

2016

Sustainability

Implementation

Action Plan

First Edition

Final Approval
By Caltrans Executive Board
September 20, 2016



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Executive Summary

Sustainability at Caltrans

Sustainability at the California Department of Transportation (Caltrans) is a central concept that flows from the highest policy levels to implementation. The Caltrans mission – *provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability* – identifies sustainability as a central element. Closely following from the mission statement and setting the course for how it will be accomplished are five strategic goals. Among those five goals is Goal 3, which is focused on *Sustainability, Livability and Economy*.

The Caltrans 2015–2020 Strategic Management Plan (SMP) further sets the course for sustainability by identifying Strategic Objectives, Performance Measures, and Targets for Goal 3. The SMP also states that “Over time, sustainability elements will be incorporated into all Caltrans programs, policies, processes, projects, plans, and procedures.”

The concept is reinforced in Caltrans Director's Policy 33 (DP-33) on Sustainability, which states that Caltrans

“embraces and is committed to its role in improving the environment, the economy, and social equity for all Californians. As defined in DP-33, sustainability means preserving or enhancing California's people, planet and prosperity to improve the quality of life by meeting the needs of present generations without compromising future generations' ability to meet their own needs. Caltrans applies sustainability principles in the planning, design, construction, maintenance, and operation of California's integrated multimodal transportation system.”

Sustainability is not just *part* of what we do; it is an organizing principle and a guiding influence in *all* that we do.

About This Action Plan

This 2016 Sustainability Implementation Action Plan (Action Plan) is intended to provide connections between the policy context and the measures and actions by which the Department is implementing its sustainability strategies. The purpose of the Action Plan is to:

- Promote the consideration of sustainability as a core operating principle at Caltrans,
- Identify specific action items and assign responsible parties,
- Encourage the application and expansion of these practices pursuant to DP-33, and
- Inform the California State Transportation Agency (CalSTA) and Caltrans management, our functional units, our partner agencies, and the public about the Department's sustainability efforts.

This plan lists approximately 135 action items to be performed by headquarters (HQ) divisions and the districts to implement sustainability performance measures through 2017 and beyond. Action items are grouped in several tables listing: Top Priorities, Road Map Items, Sustainable Freight Items, and Other Action Items. The tables also provide target completion dates and the lead Caltrans units and individuals.

The itemized lists in this Action Plan enable Caltrans to monitor and report on our progress in taking the steps to implement sustainability. These action items are drawn from a number of sources, including: work by twelve teams on SMP Goal 3; various Governor’s Executive Orders (EOs) and their implementing “Roadmap;” the 2016 ZEV Action Plan prepared by the Governor’s Interagency Working Group on Zero-Emission Vehicles, other Caltrans transportation planning documents; and input from program leads and division chiefs.

The Top Sustainability Priorities are summarized as follows:

- ***Sustainability Implementation Action Plan.*** Develop and implement a sustainability action plan and organizational framework.
- ***Sustainability Corridor Framework.*** Implement the Sustainability Corridor Framework, which focuses on better integrating and coordinating planning, programming, project development, operations and maintenance efforts.
- ***Caltrans Fleet Efficiency, Greening, and Charging Stations.*** Improve Caltrans fleet efficiency and greening (e.g., more zero emission vehicles, low carbon fuels, etc.). Build charging station/fuel network on Caltrans Rights-of-Way (e.g., district offices, maintenance facilities, roadside rest areas, park and ride, etc.) for zero emission vehicles (electric and hydrogen).
- ***Resource and Energy Conservation.*** Improve Caltrans building efficiency by establishing buildings with efficiency ratings, installing solar panels (e.g., building roof tops, parking areas, park and rides, rest areas, etc.), and establishing recycle programs. Assess opportunities to incorporate solar technology into transportation infrastructure through a Preliminary Investigation. Assess existing park and ride facilities.
- ***Non-Auto Modes.*** Establish proactive Pedestrian and Bike Safety Program that funds improvements on high priority corridors. Develop Statewide Transit Strategic Plan and Statewide Rail Plan with the goal of doubling transit trips. Develop the Statewide Bicycle and Pedestrian Plan with the goal of tripling bicycle and doubling pedestrian trips. Deliver more Project Initiation Documents (PIDs) that include complete streets and other bike and pedestrian friendly features. Monitor and report on the Active Transportation Program (ATP) (e.g., miles of new bike lanes or pedestrian facilities constructed).
- ***Low-Emission Construction Equipment.*** Conduct pilot program to promote the use of low-emissions, off-road construction vehicles by contractors to reduce emissions from construction equipment (Tier 4).
- ***Resiliency.*** Complete District Vulnerability Assessments and develop a guidance document to integrate adaptation measures into planning, programming, and project development processes.
- ***Public Awareness.*** Launch a media campaign aimed at promoting transit ridership, what Caltrans is doing in this area (e.g., the Statewide Transit Strategic Plan), and the benefits of increased ridership, including GHG emission reductions.

Shared Responsibilities among Functions

Sustainability implementation requires a high amount of collaboration among various Caltrans functional units – we must work together to achieve the sustainability targets. This Action Plan describes in general the responsibilities of Caltrans functional areas, including:

- Planning and Modal Programs

- Project Delivery (Design, Engineering Services, Environmental Analysis, Project Management, Construction and Right-of-Way)
- Maintenance and Operations
- Administration: Division of Business, Facilities and Security
- External Affairs
- Procurement and Contracts.

The Action Plan also describes the organization of the Sustainability Program, as managed within the Director's Office, including the roles and responsibilities for program management, staff, technical advisory committees, and executive oversight boards.

Putting the Plan to Work

Looking ahead, the Sustainability Program anticipates other initiatives to further the Department's movement toward sustainable practices. Caltrans will continue to identify and pursue innovative sustainability strategies to improve the quality of life for all Californians, reduce environmental impacts from the transportation system, and improve economic prosperity.

To document our commitments, work plan agreements will be prepared to further articulate roles, responsibilities, and expectations. Sustainability strategies and actions for each functional area will also be further described in fact sheets. To improve understanding of sustainability and this Action Plan, the program will develop training materials and curricula to take on the road or disseminate through web-based workshops and classes. The Sustainability Program will also continue maintaining its program website and newsletter.

This Action Plan is a living document, intended to be updated periodically to report our progress and course adjustments. Success of the plan relies on a close partnership between the HQ Sustainability Program, headquarters divisions, districts, district sustainability managers, and their sponsors.

1.0 Introduction

1.1 Sustainability – An Organizing Principle and Guiding Influence

The California Department of Transportation (Caltrans) is committed to serving the people of California. In its traditional role, Caltrans ensures the safe and efficient travel of millions of Californians every day. In recent years, Caltrans has consciously sought to reinvent itself, become a modern department, and achieve more than mobility. The Caltrans of today helps to build communities and enhance the quality of life for California's residents, protect the environment, conserve natural and cultural resources, and strengthen the economy.

These efforts are now recognized as components of sustainability. Sustainability at Caltrans is a central concept that flows from the highest policy levels to implementation. As stated in the Caltrans Director's Policy 33 (D-33) on Sustainability (discussed further in the next section; see also Appendix 1), Caltrans applies sustainability principles in the planning, design, construction, maintenance, and operation of California's integrated multimodal transportation system. Sustainability is not just part of what we do; it is an organizing principle and a guiding influence in all that we do.

1.2 Purpose of This Sustainability Implementation Action Plan

This 2016 Sustainability Implementation Action Plan (Action Plan) is intended to provide connections between the policy context and the measures and actions by which the Department is implementing its sustainability strategies. The purpose of this Action Plan is to:

- Promote the consideration of sustainability as a core operating principle at Caltrans,
- Identify specific action items and assign responsible parties,
- Encourage the application and expansion of these practices pursuant to DP-33, and
- Inform California State Transportation Agency (CalSTA) and Caltrans management, our functional units, our partner agencies, and the public about the Department's sustainability efforts.

1.3 Organization of This Plan

Following this Introduction, this plan discusses the concept of sustainability in a broad context, along with factors that drive sustainability initiatives. The policy context for sustainability is then described in Section 3.0, with references to mandates and guiding documents. Section 4.0 describes the Caltrans Sustainability Program, including its organization, performance measures, and top priorities.

At the heart of this plan in Section 5.0 are several lists of approximately 135 action items to be performed by headquarters (HQ) divisions and the districts to implement sustainability performance measures through 2017 and beyond. The itemized lists (which are expected to be updated over time) enable Caltrans to monitor and report on our progress in doing our share to implement sustainability in California.

Section 6.0 provides summaries of responsibilities by Caltrans functional areas. The Action Plan concludes with a discussion of next steps and a number of appendices.

2.0 Understanding Sustainability

2.1 Defining the Concept

Sustainability relies on the endurance of resources, systems, and processes. It requires people to think ahead with an emphasis on resilience and continuity: something that is sustainable possesses the capacity to absorb disturbance and still retain its basic structure and viability. To work toward sustainability is to help shape the future to promote a more prosperous economy, human and environmental health, and social equity – without compromising the ability of future generations to meet their own needs.¹

Sustainability calls for consideration and balancing of three policy dimensions: social equity, environmental, and economic – the “three Es” or the “triple bottom line” (Figure 1). Sustainability means that transportation decisions will support the social, environmental, and economic needs of current and future generations. These principles are highlighted in the Caltrans Director’s Policy Number 33 (DP-33) on Sustainability (Appendix 1) as **People**, **Planet**, and **Prosperity** (the “three Ps”). Achieving this balance requires *strategic innovation* and *effective partnerships* with other transportation agencies and stakeholders.

Figure 1: The Triple Bottom Line of Sustainability



2.2 Five Sustainability Principles

Sustainable Social Equity involves stewardship that strives to improve the safety, health and quality of life for workers, travelers, and communities. Caltrans promotes social sustainability in the following areas:

- Worker and traveler safety
- Active transportation
- Workforce development
- Supporting livable communities

Environmental Sustainability entails stewardship of natural resources and complying with legal mandates, as well as proactive decisions and actions that employ best practices to

¹ An early, often-cited definition comes from a 1987 United Nations World Commission on Environment and Development report called “Our Common Future” (also known as the “Brundtland report”): “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

improve ecological health and resiliency. Caltrans promotes environmental sustainability in the following areas:

- Ecosystem preservation
- Climate change adaptation
- Low-Impact development
- Reducing greenhouse gas emissions

Economic Sustainability includes stewardship that yields prudent life-cycle fiscal investments and management of physical assets; and accountability to taxpayers for project costs and delivery schedules. Caltrans promotes economic sustainability in the following areas:

- Transportation asset management
- Value analysis
- Life-cycle cost analysis
- System performance and preservation
- Innovative financing
- Relinquishments

Strategic Innovation is necessary for sustainable decision-making. Evolving sustainability challenges require innovative solutions, including the use of new technologies, system monitoring, efficient data analysis, additional data collection, and continual refinement of guidance, policies, and best practices. Areas in which Caltrans employs strategic innovation to achieve sustainability targets include:

- State-of-the-art technologies and tools
- Travel forecasting and analysis
- Travel behavior and systems modeling
- Refinement of guidance, tools, and processes
- Research and data collection

Effective Partnerships are necessary to maximize sustainability benefits. Progress toward sustainability targets rely on collaborative and integrated decision-making and actions shared among diverse statewide and federal participants. Caltrans can be an influential and effective partner in meeting State and federal sustainability goals such as reducing greenhouse gas emissions, linking land-use with transportation facilities using smart mobility principles, and making meaningful strides in promoting public transit and active transportation. Caltrans employs effective partnerships to meet sustainability goals with the following partners, stakeholders, and activities:

- California State Transportation Agency (CalSTA)
- The California Transportation Plan
- The California State Rail Plan
- Self-Help Counties Coalition
- MPO and RTPA coordination (e.g., Sustainable Communities Strategies)
- National participation with federal transportation entities
- Collaboration with California departments, agencies, and programs

2.3 Factors Driving Sustainability

Climate Change. From the reduced size of the snowpack to rising sea levels along the coast, California is challenged by the effects of a changing climate. The State of California is a leader in developing programs to limit the greenhouse gas (GHG) emissions that contribute to climate change. Caltrans and partner agencies at the state, regional, and local levels support a variety of efforts to mitigate and adapt to the effects of climate change, in particular by reducing GHG emissions, including efforts to reduce the number of vehicle miles traveled (VMT). Planning ahead and adapting to climate change are essential for long-term sustainability.

Public Health. The connections between transportation and public health are well documented, including, for example: the importance of highway design and operations in reducing traffic fatalities and injuries; the effects of motor vehicle emissions on cancer and asthma; and the role of transportation in bringing fresh food to the market. Recent research also has shed light on other transportation and health relationships, such as the effects of multimodal travel options on physical activity and obesity and the health benefits of access to essential goods and services. Public health is inextricably linked with sustainability.

Livability. Communities across the State are demanding transportation facilities that enable efficient multimodal travel and that function as high-quality public spaces that improve quality of life. Transportation facilities make up a significant portion of any community. They influence the vitality of the local economy, environmental quality, public health, and personal mobility. Well-conceived transportation infrastructure encourages the use of multimodal travel options, connects active transportation routes, supports local character, and serves as attractive public places. Livable communities served by efficient and accessible transportation systems are vital for long-term sustainability.

Economy. California's economy relies on the efficient movement of goods and people. Economic losses associated with commuter and freight delays can be significant. Businesses have come to depend on reliable, "just-in-time" freight deliveries, often scheduling narrow time windows for delivery. The ports of Los Angeles and Long Beach are the nation's busiest port complex, handling about 40 percent of U.S. imports. Freight transport depends on multimodal surface transportation systems to reach destinations in California and across the nation. Sustaining economic vitality is essential to the State and the nation.

Limited Funding. Funding limits have long constrained transportation improvements, but the scarcity of resources to operate and maintain, let alone expand, the transportation system has reached new levels. Funding limitations are partly caused by inflation, which has eroded the purchasing power of fuel taxes, and by improvements in vehicle fuel economy – i.e., gas tax receipts have not kept pace with vehicle miles of travel. As California's population and economy grow, so does the amount of travel and the cost to operate and maintain the State Highway System (SHS). The need to find more cost-effective ways to achieve Caltrans' mission and goals – to "do more with less" – is an important component of sustainability.

3.0 Policy Context

3.1 Legislation and Other Mandates

The drive toward sustainability is supported by legislation and other mandates at the federal and State levels. At the federal level, guidance on sustainability comes from the Executive Branch and a wide range of agencies and departments, including the U.S. Department of Transportation. In 2015, the President issued Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade. EO 13693 set a number of goals for federal agencies, including GHG emissions reductions, energy conservation, green building performance, climate change resiliency, and development of a Strategic Sustainability Performance Plan (EPA 2015).

At the State level, compliance with sustainability principles is included in legislation, executive orders, and other mandates (see Appendix 2: Selected California Sustainability Bills and Policies). Over the past decade, the State of California has led the nation in passing laws and implementing requirements to combat climate change and reduce greenhouse gas emissions, as well as to build sustainable and livable communities, and complete streets. Such landmark legislation in California includes the following:

- California Global Warming Solutions Act of 2006 (AB 32).
- Sustainable Communities and Climate Protection Act of 2008 (SB 375)
- Complete Streets Act of 2008 (AB 1358)
- Transit Oriented Development Act of 2013 (SB 743)

California sustainability mandates are also derived from the Governor's executive orders, several of which require ambitious reductions in GHG emissions by certain dates (Executive Order S3-05 in 2005; and Executive Order B30-15 in 2015). Together these executive orders require that the State:

- Reduce statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050 and
- Reduce statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep the State on path to meet the 2050 targets.

Other executive orders set required objectives for State agencies to reduce operational GHG emissions and reduce grid-based energy consumption (Executive Order B-18-12 in 2012); require that State agencies ensure that California has sufficient infrastructure to support up to one million zero-emission vehicles (ZEVs) by 2020 and 1.5 million ZEVs by 2025 (Executive Order B-16-12 in 2012); and require that State agencies planning construction projects in areas vulnerable to future sea-level rise consider a range of sea-level rise scenarios for 2050 and 2100 (Executive Order S-13-08 in 2008).

3.2 Caltrans Mission and Goals

Caltrans’s mission is *to provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability*. In the set of five strategic goals that help to set the course for how the Department accomplishes the mission, sustainability is a key concept:

- **Safety and Health:** Provide a safe transportation system for workers and users, and promote health through active transportation and reduced pollution in communities.
- **Stewardship and Efficiency:** Money counts. Responsibly manage California’s transportation-related assets.
- **Sustainability, Livability and Economy:** Make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.
- **System Performance:** Utilize leadership, collaboration and strategic partnerships to develop an integrated transportation system that provides reliable and accessible mobility for travelers.
- **Organizational Excellence:** Be a national leader in delivering quality service through excellent employee performance, public communication, and accountability.

3.3 Strategic Management Plan – Goal 3 Sustainability, Livability and Economy

The Caltrans Strategic Management Plan 2015–2020 (2015) provides further direction to implement the Caltrans mission statement and strategic goals. In addition to providing direction, the Strategic Management Plan (SMP) fosters strategic partnerships and provides performance measures to monitor success. The tools used to implement the SMP are “performance management, transparency, accountability, sustainability, and innovation.”

“Sustainability is a central element of our new mission statement,” according to the SMP. “Over time, sustainability elements will be incorporated into all Caltrans programs, policies, processes, projects, plans, and procedures.”

As part of SMP process, the Caltrans Executive Board (which is ultimately responsible for monitoring, measuring, and reporting progress in implementing the SMP), established five goal teams, one for each of the goals listed above. In terms of the third goal – which is focused on Sustainability, Livability and Economy – the SMP provides a greater definition of sustainability by identifying the objectives related to People, Planet, and Prosperity.

Caltrans is using performance measures to monitor progress of aggressive, yet attainable, targets. The SMP indicates that the Sustainability, Livability and Economy Goal “will have performance measures for accessibility, livability, prosperity, and resiliency. These measures will consider factors such as multimodal proximity to jobs and housing, air and noise pollution from the transportation system, gross State and federal product output, and climate change impacts.”

The relationships in Goal 3 among Strategic Objectives, Performance Measures, and Targets are shown in the table below, as presented in the SMP.

Table 1: Strategic Management Plan Goal 3 Objectives, Measures, and Targets

Goal 3: Sustainability, Livability and Economy		
<i>“Make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.”</i>		
Strategic Objectives	Performance Measures	Targets
<p>People. Improve the quality of life for all Californians by providing mobility choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods, and services, but also as livable public spaces.</p>	<p>Percentage increase of non-auto modes for:</p> <ul style="list-style-type: none"> • Bicycle • Pedestrian • Transit 	<p>By 2020, increase non-auto modes:</p> <ul style="list-style-type: none"> • Triple bicycle mode share to 4.5% • Double pedestrian mode share to 33.2% • Double transit mode share to 8.8% <p>(2010-12 California Household Travel Survey is baseline)</p>
	<p>Accessibility Score (To be determined considering, e.g., multi-modal transportation proximity to jobs, disadvantaged communities, housing services, transit-oriented communities, etc.)</p>	<p>By December 2016, develop and adopt Caltrans Accessibility Score</p>
	<p>Livability Score (To be determined considering, e.g., quality of life, noise, safety, localized emissions, environmental justice concerns, etc.)</p>	<p>By December 2016, develop and adopt Caltrans Livability Score</p>
	<p>Percentage of top 25 sustainable corridor framework (SCF) system plans completed to enhance sustainability of transportation system. (Priority corridors to be determined considering mobility, freight, highways, transit, rail, bike, pedestrian, aviation, etc.)</p>	<p>By 2017, complete System Planning Guidelines</p> <p>By 2020, complete 25 SCF system management plans</p>
<p>Planet. Reduce environmental impacts from the transportation system with emphasis on supporting a statewide reduction of greenhouse gas emissions to achieve 80% below 1990 levels by 2050.</p>	<p>Per capita vehicle miles traveled (reported statewide by district).</p>	<p>By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District</p>
	<p>Percent reduction of transportation system-related air pollution for greenhouse gas (GHG) emissions and criteria pollutant emissions.</p>	<p>15% reduction (from 2010 levels) of GHG to achieve 1990 levels by 2020</p> <p>85% reduction (from 2000 levels) in diesel particulate matter emissions statewide by 2020</p> <p>80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin by 2023</p>

Strategic Objectives	Performance Measures	Targets
<p>Planet (continued):</p>	<p>Percent reduction of pollutants from Caltrans design, construction, operation, and maintenance of transportation infrastructure and buildings for :</p> <ul style="list-style-type: none"> • GHG emissions • Criteria air pollutant emissions • Water pollution 	<p>By 2020, reduce Caltrans internal operational pollutants by District from 2010 levels (from planning, project delivery, construction, operations, maintenance, equipment, and buildings) including:</p> <ul style="list-style-type: none"> • 15% reduction by 2015 • 20% reduction by 2020 of Caltrans GHG emissions per EO-B-18-12 <p>1650 compliance units (acres) of stormwater Best Management Practices (BMPs) implemented in Caltrans projects annually as measured against 2015 baseline.</p> <p>By 2020, 85% reduction (from 2000 levels) in diesel particulate matter emissions statewide.</p> <p>By 2023, 80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin.</p>
	<p>Green Infrastructure Score. Percent increase in transportation projects that include green infrastructure. Weighting mechanism or score to be developed. (To be determined considering factors such as carbon sequestration, energy reduction, air filtration, storm water infiltration, conservation of wildlife habitat and ecosystems, and quality of life)</p>	<p>By 2020, increase by 20% (5% per year) incorporating green infrastructure into transportation projects relative to 2015 levels</p>
<p>Prosperity: Improve economic prosperity of the State and local communities through a resilient and integrated transportation system</p>	<p>Prosperity Score (To be determined considering, e.g., gross State/regional product, freight system competitiveness, transportation efficiency, return on transportation investment, etc.)</p>	<p>By 2016, develop and adopt Caltrans prosperity score.</p>
	<p>Freight System Efficiency Score. Improve freight system efficiency to enhance freight competitiveness and support a sustainable, low-emissions freight system</p>	<p>By 2016, develop and adopt freight system efficiency score</p> <p>By 2020, 10% increase in freight system efficiency</p>

Strategic Objectives	Performance Measures	Targets
<p>Prosperity (continued):</p>	<p>Resiliency Score.</p> <p>For climate change resiliency (such as vulnerability to flood, sea level rise, and others); system resiliency (such as adaptability from emergencies, disasters, and others); financial resiliency (such as ensure funding considering maintenance, operations, modernization, disasters, financial stability, and other factors).</p> <p>To be determined considering asset management, emergency and risk management, climate change, sea level rise, vulnerability, adaptation, and other factors.</p>	<p>By 2017, develop and adopt Caltrans Resiliency Score</p>
	<p>Reduction of resource consumption by measurement of materials taken to landfills (reduction of virgin materials used, reuse of existing materials for construction, recycling of building, construction, and roadside trash) and reduction of potable water use.</p>	<p>By 2020, reduce resource consumption from 2010 levels by District by 15% for materials taken to landfills</p> <p>By 2020, reduce potable water use from 2010 levels by 20%</p>

3.4 Director’s Sustainability Policy

Caltrans Director’s Policy 33 (DP-33), issued in July 2015 (Appendix 1), provides a framework to integrate sustainability within Caltrans. DP-33 establishes the Caltrans Sustainability Policy, which states in part as follows:

The California Department of Transportation (Caltrans) embraces and is committed to its role in improving the environment, the economy, and social equity for all Californians. Caltrans strives to improve Californians’ quality of life without compromising that of future generations. Caltrans meets this commitment by applying sustainability principles in the planning, design, construction, maintenance and operation of California’s integrated multimodal transportation system.

The policy defines sustainability principles as a focus on people, planet, prosperity, partnerships, and innovation (see Section 2.2). This means enhancing the economy and quality of life of Californians by meeting today’s transportation needs, without compromising the prosperity and environment of our future generations.

DP-33 assigns responsibilities for sustainability throughout Caltrans. It also calls upon each of us to integrate sustainability practices into our daily activities. It also articulates each employee’s responsibility to work in collaboration with our partners and stakeholders to make informed and sustainable transportation decisions. DP-33 outlines the responsibilities of Caltrans staff to ensure success in achieving the Sustainability Goal to make long-lasting, smart mobility decisions that improve the environment, support a vibrant economy, and build communities, not sprawl.

3.5 CTP 2040 and Other Key Caltrans Planning Efforts

The California Transportation Plan (CTP) articulates a vision of the State’s transportation system and identifies performance-based goals, policies, and strategies to achieve that vision. The latest statewide transportation plan, CTP 2040, was issued in June 2016. CTP 2040 outlines goals and recommendations to achieve the vision of a “safe, sustainable, universally accessible, and globally competitive” transportation system that “provides reliable and efficient mobility for people, goods, and services, while meeting the State’s greenhouse gas emission reduction goals and preserving the unique character of California’s communities.”

Like this Action Plan, the CTP 2040 is built upon the philosophy of the Three Ps – People, Planet, and Prosperity. Among other strategies, the CTP 2040 promotes an increase in shifting to more sustainable transportation modes (mode shift) to reduce per capita vehicle miles traveled (VMT). CTP 2040 recognizes the importance of the work conducted by Metropolitan Planning

**CTP 2040
Implementation Highlights**

- Improve transit
- Reduce long-run repair and maintenance costs (“fix-it first”)
- Improve highways and roads
- Improve freight efficiency and the economy
- Improve communities (through SCSs)
- Reduce transportation-system deaths and injuries
- Expand the use and safety of bike and pedestrian facilities
- Make our vehicles and transportation fuels cleaner
- Improve public health and achieve climate and other environmental goals
- Secure permanent, stable, and sufficient transportation revenue

Organizations (MPOs) in California to develop and adopt Regional Transportation Plans (RTPs) and Sustainable Community Strategies (SCSs). Each adopted SCS is another step toward reducing VMTs and GHG emissions, while enhancing the existing system and improving mode choice. Implementation highlights of the CTP 2040 are presented in the text box on the previous page.

Other key Caltrans planning efforts include the following.

- Main Street, California – A Guide for Improving Community and Transportation Vitality
- California Freight Mobility Plan
- California Sustainable Freight Action Plan
- Interregional Transportation Strategic Plan
- California Statewide Transit Strategic Plan
- California Aviation System Plan – Policy Element
- Smart Mobility Framework (Smart Mobility 2010: A Call to Action for a New Decade)
- California State Bicycle and Pedestrian Plan
- California State Rail Plan

3.6 Green Initiatives Road Map

In December 2015, Caltrans issued the 2015 edition of the “Road Map to Achieving Executive Orders B-18-12 and B-16-12.” The Road Map incorporates cost-effective, energy efficiency and conservation measures, and clean energy production strategies from EOs B-18-12 and B-16-12. These strategies are incorporated into transportation planning, project development, design, operations, and maintenance of transportation facilities, fleets, and buildings to optimize the use of fuel supplies and energy sources to ensure efficient business operations. In addition, Caltrans promotes energy and fuel diversity through clean, low-carbon fuel sources, fleet efficiency, and strong technology policy and market mechanisms to encourage innovation and low fossil fuel consumption to reduce emissions from transportation.

A summary of “Green Initiatives” is presented in Table 2. (See also Appendix 2, Selected California Sustainability-Related Laws and Policies.)

Table 2: State Green Initiatives and Areas of Focus

Green Initiatives	
Executive Order B-18-12	Outlines the requirements for State agencies related to reducing environmental impacts of state operations, including GHG emissions, energy, and water use, as well as improving indoor air quality, onsite renewable energy, environmentally preferable purchasing (EPP), and developing the infrastructure for electric vehicle charging stations at state facilities. The Green Building Action Plan also established two oversight groups to ensure these measures are met.

Executive Order B-16-12	Encourages the integration of zero emission vehicles (ZEVs). Directs the State toward establishing an infrastructure that can support increased public and private sector ZEVs. Directs State agencies to replace at least 10% of fleet vehicle purchases with ZEVs by 2015, and at least 25% of fleet vehicle purchases with ZEVs by 2020.
Executive Order B-29-15	Directs the State to reduce urban potable water use by 25% by February 28, 2016, as compared with 2013.
Executive Order B-30-15	Establishes a GHG reduction target of 40% below 1990 levels by 2030.
Executive Order B-32-15	Required the multi-agency development of a statewide Sustainable Freight Action Plan by July 2016
Areas of Focus	
<ol style="list-style-type: none"> 1. Greenhouse Gas Emissions (GHG) 2. Energy – Zero Net Energy (ZNE) 3. Energy – Exceed Title 24 by 15% 4. Energy – Reduced Grid-Based Energy Purchases by 20% by 2018 5. Energy – Demand Response 6. Energy – Onsite Renewable Energy 7. Building Design and Construction 8. Building Commissioning 9. Existing Buildings – LEED-EB 	<ol style="list-style-type: none"> 10. Indoor Environmental Quality (IEQ) 11. Water Efficiency 12. Electric Vehicle Charging Stations – Employee Parking 13. Electric Vehicle Charging Stations – State-Owned Vehicles 14. Environmentally Preferable Purchasing (EPP) 15. Financing 16. Monitoring and Executive Oversight 17. Zero Emission Vehicle (ZEV) Fleet Purchases

4.0 Caltrans Sustainability Program

4.1 Department-wide Culture Change

Embracing sustainability as an integrating principle is requiring a Department-wide change in culture. Sustainability is not just part of what we do; it is an organizing principle and a guiding influence in all that we do. According to the SMP, sustainability measures will be incorporated into the State Transportation Improvement Program (STIP). State Highway Operation and Protection Program (SHOPP) projects will be prioritized to align these investments with statewide and regional Sustainable Communities Strategies (SCSs). Caltrans is leading the implementation of several new transit and active transportation programs and providing support for others. Caltrans staff are important contributors to the High-Speed Rail Project, the new Affordable Housing Sustainable Communities Program, and the Strategic Growth Council.

Caltrans will support livability initiatives that promote efficient land use and invest in transportation facilities that improve local economies and community quality of life. We will improve livability by considering transportation-related outcomes in concert with community outcomes (such as accessibility to public and active transportation travel options, proximity of affordable housing to employment and civic centers, and a high-quality public realm) that support natural systems, local businesses, and community vitality.

The quality of our mobility decisions contributes to economic prosperity by enhancing the safe and efficient movement of people, goods, and services. Investments in the State's transportation infrastructure provide significant economic returns, preserve ecological health, contribute to climate change-resilient systems, and create conditions that attract businesses and employers to local communities.

As discussed in the previous section, the California Transportation Plan (CTP) 2040, the first statewide plan completed under the requirements of Senate Bill 391, provides a long-range framework to meet both mobility needs and reduce GHG emissions. The CTP 2040 is essentially the interregional equivalent of the Sustainable Communities Strategies developed by regions pursuant to Senate Bill 375. The Division of Transportation Planning has initiated the Sustainable Mobility Program to assist in the implementation of both Smart Mobility 2010 and CTP 2040. In addition, Caltrans will increase the competitiveness and efficiency of the freight system through targeted investments in trade corridors.

4.2 Giving Credit Where Credit Is Due

Caltrans has already undertaken a wide variety of sustainability activities, building on leadership in environmental stewardship and resource conservation that dates back at least 40 years. Sustainability is increasingly being integrated into how we do our work. Examples of recent and current sustainability activities include the following. This set of sustainability activities is just a sample of the hundreds of such activities ongoing at Caltrans along with partner State agencies.

People

- Establishment of a Smart Mobility Framework to guide planning, programming, and project development
- Implementation of Complete Streets and Active Transportation programs

- Adoption of a Context Sensitive Solution process, which fosters greater community livability by collaborating with stakeholders to shape project priorities
- Support for innovative, community-focused planning activities through a Sustainable Transportation Planning Grant Program
- Providing funding for and management of intercity passenger rail routes
- Providing opportunities for small and disadvantaged businesses

Planet

- Continual improvement of Environmental Analysis's Standard Environmental Reference, initially developed over 30 years ago
- Implementation of a Landscape Architecture Program that promotes sustainability in a variety of ways, following the principles of "integrated vegetation management"
- Development of a comprehensive program to improve water quality discharged from the State Highway System (SHS) and associated facilities
- Improving the protection of fish and wildlife species and enhancing their habitat, including fish passage and wildlife connectivity improvements
- Integration of energy efficient design into buildings, safety roadside rest areas, and highways
- Installation of solar energy projects at Caltrans facilities
- Use of zero emission vehicles and alternative fuels in the Caltrans fleet
- Deployment of sustainable materials and pavement strategies
- Nomination of 32 zero-emission and alternative fuel corridors in California, submitted to the Federal Highway Administration, for designation under the Fixing America's Surface Transportation (FAST) Act

Prosperity

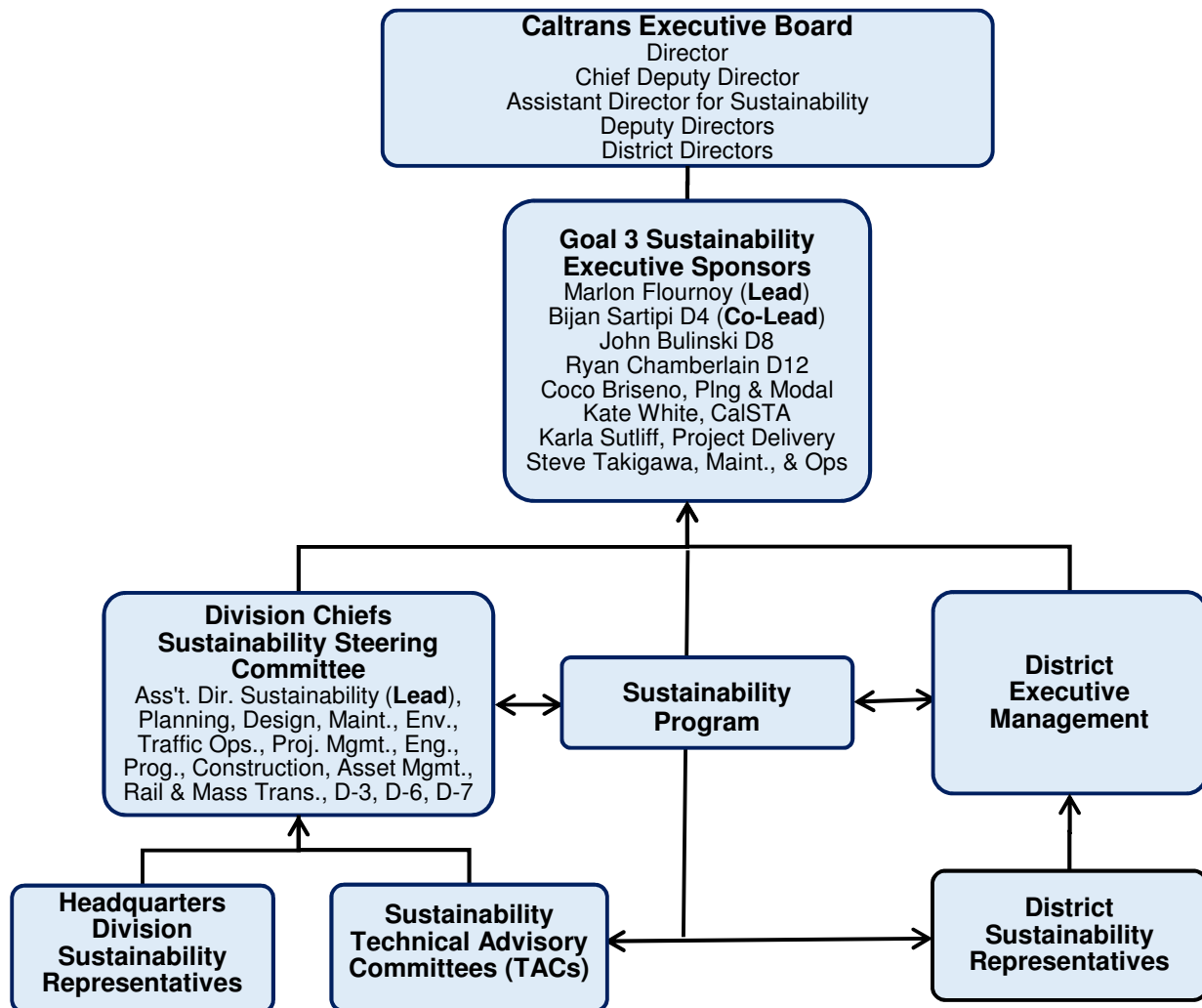
- Analysis of the expected economic benefits from transportation investments, to ensure that the transportation system contributes fully to State and local community prosperity
- Promoting the efficient movement of freight
- Innovative approaches to deliver projects more efficiently
- Use of improved highway maintenance practices that save energy or reduce the use of materials, while also saving money
- Employment of traffic operations strategies that minimize highway delay and the associated economic losses, while improving safety and reducing fuel consumption and emissions
- Consideration of climate change vulnerability and resiliency in the transportation decision-making process
- Preparing for and responding to natural disasters such as earthquakes
- Taking unprecedented actions to conserve water
- Completing in partnership with other State agencies the California Sustainable Freight Action Plan, which includes a metric for comparing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces
- Development of Project Prioritization Criteria for Asset Management

4.3 Sustainability Program Organizational Framework

Caltrans created the Sustainability Program in 2014-15 to coordinate and monitor efforts to implement this Sustainability Action Plan and the ZEV Action Plan. The program’s mission includes providing leadership and support to organizational programs, districts, and divisions across the Department in the implementation of sustainability actions and targets, such as achieving the Governor’s goal of 1.5 million ZEVs on California’s roadways by 2025.

The Sustainability Program organization is shown in Figure 2. The program coordinates the implementation of the Department’s sustainability plans and policies and monitors the outcomes. It serves to spearhead culture change within the Department and helps to ensure that sustainability principles are incorporated into planning, project delivery, maintenance, and operations.

Figure 2: Caltrans Sustainability Program Organization



Caltrans is part of an interagency effort to implement a series of statewide goals for reducing GHG emissions. The Sustainability Program is working with the California Air Resources Board, the California Energy Commission, the Governor's Office of Business and Economic Development, the Department of General Services, and other agencies to implement the targets created by mandates such as Executive Order B-16-12, which calls for State agencies to expand ZEV infrastructure for state fleets, workplaces, and the public over the next decade.

In 2014, Caltrans established a new position, the Assistant Director for Sustainability, who serves as the focal point for monitoring the Department's actions related to sustainability. The Assistant Director for Sustainability is responsible for establishing sustainability policy and reviewing the Department's communication, guidance, plans, practices, documents, training, and reports to ensure sustainability principles are integrated.

The Sustainability Policy DP-33 (Appendix 1) assigns responsibilities for sustainability throughout Caltrans. This Action Plan lists action items under lead division/programs and districts responsible for completing the actions. Those assigned leads are accountable to the Division Chiefs Sustainability Steering Committee (DCSSC) for delivery. This committee receives updates on the development and implementation of the action items in the Action Plan. The steering committee consists of the Goal 3 Executive Sponsors: the Assistant Director for Sustainability, three district directors, the Headquarters Deputy Director for Planning and Modal, and the California State Transportation Agency Deputy Secretary for Environmental Policy and Housing. The Executive Sponsors raise issues to the Caltrans Executive Board if needed.

The Sustainability Program tracks action item deliverables and reports the information to the Sustainability Technical Advisory Committees (TACs) – one for Zero-Emission Vehicles (ZEVs) and one for Solar Energy – which oversee implementation of the Action Plan. Those functions that include action items in the Action Plan commit to being accountable to the Sustainability TACs and Executive Sponsors for delivering them. Each division or district has submitted a one-page work plan to implement each action item in the Action Plan. Lead units will submit a written status report to the TACs when requested to monitor implementation. Refer to Appendix 4 for a work plan template.

In addition, the Sustainability TACs will conduct a quarterly assessment of overall progress in the implementation of the action plan. A final assessment will consider the following objectives:

- Identify gaps in or need for legislative solutions to implement sustainability.
- Explore new revenue sources and changes in existing funding programs to achieve sustainability.
- Review existing committees to ensure sustainability representation, as appropriate.
- Evaluate improvements in Caltrans' guidance and documents to meet sustainability policy.
- Evaluate training needs and update a training plan for sustainability implementation to ensure statewide consistency.
- Facilitate coordination between divisions and districts on sustainability initiatives.
- Develop sustainability implementation information.

Understanding that some of these recommended additional tasks may signify strategic use of TAC members’ time and resources, the TAC will be sensitive and deliberate in working with each action item owner on the completion of these tasks. The TAC is accountable to the Executive Sponsors in completing and reporting on these recommended tasks as well as overall progress reports on implementation of action items.

4.5 Performance Measures

Twelve performance measures have been established by the Sustainability Program to monitor progress toward achievement of the sustainability objectives of People, Planet, and Prosperity. Each performance measure has an associated target. In 2015, Caltrans formed teams to develop implementation strategies for achieving the performance measure targets, and many staff throughout Caltrans have been engaged in these important implementation efforts. These Performance Measures are presented by the associated Objectives in Table 3.

Table 3: Caltrans Sustainability Performance Measures

Objective	Performance Measure
People	Percentage increase of non-auto modes for: Bicycle, Pedestrian, and Transit
	Accessibility Score
	Livability Score
	Percentage of top 25 priority corridor system master plans completed to enhance sustainability of transportation system
Planet	Per capita vehicle miles traveled (VMT)
	Transportation system-related greenhouse gas (GHG) and criteria pollutant emissions
	GHG emissions, criteria air pollutant emissions, and water pollution from Caltrans design, construction, operation, and maintenance of transportation infrastructure and buildings
	Green Infrastructure Score
Prosperity	Prosperity Score
	Freight System Efficiency
	Resiliency Score for: Climate change, System resiliency, and Financial resiliency
	Reduction of Resource Consumption by: <ul style="list-style-type: none"> • Reduction of materials taken to landfills • Reduction of potable water use

4.6 Top Priority Action Items

The Top Sustainability Priorities were adopted at the April 2016 Executive Board Meeting.

OBJECTIVE: Action Title	Description
PEOPLE: Sustainability Implementation	<p>Develop and implement a sustainability action plan and organizational framework that allows Caltrans to efficiently and effectively (1) integrate sustainability into planning, design, construction, maintenance, and operations, (2) implement the performance measures identified in Strategic Management Plan, (3) implement top sustainability priorities, and (4) Governor’s Sustainability Road Map.</p> <p>Implement Sustainability Corridor Framework, which focuses on better integrating and coordinating planning, programming, project development, operations and maintenance efforts and using an integrated and performance-driven approach to plan and deliver a sustainable, reliable, and efficient multimodal transportation system.</p>
PLANET: Fleet/EV Charging	<p>Improve Caltrans fleet efficiency and greening (e.g., more zero emission vehicles, low carbon fuels, etc.).</p> <p>Build charging station/fuel network on Caltrans Right of Way (e.g., district offices, maintenance facilities, roadside rest areas, park and ride, etc.) for zero emission vehicles for electric and hydrogen.</p>
PLANET/ PROSPERITY: Resource and Energy Conservation	<p>Improve Caltrans building efficiency by establishing buildings with efficiency ratings, installing solar panels (e.g., building roof tops, parking areas, park and rides, rest areas, etc.) and establishing recycle programs.</p> <p>Assess opportunities to incorporate solar technology into transportation infrastructure through a Preliminary Investigation.</p> <p>Assess existing park and ride facilities, identify strategic expansion locations, and commit some funding to expansion or develop strategy to get regions to fund.</p>
PEOPLE: Non-Auto Modes	<p>Establish proactive Pedestrian and Bike Safety Program that funds improvements on high priority corridors.</p> <p>Develop Statewide Transit Strategic Plan and Statewide Rail Plan with the goal of doubling transit trips.</p> <p>Develop Statewide Bicycle and Pedestrian Plan with the goal of tripling bicycle and doubling pedestrian trips.</p> <p>Deliver more PIDs that include complete streets and other bike and pedestrian friendly features</p> <p>Monitor and report on ATP Program (e.g., miles of new bike lanes or pedestrian facilities constructed).</p>
PLANET: Low-Emission Construction Equipment	<p>Pilot program to reduce emissions from construction equipment (Tier 4) for contractors to use low emissions off road construction vehicles.</p>
PLANET: Public Awareness	<p>Launch campaign to promote transit ridership, what Caltrans is doing in this area (e.g., the Statewide Transit Strategic Plan), and the benefits of increased ridership, including GHG emission reductions.</p>
PROSPERITY: Resiliency	<p>Complete District Vulnerability Assessments and integrate into planning and project development processes.</p>

5.0 Sustainability Implementation Action Items

Sustainability implementation action items are grouped below in several tables that list: Top Priorities, Road Map Items, Sustainable Freight Items, and Other Action Items. Where possible, the tables provide target completion dates and the lead Caltrans units and individuals. The itemized lists enable Caltrans to monitor and report on our progress in taking the steps to implement sustainability. These action items are drawn from a number of sources, including: work by the various teams on SMP Goal 3, various Governor’s Executive Orders (EOs) and their implementing “Roadmap,” Caltrans transportation planning and other documents, and input from program leads and division chiefs.

5.1 Top Priority Action Items

Number	Action Title	A. Top Sustainability Priority Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
A-1	Sustainability Action Plan	Action Plan: Develop and implement a Sustainability Implementation Action Plan	Sep 2016	Sustainability: Marlon Flournoy
PEOPLE OBJECTIVE: Improve the quality of life for all Californians by providing mode choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods and services, but also as livable public spaces.				
Measure 1: Non-auto modes (mode share). By 2020, increase non-auto modes: Triple bicycle use; double pedestrian use, and double transit use				
A-2	Ped & Bike Safety	Establish proactive Pedestrian and Bike Monitoring Programs: <ul style="list-style-type: none"> • Pedestrian Safety Monitoring Program (Pilot) • Bicycle Safety Monitoring Program (Pilot) 	Sep 2019	Traffic Ops: Tom Hallenbeck
A-3	Bike/Ped Plan	Complete the Statewide Bicycle and Pedestrian Plan with the goal of tripling bicycle and doubling pedestrian trips.	June 2017	Planning: Katie Benouar
A-4	Complete Streets PIDs	Deliver more Project Initiation Documents (PIDs) that include complete streets and other bike- and pedestrian-friendly features.	Ongoing: Dec 2017	Planning: Katie Benouar
A-5	ATP monitoring	ATP Program monitoring and reporting (e.g., new bike lanes constructed).	Dec 2017	Local Assistance: Ray Zhang
A-6	Rail Plan	Statewide Rail Integration Plan update with the goal of doubling transit trips.	Dec 2017	Rail: Bruce Roberts
A-7	Transit Plan	Statewide Transit Strategic Plan update with the goal of doubling transit trips.	Feb 2018	Mass Trans: Bruce Roberts
Measure 2: Accessibility Score. By December 2016, develop and adopt Caltrans Accessibility Score				
		See Table D, Measures 2 and 3		Planning
Measure 3: Livability Score. By December 2016, develop and adopt Caltrans Livability Score				
		See Table D, Measures 2 and 3		Design

Number	Action Title	A. Top Sustainability Priority Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
Measure 4: System Corridor Framework (SCF). Percentage of top 25 sustainable corridor framework system plans to enhance sustainability of transportation system. (Priority corridors to be determined considering mobility, freight, highways, transit, rail, bike, pedestrian, aviation, etc.). By 2017, complete system planning guidelines. By 2020, complete 100% of 25 SCF system management plans.				
A-8	Sustainable Corridor Framework (SCF)	Implement the Sustainability Corridor Framework (SCF) , which focuses on better integrating and coordinating planning, programming, project development, operations and maintenance efforts and using an integrated and performance-driven approach to plan and deliver a sustainable, reliable, and efficient multimodal transportation system.	Dec 2017	Planning: Katie Benouar / DES
PLANET OBJECTIVE: Reduce environmental impacts from the transportation system with emphasis on supporting a statewide reduction of greenhouse gas emissions to achieve 80% of 1990 levels by 2050.				
Measure 5: Per capita vehicle miles traveled (VMT) reduction By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District.				
		See Table D, Measure 5		
Measure 6: System Air & Energy. Percent reduction of transportation system-related air pollution for greenhouse gas (GHG) emissions and criteria pollutant emissions (15% reduction from 2010 levels of GHG to achieve 1990 levels by 2020; 85% reduction from 2000 levels) in diesel particulate matter emissions statewide by 2020; 80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin by 2023)				
A-9	EV Charging Infrastructure	EV Charging Infrastructure: Build charging station/fuel network on Caltrans Right of Way for zero emission vehicles for electric, hydrogen and other alternative fueling options.	Dec 2018	TBD : Various
A-9a	EV Charging Infrastructure	Caltrans ZEV Plan and Policy: Develop a Caltrans ZEV plan and policy documents.	Dec 2016	Sustainability: Marlon Flournoy (Jeremy Matsuo)
A-9b	EV Charging Infrastructure	Workplace and Fleet Administration Infrastructure: Install charging stations at Caltrans Office Buildings.		Facilities
A-9c	EV Charging Infrastructure	Workplace and Fleet Equipment Shop Infrastructure: Install charging stations at Caltrans Equipment Shop facilities.		Equipment: Larry Orcutt
A-9d	EV Charging Infrastructure	Workplace and Maintenance Fleet Infrastructure: Install charging stations at Caltrans Maintenance facilities.		Maintenance:: Tony Tavares
A-9e	EV Charging Infrastructure	Workplace and Construction/Project Delivery Fleet Infrastructure: Install charging stations at Caltrans construction field offices		Construction: Rachel Falsetti
A-9f	EV Charging Infrastructure	Workplace and Operations Fleet Infrastructure (TMCs): Install charging stations at Caltrans TMCs		Traffic Ops: Tom Hallenbeck

Number	Action Title	A. Top Sustainability Priority Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
A-9g	EV Charging Infrastructure	Public Infrastructure Safety Roadside Rest Areas (SRRAs): Install charging stations at Caltrans SRRAs that are accessible to the public.		Maintenance: Tony Tavares Design: Tim Craggs
A-9h	EV Charging Infrastructure	Public Infrastructure (Park and Rides): Install level 1 and/or level 2 charging stations at Caltrans Park and Rides that are accessible to the public in coordination with the Park and Ride Task Force		Traffic Ops: Tom Hallenbeck/ Planning: Katie Benouar
A-10	Solar Infrastructure	System Energy Generation (e.g., Solar) Infrastructure: Incorporate energy generation technology into transportation infrastructure and on rights of way (Park & Ride, Safety Roadside Rest Areas (SRRAs), Caltrans Right of Way)	Dec 2017	Project Delivery Jim Davis (Elias Kurani)
A-10a	Solar Infrastructure	Solar at Park & Ride facilities		Planning Katie Benouar (Mitch Baker)
A-10b	Solar Infrastructure	Solar at SRRAs		Design Tim Craggs (Keith Robinson)
	Solar Infrastructure	Solar at Facilities (See A12)		
A-10c	Solar Infrastructure	Solar on other Caltrans Rights of Way		TBD
A-11	Park & Ride	Expand Park and Ride Statewide: Assess existing park and ride facilities, identify strategic expansion locations, commit some funding to expansion or develop strategy to get regions to fund.	Dec 2017	Planning: Katie Benouar
Measure 7: Caltrans Operations Air & Energy. Percent reduction of pollutants from Caltrans design, construction, operation, and maintenance of transportation infrastructure and buildings for GHG emissions, criteria air pollutant emissions, and water pollution. By 2020, reduce Caltrans internal operational pollutants by District from 2010 levels (from planning, project delivery, construction, operations, maintenance, equipment, and buildings) including: 15% reduction by 2015; and 20% reduction by 2020 of Caltrans GHG emissions per EO-B-18-12. Achieve 1650 compliance units (acres) of stormwater Best Management Practices (BMPs) implemented in Caltrans projects annually as measured against 2015 baseline.				
A-12	Building Solar	Building Solar: Improve Caltrans building efficiency by establishing buildings with efficiency ratings, installing solar panels (e.g., building rooftops, parking areas, facilities).	Dec 2017	TBD: Various
A-12a	Building Solar	Install solar arrays at Caltrans Office Buildings	Dec 2017	Facilities / Districts:
A-12b	Building Solar	Install solar arrays at Caltrans Equipment Shop facilities	Dec 2017	Equip: Larry Orcutt / Districts
A-12c	Building Solar	Install solar arrays at Caltrans Maintenance facilities	Dec 2017	Maintenance:: Tony Tavares / Districts
A-12d	Building Solar	Install solar arrays at Caltrans construction field offices	Dec 2017	Project Delivery: Jim Davis / Districts

Number	Action Title	A. Top Sustainability Priority Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
A-12e	LEED Certification	Pursue LEED-EB certification of all state buildings over 50,000 square feet (per 2015 Roadmap 9.1).	Dec 2015	Sustainability: Marlon Flournoy (Desiree Fox)
A-13	Fleet Greening	Greening CT Fleet: Improve Caltrans fleet efficiency and greening (e.g., more zero emission vehicles, low carbon fuels, etc.).	Dec 2017	Equipment: Larry Orcutt / Districts
A-14	Tier 4 Equip. in Construction	Low Emissions Construction Equipment Award a pilot program contract to evaluate Tier 4 construction equipment to reduce emissions on construction contracts	Dec 2017	Design: Tim Craggs; Construction: Rachel Falsetti
A-15	GHG Media Campaign	GHG Media Campaign: Launch campaign for what Caltrans is doing to reduce GHG emissions focused on Transit (e.g., label vehicles using renewable fuel) similar to "Slow for the Cone Zone."	TBD	Mass & Rail: Bruce Roberts (Jila Priebe)
Measure 8: Green Infrastructure Score: Percent increase in transportation projects that include green infrastructure. By 2020, increase by 20% (5% per year) incorporating green infrastructure score into transportation projects relative to 2010 levels.				
		See Table D, Measure 8		Design
PROSPERITY OBJECTIVE: Improve economic prosperity of the State and local communities through a resilient and integrated transportation system.				
Measure 9: Prosperity score. Score to be determined considering, e.g., gross State/regional product, freight system competitiveness, transportation system efficiency, return on transportation investment, etc. By 2016, develop and adopt Caltrans prosperity score.				
		See Table D, Measure 9		Planning
Measure 10: Freight System Efficiency & Freight Efficiency Score. Improve freight system efficiency to enhance freight competitiveness and support a sustainable, low emissions freight system. By 2016, develop and adopt freight system efficiency score. By 2020, 10% increase in freight system efficiency.				
		See Table C in entirety		Planning
Measure 11: Resiliency Score. For climate change resiliency; system resiliency; and financial resiliency. By December 2017, develop and adopt Caltrans Resiliency Score.				
A-16	District Vulnerability Assessments	Vulnerability: Complete District Vulnerability Assessments, identifying where the system is vulnerable to the impacts of climate change and extreme weather events. Develop a guidance document to integrate adaptation measures into planning, programming and project development processes, and conduct resiliency scoring.	June 2019	Planning: Katie Benouar
A-17	Local Vulnerability Assessments	Compile information and assess the application and potential integration of local and regional vulnerability assessments with the Caltrans statewide vulnerability assessment in line with <i>Safeguarding California</i> .	Dec 2017	Planning: Katie Benouar

Number	Action Title	A. Top Sustainability Priority Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
Measure 12: Reduction of resource consumption: By 2020, reduce resource consumption from 2010 levels by district: 15% reduction of materials diverted to landfills and 15% reduction of potable water use				
A-18	Recycling	Building Recycling: Improve Caltrans building efficiency by establishing building recycling programs.	Dec 2017	Facilities
A-19	Recycling	Establish baseline and targets for recycled materials in construction contracts to divert materials from landfills.		Design: TBD
A-20	Recycling	Establish baseline and targets for recycled materials in maintenance contracts to divert materials from landfills.	Completed	Maintenance: Tony Tavares

5.2 Sustainability Road Map Action Items

Number	Action Title	B. Sustainability Road Map Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
PEOPLE OBJECTIVE: Improve the quality of life for all Californians by providing mode choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods and services, but also as livable public spaces.				
Measure 1: Non-auto modes (Mode Share). By 2020, increase non-auto modes: Triple bicycle mode share to 4.5%; double pedestrian mode share to 33.2%; and double transit mode share to 8.8%.				
		See Tables A and D, Measure 1		
Measure 2: Accessibility Score. By December 2016, develop and adopt Caltrans Accessibility Score.				
		See Table D, Measures 2 and 3		
Measure 3: Livability Score. By December 2016, develop and adopt Caltrans Livability Score.				
		See Table D, Measures 2 and 3		
Measure 4: System Corridor Framework (SCF). Percentage of top 25 sustainable corridor framework system plans to enhance sustainability of transportation system. (Priority corridors to be determined considering mobility, freight, highways, transit, rail, bike, pedestrian, aviation, etc.) By 2017, complete system planning guidelines. By 2020, complete 100% of 25 SCF system management plans.				
		See Table A, Measure 4		
PLANET OBJECTIVE: Reduce environmental impacts from the transportation system with emphasis on supporting a statewide reduction of greenhouse gas emissions to achieve 80% of 1990 levels by 2050.				
Measure 5: Per capita vehicle miles traveled (VMT) reduction. By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District.				
		See Table D, Measure 5		
Measure 6: System Air & Energy. Percent reduction of transportation system-related air pollution for greenhouse gas (GHG) emissions and criteria pollutant emissions (15% reduction (from 2010 levels) of GHG to achieve 1990 levels by 2020; 85% reduction (from 2000 levels) in diesel particulate matter emissions statewide by 2020; 80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin by 2023)				

Number	Action Title	B. Sustainability Road Map Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
B-1	2015 Road Map 12.1	EV Infrastructure: Install 66 charging stations by summer of 2016. 19 additional charging stations are pending dates of installation at pre-determined locations	Sep 2016	Various
B-2	2015 Road Map 12.2	EV Infrastructure: Develop plans to evaluate new and existing state-owned parking structures and parking lots to install plug-in electric vehicle charging infrastructure where most cost-effective and appropriate.	Jul 2016	Sustainability: Various
B-3	2015 Road Map 13.1	EV Infrastructure: Install infrastructure and two dual charging stations at the Sacramento Transportation Laboratory (Translab). The contract to build the infrastructure for charging stations has been resurrected and will be reviewed by an architectural engineer.	Jun 2016	DES: Mike Keever
B-4	2015 Road Map 13.2	EV Infrastructure: Install one charging station each at Batavia, Costa Mesa, Toll Road, and San Juan Capistrano Maintenance Stations (District 12).	Dec 2016	D12: Ryan Chamberlain/Maintenance
B-5	2015 Road Map 13.3	EV Infrastructure: Install one charging station at each Marine Way, Brea, Bolsa Chica, and Stanton Maintenance Stations (District 12).	Dec 2018	D12: Ryan Chamberlain/Maintenance
B-6	2015 Road Map 13.4	EV Infrastructure: Send the list of current and planned infrastructure to DGS for contribution to the statewide ZEV Infrastructure Plan.	Aug 2016	Sustainability: Marlon Flournoy (Desiree Fox)
Measure 7: Caltrans Operations Air & Energy. Percent reduction of pollutants from Caltrans design, construction, operation, and maintenance of transportation infrastructure and buildings for GHG emissions, criteria air pollutant emissions, and water pollution. By 2020, reduce Caltrans internal operational pollutants by District from 2010 levels (from planning, project delivery, construction, operations, maintenance, equipment, and buildings) including: 15% reduction by 2015; and 20% reduction by 2020 of Caltrans GHG emissions per EO-B-18-12. Achieve 1650 compliance units (acres) of stormwater Best Management Practices (BMPs) implemented in Caltrans projects annually as measured against 2015 baseline.				
B-7	2015 Road Map 1.5	Track GHG in Materials: Track GHGs from concrete and asphalt materials in construction projects. Designate a lead for the collection, tracking and reporting of GHG emissions, as required by the Caltrans SMP.	Dec 2015 (Overdue)	Planning/Construction
B-8	2015 Road Map 17.2	ZEV Fleet Plan: Develop a ZEV vehicle replacement plan through 2020.	June 2016	Equip: Larry Orcutt
B-9	2015 Road Map 4.4	Building Energy Efficiency: Data Center Efficiency: Report Power Usage Effectiveness (PUE) of computer server rooms greater than 1,000 square feet to OTECH.	Dec 2015 (Overdue)	IT: George Akiyama
B-10	2015 Road Map 1.1	5 Year Building Efficiency Plan: Complete REV™ Sustainability Circles – District 4 (Oakland). Started in October 2015.	Apr 2016	D4: Bijan Sartipi

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Number	Action Title	B. Sustainability Road Map Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
B-11	2015 Road Map 1.1	5 Year Building Efficiency Plan: Complete REV™ Sustainability Circles – District 11 (San Diego). Started in October 2015.	Apr 2016	D11: Laurie Berman
B-12	2015 Road Map 1.1	5 Year Building Efficiency Plan: Complete REV™ Sustainability Circles – District 8 (Inland Empire). To begin in February 2016.	Aug 2016	D8: John Bulinski
B-13	2015 Road Map 1.4	LEDs: Install 52,000 LEDs in District offices statewide.	Dec 2016	Facilities
B-14	2015 Road Map 2.1	Building Policy and Procedures: Create a memo to designers for new construction and major renovations that will be included as a supplement to the existing design policies and procedures prior to the 2020 goal.	Dec 2019	DES: Mike Keever
B-15	2015 Road Map 2.3	Building ZNE: Identify existing buildings with ZNE and consult with energy companies for further energy and cost analysis.	Dec 2016	Sustainability: Marlon Flournoy (Desiree Fox)
B-16	2015 Road Map 2.4	Building ZNE: Develop program specific plans to implement ZNE requirements.	Jun 2017	Sustainability: Marlon Flournoy (Desiree Fox)
B-17	2015 Roadmap 4.1	Computer Energy Efficiency Reporting: Present Dhaani Systems to the IT Customer Relations Office for review and recommendation.	Jun 2016	Sustainability: Marlon Flournoy (Desiree Fox)
B-18	2015 Road Map 4.3	Building Energy Survey: Complete a survey of District facilities managers' specific efforts to comply with MM 14-07 Standard Operating Efficiency Procedures.	Jun 2016	Sustainability: Marlon Flournoy (Desiree Fox)
B-19	2015 Road Map 4.5	Building Light Inventory: Complete an inventory of incandescent light bulbs and any remaining magnetic fluorescent ballasts in fluorescent light fixtures.	Dec 2016	Sustainability: Marlon Flournoy (Desiree Fox)
B-20	2015 Road Map 5.1	Demand Response: Develop a plan and recommend buildings for demand response in all buildings serviced by participating energy companies.	Dec 2016	Sustainability: Marlon Flournoy (Desiree Fox)
B-21	2015 Road Map 5.2	Demand Response: District 4 Headquarters office (Oakland) will work with PG&E and Energy Solutions to perform an analysis at the District 4 Headquarters office for a potential project for the PG&E Automated Demand Response Program.	Dec 2016	Facilities
B-22	2015 Road Map 6.1	Building Solar & On-Site Renewable Energy: Establish Power Purchase Agreements for solar panels through DGS.	Dec 2016	District Facilities Managers
B-23	2015 Road Map 6.2	Building Solar & On-Site Renewable Energy: DOE will consider solar panel canopies in parking lots and wind generators at some Equipment Shop	Dec 2016	Equip: Larry Orcutt

Number	Action Title	B. Sustainability Road Map Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
		facilities (contingent on available funding) and will develop a plan.		
B-24	2015 Road Map 7.1	LEED: Complete construction of SFOBB Warehouse (Phase 2) and achieve LEED Silver.	May 2016	DES: Mike Keever
B-25	2015 Road Map 7.2	LEED: Complete construction of SFOBB Warehouse (Phase 3) and achieve LEED Silver.	Mar 2018	DES: Mike Keever
B-26	2015 Road Map 9.1	LEED-EB: Pursue LEED for Existing Buildings (EB) certification of all state buildings over 50,000 square feet. (Also listed above in Section A, Top Priorities.)	Dec 2015 (Overdue)	Sustainability: Marlon Flournoy (Desiree Fox)
B-27	2015 Road Map 8.1	Building Commissioning: Complete study of recommissioning new and existing systems at the District 7 (Los Angeles) headquarters office building.	Mar 2016	D7:
B-28	2015 Road Map 8.2	Building Commissioning: Review and analyze the energy data of the Inland Empire TMC (Fontana) for EUI threshold compliance.	Dec 2016	Traffic Ops: Tom Hallenbeck
B-29	2015 Road Map 8.3	Building Commissioning: Review and analyze the energy use intensity (EUI) of the Sacramento DOE Headquarters modernized HVAC retrofit and the District 11 (San Diego) Equipment Shop lighting improvement projects.	Dec 2016	Equip: Larry Orcutt
B-30	2015 Road Map 8.4	Building Commissioning: Review and analyze the District 1 (Eureka) Fire Life Safety Modernization project.	Dec 2016	D1/ Facilities
B-31	2015 Road Map 8.5	Building Commissioning: Review and analyze the energy data of buildings that need commissioning based on the requirements of MM 15-04, Table 2.	Jun 2016	Sustainability: Marlon Flournoy
		Building Water Efficiency: (See below in Measure 12 for Resource Consumption.)		
Measure 8: Green Infrastructure Score. Percent increase in transportation projects that include green infrastructure. By 2020, increase by 20% (5% per year) incorporating green infrastructure score into transportation projects relative to 2010 levels.				
		See Table D, Measure 8		Design
PROSPERITY OBJECTIVE: Improve economic prosperity of the State and local communities through a resilient and integrated transportation system.				
Measure 9: Prosperity score. Score to be determined considering, e.g., gross State/regional product, freight system competitiveness, transportation system efficiency, return on transportation investment, etc. By 2016, develop and adopt Caltrans prosperity score.				
		See Table D, Measure 9		Planning
Measure 10: Freight System Efficiency & Freight Efficiency Score. Improve freight system efficiency to enhance freight competitiveness and support a sustainable, low emissions freight system. By 2016, develop and adopt freight system efficiency score. By 2020, 10% increase in freight system efficiency.				
		See Table C in entirety		

Number	Action Title	B. Sustainability Road Map Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
Measure 11: Resiliency Score for: climate change resiliency; system resiliency; financial resiliency. By December 2017, develop and adopt Caltrans Resiliency Score.				
		See Table D, Measure 11		
Measure 12: Reduction of resource consumption. By 2020, reduce resource consumption from 2015 levels by District: 15% reduction of materials diverted to landfills and 15% reduction of potable water use.				
B-32	2015 Road Map 14.1	Environmentally preferred products (EPP): Continue to encourage the purchase and use of environmentally preferred products.	Dec 2016	DPAC: Angela Shell
B-33	2015 Road Map 14.2	EPP: Conduct an analysis of all acquisition activities to identify environmental, social, and economic impacts by purchasing category to update the EPP strategies and identify product and service impacts from the point of resource extraction to the point at which Caltrans takes possession.	Dec 2016	DPAC: Angela Shell
B-34	2015 Road Map 14.2	EPP: Identify impacts associated with product end-of-life processes. Caltrans is identifying funding for a comprehensive analysis to include all purchasing and contracts to determine additional EPP strategies.	May 2017	DPAC: Angela Shell
B-35	2015 Road Map 14.3	EPP: Develop strategies to increase the use of environmentally preferred products in at least one of Caltrans' top product categories.	Jun 2017	DPAC: Angela Shell
B-36	2015 Road Map 11.2	Water: District 1 will complete a district-wide water fixture retrofit at all of their facilities.	Jun 2016	D1: Mike Thiel
B-37	2015 Road Map 11.4	Water: Encourage water efficiency measures in new and re-negotiated leases.	Dec 2016	DBFS
B-38	2015 Road Map 11.1	Water: Complete Wash Rack Improvements in District 3 at South Lake Tahoe Maintenance Station to reduce water consumption by 20% or more.	Jun 2016	D3: Joel Robinson
B-39	2015 Roadmap 11.4	Water: Analyze benchmarking data and determine the best water efficiency strategies to adopt going forward.	Apr 2016	Sustainability: Desiree Fox
B-40	2015 Roadmap 11.5	Water: Consider sub-meters for landscape irrigation (for buildings with landscaping) where economically feasible.	Dec 2016	District Facilities Managers

5.3 California Sustainable Freight Action Plan Items

Number	Action Title	C. Sustainable Freight Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
PROSPERITY OBJECTIVE: Improve economic prosperity of the State and local communities through a resilient and integrated transportation system.				
Measure 10: Freight System Efficiency & Freight Efficiency Score. Improve freight system efficiency to enhance freight competitiveness and support a sustainable, low emissions freight system. By 2016, develop and adopt freight system efficiency score. By 2020, 10% increase in freight system efficiency.				
C-1	CSFAP Target Appendix B	Target: Improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030.		Planning: Katie Benouar
C-2	CSFAP Action 3 Appendix C	Focus freight infrastructure planning and investments on providing modern freight corridors. Future freight planning and programming documents should identify high-priority projects with multiple benefits for future funding, and establish performance criteria.		Planning: Katie Benouar
C-3	CSFAP Action 3 Implementation Step Appendix C-3 A-1	Electric Charging Infrastructure for Parked Trucks: Feasibility assessment and coordination.	2016-2020	Planning: Katie Benouar
C-4	CSFAP Action 3 Implementation Step Appendix C-3 B-1	Freight Transportation and Land Use Promote and encourage compatible freight transportation and land use planning.	Begin 2018- Ongoing	Planning Katie Benouar/ Design, Traffic Ops & DRISI
C-5	CSFAP Action 3 Implementation Step Appendix C-3 B-2	Freight Handbook for Freight Facility Siting, Design, and Operations.	2016-2018	Caltrans Planning: Katie Benouar with ARB and CEC
C-6	CSFAP Action 3 Implementation Step Appendix C-3 C	Research Efforts to Support Sustainable Freight Transport System Development.	Ongoing	Planning: Katie Benouar/ DRISI
C-7	CSFAP Action 3 Implementation Step Appendix C-3 D	Freight Data Collection and Modeling Tool Development to Enhance Knowledge and Planning for Freight Corridor Improvement and State Investments.	2016-2018	Caltrans Planning: Katie Benouar/ DRISI with ARB, CEC and GO-Biz
C-8	CSFAP Action 3 Implementation Step Appendix C-3 E-1	Freight Highway System Preservation through Asset Management.	2016 - Ongoing	Planning: Katie Benouar/ Design, Maintenance, Traffic Ops
C-9	CSFAP Action 3 Implementation Step Appendix C-3 E-2	Bridge Performance through Asset Management.	2016 - Ongoing	Maintenance (Bridge Program): Tony Tavares

Number	Action Title	C. Sustainable Freight Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
C-10	CSFAP Action 3 Implementation Step Appendix C-3 E-3	Pavement Technology: Develop and implement improved pavement technology.	2016 - Ongoing	Maintenance (Pavement Program): Tony Tavares & DRISI
C-11	CSFAP Action 3 Implementation Step Appendix C-3 E-4	Bottleneck Relief: Identifying, planning, and recommending projects.	2016 - Ongoing	Planning: Katie Benouar
C-12	CSFAP Action 3 Implementation Step Appendix C-3 E-5	Expand Truck Scale Technology Use: Deploy truck scale technologies statewide.		Planning: Katie Benouar
C-13	CSFAP Action 3 Implementation Step Appendix C-3 F	Feasibility Assessment of Developing Dedicated Freight Lanes Along High Capacity Corridors: Project demonstration and assessment. Assess the feasibility of developing dedicated freight lanes along high capacity corridors.	2016-2018+	Planning: Katie Benouar
C-14	CSFAP Action 3 Implementation Step Appendix C-3 G	Inland Facility, Short-haul Rail Shuttle, and Inland Seaports Utilization with Less Impact on Nearby Communities: Project identification and feasibility assessment. Increase opportunity for use of short haul rail shuttles and waterways that lead to inland seaports and freight distribution hubs.	2019-2021+	Rail: Bruce Roberts
C-15	CSFAP Action 3 Implementation Step Appendix C-3 H-1	Short Line Rail Improvements Through Infrastructure Upgrades and Advanced Technologies: Project identification and coordination. Encourage and explore funding opportunities for short-line rail track upgrades to improve system efficiency.	2016- Ongoing	Rail: Bruce Roberts
C-16	CSFAP Action 3 Implementation Step Appendix C-3 H-2	Freight Rail Efficiencies: Departmental coordination and support. Improve flow of freight movement by rail at and near seaports.	2016- Ongoing	Rail: Bruce Roberts
C-17	CSFAP Action 3 Implementation Step Appendix C-3 H-3	Freight/Passenger Rail Conflicts: Needs identification and collaboration. Reduce track capacity conflicts between freight rail and passenger rail operating on the same tracks along identified high-priority freight corridors.	2016- Ongoing	Rail: Bruce Roberts
C-18	CSFAP Action 3 Implementation Step Appendix C-3 H-4	Positive Train Control: Monitor and facilitate the implementation of positive train control for freight railroad lines carrying certain materials and passengers.	2016-2019	Rail: Bruce Roberts
C-19	CSFAP Action 3 Implementation Step Appendix C-3 I	Aviation Efficiencies: National Satellite-Based Air Traffic Management System. Monitor and support activities. Support development and deployment of national satellite-based air traffic management systems and associated elements.	Ongoing	Aero: Gary Cathey

Number	Action Title	C. Sustainable Freight Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
C-20	CSFAP Action 3 Implementation Step Appendix C-3 J-1	Freight Network Safety Improvements Freight Safety Enhancements: Research and deployment of freight safety enhancements. Continue to deploy and promote the use of advanced systems and other strategies that enhance multimodal transportation safety.	Ongoing	Planning: Katie Benouar/ DRISI and Traffic Ops
C-21	CSFAP Action 3 Implementation Step Appendix C-3 J-2	Freight Resiliency and Security Enhancements: Research, analyze, develop and deploy freight system resiliency enhancements.	2017-2020	Planning: Katie Benouar/ Maintenance DRISI
C-22	CSFAP Action 4	Accelerate use of clean vehicle and equipment technologies and fuels for freight through targeted introduction of zero and near-zero emission technologies, and continued development of renewable fuels.		Planning: Katie Benouar/ Maintenance DRISI With ARB
C-23	CSFAP Action 4 Implementation Step Appendix C-4 L-2	International Partners. Engage in international actions that help other regions move toward a more sustainable freight transport system, marketed by improved efficiency, use of zero emission technologies, and improved market integrity between governments. This type of advocacy builds on California's ongoing leadership in supporting national and international zero emission vehicle deployment and clean energy generation.	Ongoing	Caltrans Planning: Katie Benouar/ DRISI with ARB, Energy Commission, GO-Biz
C-24	CSFAP Action 5	Convene a freight think tank of experts to provide insight into the demands on the future freight transport system and then identify the transformative technologies, solutions, partnerships, and critical steps to meet those demands, consistent with the Guiding Principles.		Planning: Katie Benouar
C-25	CSFAP Action 5 Implementation Step Appendix C-5 A	Anticipating Future Demands on California's Freight System	2016+ 2017+	Caltrans Planning: Katie Benouar/ DRISI ARB, Energy Commission, GO-Biz
C-26	CSFAP Action 7	Work with the freight efficiency development group to refine its work to identify and deploy strategies to improve the efficiency of freight transport in California now and in coming years, consistent with the objectives of this Action Plan.		Planning: Katie Benouar
C-27	CSFAP Action 7 Implementation Step Appendix C-7 A-1	Truck Platooning: Support development and implementation of automated (vehicle-to-vehicle) truck platooning technology.	2016-2020+	Planning: Katie Benouar/ Traffic Ops DRISI
C-28	CSFAP Action 7 Implementation Step Appendix C-7 A-2	Truck Route Designation: Improve truck trip planning. Publish designated and alternate truck routes	2017-2019	Planning: Katie Benouar/ Traffic Ops

Number	Action Title	C. Sustainable Freight Action Description	Target Completion Date	Lead Division/District/Office: Lead Individual
C-29	CSFAP Action 7 Implementation Step Appendix C-7 A-3	Compatible Roadway Design: Departmental design and guideline changes to ensure roadway design and planning consider heavy-duty truck geometries.	2016-2018	Design: Tim Craggs
C-30	CSFAP Action 7 Implementation Step Appendix C-7 A-4	Truck Parking: Need identification and recommendations of research opportunities to increase the supply of truck parking along the freight network.	2016-Ongoing	Planning: Katie Benouar
C-31	CSFAP Action 7 Implementation Step Appendix C-7 A-5	Drayage Truck Optimization: Assist in deployment of drayage efficiency technologies to support and accelerate the development of dynamic truck travel information and drayage optimization.		Planning: Katie Benouar
C-32	CSFAP Action 7 Implementation Step Appendix C-7 A-6	Freight Corridor Traffic Management: Deploy research to develop and implement freight-priority traffic management systems such as freight signal priority & eco-routing.	2016-Ongoing	Planning: Katie Benouar/ Traffic Ops & DRISI
C-33	CSFAP Action 7 Implementation Step Appendix C-7 B	Freight Intelligent Transportation Systems Enhancements: Work with industry to research, develop, and implement to integrate intelligent transportation systems into State roadside facilities and border ports of entry for monitoring traveler information, smart truck parking, and freight mobility systems.	2017-Ongoing	Planning: Katie Benouar/ Traffic Ops
C-34	CSFAP Action 7 Implementation Step Appendix C-7 C	Off-Hour Delivery/Pick-Up Strategy Development: Support research, deployment, and analysis to support increase in off-hour deliveries and pick-ups.	2016-Ongoing	Planning: Katie Benouar
C-35	CSFAP Action 7 Implementation Step Appendix C-7 D	Cross-Jurisdictional Information Sharing: Information coordination and collaboration to coordinate with other states and Mexico to share truck/load information and make truck inspections more efficient.	2017-2020	Planning: Katie Benouar
C-36	CSFAP Appendix D A	Pilot Project: Dairy Biogas for Freight Vehicles (ARB Lead). Caltrans tasks: <ul style="list-style-type: none"> • Provide data and/or policy support for initial planning analysis. • Assist with roadway access. • Assist with development of roadway signage. 		Planning: Katie Benouar
C-37	CSFAP Appendix D B	Pilot Project: Advanced Technology for Truck Corridors Explore options for innovative projects that address truck travel in critical locations that must remain options to reduce freight congestion with less impact on nearby communities.		Planning: Katie Benouar

Number	Action Title	C. Sustainable Freight Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
C-38	CSFAP Appendix D C	Pilot Project: <i>Advanced Technology Corridors at Border Ports of Entry</i> Explore intelligent transportation system applications to improve current border infrastructure.		Planning: Katie Benouar

5.4 Other Sustainability Action Items

Number	Action Title	D. Other Sustainability Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
PEOPLE OBJECTIVE: Improve the quality of life for all Californians by providing mode choice, increasing accessibility to all modes of transportation and creating transportation corridors not only for conveyance of people, goods and services, but also as livable public spaces.				
Measure 1: Non-auto modes (Mode Share). By 2020, increase non-auto modes: Triple bicycle mode share to 4.5%; double pedestrian mode share to 33.2%; and double transit mode share to 8.8%.				
D-1	ATP with Coastal Trails	Environmental work with coastal districts and local and regional partners to integrate coastal trails into ATP submissions.	Dec 2017	Environmental/ Local Asst. Districts (D1, 4, 5, 7, 11, and 12)
D -2	Bike/Ped Plan with Coastal Trails	Environmental work with Planning to integrate coastal trails into Bike and Pedestrian Plan.		Planning: Katie Benouar Environmental: Katrina Pierce
D -3	Ped Safety Research	Pedestrian Safety Improvement Program , Phase 2. Identify and address systematic problems with pedestrian safety for three main efforts, to develop: <ul style="list-style-type: none"> Statewide pedestrian exposure model for intersections; Method to identify pedestrian hotspots across the SHS; A set of pedestrian safety management tools. 	Jan 2018	DRISI: Jim Appleton
D -4	Bike Crash Research	UTC - Bicycle Crash Risk: How Does it Vary and Why: Examine bicycle crash data along with bicycle count data in Los Angeles County to better understand factors that correlate with bicycle crash risk. Collect bicycle count data to supplement existing data and create a varied data set. Model bicycle crash risk at about 100 intersections as a function of design characteristics and operational variables.	Mar 2016	DRISI: Jim Appleton
D -5	Bike Counts in TASAS-TSN	Develop a Plan to Collect Bicycle Infrastructure and Volume Data for future incorporation into TASAS-TSN.		DRISI: Jim Appleton
D -6	Transit Summit	Transit Summit with stakeholders and partners to address integration, connectivity, accessibility, technology, etc., to achieve target to double transit.		Mass Trans: Bruce Roberts/. DRISI. Planning

Number	Action Title	D. Other Sustainability Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
Measure 2: Accessibility Score. By December 2016, develop and adopt Caltrans Accessibility Score.				
Measure 3: Livability Score. By December 2016, develop and adopt Caltrans Livability Score.				
D -7	TAG/TISG	TAG/TISG to evaluate recommendations and Transportation Analysis Guidance (TAG) and Traffic Impact Study Guidance (TISG) that includes analysis for accessibility and livability.		Planning: Katie Benouar
D-8	UCB Scores Workshop	Accessibility, Livability, and Prosperity workshop May 2016: mini expert workshops; Aug. workshop w/industry experts, local partners and Caltrans; and Sept. Final Report to Caltrans from U.C. Berkeley.	Sep 2016	DRISI: Jim Appleton/ Planning: Katie Benouar
D-9	Accessibility Pilot (D3)	D3 Pilot on Accessibility with SACOG/SACRT/SSTI/CT project on trip-making and accessibility tool development (Sugar Tool).		D3/Districts and HQ Planning: Katie Benouar
D-10	Accessibility Score	Develop Indicators and Initial Scoring Mechanism for Accessibility	Dec 2016	Planning: Katie Benouar (Rahul Srivastava)
D-11	Livability Score	Develop Indicators and Initial Scoring Mechanism for Livability	Dec 2016	Landscape Architecture: Keith Robinson
Measure 4: System Corridor Framework (SCF). Percentage of top 25 sustainable corridor framework system plans to enhance sustainability of transportation system. (Priority corridors to be determined considering mobility, freight, highways, transit, rail, bike, pedestrian, aviation, etc.). By 2017, complete system planning guidelines. By 2020, complete 100% of 25 SCF system management plans.				
		See Table A, Measure 4		Planning
PLANET OBJECTIVE: Reduce environmental impacts from the transportation system with emphasis on supporting a statewide reduction of greenhouse gas emissions to achieve 80% of 1990 levels by 2050.				
Measure 5: Per capita vehicle miles traveled (VMT) reduction. By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District.				
		See Measures 1 Bike/Ped/Transit.		Planning
		See Measure 2 for Accessibility.		
D-12	VMT Reduction	Develop strategies for per capita VMT reduction.	June 2017	Planning: Katie Benouar Traffic Operations
D-13	Sustainable Communities Strategies Monitoring System	Phase 1. Identifying, Evaluating and Selecting Indicators, Indices and Data for Future Monitoring System of the Implementation of Sustainable Communities Strategies <ul style="list-style-type: none"> Variables selected for analysis and other methodological considerations, Recommendations/input on key indicators related to VMT & GHG, and Assessment criteria for Task 4 "Assessing Data Sources." 		Planning: Katie Benouar

Number	Action Title	D. Other Sustainability Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
		Phase 2. Developing Sustainable Community Strategies Monitoring System for Jobs, Housing and Commute.		
Measure 6: System Air & Energy. Percent reduction of transportation system-related air pollution for greenhouse gas (GHG) emissions and criteria pollutant emissions (15% reduction (from 2010 levels) of GHG to achieve 1990 levels by 2020; 85% reduction (from 2000 levels) in diesel particulate matter emissions statewide by 2020; 80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin by 2023.				
D-14	Solar Infrastructure	Preliminary Investigation on various solar technologies for viability and opportunities.	Oct 2016	Sustainability: Marlon Flournoy/ DRISI: Jim Appleton
D-15	Solar Infrastructure	Caltrans Solar Plan and Policy: Work with programs and districts on policy changes and agreements to enable installation. Identify recommended locations and types of technologies.	Dec 2016	Sustainability: Jeremy Matsuo
Measure 7: Caltrans Operations Air & Energy. Percent reduction of pollutants from Caltrans design, construction, operation, and maintenance of transportation infrastructure and buildings for GHG emissions, criteria air pollutant emissions, and water pollution. By 2020, reduce Caltrans internal operational pollutants by District from 2010 levels (from planning, project delivery, construction, operations, maintenance, equipment, and buildings) including: 15% reduction by 2015; and 20% reduction by 2020 of Caltrans GHG emissions per EO-B-18-12. Achieve 1650 compliance units (acres) of stormwater Best Management Practices (BMPs) implemented in Caltrans projects annually as measured against 2015 baseline.				
		See Tables A and B, Measure 7		
Measure 8: Green Infrastructure Score. Percent increase in transportation projects that include green infrastructure. By 2020, increase by 20% (5% per year) incorporating green infrastructure score into transportation projects relative to 2010 levels.				
D-16	GI Scoring Tool	Green Infrastructure scoring tool to help districts incorporate green infrastructure in projects and CT to prioritize programming by score. Test tool in pilots and if needed, hire consultant to construct or improve tool.	2017-18	Design: Tim Craggs
D-17	GI Guidance	Develop highway green infrastructure design guidance for planners, engineers, landscape architects, architects, and consultants. Include in manuals. Devise websites, tool boxes, guides and standards.	2018	Design: Tim Craggs/ Project Delivery
D-18	GI Training	Develop and deliver training on green infrastructure/sustainable practices and the scoring tool to staff.	2018-2020	Design: Tim Craggs/ Project Delivery
PROSPERITY OBJECTIVE: Improve economic prosperity of the State and local communities through a resilient and integrated transportation system.				
Measure 9: Prosperity score. Score to be determined considering, e.g., gross State/regional product, freight system competitiveness, transportation system efficiency, return on transportation investment, etc. By 2016, develop and adopt Caltrans prosperity score.				
D-19	Prosperity Score	Develop Prosperity Score	Dec 2016	Planning: Katie Benouar (Barry Padilla)

Number	Action Title	D. Other Sustainability Action Description	Target Completion Date	Lead Division/ District/Office: Lead Individual
Measure 10: Freight System Efficiency & Freight Efficiency Score. Improve freight system efficiency to enhance freight competitiveness and support a sustainable, low emissions freight system. By 2016, develop and adopt freight system efficiency score. By 2020, 10% increase in freight system efficiency.				
D-20	Sustainable Freight Action Plan	California Sustainable Freight Action Plan (CSFAP)	Completed	Planning: Katie Benouar
Measure 11: Resiliency Score for climate change resiliency; system resiliency; financial resiliency. By December 2017, develop and adopt Caltrans Resiliency Score.				
D-21	Climate Disaster Preparedness	Incorporate climate change impact consideration into disaster preparedness planning .		Maintenance: Tony Tavares
D-22	System Risk	Develop a plan to summarize Best Management Practices identifying methods to reduce risks to transportation system infrastructure .	50% by Dec. 2016	Maintenance: Tony Tavares
D-23	Emergency Operations	Each District and HQ will update Emergency Operations plans every 3 years or as needed.		Maintenance: Tony Tavares
Measure 12: Reduction of resource consumption. By 2020, reduce resource consumption from 2015 levels by District: 15% reduction of materials diverted to landfills and 15% reduction of potable water use.				
D-24	Water - Smart Irrigation	Evaluate roadside maintenance staffing levels to sustainably operate, maintain, and maximize water savings from smart irrigation control systems.	2017-18	Maintenance: Tony Tavares
D-25	Water - Roadside Asset Inventory	Create and update roadside asset inventory (irrigation controllers, meters, backflow preventers, etc.).	2017-18	Maintenance: Tony Tavares
D-26	Water - Office Buildings	Implement business practices in office buildings as required to track building water use .	2017-18	DBFS
D-27	Water - Performance Measure	Develop a landscape water use performance measure on the objective, mathematical model in DWR's MWELO (Model Water Efficient Landscape Ordinance).	2017-18	Design: Tim Craggs
D-28	Water – Low Water Use Planting	Convert existing higher-water-use highway planting to sustainable, low maintenance, low-water-use planting .	2018-2020	Design: Tim Craggs
D-29	Water – Non-potable Landscape Use	Establish a new sustainability goal: 100% of water used for landscape statewide should be non-potable .	2030	Design: Tim Craggs
D-30	Organic Waste Recycling	Arrange for organic waste recycling at facilities that generate over 4 cubic yards of waste per week based on AB 1826 (Public Resource Code enacted in 2014).	Jan 2017	DBFS

6.0 Responsibilities by Functional Areas

The following sections summarize the types of responsibilities associated with high-level Caltrans functional areas. More than most other programs, Sustainability implementation requires considerable collaboration among various functional units. Planning and Modal Programs, Project Delivery, and Maintenance and Operations all are taking the lead on many action items, with additional participation and support from External Affairs and Procurement and Contracts. Depending on the type of work, cross-cutting efforts will require multi-disciplinary teams working together to achieve the sustainability targets. Sustainability is integrated into our work. It is not what we do; rather, it is how we do it.

6.1 Director's Office

The Sustainability Program is housed in the Director's Office. The Assistant Director for Sustainability: (1) serves as the focal point for monitoring the Department's actions related to sustainability; (2) represents Caltrans to external agencies on sustainability issues and convenes advisory groups, as needed; and (3) establishes sustainability policy and reviews the Department's communications, guidance, plans, practices, documents, training, and reports to ensure that sustainability principles are consistent and well-integrated.

The Sustainability Program Manager: (1) develops and implements the Sustainability Program, the Sustainability Implementation Action Plan, and reviews processes with interdisciplinary teams from the districts, divisions, programs, and partners; (2) provides guidance and direction to interdisciplinary teams on the development and updates of sustainability metrics, benchmarking, and monitoring to meet the changing needs of society in California; and (3) assists divisions, districts, and programs in developing and updating sustainability procedures, guidance documents, tools, and training.

The Director's Office Sustainability Program also has a lead role in developing policies and plans for zero-emission vehicles, LEED-EB certification of State buildings, planning for electric vehicle infrastructure, zero-net-energy (ZNE) implementation, computer energy efficiency reporting, building energy and light inventories and surveys, building commissioning, preliminary investigation research on solar technologies, and oversight of other sustainability actions.

6.2 Planning and Modal Programs

Planning and Modal Programs serve a major role in sustainability implementation. This functional area includes Transportation Planning, Aeronautics, Rail and Mass Transit, Local Assistance, and Research, Innovation and System Information (DRISI).

Transportation Planning involves a wide variety of activities including: policy development, long-range transportation planning, system planning, freight planning, economic analysis, and project initiation documents (PIDs). Planning is also involved with air quality and climate change planning, environmental and public health linkages, local development and intergovernmental review, coordination with regional transportation agencies, public engagement, and serving as liaison to Native American tribes.

Planning is responsible for the California Transportation Plan (CTP); including the latest version, CTP 2040; the Interregional Transportation Strategic Plan (ITSP); the Statewide Bicycle and

Pedestrian Plan; and the Department's participation in the multi-agency California Sustainable Freight Action Plan (CSFAP), including certain aspects of the Freight Pilot Projects.

In terms of the CSFAP, Planning has already represented the Department on the multi-agency team in the development of the plan. Additional activities related to the plan remain to be carried out. For example, Planning is responsible for helping to improve freight system efficiency and conducting electric charging and hydrogen-fueling infrastructure assessments for medium- and heavy-duty vehicles. Planning is responsible for coordination with local and regional partners and for developing a Freight Handbook for on freight facilities, siting, design, and operations in terms of freight transportation and land use. Planning will also work with DRISI on research efforts to support sustainable freight transport system development. Planning is also responsible to develop tools for freight data collection, analysis, and modeling; and it is responsible for expanding a fix-it-first approach for highways and key freight corridors using asset management strategies.

Planning is also taking the lead role, with support from other Caltrans functional units, in developing a Caltrans Accessibility Score, Prosperity Score, and Resiliency Score. Planning is also responsible for implementing a Sustainable Corridor Framework, which will help the Department better integrate and coordinate all functional areas using an integrated and performance-driven approach to plan and deliver a sustainable, reliable, and efficient multimodal transportation system. Planning is responsible for assessing existing park and ride facilities, identifying strategic expansion locations, and developing a funding strategy. In addition, Planning is responsible for delivering more PIDs that include complete streets and other bicycle- and pedestrian-friendly features. Planning is also expected to complete District Vulnerability Assessments, consistent with the Natural Resources Agency's *Safeguarding California* program, and incorporate the results into planning and project development processes.

Modal Programs such as Aeronautics and Rail and Mass Transit, are essential to implementing sustainability at Caltrans. The California Rail Plan and Statewide Rail Integration Plan, responsibilities of the Rail Division, are an important tool for increasing travel by rail and thus reducing VMT. Rail is also responsible for a variety of freight rail network improvements, including short line improvements, freight rail efficiencies, and positive train control. The Statewide Transit Strategic Plan update has a goal to double transit trips, also reducing the use of personal vehicles in favor of modes that are less costly in terms of GHG emissions. Aeronautics is responsible for improving aviation efficiencies, in particular by supporting development and deployment of national satellite-based air traffic management systems and associated elements.

In many areas, DRISI leads the way toward sustainability through research and innovation. DRISI is responsible for assessing solar technologies use in the State's transportation infrastructure, as well as research on bicycle crash risk and data collection. Local Assistance is responsible for monitoring and reporting on the Active Transportation Program.

6.3 Project Delivery

The Caltrans functional area of Project Delivery includes Design, Engineering Services, Environmental Analysis, Project Management, Construction, and Right of Way.

Design provides the procedures, policy, standards, guidance, technical assistance, and training needed to facilitate California transportation improvements and system integrity. In this role,

Design has an important role in ensuring the implementation of sustainable practices. Along with Right of Way and the districts, Design is responsible for installing electric vehicle charging stations and sustainable fuel networks on Caltrans Right of Way and in roadside rest areas. Along with Planning, Maintenance, and Traffic Operations, Design is responsible for expanding the fix-it-first approach for highways in key freight corridors using asset management strategies.

In addition, Design is responsible for Departmental design and guideline revisions to ensure roadway design and planning consider heavy-duty truck geometries, as well as an investigation of possible increases in truck weight and/or length on key freight corridors. Design is also responsible for developing a Green Infrastructure Scoring Tool and Green Infrastructure Design Guidance, as well as delivering training on green infrastructure and sustainable practices to Caltrans staff. Design also serves an important role in encouraging the reduction of water consumption by developing landscape water use performance measures.

Engineering Services is the lead project delivery organization for the design, construction, and oversight of bridge and other transportation structures, including buildings and earth-retaining structures. This functional area is also responsible for water and wastewater engineering associated with the state highway system, and accordingly plays a role in reducing water consumption.

Environmental Analysis administers the Department's responsibilities under federal and state environmental law. This functional area develops and maintains Caltrans' environmental standards, policies, procedures, and practices, which are implemented by the Department's twelve districts. Environmental staff work to identify and assess the effects of Caltrans projects on the state's physical, natural, and cultural environments, and identify ways to avoid or mitigate those effects. Environmental Analysis has the lead responsibility in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Environmental works with Planning and Design to address air quality and climate change issues and analyses; fish and wildlife connectivity; and adaptation to sea-level rise.

Project Management is responsible for the management and delivery of the Department's workload of transportation improvement projects. Project Management facilitates the efficient delivery of projects by developing people, processes, and tools that enhance partnerships, transparency, and accountability. Project management is responsible, along with Programming, Construction, and Right of Way, for installing electric vehicle charging stations at Caltrans capital program facilities.

Construction develops and administers contracts for construction projects on the state highway system, ensuring safety, efficient use of resources, and timely completion. Construction is responsible for a pilot program to reduce emissions from construction equipment by contractors using low-emissions construction equipment. Along with Planning, Construction is responsible for tracking GHG emissions from concrete and asphalt materials in construction projects.

6.4 Maintenance and Operations

Equipment, Maintenance and Traffic Operations also play an important role in implementing sustainability, much of which occurs at the district level. Equipment is responsible for improving Caltrans fleet efficiency and greening, e.g., additional zero emission vehicles and increased use of low-carbon fuels. Maintenance and Facilities will participate in the conservation of resources and energy by helping to improve Caltrans building efficiency, installing solar panels, and

establishing and expanding recycling programs. Maintenance is also responsible for reducing water consumption and maximizing conservation through smart irrigation control systems.

Traffic Operations is leading or partnering with other functional units in many Sustainability actions. Traffic Operations is responsible for establishing a proactive Pedestrian and Bike Safety Program that funds improvements on high priority corridors. Along with Planning, Traffic Operations is working with the Park and Ride Task Force on a plan for installing electric vehicle charging stations at Caltrans Park and Ride lot locations. Traffic Operations also has a role in building commissioning, coordination with partners on freight facilities and land use, and freight highway preservation. Along with Planning, Traffic Operations is responsible for truck route designation to improve truck trip planning, as well as establishing primary Surface Transportation Assistance Act (STAA) routes, alternative routes, and rest stops throughout the State. Again with Planning, Traffic Operations is responsible for freight corridor traffic management enhancements, deploying research and to develop and implement freight-priority traffic systems such as freight signal priority and eco-routing. Also with Planning, Traffic Operations will work with industry to research and develop intelligent transportation systems for State roadside facilities and border ports of entry such as smart truck parking and freight mobility systems.

6.5 External Affairs

External Affairs is responsible for launching a campaign to promote transit ridership, what Caltrans is doing in this area (e.g., the Statewide Transit Strategic Plan), and the benefits of increased ridership, including GHG emission reductions. External Affairs also serves on the front line in terms of communicating to the public regarding efforts involving sustainable practices. External Affairs can help publicize the good work Caltrans is doing in moving toward a sustainable future.

6.6 Administration

Procurement and Contracts is responsible for encouraging the purchase and use of environmentally preferred products (EPP).

Business, Facilities and Security is responsible for a number of action items related primarily to improving Caltrans buildings' efficiency, installing electric charging stations, installing solar arrays, and recycling. Facilities will also assist with installation of LEDs in Caltrans buildings and coordination with PG&E for possible projects under the utility company's Automated Demand Response Program.

7.0 Next Steps: Putting the Plan to Work

Looking ahead, Caltrans will continue to identify and pursue innovative sustainability strategies to improve the quality of life for all Californians, reduce environmental impacts from the transportation system, and improve economic prosperity.

This Action Plan is a living document, intended to be updated periodically to report our progress and course adjustments. Success of the plan relies on a close partnership between the HQ Sustainability Program, headquarters divisions, districts, district sustainability managers, and their sponsors.

The Sustainability Program also anticipates other initiatives to further the Department's movement toward sustainable practices. To improve understanding of sustainability and this Action Plan, the program will develop training materials and curricula to take on the road or disseminate through web-based workshops and classes.

For each of the functional areas discussed above, work plan agreements will be prepared to further articulate roles, responsibilities, and expectations. Each functional area will also be further described in fact sheets.

The Sustainability Program will also continue developing the program website, posting new content, links, and related materials. The Sustainability Program's newsletter (Sustainability News of Interest) will continue providing items of interest concerning the Department's sustainability activities, as well as items of interest from other agencies and around the State.

Appendices

1. Director's Policy 33, Sustainability Policy
2. Selected California Sustainability Bills and Policies
3. Sustainability 2015 Roadmap Summary
4. Sustainability Implementation Work Plan Template

A1. Director’s Policy 33, Sustainability Policy

Director’s Policy

<i>Number:</i>	DP-33
<i>Effective Date:</i>	07/01/2015
<i>Supersedes:</i>	NEW
<i>Responsible Program:</i>	Sustainability

TITLE Sustainability Policy

POLICY

The California Department of Transportation (Caltrans) embraces and is committed to its role in improving the environment, the economy, and social equity for all Californians. Caltrans strives to improve Californians’ quality of life without compromising that of future generations. Caltrans meets this commitment by applying sustainability principles in the planning, design, construction, maintenance and operation of California’s integrated multimodal transportation system.

DEFINITIONS

Sustainability: Preserve or enhance California’s people, planet, and prosperity to improve the quality of life by meeting the present generation needs without compromising future generation’s ability to meet their own needs.

Caltrans fosters a sustainability culture committed to promoting the people, planet, and prosperity and to support California’s sustainability goals. We apply sustainability principles by making efficient, risk-based, balanced decisions through the use of best practices. Sustainability principles include:

- **People:** Enhancing social equity for all Californians across present and future generations by using best practices that improve and support long-term community livability, health, safety, quality of life, mobility choice, accessibility to all modes of transportation and that create transportation corridors not only for conveyance of people, goods, and services, but also as livable public spaces.
- **Planet:** Protecting the environment and making practical transportation decisions that preserve or improve ecological health and resiliency while complying with legal mandates and reduce environmental impacts from the transportation system with emphasis on supporting statewide reduction of greenhouse gas emissions.
- **Prosperity:** Enhancing California’s economy involves management and public accountability of transportation asset investments and life-cycle costs to support statewide goals, provide integrated transportation services and promote economic vitality of local communities through a resilient and integrated transportation system.

“Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability”

- Partnerships: Fostering effective partnerships with governmental entities, the public, tribal governments, and stakeholders that are essential to statewide sustainability and to improve system integration with partners beyond transportation to achieve statewide goals.
- Innovation: Strategic innovation that adopts new technologies, practices, and research findings and continually evaluates and refines guidance, tools, policies, and processes essential to meet evolving sustainability challenges.

INTENDED RESULTS

California's statewide sustainability goals strive to benefit natural and built systems as well as individuals and communities across the state, the nation, and the world. Implementing sustainability principles leads to balanced use and conservation of resources over time, ensuring supplies are available for future prosperity of people and the planet. Borrowing from the future is unsustainable; sustainable actions taken today bestow sound social, environmental and economic conditions upon the next generations.

Long-term sustainability principles as an organizing framework guides Caltrans in decisions and business practices that support statewide sustainability goals including, but not limited to:

- Chapter 488, Statutes of 2006 (AB32) Global Warming Solutions Act and California's Climate Change Scoping Plan requiring statewide reductions in greenhouse gas (GHG) emissions.
- Chapter 728, Statutes of 2008 (SB 375) Communities and Climate Protection Act requiring sustainable community strategies to integrate land use and transportation planning in regional transportation plans.
- Chapter 585, Statutes of 2009 (SB 391) California Transportation Plan updates requiring the plan to address GHG emission reductions to 1990 levels by 2020 and 80% reduction of 1990 levels by 2050.
- Chapter 386, Statutes of 2013 (SB 743) California Environmental Quality Act guideline updates furthering the development of a multimodal transportation system to provide an alternative for evaluating transportation impacts to promote reductions in GHG emissions and diversity of land uses.

With these and other mandates and state policy, Caltrans develops and maintains our transportation system in a way that contributes to resiliency in the natural and built environments to improve the quality of life, provide access to necessities, and support a vibrant California.

RESPONSIBILITIES

Assistant Director for Sustainability:

- Serves as the focal point for monitoring Caltrans' actions related to sustainability.

- Represents Caltrans to external agencies on sustainability issues and convenes advisory groups, as needed.
- Establishes all sustainability policy and reviews Caltrans' communication, guidance, plans, practices, documents, training and reports to ensure sustainability principles are integrated.

Sustainability Program Manager:

- Develops and implements the Sustainability Program, implementation plan and processes for this directive with interdisciplinary teams from Districts, Division, Programs and partners.
- Provides guidance and direction to interdisciplinary teams on the development and updates of sustainability metrics, benchmarking and monitoring to meet the changing needs of society in California.
- Assists Divisions, Districts and Programs in developing and updating sustainability procedures, guidance documents, tools and training.

District Directors, Deputy District Directors and District Division Chiefs:

- Ensure collaboration with the Assistant Director for Sustainability and the Sustainability Program to implement sustainability guidance, policy, practices and communication and ensure that planning, project delivery, maintenance, operations and administration of activities that support a safe, sustainable, efficient and integrated transportation system for all of California.
- Incorporate sustainability principles when developing and implementing integrated multimodal transportation plans, programs, and projects, and use project performance to measure success, in project planning through post-construction.
- Enhance communications and partnership with stakeholders to achieve mutual sustainability goals that integrate with partners beyond transportation.

Deputy Directors, Assistant Directors, Division Chiefs and Program Managers:

- Ensure collaboration with the Assistant Director for Sustainability and the Sustainability Program to incorporate sustainability principles when developing and implementing guidance, policy, practices, plans, projects, services and communication an through responsible risk-based, balanced decision-making, conserving financial resources, and ensuring sustainable investment funding.
- Use project performance to measure success, including standardized measurement and evaluation of sustainability, in project planning through post-construction.
- Develop, improve, and administer transportation best practices that sustain California's environment by conserving and restoring ecosystems, improving air quality and public health, and conserving natural and built resources.

- Develop, improve, and administer transportation best practices that enhance social equity, livability, public health and safety, multimodal travel accessibility, and the retention and development of a diverse and highly skilled workforce.

Managers and Supervisors:

- Ensure that all employees are aware of and adhere to this policy.
- Empower employees to integrate sustainability into daily responsibilities.
- Set a positive example by practicing sustainability.

All Employees:

- Work collaboratively with partners and stakeholders to make informed, responsible and sustainable transportation decisions.
- Seek innovative solutions while considering California's people, planet and prosperity, transportation needs, and statewide priorities.
- Integrate sustainability practices into daily activities.

APPLICABILITY

This policy applies to all employees.

Original signed by:
MALCOLM DOUGHERTY
Director

07/01/2015
Date Signed

A2. Selected California Sustainability-Related Laws and Policies

Bill/Order Number	Name	Year Adopted	Requirements
AB 32	California Global Warming Solutions Act	2006	California Air Resources Board (ARB) is required to prepare a plan to reduce statewide greenhouse gas (GHG) emissions to 1990 levels by 2020, with participation from other State agencies.
EO S-3-05	Executive Order S3-05	2005	Reduce statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.
EO B-30-15	Executive Order B30-15	2015	Reduce statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep the State on path to meet the 2050 targets in EO S-3-05.
SB 391	California Transportation Plan	2009	The plan must identify how the transportation sector will meet the targets in AB 32 and EO S-3-05.
SB 375	Sustainable Communities and Climate Protection Act	2008	Metropolitan planning organizations must create land use and transportation plans that meet regional transportation-section GHG reduction targets issued by ARB.
AB 1358	Complete Streets Act	2008	Local transportation agencies must identify how their general plans will accommodate pedestrians, bicyclists, and transit riders.
EO B-18-12	Executive Order B18-12	2012	State agencies must reduce operational GHG emissions at least 10 percent below 2010 levels by 2015 and 20 percent by 2020, and reduce their grid-based energy consumption 20 percent below 2003 levels by 2018. New or renovated State buildings larger than 10,000 square feet must achieve LEED Silver certification or higher and include renewable energy generation. New and existing State-owned buildings must achieve zero net energy consumption targets. State agencies must reduce water use. New and existing buildings must incorporate building commissioning.
EO B-16-12	Executive Order B16-12	2012	State agencies must ensure that California has sufficient infrastructure to support up to one million zero-emission vehicles (ZEVs) by 2020 and 1.5 million ZEVs by 2025. The order also sets targets for State agency fleets, requiring that at least 10 percent of new light-duty fleet vehicles be ZEVs by 2015 and at least 25 percent be ZEVs by 2020.
EO B-29-15	Executive Order B29-15	2015	State Water Resources Control Board must reduce water usage by 25 percent. The order specifies measures to help the State meet this target, including replacing lawns with drought-tolerant landscapes, calling on local agencies to adjust rates and encourage conservation, requiring property owners with large landscapes to reduce water use, and creating incentives for consumers to purchase water-efficient appliances.

Bill/Order Number	Name	Year Adopted	Requirements
EO S-13-08	Executive Order S-13-08	2008	Directs State agencies planning construction projects in areas vulnerable to future sea level rise to consider a range of sea level rise scenarios for 2050 and 2100.
AB 75	State Agency Recycling	1999	State agencies must divert at least 50 percent of all solid waste.
AB 338	Recycling Crumb Rubber	2005	Establishes graduated targets for increasing the amount of recycled rubber used in asphalt mixes.
SB 1016	Diversion: Per Capita Disposal Rate	2008	Amends the AB 75 waste diversion target for State agencies so that it is calculated on a per capita basis.
SB 743	Transit Oriented Development	2013	Allows the use of alternatives to vehicle level of service, which measures delay experienced by drivers, when analyzing the environmental impacts of transportation and land use projects. This shifts the focus of these analyses from reducing driver delay to supporting all transportation modes and fostering mixed-use communities, which reduce GHG emissions.
AB 692	Low Carbon Fuels	2015	Requires that, in 2017, at least 3 percent of transportation fuel purchased by the State must be from very low carbon transportation fuel sources, with the requirement increasing 1 percent every year to 2024.
DGS Management memo 15-07	Diesel, Biodiesel, and Renewable Hydrocarbon Diesel Bulk Fuel Purchases	2015	Requires that State agencies purchase renewable diesel fuel, in lieu of conventional diesel and biodiesel fuels, provided fuel supply is adequate.
DGS Management Memo 15-04	Energy Use Reduction for New, Existing, and Leased Buildings	2015	State agencies must achieve targets and timelines for energy use reductions established in EO B-18-12 and the Green Building Action Plan for buildings they design, build, manage, or lease.
N/A	ARB Fleet Rule for Public Agencies and Utilities	2005	Agencies must upgrade trucks to cleaner standards by 2011, and agencies must keep records documenting their compliance.

A3. Sustainability 2015 Roadmap Summary

2015 Roadmap Requirements for Green Initiatives in Caltrans Executive Order B-18-12

1. Greenhouse Gas Emissions

- Reduce department-wide greenhouse gas emissions by 10% by 2015 and 20% by 2020, measured against 2010 baseline – including GHGs from concrete and asphalt materials used in projects.
- By April 1st each year –update annual inventory of business GHGs into Climate Registry’s CRIS database.

2. Energy – Zero Net Energy (ZNE)

- 2020 – ZNE on 50% of new construction and major renovations
- 2025 – ZNE on 100% of new construction and major renovations
- 2025 – ZNE on 50% of total existing building area

3. Energy – Exceed Title 24 by 15%

- New buildings and major renovations beginning design after July 1, 2012, shall exceed Title 24 energy requirements by 15% or more.

4. Energy – Reduce Grid-Based Energy Purchased by 20% by 2018

- Reduce grid-based energy purchased by 20% by 2018, compared with 2003 baseline for state-owned buildings and non-building grid-based energy purchases.
- Submit an annual report of this energy use to DGS by March 1st each year, including energy use, individual building square footages (if metered separately), and building types.
- Comply with the Department of Technology’s Basic Policy 4819.31, item 12. (Implementing Power Management Practices).
- Comply with the requirements of Management Memo 14-07 (Standard Operating Procedures).
- Comply with Management Memo 14-09 (Energy Efficiency in Data Centers and Server Rooms).
- Comply with requirements of Management Memo 15-04 (Energy Use Reduction and Reporting for New, Existing, and Leased Buildings).

5. Energy – Demand Response

- Participate in “demand response” programs to obtain financial incentives for reducing peak electrical loads when called upon, to maximum extent cost-effective and not materially adversely affecting agency operations by December 31, 2016.

6. Energy – On-Site Renewable Energy

- New or major renovated buildings over 10,000 square feet shall use clean, on-site power generation and clean back-up power supplies, if economically feasible.
- Facilities with available open land shall consider large scale distributed generation through various financing methods, including 3rd party power purchase agreements (PPA’s).

7. Building Design & Construction

- New and major renovated state buildings and build-to-suit leases over 10,000 square feet shall obtain LEED “Silver” certification or higher.
- Buildings smaller than 10,000 square feet after January 1, 2013, shall meet applicable CALGREEN Tier 1 measures.

- All new buildings, major renovation & build-to-suit leases shall include Energy Management System (MM15-04 1.g).
- All new leases shall require the use of submeters for gathering energy use data. (MM15-04 3.c).

8. Building Commissioning

- New and existing buildings shall use building commissioning for improved and efficient building operation.
- State agencies managing state-owned buildings shall pursue monitoring-based commissioning for facilities over 5,000 square feet with EUI's exceeding thresholds determined by DGS to the extent possible.
- New construction or major renovations greater than 5,000 square feet for offices or other energy intensive spaces shall be commissioned.

9. Existing Buildings

- All existing State buildings over 50,000 square feet shall complete LEED-EB certification by December 31, 2015 and meet Energy Star rating of 75, or alternate energy standard established by the CEC.

10. Indoor Environmental Quality (IEQ)

- Comply with MM 14-05 (Indoor Environmental Quality) to ensure healthy indoor environments for occupants in new and major renovated buildings.

11. Water Efficiency and Conservation

- Agencies to reduce water use at the facilities they operate by 10% by 2015 and by 20% by 2020, as measured against a 2010 baseline benchmark. Reduce by 25% between 2013 and Feb 2016 (EO B-29-15).
- Enter water use data into the ESPM and complete water use report by March 1st 2014, and annually thereafter.
- New and renegotiated state leases shall encourage including provisions for reporting water use and installation of sub-meters where appropriate.
- All new and renovated State buildings and landscapes shall utilize alternative sources of water wherever cost-effective. Sources may include, but are not limited to, recycled water, graywater, rainwater capture, stormwater retention, and other water conservation measures.
- Landscape plants shall be selected based on their suitability to local climate and site conditions, and reduced water needs and maintenance requirements.

12. Electric Vehicle Charging Stations – Employee Parking

- Identify and pursue opportunities to provide electric vehicle charging stations, and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings

13. Electric Vehicle Charging Stations – Fleet

- State agencies shall work with DGS and outside entities to develop an electric vehicle charging station infrastructure plan including the following:
 - Evaluate existing state-owned parking structures and parking lots and install plug-in electric vehicle charging infrastructure where most cost-effective and appropriate.
 - Plan for and install appropriate cost-effective levels of plug-in electric vehicle charging infrastructure in the new construction of state-owned parking structures and parking lots.
 - Complete the Infrastructure Plan by 2015, when agencies are required to purchase ZEV.

14. Environmentally Preferable Purchasing (EPP)

- State agencies shall purchase and use environmentally preferable products that have a lesser or reduced effect on human health and the environment when compared with competing goods that serve the same purpose whenever they are applicable, perform well and are cost-effective per Public Contract Code 12400 including, but not limited to:
- Purchase, install and operate EPA Energy Star-rated equipment or appliances.
- Consider purchase and use of recycled paint from State Contracts for appropriate exterior applications.
- Consider use of low or zero VOC paint in building interiors, improving indoor air quality.
- State office printers, copiers or related equipment shall use quality remanufactured ink and toner cartridges to the extent possible.
- State agencies shall purchase, install and operate WaterSense or equivalent industry standard labeled fixtures and equipment.

15. Financing

- State agencies shall pursue and utilize available financing and project delivery mechanisms to achieve these goals including, but not limited to: state revolving loan funds, utility On-Bill Financing (OBF), Power Purchase Agreements (PPA's), GS \$Mart, Energy Service Contractors (ESCO's), or other available programs.

16. Monitoring and Executive Oversight

- Provide executive level oversight through representation of department on Sustainability Task Force which meets quarterly to oversee progress.
- Provide technical department representation on Sustainable Building Working Group which oversees initiatives implementation, meets monthly, measure results, and report findings to Sustainability Task Force.

Executive Order B-16-12

17. Zero Emission Vehicle (ZEV) Fleet Purchases

- Vehicle fleet to increase the number of its zero-emission vehicles through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles be zero-emission by 2015 and at least 25 percent of fleet purchases of light-duty vehicles be zero-emission by 2020.
- Does not apply to vehicles with special performance requirements necessary for the protection of the public safety and welfare

A4. Sustainability Implementation Work Plan Template

Sustainability Implementation Action Plan Action Item __ Work Plan

Action Title:

Description:

Completion Date:

Final Deliverable:

	Lead	Completion Date	Deliverable (if applicable)
Task #1			
Subtask 1.1			
Subtask 1.2			
Subtask 1.3			

Work Plan Written by:

Date: May 16, 2016

Lead Individual Signature

Print Name

Date

Division Chief Signature

Print Name

Date