DRAFT

Cap-and-Trade Auction Proceeds
Third Investment Plan:
Fiscal Years 2019-20 through 2021-22

Release Date: August 21, 2018

State of California
Cap-and-Trade Auction Proceeds
Draft Third Investment Plan:
Fiscal Years 2019-20 through 2021-22

PROGRAM WEBPAGE

For more information on this topic, please see the program website for Administration activities at: http://www.arb.ca.gov/auctionproceeds.

DOCUMENT AVAILABILITY

Electronic copies of this document and related materials can be found at: www.arb.ca.gov/cci-investmentplan. Alternatively, paper copies may be obtained from the California Air Resources Board's Public Information Office, 1001 I Street, 1st Floor, Visitors and Environmental Services Center, Sacramento, California, 95814, (916) 322-2990.

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PUBLIC INPUT

Two workshops will be held during September 2018 in Fresno and Los Angeles to obtain public input in response to the Cap-and-Trade Auction Proceeds Draft Third Investment Plan: Fiscal Years 2019-20 through 2021-22.

Written comments will be accepted through September 14, 2018. To submit written comments, please visit: https://www.arb.ca.gov/lispub/comm2/bcsubform.php?comm_period=1&listname=3rdinvestmentplan-ws&utm_medium=email&utm_source=govdelivery.

Written comments submitted for these workshops will be posted at: https://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=3rdinvestmentplan-ws&utm_medium=email&utm_source=govdelivery.

The California Air Resources Board will hold a public hearing in Fall 2018 to obtain public input the Cap-and-Trade Auction Proceeds Draft Third Investment Plan: Fiscal Years 2019-20 through 2021-22.

LIST SERVE FOR DISTRIBUTION OF NOTICES

To receive notices of upcoming meetings or availability of documents, please subscribe to the electronic list serve by clicking the “Subscribe” button on the program webpage at: http://www.arb.ca.gov/auctionproceeds.
## Agency Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>CalEPA</td>
<td>California Environmental Protection Agency</td>
</tr>
<tr>
<td>CALFIRE</td>
<td>California Department of Forestry and Fire Protection</td>
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<tr>
<td>CalOES</td>
<td>California Governor’s Office of Emergency Services</td>
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<tr>
<td>CalRECYCLE</td>
<td>California Department of Resources Recycling and Recovery</td>
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<tr>
<td>CalSTA</td>
<td>California State Transportation Agency</td>
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<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
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<tr>
<td>CARB</td>
<td>California Air Resources Board</td>
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<tr>
<td>CDFA</td>
<td>California Department of Food and Agriculture</td>
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<tr>
<td>CDFW</td>
<td>California Department of Fish and Wildlife</td>
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<tr>
<td>CEC</td>
<td>California Energy Commission</td>
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<tr>
<td>CHSRA</td>
<td>California High-Speed Rail Authority</td>
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<tr>
<td>CNRA</td>
<td>California Natural Resources Agency</td>
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<tr>
<td>Coastal Commission</td>
<td>California Coastal Commission</td>
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<tr>
<td>Conservation Corps</td>
<td>California Conservation Corps</td>
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<tr>
<td>CPUC</td>
<td>California Public Utilities Commission</td>
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<tr>
<td>CSD</td>
<td>California Department of Community Services &amp; Development</td>
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<tr>
<td>DWR</td>
<td>California Department of Water Resources</td>
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<tr>
<td>SCC</td>
<td>California State Coastal Conservancy</td>
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<tr>
<td>SGC</td>
<td>California Strategic Growth Council</td>
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<tr>
<td>WCB</td>
<td>California Wildlife Conservation Board</td>
</tr>
</tbody>
</table>
# Table of Contents

Executive Summary .................................................................................................................. ES-1

I. Introduction .......................................................................................................................... 1

II. State Climate Objectives and Strategies ............................................................................. 3
   A. Scoping Plan Climate Strategy ....................................................................................... 3
   B. California’s Cap-and-Trade Program: Source of Auction Proceeds ......................... 8
   C. Greenhouse Gas Reduction Fund ................................................................................. 9

III. Opportunities to Support Transformational Change for 2030 and Beyond ...................... 11
   A. Long-lasting Community Benefits ............................................................................. 12
   B. Planning and Implementation towards Long-term Climate Objectives ...................... 15

IV. GGRF Funding Priorities ................................................................................................. 16
   A. Foundational GGRF Requirements and Priorities ......................................................... 16
   B. AB 398 Priorities ........................................................................................................ 19
   C. Icons for Funding Priorities ....................................................................................... 23

V. California Climate Investments .......................................................................................... 23
   A. Continuous Appropriations ......................................................................................... 25
   B. Annual Appropriations: Transportation and Sustainable Communities Sector .......... 26
   C. Annual Appropriations: Clean Energy and Energy Efficiency Sector .................... 27
   D. Annual Appropriations: Natural Resources and Waste Diversion Sector ................ 29

VI. California Climate Investments Project Metrics and Outcomes ........................................ 32
   A. GHG Reduction Cost-Effectiveness ............................................................................. 32
   B. Co-Benefit Metrics ..................................................................................................... 33
   C. Assessing Progress .................................................................................................... 34

VII. Priority Population Investments ....................................................................................... 35

Appendix A. Auction Proceeds Allocated to Utilities ............................................................. A-1
Appendix B. Greenhouse Gas Reduction Fund Appropriations ........................................... B-1
Cap-and-Trade Auction Proceeds Draft Third Investment Plan:
Fiscal Years 2019-20 through 2021-22

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Executive Summary

Since 2012, the Governor and the Legislature have appropriated over $8 billion in California Climate Investments funding received through the State’s Cap-and-Trade auctions. Agencies, individuals, and businesses invest these funds in the State’s low-carbon future by providing cleaner vehicles and energy, more transit options, modern housing near jobs and services, additional tree cover, forest and watershed improvements, healthy soils, recycling opportunities, and housing upgrades to cut energy use.

In the first Investment Plan, the State focused on reducing greenhouse gas (GHG) emissions. Through an iterative, annual budget process with the Governor and the Legislature and the development of a second Investment Plan, investments grew to not only emphasize GHG emission reductions, but also support vulnerable communities, improve local air quality, and provide other benefits. The current suite of programs meets these objectives and advances not just the climate and equity goals in the transportation, energy, natural and working lands, and waste sectors, but also the additional priorities established by the Administration and the Legislature. California Climate Investments programs now reach communities, people, businesses, and homes statewide. The success and evolution of California Climate Investments programs set the stage for the next decade in which these existing programs can expand and innovate to support a statewide transformational shift toward a more sustainable future.

Californians and our communities need transformative investments now. With potentially billions more in Cap-and-Trade auction proceeds available in the coming years, these incentives must be used deliberately to meet our ambitious 2030 and 2050 climate targets while spurring economic, equity, community, and environmental advancement. These investment programs, coupled with community leadership and leveraged with additional support, can, and must, accomplish more.

First, the incentives provided by California Climate Investments allow individuals, agencies, businesses, and communities to continue to envision and develop a low-carbon, safe, accessible California. Second, these funds and the Climate Investments programs can produce even greater GHG emission reductions and other benefits. California Climate Investments programs can improve air quality, fund research needed to further reduce GHG emissions, support jobs that are needed for disadvantaged and low-income communities to transition to a low-carbon future, and prepare for climate change by creating more resilient communities, infrastructure, and natural lands. Third, we know that disadvantaged and low-income communities are disproportionately burdened by climate change. These same communities tend to face greater barriers in accessing these funds and successfully implementing projects. To reach all Californians, we must improve funding equity and provide more investment benefits to these communities.
The foundation established by past budget appropriations, legislative direction, and the hard work and commitment of the State agencies, project partners, and community members in implementing these programs is producing tangible and important benefits statewide. The evolution of the program allows the focus of this Investment Plan to extend beyond individual programs to the broad potential for true transformation of California’s neighborhoods and communities within the next 10 years. Our State’s ambitious climate goals require innovation, inclusive action, and an optimistic mindset. While these investments alone will not achieve the State’s ambitious climate, air, and equity goals, they are a critical step on California’s path to transform our State to a low-carbon and resilient future.
I. Introduction

Through Cap-and-Trade auction proceeds, California invests in the State’s low-carbon transition and its climate, air quality, and environmental justice goals with transparency and accountability. This Cap-and-Trade Auction Proceeds Third Investment Plan: Fiscal Years 2019-20 through 2021-22 (Investment Plan) identifies current funding priorities and future opportunities to continue to create an equitable, sustainable future. This Investment Plan highlights ongoing accomplishments in implementing previous investment plans, notably, the creation and implementation of programs that directly reduce GHG emissions and benefit disadvantaged and low-income communities. This Investment Plan also identifies the need for broad transformational change that California Climate Investments can support over the next three years as California works toward its 2030 climate target.

The first (2013) and second (2016) investment plans identified funding priorities for early investments made with the State’s portion of auction proceeds, called California Climate Investments. In accordance with statutory requirements, the previous investment plans identified the State’s greenhouse gas (GHG) emission reduction targets and goals, analyzed gaps in State strategies to meet those goals, identified priority investments that would achieve feasible and cost-effective GHG emission reductions, and included statutory investments minimums for disadvantaged communities. These investment plans also focused recommendations on quantifiable and direct GHG emission reductions at a project level.

In meeting the objectives identified in previous investment plans, California Climate Investments now supports more than 40 programs administered by 20 State agencies. Projects span the State and major sectors that affect GHGs, including transportation, land use, energy, natural and working lands, and waste. Over a hundred project types produce quantifiable GHG benefits and other economic, environmental, and public health co-benefits, including lower energy and transportation costs, better access to jobs, reduced criteria air pollutant and toxic air contaminant emissions, and more resilient ecosystems.

Drawing from the Governor’s annual budget proposal, the Legislature appropriates funds annually to California Climate Investments programs that provide grants, vouchers, and other funding incentives to drive GHG emission reductions. Investments implemented through 2017 will reduce an estimated 23.2 million metric tons of carbon dioxide equivalent (MMTCO₂e), plus reductions in the range of 64.9 to 84.1 MMTCO₂e expected from full implementation of the High-Speed Rail system over the first fifty years of its operating life. Over half of the $2 billion in projects implemented benefit communities disproportionally burdened by, and vulnerable to, multiple sources of

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1 Discussion of environmental justice is available at: [https://calepa.ca.gov/envjustice/](https://calepa.ca.gov/envjustice/).
2 Investment plans are available at: [www.arb.ca.gov/cci-investmentplan](http://www.arb.ca.gov/cci-investmentplan).
3 Assembly Bill 1532 (Pérez, Chapter 807, Statutes of 2012)
4 Senate Bill 535 (De León, Chapter 830, Statutes of 2012)
5 2018 Cap-and-Trade Auction Proceeds Annual Report
pollution. Agencies continue to implement the additional $6 billion appropriated by the Legislature.

In 2017, the Legislature passed Assembly Bill (AB) 398,\(^6\) which identified seven funding priorities for California Climate Investments. These new priorities reinforce and expand on the seven original investment priorities established in AB 1532 (Box 1). Focusing on the AB 398 priorities will help meet the State’s short- and long-term climate targets, improve air quality, sustain natural and working lands, and prepare the State for climate impacts that cannot be avoided.

**Box 1. Investment Priorities**

<table>
<thead>
<tr>
<th><strong>Investment Priorities</strong></th>
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<tbody>
<tr>
<td><strong>AB 1532</strong></td>
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<tr>
<td>1. Energy Efficiency and Renewable Energy</td>
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<tr>
<td>2. Low Carbon Transportation, Freight, and Advanced Technology Vehicles and Fuels</td>
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<tr>
<td>3. Natural Resources: Water Use and Supply, Land Conservation, Forestry, and Sustainable Agriculture</td>
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<td>4. Strategic Planning</td>
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<td>5. Waste Diversion, Reduction, and Reuse</td>
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<td>6. Research, Development, and Deployment of Innovative Technologies and Practices</td>
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<td>7. Partnerships for Local and Regional Program Implementation</td>
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<td><strong>AB 398</strong></td>
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<tr>
<td>1. Air Toxics and Criteria Pollutants</td>
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<td>2. Low and Zero Carbon Transportation</td>
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<td>3. Sustainable Agricultural Practices</td>
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<tr>
<td>4. Healthy Forests and Urban Greening</td>
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<td>5. Short-lived Climate Pollutants</td>
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<td>6. Climate Adaptation and Resiliency</td>
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<td>7. Climate and Clean Energy Research</td>
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During the comment and workshop period of the previous investment Plan, and in numerous hearings on Greenhouse Gas Reduction Fund (GGRF) funding bills in 2016, 2017, and 2018, the public and stakeholders identified investment gaps that could help California achieve the transformational changes needed for a low-carbon future. These include key opportunities for supporting environmental justice; equitable outcomes; technical assistance; community-driven, community-scale projects; employment opportunities; outcome assessment; and planning for long-term 2050 climate targets.

The current suite of California Climate Investments programs is well-positioned to continue implementing important projects and, with some modifications, address these

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\(^6\) Assembly Bill 398 (E. Garcia, Chapter 135, Statutes of 2017)
gaps. Many programs are already providing technical assistance and achieving critical co-benefits, and doing more in the future is a priority of this Investment Plan. Therefore, this Investment Plan builds on the successful implementation of previous investment plans and identifies how existing programs can further the priorities identified by the Legislature and public. In addition, to better communicate the achievements of these investments to the Legislature and public, as well as meet requirements of Senate Bill (SB) 1464,7 this Investment Plan includes a description of metrics for agencies to use in reporting the outcomes of California Climate Investments in a consistent and transparent way. This Investment Plan also describes, as required in SB 1464, how existing California Climate Investments programs support the State’s climate regulations, policies, and programs.

In addition, existing California Climate Investments programs can expand their reach by planning longer-term to identify investments that will transform communities to help meet California’s climate goals, align with Legislative and Administrative priorities to further decarbonize the economy, advance clean air goals, and improve ecosystem health.

II. State Climate Objectives and Strategies

In 2006, the Legislature passed AB 32, the California Global Warming Solutions Act of 2006,8 which marked the beginning of the State’s climate change program and secured the State’s role as a national and global leader in reducing GHG emissions. The landmark legislation built on decades of environmental leadership and stewardship in the State, and set the stage for continuing progress to reduce both GHG emissions and air pollution. In 2016, the Legislature passed SB 32, which codified a 2030 GHG emission reduction target of 40 percent below 1990 levels, or 260 MMTCO₂e.9 California Climate Investments are an important part of the State’s climate and air pollution strategies, as they provide funding to help implement regulations and support existing policies and programs.

A. Scoping Plan Climate Strategy

AB 32 requires the California Air Resources Board (CARB) to develop a Climate Change Scoping Plan (Scoping Plan) that describes the approach to reduce the State’s GHG emissions to 1990 levels by 2020, and to update the plan at least once every five years. CARB approved the first Scoping Plan in 2008 and the First Update to the Scoping Plan in 2014. CARB’s 2017 Climate Change Scoping Plan10 identifies how the State can meet the 2030 GHG emission reduction target while advancing the State’s 2050 target of reducing GHG emissions to 80 percent below 1990 levels. The 2017

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7 Senate Bill 1464 (De León, Chapter 679, Statutes of 2016) requires the Investment Plan to assess how proposed investments interact with current state regulations, policies, and programs, evaluate if and how those proposed investments could be incorporated into existing programs, and recommend metrics that would measure progress and benefits from the proposed programmatic investments.
8 Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006)
9 Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016)
10 Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.
Scoping Plan was a multi-agency effort to identify the suite of economically viable and technologically feasible policies, which include programs and regulations, to achieve California’s 2030 GHG emission reduction target. In addition, the 2017 Scoping Plan suggests a balanced mix of strategies to meet the 2030 target at a low cost while improving public health, investing in disadvantaged and low-income communities, protecting consumers, and supporting economic growth, jobs, and energy diversity.

California’s climate policy portfolio identified in the 2017 Scoping Plan includes the following:

- Increasing energy efficiency and renewable energy.
- Decreasing dependence on transportation fossil fuels and instead encouraging deployment of alternative fuels.
- Putting millions of zero-emission vehicles on the road.
- Supporting sustainable community development.
- Improving the efficiency of the freight sector and advancing zero-emission technology within the freight and heavy-duty sector.
- Reducing emissions from high global warming potential gases.
- A Cap-and-Trade Program that caps emissions in our largest economic sectors.
- Investing in our communities throughout the State to further reduce emissions.

Details of the 2017 Scoping Plan policy portfolio are provided in the 2017 Scoping Plan and are summarized in Table 1.

**Table 1. Summary of the 2017 Scoping Plan Policy Portfolio**

<table>
<thead>
<tr>
<th>Policy</th>
<th>Primary Objective</th>
<th>Highlights</th>
<th>Implementation Time Frame</th>
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| SB 350\(^{11}\)   | Reduce GHG emissions in the electricity sector.         | • Load-serving entities file plans to achieve GHG emission reduction planning targets while ensuring reliability and meeting the State’s other policy goals cost-effectively.  
• 50 percent Renewables Portfolio Standard.  
• Doubling of energy efficiency savings in natural gas and electricity end uses statewide. | 2030                                      |
| Low Carbon Fuel Standard | Transition to cleaner/ less-polluting fuels.  | • Reduction in carbon intensity, as included in the Mobile Source Strategy.                          | 2030                                      |

\(^{11}\) SB 350 (De León, Chapter 547, Statutes of 2015). Available at: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350)  
This policy also includes increased demand response and PV.
## Cap-and-Trade Auction Proceeds Draft Third Investment Plan: Fiscal Years 2019-20 through 2021-22

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<th>Highlights</th>
<th>Implementation Time Frame</th>
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</table>
| Mobile Source Strategy (Cleaner Technology and Fuels Scenario)\(^\text{12}\) | Reduce GHG emissions and other pollutants from the transportation sector. | • 1.5 million zero-emission vehicles (ZEV), including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles by 2025,\(^\text{13}\) and 4.2 million ZEVs by 2030.  
• Continue ramp up of GHG stringency for all light-duty vehicles beyond 2025.  
• Reductions in GHG emissions from medium-duty and heavy-duty vehicles via the Phase 2 Medium and Heavy-Duty GHG Standards.  
• Innovative Clean Transit: Transition to a suite of innovative clean transit options.  
• Last Mile Delivery: New regulation that would result in the use of low NOx or cleaner engines, and the deployment of increasing numbers of zero-emission trucks—primarily for class 3-7 last mile delivery trucks in California.  
• Reduction in vehicle miles travelled (VMT), to be achieved in part by continued implementation of SB 375\(^\text{14}\) and regional Sustainable Community Strategies; forthcoming statewide implementation of SB 743\(^\text{15}\); and potential additional VMT reduction strategies.\(^\text{16}\) | Various |
| SB 1383 | Implement Short-Lived Climate Pollutant Reduction Strategy\(^\text{17}\) to reduce potent GHG emissions | • 40 percent reduction in methane and hydrofluorocarbon (HFC) emissions below 2013 levels by 2030.  
• 50 percent reduction in anthropogenic black carbon emissions below 2013 levels by 2030. | 2030 |


\(^{13}\) Governor’s Executive Order B-16-12

\(^{14}\) SB 375 (Steinberg, Chapter 728, Statutes of 2008)

\(^{15}\) SB 743 (Steinberg, Chapter 386, Statutes of 2013)

\(^{16}\) CARB. Potential State-Level Strategies to Advance Sustainable, Equitable Communities and Reduce VMT — for Discussion. <https://www.arb.ca.gov/cc/scopingplan/meetings/091316/Potential%20VMT%20Measures%20For%20Discussion_9.13.16.pdf>

Policy | Primary Objective | Highlights | Implementation Time Frame
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California Sustainable Freight Action Plan\(^\text{18}\) | Improve freight efficiency, transition to zero-emission operations, and increase competitiveness of California’s freight system. | • Improve freight system efficiency by 25 percent by 2030.  
• Deploy over 100,000 freight vehicles and equipment capable of zero-emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030. | 2030
Post-2020 Cap-and-Trade Program | Reduce GHG emissions across the largest GHG emission sources | Continue the existing Cap-and-Trade Program with declining caps to ensure the State’s 2030 target is achieved. | Ongoing

SB 1464 directs that, in identifying priority programmatic investments, the Investment Plan assess how proposed investments interact with current State regulations, policies, and programs. The 2017 Scoping Plan identifies the State efforts needed to meet GHG reduction targets and acknowledges the need for incentives, such as California Climate Investments, to support and facilitate these efforts. Therefore, while California Climate Investments project-level emission reductions are not categorized as a quantified emission-reduction policy in the Scoping Plan, the investments are critical to ensuring full implementation of many of the policies that are quantified.

For example, SB 605\(^\text{19}\) requires CARB to adopt a Short-lived Climate Pollutant (SLCP) Reduction Strategy. The Scoping Plan incorporates SB 1383,\(^\text{20}\) which establishes SLCP reduction goals. The Scoping Plan quantifies the reductions that will result from implementation of the SLCP Reduction Strategy, which includes avoiding landfill emissions, capturing methane from dairies to create electricity and fuel, and other actions. Converting or adding advanced technology can be costly and providing up-front investments can help offset costs and facilitate early adoption of these actions. California Climate Investments provide incentives for dairy farmers to install dairy digesters for methane capture and use, and by funding public and private entities to divert organic materials from landfills and to prevent edible food from being disposed of by recovering and distributing it for human consumption. Many of these projects would be delayed or not possible without incentives, and therefore, California Climate Investments are complementary and critical to the overall goal of the SLCP Reduction Strategy and SB 1383. SB 1383 also authorized CARB to implement a regulation for livestock and dairy manure management beginning in 2024, but only if farmers as a group fail to progress toward methane reduction goals. Providing incentives for early

\(^\text{19}\) Senate Bill 605 (Lara, Chapter 523, Statutes of 2014)
\(^\text{20}\) Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016)
adoption of new technology could prevent the need for regulation that could pose an economic hardship to regulated entities and delay these emission reductions for years.

California Climate Investments also fund the development of innovative technologies that will facilitate compliance with State regulations and policies. For example, California Climate Investments in the transportation sector have funded zero-emission battery-electric and hydrogen fuel cell technology in drayage trucks. It is likely that these types of trucks will need to be widely adopted to comply with the Zero Emission Drayage Truck Regulation, which is being considered to help reach climate targets and reduce particulate matter and oxides of nitrogen emissions from diesel-fueled engines involved in freight transport.

The programs, policies, and regulations being implemented by the State have been effective in meeting climate goals. In 2016, emissions from routine GHG emitting activities statewide were 429 MMTCO₂e, which puts total emissions below the 2020 target of 431 MMTCO₂e, according to CARB’s 2018 edition of the GHG Emission Inventory. The GHG Emission Inventory documents California GHG levels from 2000-2016. The data show that California’s GHG emissions continue to decrease and that GHG reduction programs are working as designed. Recognizing that GHG emissions vary from year-to-year, California will continue to implement its GHG reductions program to ensure the State continues to meet its climate targets in 2020 and beyond. These GHG reductions come while California’s economy grows and continues to generate jobs, as shown in Figure 1.

Figure 1. Carbon Intensity of California’s Economy

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The State must now focus on reductions needed to meet the 2030 and 2050 GHG goals. The Scoping Plan and initiatives established after the Scoping Plan set a course to 2030 and beyond. While the Scoping Plan does not dictate California Climate Investments program priorities, programs funded with California Climate Investments clearly support many of the State’s current policies, laws, and programs needed for future GHG emission reductions.

California Climate Investments go beyond the policies identified in the Scoping Plan policy portfolio described in Table 1. California Climate Investments are funding the reduction of GHG emissions outside of the traditional transportation and energy sectors, the most notable example being the early effort to address emissions and carbon sequestration associated with natural lands. Early California Climate Investments in forest health projects that improve forest resiliency to wildfire, drought, and pests are just one example of an effort in the natural lands sector to support the State’s climate goals. The adoption of the 2017 Scoping Plan commits the State to finalize a carbon sequestration and greenhouse gas emission reduction goal for natural and working lands by September 2018, which will give natural resource agencies and programs a specific GHG emission reduction goal to work towards. The 2030 Natural and Working Lands Climate Change Implementation Plan\(^{22}\) will describe this GHG goal and provide a blueprint to achieve it by building capacity through State-funded conservation, restoration, and management activities. California’s approach to sequester carbon and reduce GHGs on natural and working lands will encompass conservation, improved management, and restoration of wildland and urban forests, farms and ranches, grasslands, coasts, and wetlands. Many of these activities are already funded with California Climate Investments, and continued support will help ensure the success of the Implementation Plan. By late 2018, California will release a final Implementation Plan to outline the extent of restoration, conservation, and management activities needed to meet identified climate change goals.

**B. California’s Cap-and-Trade Program: Source of Auction Proceeds**

California’s Cap-and-Trade Program is a key component of the State’s GHG emission reduction strategy and is the source of funding for California Climate Investments. Cap-and-Trade creates a statewide limit for California’s major sources of GHG emissions, sets the price signal needed to drive long-term investment in cleaner fuels and more efficient energy use, and provides the flexibility to implement the lowest-cost options to reduce GHG emissions.

Large emitters responsible for approximately 80 percent of GHG emissions in the State are termed “covered entities” and need an allowance or offset credit for every metric ton of carbon dioxide equivalent emissions they produce each year. Some allowances are distributed to covered entities at no cost, while other (State-owned) allowances can be purchased at the State’s quarterly auctions.

\(^{22}\) Discussion of the Natural and Working Lands Implementation Plan is available at: http://resources.ca.gov/climate/natural-working-lands/
Electric and natural gas utilities also receive allowance allocations per the Cap-and-Trade regulation; however, these utilities must use their allowances for the benefit of ratepayers, consistent with the goals of AB 32. Utility allowances sold via quarterly auctions generate a portion of auction proceeds, the use of which is described in Appendix A. Auction Proceeds Allocated to Utilities

**Figure 2. Overview of California Climate Investments Using Cap and Trade Auction Proceeds**

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**C. Greenhouse Gas Reduction Fund**

Auction proceeds from the sale of State-owned allowances at quarterly auctions are deposited into the GGRF and available for the Governor and Legislature to appropriate to State agencies for California Climate Investments. Sixty percent of each auction’s proceeds automatically supports four programs (identified below); the Governor and Legislature divide the remaining 40 percent among other California Climate Investments programs through the annual budget process. To date, auctions have generated nearly $8 billion to fund climate investments, as shown in Figure 3.

When the Legislature established the GGRF, it set several additional requirements for California Climate Investments, including that the funds facilitate GHG emission reductions through investments that may include transportation, energy, and natural resources sectors. Legislation also required a minimum percentage of the investments benefit disadvantaged communities and required additional investments to benefit
low-income communities and households. The Funding Guidelines for California Climate Investments refer to the collective grouping of disadvantaged communities, and low-income communities and households, as “priority populations” (Box 3).

Figure 3. Cumulative Proceeds from the Sale of State-Owned Allowances Deposited in the GGRF

Implementing legislation also requires California Climate Investments to maximize other economic, environmental, and public health benefits—referred to as “co-benefits”—where applicable and to the extent feasible. Some of these co-benefits include: fostering job creation; complementing air quality efforts; providing opportunities for community institutions to participate in and benefit from GHG emission reduction efforts; and lessening the impacts of climate change across all communities in the State. The Legislature has expanded the number and types of programs funded through the GGRF, but the foundational objectives of the fund remain.

In 2014, The Legislature identified the four programs that would receive a continuous appropriation from the GGRF. With each auction, 25 percent of the State’s proceeds are appropriated to the California High-Speed Rail Authority’s (CHSRA) High-Speed Rail Project, 20 percent to the Strategic Growth Council’s (SGC) Affordable Housing and Sustainable Communities Program (AHSC), 10 percent to the California State Transportation Agency’s (CalSTA) Transit and Intercity Rail Capital Program (TIRCP), and 5 percent to the California Department of Transportation’s (Caltrans) Low Carbon Transit Operations Program (LCTOP). Other programs are funded from the remaining

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23 Senate Bill 535 (De León, Chapter 830, Statutes of 2012), Assembly Bill 1550 (Gomez, Chapter 369, Statutes of 2016)
24 Available at: www.arb.ca.gov/cci-fundingguidelines
40 percent of funds, which are appropriated through the State budget process. Figure 4 shows how the Legislature directs the expenditure of monies in the GGRF.

**Figure 4. Funding Process and Legislative Direction for California Climate Investments**

III. Opportunities to Support Transformational Change for 2030 and Beyond

The first several years of implementing California Climate Investments focused on maximizing GHG emission reductions and disadvantaged community benefits. Through ongoing program implementation, agencies and the public gain understanding of the influence California Climate Investments programs have on communities Statewide and the capacity for projects to achieve multiple benefits. The Legislature and public now emphasize additional areas of focus, from greater community assistance to strategic incentives to accelerate the economy-wide transformational changes needed to meet the State’s 2030 and 2050 GHG emission reduction targets. The recommendations in this Investment Plan reflect these focus areas (Box 2). California’s low-carbon future will be spurred and supported by providing priority populations with financial assistance

**Box 2. Investment Plan Recommendations**

<table>
<thead>
<tr>
<th>Investment Plan Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prioritize community transformation.</td>
</tr>
<tr>
<td>2. Develop multi-year funding commitments.</td>
</tr>
<tr>
<td>3. Consider and plan for large investments in the long-term.</td>
</tr>
<tr>
<td>4. Support the existing suite of California Climate Investments programs.</td>
</tr>
</tbody>
</table>
that helps them invest in the low-carbon economy, thrive as the workforce evolves, and
develop grassroots transformational projects.

A. Long-lasting Community Benefits

Improving equity and achieving environmental justice are also major components of the
State’s climate goals and California Climate Investments in particular. The
Administration, the Legislature, and stakeholders have consistently prioritized access to
funding and ensuring that meaningful benefits reach communities most affected by
pollution. Initially, State agencies interpreted “equal access” as “equity,” and
implemented programs before considering applicant capacity to pursue California
Climate Investments grants. Agencies rapidly realized the inequity of this assumption
as communities with greater capacity to apply for State funds had fewer barriers in
applying for funds and successfully implementing projects once funded (Figure 5).

Figure 5. Equity versus Equality

In recent years, agencies, stakeholders, and the Legislature engaged in productive
dialogue that resulted in a growing focus on equitable outcomes that meet
community-derived needs. The ability to meet the State’s long-term climate and air
quality goals relies on all Californians; these funds can help those most in need access
new technologies, lower energy and transportation costs, and acquire the skills needed
for climate-friendly careers.
Agencies administering California Climate Investments have designed programs and selected projects that provide direct, meaningful, and assured benefits to priority populations, consistent with current legislative requirements (Box 3). Additional efforts by agencies to provide technical assistance and address community needs will provide greater equity and improved outcomes. Moreover, other programs within the State and elsewhere are applying lessons learned in this program to developing and implementing inclusive and comprehensive programs to support all communities. Therefore, while California Climate Investments alone cannot solve equity or climate issues, it can serve as a model and catalyst for others.

Box 3. Requirements to Invest in Priority Populations

<table>
<thead>
<tr>
<th>Priority Population Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SB 535</strong></td>
</tr>
<tr>
<td>In 2012, SB 535 (De León, Chapter 830, Statutes of 2012) required a portion of investments to benefit disadvantaged communities in California. Most of the projects implemented to date have used this framework for targeting investments.</td>
</tr>
</tbody>
</table>

| **AB 1550**                      |
| In 2016, AB 1550 (Gomez, Chapter 369, Statutes of 2016) set more rigorous investment minimums for California Climate Investments: at least 25 percent of funding to projects located in disadvantaged communities, and 10 percent of funding to projects located in low-income communities and/or benefiting low-income households. The Funding Guidelines refer to the communities and households identified in AB 1550 collectively as “priority populations.” Investments in the future must target these priority populations. |

1. Technical Assistance and Capacity Building

Initially, California Climate Investments focused on physically locating projects in disadvantaged communities or providing benefits for these communities. Project location is often important, for example when planting an urban forest to provide shade, recreation, and carbon sequestration. However, agencies can do more than locate projects strategically. Technical assistance and capacity building help priority populations overcome challenges with accessing funds and become active participants in the transition to a low-carbon economy. Administering agencies, community-based organizations, and applicants have communicated a critical need for technical assistance and capacity building, particularly among members of under-resourced communities, rural communities, and priority populations. From farmers to urban nonprofits to local governments, stakeholders have reiterated that technical assistance is essential to navigate the application process and improve access to California Climate Investments. Helping people and organizations with applications for grants and other incentives has two benefits: first, people that receive technical assistance are more likely to submit competitive, successful applications; second, the project design is more likely to include desirable, community-derived co-benefits with community-member buy-in and participation in the project development process.
Effective technical assistance takes many forms. Between 2015 and 2016, the Legislature appropriated $2.5 million for technical assistance to SGC, which has facilitated technical assistance for many California Climate Investment programs. A University of California (UC) Davis evaluation of the initial $500,000 received by SGC found that technical assistance played “a unique and important role” in applicants’ success. Applicants who used technical assistance were much more likely to win awards. The evaluation showed that in the subsequent funding cycle, 24 of the 25 award winners were provided assistance from one or more of the major technical assistance providers. Administering agencies may also fund and implement technical assistance within their program and are encouraged to develop partnerships with organizations that build local capacity. Employing a variety of methods to establish engagement with potential applicants will contribute to the ongoing success of California Climate Investments.

2. Community-focused Investments

Recent appropriations reflect stakeholder interest in programs designed to be community-focused, such as the Transformative Climate Communities and Community Air Protection programs. These community-based programs support coordinated, comprehensive solutions that address multiple local needs. The Transformative Climate Communities Program and Community Air Protection Program require local participation and encourage building the community’s ability to take on more leadership in environmental solutions. These programs provide flexibility in the type of projects funded, to allow for community decision-making in project design and implementation. For example, one Transformative Climate Communities project formed a steering committee of more than 160 residents and business owners to select from a suite of proposed Climate Investment projects. Based on community input, the funded project included affordable housing, residential solar installation and energy efficiency measures, tree planting, park and community garden development, transit service improvement, and bicycle- and car-sharing programs.

Agencies can also modify existing programs to facilitate community-level projects, exemplified by the Community Solar Pilot Program, recently created under the Low-Income Weatherization Program. The structure of some programs is not conducive to community-wide projects, but administering agencies may be able to facilitate community-wide solutions by collaborating with other administering agencies to implement separate but complementary projects. All programs can also strategize on how to maximize community benefits, even if direct community participation is not possible. For example, the Transit and Intercity Rail Capital Program convened a panel of community outreach and technical experts to review major infrastructure projects selected for funding, to ensure the projects maximize benefits to priority populations.

3. Jobs

As the State moves to a low-carbon economy, the jobs available and skills needed will change, as exemplified by the growing need for skilled workers to install solar arrays. In public workshops designed to solicit feedback on California Climate Investments, stakeholders have consistently asked for jobs and job training opportunities, particularly for priority populations. California Climate Investments represent an opportunity to continue building the low-carbon workforce. The investments also support indirect and induced jobs, which are the result of incomes being spent in the broader economy. A recent report published by the Luskin Center at UC Los Angeles estimated 19,700 jobs are being supported in the State by California Climate Investments funding appropriated through 2016 ($2.2 billion).

Agencies should evaluate their programs and identify potential employment opportunities to prepare California’s workforce to transition to a low-carbon economy. Opportunities should focus on individuals living in the project area or facing employment barriers.

B. Planning and Implementation towards Long-term Climate Objectives

AB 398 clarified the role of the Cap-and-Trade Program from January 1, 2021, through December 31, 2030, and with it the California Climate Investments funding mechanism. Currently, the State provides continuous funding to ensure GHG emission reductions in the California High-Speed Rail Project, the Affordable Housing and Sustainable Communities Program, the Transit and Intercity Rail Capital Program, and the Low Carbon Transit Operations Program. The continuous appropriation enables steady, predictable funding for large-scale infrastructure and housing projects. AHSC makes annual investments in affordable housing development located near jobs and other amenities CHSP and TIRCP utilize multi-year funding plans for large infrastructure projects based on these continuous appropriations. Other programs may benefit from multi-year appropriations to achieve transformative change, improve administrative efficiency, foster capacity-building relationships with stakeholders, and offer more effective outreach. The Legislature could encourage agencies to plan for 2030 and beyond by signaling longer-term funding commitments.

The State’s longer-term GHG emission targets for 2030 and 2050 will also require more focus on scaling-up proven low- and zero-emission technologies, promoting innovative pilot and demonstration projects, advancing research on approaches to sequester carbon and reduce GHG emissions, and incorporating climate adaptation. The 2017 Scoping Plan identifies GHG-reducing measures the State should take to meet climate targets, summarized in Table 1. Individual California Climate Investments programs have an important role to play in long-term planning for climate mitigation and adaptation. Major infrastructure projects should be selected with the 2050 targets in mind, incorporating measures and supporting practices that will help all Californians reduce GHG emissions and adapt to the unavoidable effects of climate change whenever possible.
Additionally, the growing influence that California Climate Investments and leveraged funds have on the State’s economy must be considered. To date, Cap-and-Trade has generated approximately $8 billion to reinvest through California Climate Investments programs, and if the trend continues, program dollars can have substantial influence in the upcoming decade. California Climate Investments can spur innovation in emerging technologies and profitable business endeavors. California Climate Investments should support businesses that contribute to the State’s climate goals and implement discrete projects under California Climate Investments programs. However, investments should not be subsidizing business models that do not support the transition to a low carbon economy. Understanding how billions of dollars are shaping or enabling market-wide changes will lead to more informed investments.

Deliberate focus on the long-term impacts of these investments will expand the reach and impact of California Climate Investments for decades to come. All agencies administering California Climate Investments programs can contribute to these efforts.

IV. GGRF Funding Priorities

Two statutory requirements underpin the fundamental objectives for California Climate Investments: (1) facilitating GHG emission reductions and (2) investing in priority populations. As existing programs continue to meet these objectives, additional benefits identified in AB 1532 and AB 398 can and should be prioritized. Administering agencies should use the complementary legislative priorities in AB 1532 and AB 398 as they identify appropriate projects that will facilitate GHG reductions, and benefit priority populations. For example, zero-emission freight technology is needed in port communities and major transportation corridors, while residential renewable energy generation may help offset homeowner costs and help communities in the Central Valley adapt to longer and intensifying extreme heat. Sustainable forests projects in rural communities reduce exposure to wildfire emissions, protect the ecosystem, and provide benefits like clean water for the entire State. The additional priorities emphasized by a particular California Climate Investments program are determined by legislation, the administering agency, and stakeholder input.

A. Foundational GGRF Requirements and Priorities

When establishing the GGRF, the Legislature identified requirements for California Climate Investments in AB 1532. The legislation requires that investments, where applicable and to the extent feasible:

- Facilitate GHG emission reductions;
- Maximize other economic, environmental, and public health co-benefits;
- Foster job creation;
- Complement air quality efforts;
- Direct investments toward disadvantaged communities;
- Provide opportunities for community institutions to participate in and benefit from GHG emission reduction efforts; and
- Lessen the impacts of climate change.
Programs are achieving many of these goals and must continue and expand their efforts. Just as important, agencies must track and report on outcomes consistent with these requirements (described more in Chapter VI).

In AB 1532, the Legislature also suggested seven investment priority areas, described below, that are being funded through current California Climate Investments.

1. **Energy Efficiency and Renewable Energy**

   California Climate Investments fund multiple project types that support the goal of reducing GHG emissions and the air quality impacts of energy generation in California. Projects reduce dependence on fossil fuels by increasing clean and renewable energy generation and increasing energy efficiency. Project types that support California’s efforts in this sector include, but are not limited to: providing vouchers and funding for residential energy efficiency and photovoltaics installations, making improvements to State water-energy generation systems, incentivizing energy efficiency upgrades for food production, and funding energy efficient equipment and on-site solar energy generation in agricultural operations. These investments provide a variety of benefits for communities, households, and individuals statewide, including providing opportunities for job training, reducing residential utility bills, and conserving water. Investments also support projects that improve indoor and outdoor air quality and deliver public health benefits. Investments funded by auction proceeds from allowances sold by utilities will complement these efforts. In 2017, per the requirements of AB 693, the utilities began to set aside auction proceeds for the Solar on Multifamily Affordable Housing Program.

2. **Low Carbon Transportation, Freight, and Advanced Technology Vehicles and Fuels**

   The transportation sector is a major source of GHG emissions and air contaminants within the State of California. California Climate Investments projects address this by providing funding to project types that replace older, more emission-intensive vehicles with clean, modern systems such as hybrid, electric, and alternative fuel powered vehicles in classes ranging from passenger cars to heavy-duty trucks and off-road equipment. Other project types provide capital assistance and operations support to increase public transportation and provide funding for many transportation projects such as car-share programs, safe bicycle and pedestrian corridors, and electric-vehicle and alternative fuel infrastructure. GGRF funding is also accelerating commercialization of advanced freight technologies and freight infrastructure, and supporting the planning, development, construction, and operation of California’s High-Speed Rail system.

3. **Natural Resources: Water Use and Supply, Land Conservation, Forestry, and Sustainable Agriculture**

   California Climate Investments are helping preserve and restore our natural resources while reducing GHG emissions. Projects help prevent and limit damaging wildfire, advance management practices that make healthier ecosystems that are more resilient.

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26 Assembly Bill 693 (Eggman, Chapter 582, Statutes of 2015)
to climate change, and implement climate adaptation projects. California’s forests, 
etwetlands, grasslands, and other natural lands also provide an opportunity to sequester 
carbon in the soil and in biomass through projects in reforestation and wetland and 
coastal restoration. The Wetlands and Watershed Restoration Program is improving 
habitat to support biodiversity and climate resilience while protecting source water 
supplies. Urban Forest and Urban Greening projects are planting trees and managing 
forests in urban areas to reduce urban heat island effects, potentially resulting in 
cost-savings for households. Coastal programs focus climate adaptation projects on 
planning and preparing for sea level rise due to climate change.

GGRF monies are also used to support sustainable practices in the agricultural sector 
by providing financial incentives for farmers to implement sustainable management 
practices that increase carbon sequestration, and by funding projects that prevent the 
conversion of agricultural lands to more GHG-intensive uses. Funding also allows 
farmers to purchase cleaner agricultural equipment like harvesters, pumps, trucks, and 
tractors, and to decrease methane emissions from dairies.

California Climate Investments are addressing energy, and therefore GHG emissions, 
associated with the use of water for agricultural, residential, and industrial purposes. 
Incentives and grants allow farmers to enhance or replace pumps and irrigation systems 
with more energy-efficient technologies and fund commercial and residential 
water-energy efficiency through appliance and fixture upgrades, including projects 
which benefit disadvantaged communities within the State.

4. Strategic Planning

California Climate Investments funds strategic planning efforts to support the State’s 
climate goals. Many of these project types take a multi-faceted approach to addressing 
GHG emissions, including project types that make improvements to public transit 
systems and housing, reducing VMT, and connecting California’s cities by rail, buses, 
and ferries. These projects also reduce dependence on automobiles and decrease 
traffic. Other project types foster community-driven, collaborative efforts that implement 
multiple strategies to create transformative changes at the neighborhood scale.

5. Waste Diversion, Reduction, and Reuse

GGRF funds are helping reduce air and climate impacts from the waste sector. Projects 
are reducing waste volume, thereby prolonging the useful life of existing landfills, 
rescuing edible food and providing it to food-insecure citizens around the state, and 
using waste to generate compost, energy, and other products. California Climate 
Investments funds are increasing in-State diversion of solid waste, which reduces 
methane emissions from waste by rescuing organic waste; and incentivizing edible food 
rescue, recycling/composting, and bioenergy generation. Waste diversion projects are 
supporting more efficient use of materials—including the use of recycled instead of 
virgin materials—to conserve natural resources, potentially reducing supply chain costs, 
and resulting in consumer cost savings.
6. Research, Development, and Deployment of Innovative Technologies and Practices

Many of the current California Climate Investments programs are incentivizing the deployment of advanced technologies. Advanced Technology Freight Demonstration Projects fund precommercial advanced vehicles, engines, equipment, and transportation systems that use less petroleum and emit less GHG and air pollutant emissions than conventional diesel equipment. Similarly, the Healthy Soils Program incentivizes demonstration projects on innovative farming practices. By offsetting the costs of advanced technology and encouraging more sustainable management of resources through incentives, California Climate Investments are signaling the need for further research and development of low-carbon alternatives. Funding also has provided direct research for biofuels, for the design of new digester systems that reduce SLCPs, to generate clean energy, and to promote climate adaptation and resilience.

7. Partnerships for Local and Regional Program Implementation

California Climate Investments fund many programs that are implemented by local and regional agencies, local and regional collaboratives, and nonprofit organizations coordinating with local governments. Agencies continue to outreach to communities to increase understanding of local needs, and some programs have engaged communities directly in the project development process. Projects undertaken or supported by local partnerships support establishment, enhancement, and expansion of community spaces and parks, tree planting, green infrastructure in streets and alleys, and the construction of active transportation infrastructure. Agencies and the Legislature have focused more on the need for partnerships at all levels recently, through funding of technical assistance and supporting local agencies, community-based organizations, and other local entities to participate in program development. The Community Air Protection Program provides direct grants to community-based organizations and other local entities to build capacity and become active partners with government to identify, evaluate, and ultimately reduce air pollution and exposure to harmful emissions in their communities. Transformative Climate Communities emphasizes the development of long-term, cross-sector partnerships between and among multiple stakeholders including award recipients, local government, community members, and the State.

B. AB 398 Priorities

AB 398 augments the foundational priorities with seven complementary funding priorities that, as shown in Figure 6, provide additional direction for future investments. Existing programs are largely supporting these priorities, and agencies can expand or modify their programs to respond more fully to these important issues.

1. Air Toxics and Criteria Pollutants

California Climate Investments contribute to improving air quality by providing incentives to encourage consumers to buy cleaner, more energy-efficient vehicles and equipment that reduce GHG emissions and produce less air pollution than conventional, less expensive models. California Climate Investments also fund the creation and
implementation of community air protection plans to reduce stationary source pollution that affects local air quality in priority populations. Programs that reduce electricity consumption through energy efficiency measures contribute to air quality improvements because a portion of the energy used to power California’s electric grid is generated from nonrenewable sources that emit GHG emissions and cause air pollution. However, California residents continue to face some of the worst air pollution in the country, and upgrading technology will be key to further improve local air quality to meet State and federal air quality standards.

2. **Low and Zero-Carbon Transportation**

California Climate Investments are investing in all aspects of low-and zero-carbon transportation, from personal vehicles to transit to public and private fleets. Vehicle incentives are helping move California toward a zero-emission light-duty fleet and reducing costs for engine conversions in heavy-duty trucks. The public sector is electrifying transit vehicles, from diesel buses to freight yard equipment. Investments in low- and zero-carbon transportation-related infrastructure and equipment support fleet turnover and service improvements in bus and rail lines, and incentivize people to use public transit, thereby reducing California’s dependency on fossil fuels. Future low carbon transportation efforts will need to increase focus on reducing GHG and air pollutant emissions from vehicles, particularly heavy-duty vehicles used in freight.

Additionally, zero-carbon transportation includes nonmotorized transportation options, which also help to reduce VMT. Additional investments in nonmotorized forms of transportation, such as biking and walking, provide safe alternatives for travel between residences, workplaces, commercial centers, and schools.

3. **Sustainable Agricultural Practices**

AB 398 calls for a focus on sustainable agriculture practices that can promote transitions to clean technology, water and energy efficiency, and better air quality.

Many California Climate Investments in agricultural practices focus on soil carbon sequestration. According to the California Department of Food and Agriculture (CDFA), soils contain approximately 75 percent of the carbon pool on land—three times more than the amount stored in living plants and animals. Experts estimate that United States cropland soils have the potential to sequester up to several hundred MMTCO$_2$e per year. However, California cropland is also a primary emission source of nitrous oxide (N$_2$O), a potent GHG. N$_2$O is produced from the soil through microbial processes that convert nitrogen from nitrogen fertilizers, manure, and crop residues into N$_2$O and other nitrogen gases. Scientists are researching ways to make this aspect of farming more sustainable. California Climate Investments incentivize practices that build soil

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organic matter and reduce GHG emissions, including compost application, cover crops, improved fertilizer management, and reduced/no-till farming methods.

4. Healthy Forests and Urban Greening

California Climate Investments have supported programs in forest health and urban greening for several years. California’s tree canopy serves an important purpose of removing pollutants from the air and sequestering carbon dioxide in woody material while providing multiple significant co-benefits that increase the State’s resilience to the effects of climate change.

Forest health restoration projects focus on increasing and stabilizing the large reservoir of carbon stored in forest trees and soils, protecting upper watersheds where the State’s water supply originates, and contributing to overall forest health. Healthy forests are more resilient to drought, wildfire, and other stressors. Specific activities include reforestation, prescribed fire, pest management, fuels reduction, forest conservation easements, and biomass utilization. Urban greening and urban forestry projects achieve GHG benefits by planting trees to sequester and store carbon and shade buildings, thereby reducing building energy use.

5. Short-lived Climate Pollutants

Climate science unequivocally underscores the need to reduce SLCP emissions immediately, including black carbon (or soot), methane, and fluorinated gases (F gases, including HFCs). SLCPs are powerful climate forcers and black carbon is a harmful air pollutant. SLCPs have an outsized impact on climate change in the near term compared to longer-lived GHGs, such as carbon dioxide. SLCPs are responsible for about 40 percent of current net climate forcing, or the trapping of warming radiation in the atmosphere. Action to reduce these powerful “super pollutants” today will provide immediate benefits and complement policies to reduce longer-lived GHGs.

Nearly all California Climate Investments programs facilitate SLCP reductions. For instance, investments in the transportation or energy sectors reduce VMT, increase mode shift to public or active transportation, and/or reduce demand on the energy grid. These outcomes help reduce black carbon emissions, a form of SLCP, from gas engines, diesel engines, and other fossil fuel combustion. Certain California Climate Investments programs focused on methane are designed and implemented specifically to achieve SLCP reductions.

The Legislature directed CARB to develop a plan to reduce SLCP emissions. The Legislature also directed CARB to begin implementing the plan by January 1, 2018, and established targets for statewide SLCP emission reductions in SB 1383. California Climate Investments support the State’s SLCP Reduction Strategy and complement the suite of regulations, incentives, and other market-based activities that contribute to SLCP reductions.

29 Available at: https://www.arb.ca.gov/cc/shortlived/meetings/11282016/revisedproposedslcp.pdf
30 Senate Bill 605 (Lara, Chapter 523, Statutes of 2014)
6. Climate Adaptation and Resiliency

California is a national leader in efforts to avoid the worst effects of climate change by reducing GHG emissions. Still, the impacts of climate change are already felt in California and disproportionately affect the State’s most vulnerable populations. The accelerating rate of climate change in this century will likely exceed that experienced by California over past millennia. California Climate Investments are an important part of the State’s strategy to address current and future climate impacts.

In January 2018, the California Natural Resources Agency (CNRA) released an update to the Safeguarding California Plan: California’s Climate Adaptation Strategy (Safeguarding California). Safeguarding California included the following definitions:

- **Adaptation** – adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- **Resilience** – the capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.

From incentivizing improved weatherization of residential homes to restoring wetlands that retain meadow moisture or reduce destructive shoreline waves, California Climate Investments support measures to build both adaptation and resilience in a variety of ways to advance this priority investment area.

7. Climate and Clean Energy Research

California is committed to supporting research on climate change mitigation, adaptation, and resiliency. Research efforts to understand human and natural systems and their interactions will support additional opportunities to set targets and establish actionable policies. The State’s support of research efforts is a vital step toward minimizing the impact of GHG emissions and part of a three-pronged approach to reduce emissions, prepare for impacts, and conduct innovative research to serve as a model for action.

While the 2017 Scoping Plan identifies the path to achieve the 2030 GHG emission reduction target, the State needs additional momentum to meet the 2050 GHG emission reduction target. Measures that are not feasible today will be necessary to achieve the 2050 target. Additional research will help investigate, develop, and deploy advanced technologies while facilitating the comprehensive transition to a low-carbon economy.

31 Available at: [http://resources.ca.gov/climate/safeguarding/](http://resources.ca.gov/climate/safeguarding/)
C. Icons for Funding Priorities

The seven priorities established in AB 398 are matched with icons, which are used in Chapter V to show how the current suite of California Climate Investments is meeting these newest priorities and where additional opportunities exist.

Figure 6. California Climate Investments Funding Priorities

- Air Toxics and Criteria Pollutants
- Short-Lived Climate Pollutants
- Low-and Zero-Carbon Transportation
- Climate Adaptation and Resiliency
- Sustainable Agricultural Practices
- Climate and Clean Energy Research
- Healthy Forests and Urban Greening

V. California Climate Investments

California Climate Investments programs are achieving GHG emission reductions, investing in and benefiting priority populations, and providing other important co-benefits throughout the State. Most California Climate Investments programs fund several types of projects to support the broader program or agency purpose. To maximize administrative efficiency, the Legislature should continue existing, well-established programs, and agencies should add project types as necessary to meet the priorities of the next Administration. Agencies have already laid the groundwork to meet the requirements of the GGRF and have built partnerships with stakeholders, potential applicants, and other State agencies for effective program implementation. Agencies are accelerating implementation of projects and are aligning their programs with the priorities identified in AB 398.

California Climate Investments have evolved and matured since the last investment plan. Agencies use existing flexibility to adapt programs and add new project types to align with the Legislature and Administration’s priorities. This helps to maintain the momentum and stability of programs without creating significant new administrative burdens or changing expectations for potential funding recipients.

The following sections illustrate how the existing California Climate Investments programs align with the new funding priorities established in AB 398.
### How to Read the Tables

Each icon represents one of the new funding priorities established by the Legislature in AB 398 in 2017. Previous investment plans and the Cap-and-Trade Auction Proceeds Annual Report to the Legislature (Annual Report) describe in detail how the programs are meeting GHG emission reduction goals in the transportation, energy, and natural resource sectors, as well as targeting funds in disadvantaged communities.

The tables illustrate that, overall, the current suite of California Climate Investments programs is already accomplishing the Legislature’s new priorities set forth in AB 398.

The individual programs vary in terms of their primary focus and additional benefits. It is clear that the existing California Climate Investments programs are on the right track. Moving forward, the administering agencies are using AB 398 direction to expand their programming and identify future opportunities to address legislative priorities.

The programs are grouped by the sectors used in the Annual Report: programs with continuous appropriations, followed by programs grouped under the transportation sector, energy sector, and natural resources and waste sector. Programs with continuous appropriations receive the same set percentage of funds each year, while the Legislature decides each year whether the other programs will receive funding, and if so, how much.

Programs are listed with the appropriations received as of June 2, 2018. Funding Details over the life of the program are provided in Appendix B. Greenhouse Gas Reduction Fund Appropriations.

Detailed descriptions of each program are available at caclimateinvestments.ca.gov.
A. Continuous Appropriations

SB 862 establishes requirements for agencies receiving GGRF monies and provides continuous appropriations of 60 percent of future GGRF monies for transportation, transit, and affordable housing and sustainable communities programs. Continuous appropriations to programs provide the stability for program administrators to plan future activities. The programs in this section are those that receive continuous appropriations.

Table 2. Programs with Continuous Appropriations

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Program Priority</th>
<th>Additional Benefits</th>
<th>Total Funding ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caltrans</td>
<td>Low Carbon Transit Operations Program</td>
<td><img src="transportation.png" alt="Transportation" /></td>
<td><img src="clean-air.png" alt="Clean Air" />, <img src="adaptation.png" alt="Adaptation" /></td>
<td>$301</td>
</tr>
<tr>
<td>CHSRA</td>
<td>High-Speed Rail</td>
<td><img src="transportation.png" alt="Transportation" /></td>
<td><img src="clean-air.png" alt="Clean Air" />, <img src="adaptation.png" alt="Adaptation" />, <img src="slcps.png" alt="SLCPs" /></td>
<td>$1,638</td>
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<tr>
<td>CalSTA</td>
<td>Transit and Intercity Rail Capital Program</td>
<td><img src="transportation.png" alt="Transportation" /></td>
<td><img src="clean-air.png" alt="Clean Air" />, <img src="adaptation.png" alt="Adaptation" />, <img src="slcps.png" alt="SLCPs" /></td>
<td>$716</td>
</tr>
<tr>
<td>SGC</td>
<td>Affordable Housing and Sustainable Communities + Sustainable Agricultural Lands Program</td>
<td><img src="transportation.png" alt="Transportation" /></td>
<td><img src="clean-air.png" alt="Clean Air" />, <img src="research.png" alt="Research" />, <img src="agriculture.png" alt="Agriculture" /></td>
<td>$1,240</td>
</tr>
</tbody>
</table>

32 Senate Bill 862 Greenhouse gases: emissions reduction. (Budget and Fiscal Review Committee, Chapter 36, Statutes of 2014)
33 Estimated totals are contingent on auction proceeds in 2018 and are subject to change.
B. Annual Appropriations: Transportation and Sustainable Communities Sector

California’s transportation sector represents 37 percent of GHG emissions statewide. Investments in transportation and sustainable communities provide a variety of benefits for communities, households, and individuals statewide. Continued focused investments in this sector are a critical component of reaching California’s 2050 climate target.

Table 3. Transportation and Sustainable Communities Programs

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Program Priority</th>
<th>Additional Benefits</th>
<th>Total Funding ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARB</td>
<td>Community Air Protection Program</td>
<td>Clean Air</td>
<td>Transportation</td>
<td>$557</td>
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<tr>
<td>CARB</td>
<td>Low Carbon Transportation</td>
<td>Clean Air</td>
<td>Transportation</td>
<td>$1,732</td>
</tr>
<tr>
<td>CARB</td>
<td>Funding Agricultural Replacement Measures for Emission Reductions</td>
<td>Clean Air</td>
<td>Adaptation</td>
<td>$197</td>
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<td>Caltrans</td>
<td>Active Transportation</td>
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<td>Clean Air</td>
<td>$10</td>
</tr>
<tr>
<td>SGC</td>
<td>Transformative Climate Communities</td>
<td>Transportation</td>
<td>Clean Air</td>
<td>$190</td>
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<td>Transportation</td>
<td>Adaptation</td>
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<tr>
<td>SGC</td>
<td>Technical Assistance</td>
<td>SGC’s Technical Assistance Program supports all CCI programs and priorities.</td>
<td></td>
<td>$4</td>
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</tbody>
</table>
C. Annual Appropriations: Clean Energy and Energy Efficiency Sector

California’s energy sector—including the use of electricity and natural gas—accounts for about half of the State’s near-term GHG emissions. In 2015, the Governor signed SB 350, which requires the State to double building energy efficiency and increase renewable energy to 50 percent by 2030. California Climate Investments provide funding for energy efficiency and clean energy generation, reduced energy and water use through installation of more efficient appliances, and efficient agricultural equipment. Residential investments allow low-income homeowners in disadvantaged communities to save money and improve their homes through weatherization and solar installation projects.

Table 4. Clean Energy and Energy Efficiency Programs

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Program Priority</th>
<th>Additional Benefits</th>
<th>Total Funding ($M)</th>
</tr>
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<tbody>
<tr>
<td>CARB</td>
<td>Woodsmoke Reduction</td>
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<td>CSD</td>
<td>Low-Income Weatherization</td>
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<td>CDFA</td>
<td>State Water Efficiency and Enhancement Program</td>
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<td>CDFA</td>
<td>Alternative Renewable Fuels</td>
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<td></td>
<td></td>
<td></td>
<td>Research</td>
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<td>CEC</td>
<td>Renewable Energy in Agriculture Program</td>
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### Cap-and-Trade Auction Proceeds Draft Third Investment Plan: Fiscal Years 2019-20 through 2021-22

<table>
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<tr>
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<td>CEC</td>
<td>Transportation Technology and Fuels</td>
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<td>Research</td>
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<td>DWR</td>
<td>State Water Project: Turbines</td>
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<td>DWR</td>
<td>Water-Energy Grant</td>
<td>Energy</td>
<td>Adaptation Clean Air</td>
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</table>
D. Annual Appropriations: Natural Resources and Waste Diversion Sector

California’s natural and working lands comprise three-quarters of the land base statewide. These lands provide food, fiber, and a variety of ecosystem services including important opportunities for climate mitigation that reduce GHG emissions from wildfire and land conversion, and store carbon in biomass and soils. In addition, investments in organic waste management and waste diversion decrease GHG emissions as well as criteria and toxic air pollutants by reducing the amount of municipal solid waste that is disposed of in landfills. Investments in natural resources and waste diversion can also help protect against the impacts of future climate change.

Table 5. Natural Resources and Waste Diversion Programs

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Program Priority</th>
<th>Additional Benefits</th>
<th>Total Funding ($M)</th>
</tr>
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<tbody>
<tr>
<td>CDFW</td>
<td>Wetlands and Watershed Restoration</td>
<td>Adaptation</td>
<td>Research</td>
<td>Natural Resources</td>
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<tr>
<td>CDFA</td>
<td>Dairy Methane</td>
<td>SLCPS</td>
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<tr>
<td>CDFA</td>
<td>Healthy Soils</td>
<td>Agriculture</td>
<td>SLCPS</td>
<td>Adaptation</td>
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<tr>
<td>CALFIRE</td>
<td>Fire Prevention in the SRA</td>
<td>Natural Resources</td>
<td>Adaptation</td>
<td>Clean Air</td>
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<tr>
<td>CALFIRE</td>
<td>Prescribed Fire and Fuel Reduction</td>
<td>Adaptation</td>
<td>SLCPS</td>
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## Cap-and-Trade Auction Proceeds Draft Third Investment Plan:
**Fiscal Years 2019-20 through 2021-22**

<table>
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<th>Additional Benefits</th>
<th>Total Funding ($M)</th>
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<td>CalRECYCLE</td>
<td>Waste Diversion</td>
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<td>CNRA</td>
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<td>WCB</td>
<td>Climate Adaptation and Conservation Easements</td>
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<td>CalOES</td>
<td>Wildfire Response and Readiness</td>
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<td>San Francisco Bay Conservation and Development Commission</td>
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<td>SCC</td>
<td>Climate Ready and Coastal Resilience Planning</td>
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<tr>
<td>Agency</td>
<td>Program</td>
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<td>--------------------</td>
<td>----------------------------------------------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Conservation Corps</td>
<td>Training and Workforce Development</td>
<td>![Natural Resources]</td>
<td>![Adaptation]</td>
<td>$15</td>
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<tr>
<td>Coastal Commission</td>
<td>Coastal Management Program</td>
<td>![Adaptation]</td>
<td>![Natural Resources]</td>
<td>$3</td>
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</table>
VI. California Climate Investments Project Metrics and Outcomes

Agencies are required to report on project outcomes for California Climate Investments (AB 1532), including estimated GHG emission reductions and priority population benefits (SB 535 and AB 1550). Outcomes are estimated using guidance from CARB, which develops methods for quantifying GHG emission reductions and evaluating whether projects are benefiting priority populations. The Department of Finance publishes these and other outcomes in the Cap-and-Trade Auction Proceeds Annual Report to the Legislature.

In addition to supporting GHG and priority population objectives, California Climate Investments provide many economic, environmental, and public health benefits, or “co-benefits.” The Legislature, through the enactment of AB 1532, directed administering agencies to maximize co-benefits derived from investments. CARB focused on developing quantification methods for project-level GHG emission reductions in the initial years of California Climate Investments and more recently has developed methods for estimating many other benefits from these investments.

A. GHG Reduction Cost-Effectiveness

AB 1532 requires that funds facilitate the achievement of feasible and cost-effective GHG emission reductions, and the Legislature and the public need to know whether investments are a good value. The Annual Report includes “cost per GHG reduced ($/MTCO2e)” by program, which uses GGRF dollars and GHG emission reductions estimated using CARB’s quantification methodologies. GHG reduction cost-effectiveness is an important metric, but comparing projects based solely on cost-effectiveness per GHG emission reduction does not give a complete picture of project value. The metric may obscure important considerations and should not be used as a comparative metric across all programs to determine which programs or projects provide the best value.

Rapid and direct GHG emission reductions may be one of potentially many priorities within a program. Although implementing projects to achieve multiple priorities may increase costs—without necessarily facilitating a corresponding decrease of GHGs per dollar spent—such projects may be important to achieving other meaningful benefits, particularly those identified by the Legislature. For example, programs focused on investing in priority populations may have higher costs per GHG emission reduction due to barriers to access funding or lack of existing supporting infrastructure. In addition, while highly leveraged programs may have a lower cost per GHG emission reduction, certain programs fund pilot or demonstration projects, which may have no leveraged funds and therefore have a higher “cost per GHG reduction.” Investing in precommercial or early commercial transformative technologies is inherently less cost-effective in the near term than investing in fully commercialized technologies. Such projects may not otherwise be implemented but nonetheless are critical to pilot new technologies, demonstrate proof-of-concept, or catalyze market transformations that can lead to widespread adoption in the future.
Additionally, some project types have GHG emission reductions that are more challenging to quantify. CARB’s quantification methodologies use the best available science, but many sectors, such as natural and working lands, may use conservative estimates because sequestration and emission estimates vary widely across different research studies.

Other cost-effectiveness metrics are available, such as the avoided cost of emissions and energy-efficiency. All cost-effectiveness metrics include a series of assumptions and do not reflect a comprehensive assessment of value; therefore, while useful, they should be used as one of many important funding considerations.

B. Co-Benefit Metrics

SB 1464, enacted in 2016, requires the Investment Plan to recommend metrics that would measure progress and benefits from investments. CARB is required to develop quantification methodologies for these investments, including the estimation of GHG emission reductions and co-benefits. To develop standardized approaches to evaluating and reporting on co-benefits, CARB contracted with UC Berkeley in 2016 to research potential quantification methods for several public health, economic, and environmental co-benefits. Administering agencies and CARB prioritized several co-benefits for initial evaluation based on applicability across California Climate Investments programs and interest from the Legislature and stakeholders. CARB and UC Berkeley collaborated on developing quantification methodologies to quantify co-benefits. These metrics allow administering agencies to objectively compare projects during the selection process and give administering agencies a way to report expected project benefits to the Legislature. Co-benefits quantification methodologies currently available include:

- Air Pollutant Emissions,
- Travel Cost Savings,
- Vehicle Miles Traveled,
- Energy and Fuel Cost Savings,
- Water Savings,
- Soil Health and Conservation,
- Climate Adaptation,
- Community Engagement, and
- Asthma/Respiratory Disease Incidence.

A methodology for Jobs is under development and will soon be available. CARB and UC Berkeley also evaluated two additional co-benefits: Anti-displacement and Accelerated Implementation of Technology. CARB and UC Berkeley considered developing methodologies for these co-benefits but determined that available research was not sufficient to support rigorous project-level methodologies. For more information, please see the UC Berkeley literature reviews on Accelerated
Implementation of Technology\textsuperscript{34} and Anti-displacement\textsuperscript{35} CARB will continue to develop assessment methodologies to measure additional co-benefits.

This Investment Plan recommends use of these methods as applicable to future investments. As agencies apply the methodologies and report on the results, the Legislature will have a more accurate way to compare the scope of benefits among programs, and CARB will have more data to support further improvements to existing assessment methodologies.

\textbf{C. Assessing Progress}

Currently, California Climate Investments programs report semi-annually on the estimated GHG project benefits, including benefits to disadvantaged communities. CARB has developed over one hundred GHG methods that allow agencies to quantify the GHG benefits they expect from each funded project. These are included each year in the Annual Report released by the Department of Finance. CARB also developed tools and procedures to assess benefits to disadvantaged communities. In addition, the California Climate Investments Project Map\textsuperscript{36}, which is updated every six months, displays cumulative GHG and disadvantaged community project benefits. Providing information on project outcomes in multiple formats provides accountability, allowing the Legislature, the public, and any interested stakeholder groups to see how and where California Climate Investments monies are spent.

In addition, agencies must report on outcomes after full project implementation for a subset of projects. California Climate Investments projects range in scale from providing a voucher for the purchase of one electric vehicle to modifying an ecosystem or supporting large-scale infrastructure such as a high-speed rail system. It would be impractical and very costly to apply monitoring requirements uniformly. Implementing a voucher has immediate results, and GHG emission reductions and other co-benefits can be estimated and presented in the Annual Report. Projects that involve altering ecosystems, building infrastructure, or implementing complicated projects with many phases are more difficult to evaluate. Completing the project may take years, and it may take several years beyond project completion before impacts can be fully assessed. Ideally, agencies should be prepared to demonstrate effective project implementation with enduring benefits. Although outcome reporting at specific intervals is not required for all projects, several programs have already incorporated monitoring requirements.

The Community Air Protection Program, for example, includes a mechanism to ensure that projects yield concrete benefits over the life of the program. Implementing

\textsuperscript{34}Available at: https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ucb_lit_rev_on_accelerated_implementation_technology.pdf

\textsuperscript{35}Available at: https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ucb_lit_review_anti_displacement.pdf

\textsuperscript{36} Available at: https://webmaps.arb.ca.gov/cci/map/
legislation for the Community Air Protection Program requires air districts that encompass a community selected for a local air quality program pursuant to AB 617 prepare an annual report on program progress. The annual report must describe actions taken to further reduce emissions pursuant to the Community Emissions Reduction Program, and summarize the results. This model of reporting annually after project implementation will produce valuable data to help refine the program and show which measures were effective. Healthy Soils demonstration projects are also required to monitor GHG emissions for three years, report results to CDFA, and host a field day once a year to educate farmers. Wetland projects are likewise required to monitor GHG emissions for three years and report to the Department of Fish and Wildlife (DFW).

VII. Priority Population Investments

In addition to ensuring all GGRF derived investments facilitate GHG reductions, SB 535 and AB 1550 require the Investment Plan to allocate minimum investments for priority populations.

SB 535 specifically directs the Secretary for Environmental Protection at the California Environmental Protection Agency (CalEPA) to identify “disadvantaged communities” for California Climate Investment prioritization. The identification of these communities must be based on geographic, socioeconomic, public health, and environmental hazard criteria. The criteria may include, but are not limited to, the following:

- Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation.

- Areas with concentrations of people that are of low-income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment.

To meet the statutory mandate, CalEPA uses a tool called CalEnviroScreen to help identify disadvantaged communities. The Office of Environmental Health Hazard Assessment developed this screening tool under CalEPA’s guidance to assess areas that are disproportionately affected by multiple types of pollution and areas with vulnerable populations.

AB 1550, enacted in 2016, modifies the SB 535 disadvantaged community investment minimums. AB 1550 requires that a minimum of 35 percent of California Climate Investments be invested in three categories of priority populations, as shown in Figure 7.

37 Assembly Bill 617 (C. Garcia, Chapter 136, Statutes of 2017)
38 Senate Bill 535 (De León, Chapter 830, Statutes of 2012)
Investment minimums apply to the overall appropriations from the GGRF, rather than to each agency appropriation. To help ensure statutory requirements are met, the Administration considers investment targets for each program (program targets) and sets percentages of funding that should be spent on priority population projects for programs that are most able to deliver benefits to priority populations. For example, a housing program could more easily be designed to benefit certain populations than a program focused on forestry. The program targets help guide programs towards investments that achieve direct, meaningful, and assured benefits to priority populations. CARB posts program targets as needed for each fiscal year.39

Interactive maps are available as resources to aid in determining geographic eligibility for disadvantaged and low-income communities. The interactive maps show the disadvantaged community census tracts, low-income community census tracts located anywhere in the State, and portions of low-income census tracts within a half mile around a disadvantaged community tract boundary.40

All California Climate Investments programs may fund projects that provide benefits to priority populations. As administering agencies fund projects that benefit priority populations, those projects will be evaluated and benefits will be documented through the reporting process.

In addition to program targets set by the Administration to meet AB 1550 program-wide priority population goals, some individual programs have specific statutory requirements for investing in projects that benefit, but are not necessarily within, disadvantaged communities. These requirements were established in SB 862 and SB 859.41

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39 Program targets are available at: [http://www.arb.ca.gov/cci-fundingguidelines](http://www.arb.ca.gov/cci-fundingguidelines).
40 These maps are available at: [www.calepa.ca.gov/EnvJustice/GHGInvest](http://www.calepa.ca.gov/EnvJustice/GHGInvest) and [http://www.arb.ca.gov/cci-communityinvestments](http://www.arb.ca.gov/cci-communityinvestments).
41 Senate Bill 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016)
Administering agencies are responsible for determining compliance with any program specific investment requirements. Investments that are eligible to be counted toward AB 1550 investment minimums for being within and benefiting disadvantaged communities would also count toward meeting the SB 862 and SB 859 program-specific investment requirements outlined below. Programs with statutory minimum percentage allocations benefiting disadvantaged communities include the following:

- **Affordable Housing and Sustainable Communities Program.** Must allocate at least 50 percent of program expenditures to benefit disadvantaged communities.

- **Low Carbon Transit Operations Program.** This program uses an established formula for distribution of funds to transit operators and regional entities. For those operators with disadvantaged communities in their service areas, the operators must direct at least 50 percent of funding to benefit disadvantaged communities. The requirement does not apply to transit operators that do not have disadvantaged communities in their service areas.

- **Transformative Climate Communities.** Supports coordinated project investment in disadvantaged communities. Current investments focus on the top 5 percent of most disadvantaged communities.

- **Transit and Intercity Rail Capital Program.** Must allocate at least 25 percent of available funding to benefit disadvantaged communities.

- **Urban Greening Grant Program.** Must allocate at least 75 percent of the monies available to projects that are located in, and provide benefits to, disadvantaged communities.\(^{42}\)

Agencies demonstrate intent to comply with AB 1550 priority population targets by completing a document called an expenditure record prior to awarding funds, which is posted online. The expenditure record documents: the percentage of total funding that will be expended for projects that are located in disadvantaged or low-income communities and/or benefit low-income households per CARB guidance, specific benefits to disadvantaged or low-income communities and low-income households per CARB guidance, and strategies the administering agency will use to maximize benefits to disadvantaged communities. Metrics describing benefits to priority populations are also included in the public Annual Report to the Legislature on Cap-and-Trade Auction Proceeds. CARB’s online California Climate Investments Project Map, updated every six months, indicates whether a project is implemented in a low-income or disadvantaged community.

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\(^{42}\) SB 859 provides two definitions of disadvantaged communities for this program, one of which is **communities identified pursuant to Health and Safety Code Section 39711**. Only projects that meet the criteria and provide benefits to disadvantaged communities as identified by Health and Safety Code Section 39711 will count toward the AB 1550 investment minimums.
Appendix A. Auction Proceeds Allocated to Utilities

1. Electrical and Natural Gas Utility Allowance Allocations

The Cap-and-Trade Regulation (Regulation) applies to major emitters of greenhouse gases, including large industrial facilities, in-State electricity generators, importers of electricity, and suppliers of natural gas and transportation fuels. Allowances are freely allocated to both electrical distribution utilities (investor-owned utilities, publicly owned utilities, and cooperatives) and natural gas suppliers (investor-owned utilities and publicly owned utilities) to ensure ratepayers do not experience sudden increases in their electricity and natural gas bills associated with the Regulation. Utilities receiving these free allowances must use them for ratepayer benefit consistent with the goals of AB 32 and must report annually to CARB on how they used these allowances.

The reporting requirements for these utilities are separate and distinct from the reporting requirements for California Climate Investments. CARB periodically posts reports summarizing the use of allocated allowance value for all reporting utilities.43

2. Investor-Owned Electric Utilities

The investor-owned electric utilities (IOUs) in California are Pacific Gas and Electric, Southern California Edison, San Diego Gas & Electric, Liberty Utilities (CalPeco Electric) LLC, and PacifiCorp. Under the Regulation, these utilities must offer all of their freely allocated allowances for sale at CARB’s Cap-and-Trade Program allowance auctions. (This requirement does not apply to publicly-owned electric utilities and electric cooperatives, which are not discussed further in this document.) SB 101844 and the California Public Utilities Commission (CPUC) require investor-owned electric utilities to return nearly all the proceeds from the sale of allocated allowances to their industrial, small business, and residential customers. A portion of proceeds may be set aside for renewable energy and energy efficiency projects, and a small fraction of proceeds may be used for limited administrative and outreach costs needed to return the proceeds to these customers.

This section summarizes how the IOUs used the dollar value of the allocated allowances from 2013 to 2016.45 Utilities have submitted to CARB initial information on their use of 2017 allocated allowance value, and CARB is in the process of reviewing and compiling this information.46

43 Use of allocated allowance value summary reports are available at: https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/edu-ng-allowance-value.htm.
44 Senate Bill 1018 (Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012)
45 Fifty percent of the allowance value from 2013 allocations was distributed in 2014 and 50 percent was distributed in 2015, along with the 2014 and 2015 allowance values, respectively.
46 When final, CARB will post updated summary information at: https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/edu-ng-allowance-value.htm.
From 2013 through 2016, the value of allowances allocated to electricity distribution IOUs totaled over $3 billion (Figure A-1).

**Figure A-1. Investor-Owned Electric Utilities Allocated Allowance Proceeds**

All of the value, except for less than 0.5 percent of the funds used for outreach and administrative costs, was distributed to ratepayers. The utilities distributed these funds back to customers through four mechanisms:

- **Residential Climate Credit.** Twice-annual on-bill credit given to all residential customers.
- **Residential Rate Reduction.** Volumetric reduction of residential electricity rates (the IOUs began phasing out volumetric rate reduction in 2016).
- **Small Business Climate Credit.** On-bill credit, which declines over time, to each nonresidential business with typical energy demand of less than 20 kilowatts per month.
- **Industry Credit.** Annual bill credit to industrial customers deemed emissions-intensive and trade-exposed under the Regulation.

Figure A-2 shows how total 2013-2016 investor-owned electric utility proceeds were spent.
In addition to directing the return of allocated allowance proceeds to residential, small business, and industrial electricity ratepayers, SB 1018 allows the CPUC to direct each investor-owned electric utility to allocate up to 15 percent of its annual auction proceeds for clean energy or energy efficiency projects. CPUC Decision 14-10033 developed the process by which these utilities may seek approval to use auction proceeds for clean energy or energy efficiency projects that are not otherwise funded. In 2017, per the requirements of AB 693, the utilities began to set aside auction proceeds for the Solar on Multifamily Affordable Housing Program.

3. Investor-Owned Natural Gas Suppliers

Natural gas suppliers have been subject to the Cap-and-Trade Regulation since 2015. Like electric utilities, they receive free allowance allocations from CARB pursuant to provisions of the Regulation.

Of the natural gas suppliers in California, investor-owned utilities account for almost all retail natural gas sales in California and receive 98 percent of allowances allocated to natural gas suppliers. The investor-owned natural gas suppliers in California are the Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Gas Company, and Southwest Gas Corporation. California also has three cities—Long Beach, Palo Alto, and Vernon—that have municipally owned natural gas suppliers that receive the remaining 2 percent of allowances allocated to natural gas suppliers. These municipal suppliers are not discussed further here.

Since 2015, allowances allocated to investor-owned natural gas utilities have represented approximately 11 percent of the Cap-and-Trade Program’s annual

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47 This Figure does not reflect administrative costs.
48 Assembly Bill 693 (Eggman, Chapter 582, Statutes of 2015)
allowance budget. For 2015 and 2016, the value of allowances allocated to investor-owned natural gas utilities totaled over $1.1 billion (Figure A-3).

**Figure A-3. Investor-Owned Natural Gas Utilities Allocated Allowance Proceeds**

Investor-owned natural gas suppliers’ allocated allowances are subject to requirements defined by the Cap-and-Trade Regulation and CPUC proceedings. The Cap-and-Trade Regulation allows all natural gas suppliers to use a percentage of their allocated allowances directly for compliance, reducing the suppliers’ cost of Cap-and-Trade Program compliance. The remaining percentage of allocated allowances must be sold at auction, and the auction proceeds must be used to benefit ratepayers, consistent with the goals of AB 32 (section 95893 of the Regulation). To date, all investor-owned natural gas suppliers have auctioned the minimum percentage required each year. The minimum percentage of allocated allowances that must be auctioned began at 25 percent in 2015 and increases by 5 percent each year.

In March 2018, CPUC Decision 18-03-017 directed investor-owned natural gas suppliers to net all proceeds from auctioning vintage 2015-2017 allowances against 2015-2017 Cap-and-Trade Program GHG compliance costs. Starting July 2018, this Decision directs investor-owned natural gas suppliers to begin including GHG compliance costs in customer rates and requires the investor-owned natural gas suppliers to return all of their auction proceeds to residential ratepayers, less a small amount for necessary administrative and outreach costs. Each residential ratepayer served by a given utility will receive an equal dollar amount, termed the natural gas “Climate Credit.” The first annual natural gas supplier Climate Credits are scheduled to be distributed to residential ratepayers in October 2018, with later credits distributed annually in April.
## Appendix B. Greenhouse Gas Reduction Fund Appropriations

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Cumulative Appropriations, Prior to FY 2018-19 ($M)</th>
<th>FY 2018-19 Appropriations ($M)</th>
<th>Cumulative Total ($M)</th>
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<td>California Air Resources Board</td>
<td>Community Air Protection$^{52}$</td>
<td>267</td>
<td>290</td>
<td>557</td>
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<tr>
<td></td>
<td>Funding Agricultural Replacement Measures for Emissions Reductions Program$^{53}$</td>
<td>85</td>
<td>112</td>
<td>197</td>
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<tr>
<td></td>
<td>Low Carbon Transportation Program$^{54}$</td>
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<tr>
<td></td>
<td>Low Carbon Transit Operations Program*</td>
<td>301</td>
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<td>High-Speed Rail Authority</td>
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<td>Transit and Intercity Rail Capital Program*</td>
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<td>Strategic Growth Council</td>
<td>Affordable Housing and Sustainable Communities Program; Sustainable Agricultural Lands Conservation Program*</td>
<td>1,240</td>
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<tr>
<td></td>
<td>California Climate Investments Technical Assistance Program</td>
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<td>Climate Change Research Program</td>
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<td>Transformative Climate Communities Program</td>
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<td>190</td>
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</table>

49 Prior year appropriations do not include prior year reversions to date.
50 Appropriations listed are estimates based on published budgets, legislation, and quarterly Cap-and-Trade auction results.
51 Totals may not sum due to rounding.
52 FY 2018-19 Appropriations include $15M for program administration.
53 FY 2018-19 Appropriations include approximately $1M for program administration.
54 FY 2018-19 Appropriations include $11M for program administration.
* Programs denoted with an asterisk receive continuously appropriated funds. FY 2018-19 auctions have not occurred and therefore appropriations are unknown at this time.
### Cap-and-Trade Auction Proceeds Draft Third Investment Plan:
Fiscal Years 2019-20 through 2021-22

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Cumulative Appropriations, Prior to FY 2018-19(^{50}) ($M)</th>
<th>FY 2018-19 Appropriations(^{50}) ($M)</th>
<th>Cumulative Total(^{51}) ($M)</th>
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</thead>
<tbody>
<tr>
<td>California Air Resources Board</td>
<td>Woodsmoke Reduction Program</td>
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<tr>
<td>Department of Community Services and Development</td>
<td>Low-Income Weatherization Program</td>
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<td>Department of Food and Agriculture</td>
<td>Alternative Renewable Fuels Program</td>
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<td>Department of Food and Agriculture</td>
<td>State Water Efficiency and Enhancement Program</td>
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<td>Department of Water Resources</td>
<td>State Water Project Turbines</td>
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<td>-</td>
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<td>Department of Water Resources</td>
<td>Water-Energy Grant Program</td>
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<td>Energy Commission</td>
<td>Food Production Investment Program</td>
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<td>Energy Commission</td>
<td>Transportation Technology and Fuels</td>
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<td>Renewable Energy for Agriculture Program</td>
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<td>Conservation Corps</td>
<td>Training and Workforce Development Program</td>
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<td>6</td>
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<td>Department of Fish and Wildlife</td>
<td>Wetlands and Watershed Restoration Program</td>
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<tr>
<td>Department of Food and Agriculture</td>
<td>Alternative Manure Management Program; Dairy Digester Research and Development Program</td>
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<td>Healthy Soils Program</td>
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<tr>
<td>Department of Forestry and Fire Protection</td>
<td>Forest Health Program, Fire Prevention Program, Urban and Community and Forestry Program</td>
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<td>469</td>
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<td>Department of Forestry and Fire Protection</td>
<td>Prescribed Fire and Fuel Reduction</td>
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</tbody>
</table>
### Cap-and-Trade Auction Proceeds Draft Third Investment Plan:
Fiscal Years 2019-20 through 2021-22

<table>
<thead>
<tr>
<th>Agency</th>
<th>Program</th>
<th>Cumulative Appropriations, Prior to FY 2018-19&lt;sup&gt;55&lt;/sup&gt; ($M)</th>
<th>FY 2018-19 Appropriations&lt;sup&gt;50&lt;/sup&gt; ($M)</th>
<th>Cumulative Total&lt;sup&gt;51&lt;/sup&gt; ($M)</th>
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</thead>
<tbody>
<tr>
<td>Department of Forestry and Fire Protection</td>
<td>Fire Prevention in the State Responsibility Area (SRA)&lt;sup&gt;55&lt;/sup&gt;</td>
<td>75</td>
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<td>Department of Resources Recycling and Recovery</td>
<td>Waste Diversion Program</td>
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<td>Regional Forest Health Projects</td>
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<td>Urban Greening Program</td>
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<tr>
<td>San Francisco Bay Conservation and Development Commission</td>
<td>Bay Conservation and Development</td>
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<tr>
<td>California Coastal Commission</td>
<td>Coastal Management Program</td>
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<td>State Coastal Conservancy</td>
<td>Climate Ready and Coastal Resilience Planning</td>
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<td>Wildlife Conservation Board</td>
<td>Climate Adaptation and Conservation Easements</td>
<td>20</td>
<td>-</td>
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<td>California Governor's Office of Emergency Services</td>
<td>Wildfire Response and Readiness</td>
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<td>25</td>
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<tr>
<td><strong>Total&lt;sup&gt;51&lt;/sup&gt;</strong></td>
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<td><strong>6,951</strong></td>
<td><strong>1,459</strong></td>
<td><strong>8,414</strong></td>
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<sup>55</sup> FY 2018-19 Appropriations include $2.5M from California Conservation Corps line items. Also includes $5M for California Conservation Corps fire prevention in/near SRAs.