordinance
NCYCC	Northern California Youth Correctional Center
NEM	Net Energy Metering
NKSP	North Kern State Prison
OBF	On-Bill Financing
OBR	On-Bill Repayment
OBS	Office of Business Services
OPC	Ocean Protection Council

OPOS	Office of Peace Officer Selection
PBSP	Pelican Bay State Prison
PCC	Public Contract Code
PD	Project Director
PES	Performance and Environmental Standards
PG&E	Pacific Gas & Electric
PHEV	Plug-In Hybrid Electric Vehicles
PPA	Power Purchase Agreement
PPM	Project Procedures Manual
PSREC	Plumas Sierra Rural Electric Cooperative
PUC	Public Utility Code
PV	Photovoltaic
PVSP	Pleasant Valley State Prison
RCP	Representative Concentration Pathway
RJD	Richard J. Donovan Correctional Facility
SABRC	State Agency Buy Recycled Campaign
SAC	California State Prison, Sacramento
SAM	*State Administrative Manual*
SATF	California Substance Abuse Treatment Facility
SB	Senate Bill
SBD	Savings By Design
SCC	Sierra Conservation Center
SCE	Southern California Edison
SCG	Southern California Gas
SCM	State Contracting Manual
SCPRS	State Contract and Procurement Registration System
SDD	Standard Design Document
SDG	Sustainable Design Guidelines
SDG&E	San Diego Gas & Electric
SGA	Sustainable Groundwater Agency

SGC	Strategic Growth Council
SGMA	Sustainable Groundwater Management Act
SMUD	Sacramento Municipal Utility District
SOL	California State Prison, Solano
SPLC	Sustainable Purchasing Leadership Council
SPPA	Solar Power Purchase Agreement
SQ	San Quentin State Prison
STU	Statewide Transportation Unit
SUV	Sports Utility Vehicle
SVSP	Salinas Valley State Prison
UHII	Urban Heat Island Index
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
USGBC	United States Green Building Council
VFD	Variable Frequency Drive
VOC	Volatile Organic Chemical
VSP	Valley State Prison
VYCF	Ventura Youth Correctional Facility
WMC	Water Management Coordinator
WSP	Wasco State Prison
ZEV	Zero Emission Vehicle
ZNE	Zero Net Energy

APPENDIX D - GLOSSARY

Acre-foot - volume equal to water one acre in area and one foot deep.

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

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

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

Cogeneration - also known as combined heat and power, use of a heat engine or power station to generate electricity and heat (and sometimes cooling and/or industrial chemicals).

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

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

Easement - right to use or enter land owned by another partner.

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

- Provisioning services are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources and medicines.
- Regulating services are the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination or pest control.
- Habitat services provide living places for all species and maintain the viability of gene-pools.
- Cultural services include non-material benefits such as spiritual enrichment, intellectual development, recreation and aesthetic values.

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

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

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

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

Lighting Power Density - watts per square foot, or energy consumed divided by the size of a space.

Minimum Efficiency Reporting Value (MERV) - scale for rating the effectiveness of air filters.

Model Water Efficient Landscape Ordinance (MWELO) - The Water Conservation in Landscaping Act was signed into law on September 29, 1990. The premise was that landscape design, installation, and maintenance can and should be water efficient. Some of the provisions specified in the statute included plant selection and groupings of plants based on water needs and climatic, geological or topographical conditions, efficient irrigation systems, practices that foster long term water conservation and routine repair and maintenance of irrigation systems. DWR adopted the Model Ordinance in June of 1992. One element of the Model Ordinance was a landscape water budget. In the water budget approach, a Maximum Applied Water Allowance (MAWA) was established based on the landscape area and the climate where the landscape is located. The latest update to MWELO was in 2015. MWELO applies to all state agencies' landscaping.

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

Plug Load Management - tracking and/or controlling energy used through a building's electrical outlets.

Rainwater harvesting - rainwater collection and storage systems used to offset potable water needs for a building and/or landscape, usually consisting of a surface for collecting precipitation (roof or other impervious surface) and a storage system.

Real property - legally defined land with man-made improvements.

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

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

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

Urban forest - a densely wooded area located in a city.

Vermicompost/Vermiculture - compost resulting from use of worms to create mixture of decomposing organic waste and worm manure.

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

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

Water Shortage Contingency Plans - each urban water purveyor serving more than 3,000 connections or 3,000 acre-feet of water annually must have an Urban Water Shortage Contingency Plan (Water Shortage Plan) which details how a community would react to a reduction in water supply of up to 50% for droughts lasting up to three years.

APPENDIX E – SUSTAINABILITY BACKGROUND REFERENCES

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

Executive Orders

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

- **Executive Order B-16-12**
  EO B-16-12 directs state agencies to integrate zero-emission vehicles (ZEVs) into the state vehicle fleet. It also directs state agencies to develop the infrastructure to support increased public and private sector use of ZEVs. Specifically, it directs state agencies replacing fleet vehicles to replace at least 10 percent with ZEVs, and by 2020 to ensure at least 25 percent of replacement fleet vehicles are ZEVs.
- **Executive Order B-18-12**
  EO B-18-12 and the companion *Green Building Action Plan* require state agencies to reduce the environmental impacts of state operations by reducing greenhouse gas emissions, managing energy and water use, improving indoor air quality, generating on-site renewable energy when feasible, implementing environmentally preferable purchasing, and developing the infrastructure for electric vehicle charging stations at state facilities. The Green Building Action Plan also established two oversight groups – the staff-level Sustainability Working Group and the executive-level Sustainability Task Force – to ensure these measures are met. Agencies annually report current energy and water use into the Energy Star Portfolio Manager (ESPM).
- **Executive Order B-29-15**
  EO B-29-15 directs state agencies to take actions in response to the ongoing drought and to the state of emergency due to severe drought conditions proclaimed on January 17, 2014. Governor Brown directed numerous state agencies to develop new programs and regulations to mitigate the effects of the drought, and required increased enforcement of water waste statewide. Agencies were instructed to reduce potable urban water use by 25 percent between 2013 and February 28, 2016.
- **Executive Order B-30-15**
  In 2015, the governor issued EO B-30-15, which declared climate change to be a "threat to the well-being, public health, natural resources, economy and environment of California." It established a new interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 and reaffirms California's intent to reduce GHG emissions to 80 percent below 1990 levels by 2050. To support these goals, this order requires numerous state agencies to develop plans and programs to reduce emissions. It also directs state agencies to take climate change into account in their planning and investment decisions and employ life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. State agencies are directed to prioritize investments that both build climate preparedness and reduce GHG emissions; prioritize natural infrastructure; and protect the state's most vulnerable populations.

- **Executive Order B-37-16**
  EO B-37-16 builds on what were formerly temporary statewide emergency water restrictions in order to establish longer-term water conservation measures, including permanent monthly water use reporting; new permanent water use standards in California communities; and bans on clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes. The EO focuses on using water more wisely and eliminating water waste by taking actions to minimize water system leaks. The California Department of Water Resources (DWR) estimates that leaks in water district distribution systems siphon away more than 700,000 acre-feet of water a year in California – enough to supply 1.4 million homes for a year.
  The EO further strengthens local drought resilience and looks to improve agricultural water use efficiency and drought planning. State agencies are to cooperate with urban water management plans, which include plans for droughts lasting for at least five years by assuring that the water efficiency and conservation plan has drought contingency actions.

- **Executive Order B-48-18**
  EO B-48-18 directs state government to meet a series of milestones toward a long-term target of 1.5 million ZEVs on California's roadways by 2025 and 5 million by 2030. Orders all State entities to continue partnering with regional and local governments to streamline ZEV infrastructure installation processes wherever possible.

  Executive Order N-10-19
  EO N-10-19 directs the California Natural Resources Agency, the California Environmental Protections Agency, the California Department of Food and Agriculture, in consultation with the Department of Finance, to prepare a water resilience portfolio that meets the needs of California's communities, economy, and environment through the 21st century. The EO directs these agencies to reassess priorities contained within the 2016 California Water Action Plan, update projected climate change impacts to water systems, identify key priorities for the Administration's water portfolio moving forward, and identify how to improve across state agencies to implement these priorities.

- **Executive Order N-19-19**
  EO N-19-19 directs state government to redouble its efforts to reduce greenhouse gas emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy.

  Executive Order N-79-20
  EO N-79-20 orders a State goal of 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035, 100 percent of medium and heavy duty vehicles in the State be zero emission by 2045 for all operations where feasible and by 2035 for drayage trucks. This EO orders a goal of the State to transition to 100 percent zero emission off-road vehicles by 2035 where feasible.

- **Executive Order N-10-21**
  EO N-10-21 calls on all Californians to voluntarily reduce their water usage by 15 percent compared to 2020 levels. State agencies shall encourage actions by all Californians to reduce water usage through the statewide Save Our Water conservation campaign.

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
- **SAM Chapter 1900**: "Waste Prevention and Recycling of Non-Hazardous Waste".
- **MM 14-02:** Water Efficiency And Conservation
- **MM 14-05**: Indoor Environmental Quality: New, Renovated, And Existing Buildings
- **MM 14-07**: Standard Operating Procedures for Energy Management in State Buildings
- **MM 14-09**: Energy Efficiency in Data Centers and Server Rooms
- **MM 15-03**: Minimum Fuel Economy Standards Policy
- **MM 15-04**: Energy Use Reduction for New, Existing, and Leased Buildings
- **MM 15-06**: State Buildings and Grounds Maintenance and Operation
- **MM 15-07**: Diesel, Biodiesel, and Renewable Hydrocarbon Diesel Bulk Fuel Purchases
- **MM 16-07**: Zero-Emission Vehicle Purchasing and EVSE Infrastructure Requirements (SAM Section 4121.4)
- **MM 20-01**: Buy Clean California Act
- **MM 20-04**: Medium and Heavy Duty Zero-Emission Vehicle (ZEV) First Purchasing
- **MM 20-05**: Purchasing Restrictions for the State Fleet
- **MM 21-01**: Telematics Installation and Usage Mandate
- **MM 21-04**: Recycling Modular Systems Furniture and Conventional Furniture

Legislative Actions

Recent legislation also strengthens some of the executive orders and enhances California sustainability goals, or provided further requirements included in the policies. These include the following:

- **Assembly Bill (AB) 1482** (Gordon, 2015): Requires that the California Natural Resources Agency (CNRA) update the state's adaptation strategy safeguarding California every three years. Directs state agencies to promote climate adaptation in planning decisions and ensure that state investments consider climate change impacts, as well as the use of natural systems and natural infrastructure. (Public Resources Code Section 71153)
- **Senate Bill (SB) 246** (Wieckowski, 2015): Established the Integrated Climate Adaptation and Resiliency Program within the Governor's Office of Planning and Research to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change. (Public Resources Code Section 71354)
- **AB 2800** (Quirk, 2016): Requires state agencies to take the current and future impacts of climate change into planning, designing, building, operating, maintaining and investing in state infrastructure. CNRA will establish a Climate-Safe Infrastructure Working Group to determine how to integrate climate change impacts into state infrastructure engineering. (Public Resources Code Section 71155)
- **Public Contract Code Section 12153-12217** 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.
- **AB 341**(Chesburo, 2011) Bill makes a legislative declaration that it is the policy goal, of the state of California, that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020
- **AB 1826** (Chesburo, 2014) Requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of organic waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including State Agencies that meet the progressive thresholds.
- **AB 2396** (McCarty, 2016): each state agency is required to include in its existing annual report to CalRecycle specified information on the state agency's compliance with mandatory commercial recycling requirements, pursuant to AB 341, and mandatory commercial organics recycling requirements, pursuant to AB 1826.

- **AB 2812** (Gordon, 2016): As of January 1, 2017, each state agency is required to provide adequate receptacles, signage, education, and staffing, and arrange for recycling services consistent with existing recycling requirements for each office building of the state agency or large state facility. The bill requires, at least once per year, each covered state agency and large state facility to review the adequacy and condition of receptacles for recyclable material and of associated signage, education, and staffing. Additionally, the bill requires each state agency to include in its existing annual report to CalRecycle a summary of the state agency's compliance with the act.
- **SB 1016** (Wiggins, 2008): The Per Capita Disposal Measurement System Act changed the way state agencies and local governments measure their progress toward meeting the statutory waste diversion mandates. State agencies and large state facilities now use per capita disposal as an indicator of their compliance with the 50 percent waste diversion requirement. Compliance is also determined by diversion program implementation.
- **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.

Action Plan

- The 2016 ZEV Action Plan was released just three years later than the 2013 Plan because the ZEV market had evolved significantly and state agencies had completed many of the actions in the 2013 Plan. It was time for a new, updated version to reflect market growth and emerging needs and opportunities. The plan detailed more than 200 actions across six key target areas and incorporated the medium- and heavy-duty sectors.
- The 2018 ZEV Action Plan Priorities Update was prompted by Executive Order B-48-18 which reaffirmed California's commitment to ZEVs. The executive order sought an update of the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in ZEV infrastructure, particularly in low income and disadvantaged communities, while also setting infrastructure targets for vehicle charging stations and hydrogen fueling stations, and setting the goal of 5 million ZEVs on our roads by 2030.

State Resources and Guidance Documents

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

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