



# Major Accomplishments

*2011 – 2018*







**CalEPA**  
California Environmental  
Protection Agency

## **Major Accomplishments 2011-2018**

*California Environmental Protection Agency, Office of the Secretary*  
*California Air Resources Board*  
*California Department of Pesticide Regulation*  
*California Department of Resources Recycling and Recovery*  
*California Department of Toxic Substances Control*  
*California Office of Environmental Health Hazard Assessment*  
*California State Water Resources Control Board*

**Edmund G. Brown Jr.**  
*Governor*

**Matthew Rodriguez**  
*Secretary for Environmental Protection*

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# Message from the Secretary

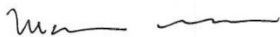
It is often the case that we are so focused on what needs to be done that we don't have time to reflect on what has been done. This is especially true when we are confronted by serious challenges, as we have been over the last eight years. There is little opportunity to consider our past achievements when we are confronted with catastrophic fires, devastating droughts, industrial incidents and the latest bouts of lunacy by the current federal government.

As we prepare the way for the change in administration in California, however, we have had the occasion to think about all that has occurred since 2011. It is a staggering list. While the economy has grown to be the fifth largest in the world, California has become an international leader in the fight against climate change. By promoting renewable energy, energy efficiency and programs combining regulatory targets, financial incentives and market-based approaches, we have already met our greenhouse gas emissions targets for 2020 and set even more ambitious goals for 2030 and 2045. While at the national level questions of science and health have become entangled in political posturing and programs intended to protect the public have been deprived of funding and focus, California has encouraged research and innovation while continuing to strengthen its commitment to environmental protection. The state has stepped in to fill the void by promoting consumer product safety, improving its pesticide regulations, and ensuring water quality, resilience and reliability.

Admittedly, much still needs to be done. Many communities remain overburdened by pollution and residual contamination, especially communities of color, and we have yet to realize the objective of fulfilling the Human Right to Water. But even here there have been advances. We have developed statewide programs for identifying those neighborhoods most in need of assistance and then directing investments in time and funds to these areas. We have worked to restructure our decision-making processes to be more inclusive and accessible to all communities, while also making them more open and transparent.

This report chronicles the many accomplishments of CalEPA, its boards, departments and offices over the last eight years. The work has not been easy, has not been perfect and has not been finished, but it demonstrates our enduring commitment to improving the lives of all Californians even in the face of these uncertain political times for environmental policy at the national level. And as we move into a new administration, I am confident that California will continue to improve and expand on these policies by using quality, science-based judgments and making equitable, balanced decisions.

Sincerely,



Matthew Rodriguez





# About CalEPA

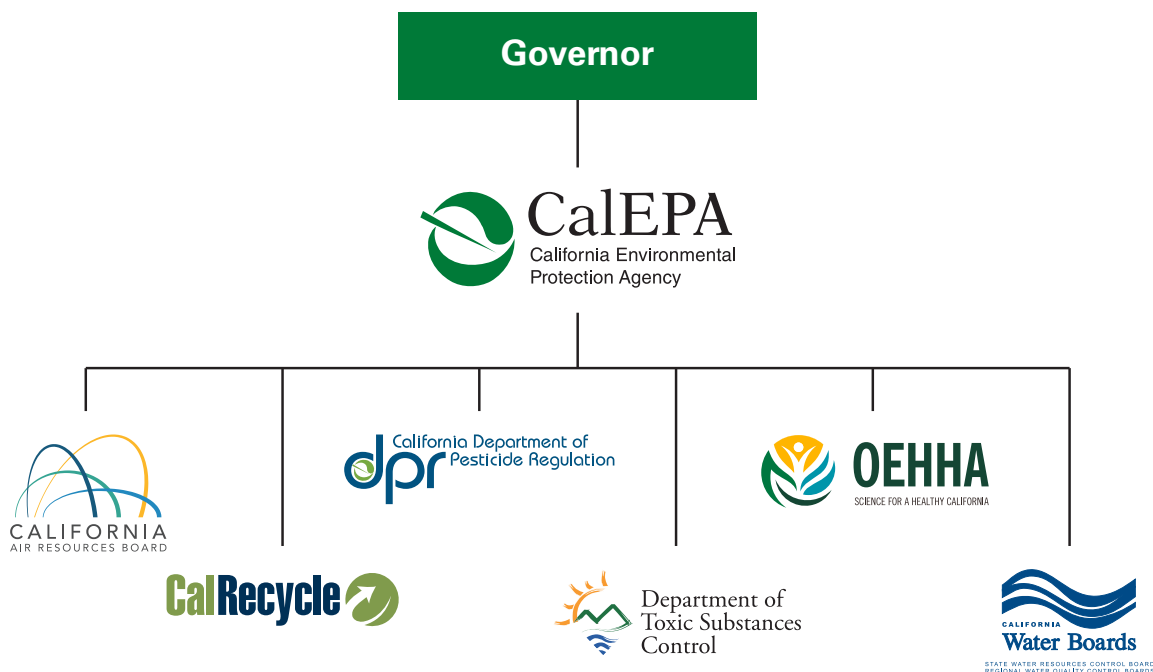
The California Environmental Protection Agency's (CalEPA) mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality. CalEPA fulfills its mission by developing, implementing and enforcing environmental laws that regulate air, water and soil quality, pesticide use and waste recycling and reduction.

CalEPA was formally established on July 17, 1991, although its foundation was laid decades earlier through the hard work of multiple administrations.

In 1961, Governor Edmund G. "Pat" Brown oversaw a comprehensive reorganization of the Executive Branch, which established state agencies and placed most of the state's environmental quality programs within the California Natural Resources Agency.

When Governor Edmund G. "Jerry" Brown Jr. took office in 1975, one of his first actions was to propose establishing a separate agency dedicated to the environment. While the plan was not adopted by the Legislature, Governor Brown was able to successfully establish a new Cabinet-level position – Secretary of Environmental Affairs – tasked with advising the Governor and broadening environmental protections. While this Cabinet-level role continued under Governor George Deukmejian, it was not until 1991, when Governor Pete Wilson took office, that CalEPA as we now know it was established.

Today's CalEPA consists of the California Air Resources Board (CARB), the Department of Pesticide Regulation (DPR), the Department of Resources Recycling and Recovery (CalRecycle), the Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA), and the State Water Resources Control Board (State Water Board).



# Office of the Secretary

The CalEPA Office of the Secretary oversees and coordinates the activities of its boards, departments and office, in close collaboration with the Governor's Office. The Office of the Secretary has been involved in the creation and implementation of some of the most progressive environmental policies in the nation, from a multi-pronged approach to achieving California's climate goals to enhanced community engagement measures. The office's commitment to advance the environment and economy has made transformational change across the state and is recognized at the national and international levels.

## **Addressing Climate Change through Interagency Coordination**

The Office of the Secretary works across state agencies and departments to accomplish the state's considerable and ambitious climate goals, with an emphasis on climate change mitigation outcomes. The office convenes the Climate Action Team (CAT), an interagency team created and codified in climate legislation, and sub-teams that focus on intergovernmental work, research, forests, biodiversity, water-energy, government operations, and public health.

The Office of the Secretary also works collaboratively with a number of other departments and agencies throughout the executive branch and at the local and regional levels, including:

- The California Department of Food and Agriculture: CalEPA contributed to the development and implementation of the Climate Smart Agriculture Program and expenditure of the Greenhouse Gas Reduction Fund (GGRF) monies for the Healthy Soils, Dairy Digesters and Alternative Manure Management programs.
- The Strategic Growth Council: CalEPA provided key staff to the council, supporting the CalEPA Secretary's role as a member of the council. Key staff provided assistance in the development and implementation of the Affordable Housing and Sustainable Communities Program, Sustainable Agricultural Lands Conservation Program, Climate Change Research Program, Transformative Climate Communities Program, and Technical Assistance and Outreach programs.
- The California Natural Resources Agency: CalEPA worked with the agency's departments on the development of the Forest Carbon Plan and the implementation of an emergency proclamation and executive order on forest health. Work also included the development and implementation of multiple programs funded by cap-and-trade proceeds, such as Urban Greening, Urban Forestry, Forest Health, and Wetlands and Mountain Meadows Conservation.
- CalEPA worked with the California Energy Commission (CEC), California Governor's Office of Business and Economic Development, California State Transportation Agency and California Department of Transportation on zero-emission vehicles, freight, and active transit programs and strategies.
- CalEPA also worked with the CEC and California Public Utilities Commission on bioenergy, zero emissions vehicle infrastructure, freight strategies, research and the water-energy nexus.
- CalEPA established the Independent Emissions Market Advisory Committee, which was created through the passage of Assembly Bill 398 in 2017. The committee issues annual reports to

CARB and the Joint Legislative Committee on Climate Change, providing its assessment of environmental and economic performance of the cap-and-trade program and other climate policies.

## **Intergovernmental Coordination**

California is committed to sharing its policy experience and expertise with interested national and international governments. To facilitate this work, California has a number of multilateral and bilateral international agreements with national and subnational actors, and engages directly with representatives from other countries to exchange ideas, information, and best practices that can also be used to improve the state's own policy-making and implementation. The Office of the Secretary also contributes to the state's international relations through the management of the International Climate Action Team, which is the primary interagency coordinating body for California's international climate cooperation.

## **International Memoranda of Understanding (MOUs)**

### **China**

CalEPA and CARB have worked extensively with China on air pollution, climate change and low carbon development. The relationship was formalized with the MOU signed in September 2013 between the state of California and the National Development and Reform Commission (NDRC) and was renewed in September 2015. Cooperation under this MOU included activities to facilitate implementing carbon emissions trading systems and other market-based instruments in China. California also cooperated on the development of the cap-and-trade programs at the subnational level through MOUs with Beijing, Guangdong and Shenzhen. In 2017, emphasis shifted from China's seven regional pilot programs to the development of a national emissions trading systems. CARB is working to incorporate reliable reporting and verification protocols into China's emissions trading systems.

During the 2018 Global Climate Action Summit, California signed an MOU with the Chinese Ministry of Ecology and Environment (MEE), formerly the Ministry of Environmental Protection (MEP), to continue its cooperation on climate and environment. In order to explore specifically how to collaborate through the framework of the MOU, officials from the Department of International Cooperation of the MEE, the CalEPA Office of the Secretary, CARB's Chair, and the Chair of the CEC, will co-chair an MOU working group.

### **Other notable MOUs with Chinese governments included:**

#### **Beijing Environmental Protection Bureau (EPB)**

Signed in April 2013 and renewed in June 2016, CalEPA's MOU with the Beijing EPB has led to fruitful exchanges on air quality monitoring and vehicle emissions standards. The MOU facilitated two three-month staff visits from Beijing EPB. During the first visit, Beijing EPB staff focused on vehicle emissions. During the second visit, staff focused on regional air quality control. Both the visits helped translate California policies into China's air pollution control practice. In 2018, two staff from Beijing EPB visited California to participate in a four-week exchange on volatile organic compounds with staff from CARB and local air districts.

#### **Guangdong Province**

In August 2015, the CEC and CalEPA signed an MOU with the Government of Guangdong Province to support the achievement of low-carbon development goals in both regions. Areas of cooperation include increasing energy conservation and energy efficiency of traditional industrial sectors, the expansion of clean energy, and the support of low-carbon technology research, development, and transfer.

## City of Shenzhen

CARB signed an agreement with the city of Shenzhen in 2013: Memorandum of Understanding to Enhance Cooperation on Low Carbon Development. Through the MOU, Shenzhen supported the Under2 Coalition. Under the agreement, California and Shenzhen have agreed to work together to share policy design and early experiences from their climate trading programs, in order to build strong, stable and growing markets for clean energy technology and greenhouse gas emission reductions. The MOU was renewed in 2015.



CalEPA Secretary Matthew Rodriguez, Aimee Barnes and Edie Chang during a bilateral meeting with China (COP 20 Lima - December 2014)

## Mexico

### ***Ministry of Environment and Natural Resources (SEMARNAT) and the National Forestry Commission (CONAFOR)***

CalEPA implements the California-Mexico MOU on climate change and environment signed by Governor Brown for the state of California with the Ministry of Environment and Natural Resources and the National Forestry Commission (SEMARNAT) in 2014 (See page 12 for more information on this MOU).

## Canada

### ***Minister of Sustainable Development, Environment and the Fight against Climate Change of the Government of Quebec***

In December 2014, CalEPA signed a Letter of Intent with the Minister of Sustainable Development, Environment and the Fight against Climate Change of Quebec agreeing to accelerate the deployment of electric drive vehicles. The letter also established a working group of staff members to exchange information and consult on best practices.

## The Netherlands

### ***Ministry of Infrastructure and the Environment***

CalEPA has had a strong collaborative relationship with The Netherlands since the 2013 signature of its first Letter of Intent on Environmental Cooperation with the Ministry of Infrastructure and the Environment. The Letter of Intent was subsequently renewed in both 2015 and 2017. Exchanges have focused on sustainable mobility, including zero emission vehicles and reduction of emissions at ports. This partnership led to the establishment of the Coast to Coast Sustainable Investment Finance Program on Smart and E-Mobility, a trans-Atlantic investment fund focused on promising Smart E-Mobility solutions in both the Netherlands and California. It also helped lead to a commitment by the port authorities of Los Angeles, Long Beach, Rotterdam, and four others on the World Ports Climate Action Program to collaborate in refining and developing tools to facilitate reduction of CO2 emissions from maritime transport. CalEPA also works closely with the Netherlands through the international ZEV Alliance and the Under2 Coalition.

## Norway

### ***Ministry of Climate and Environment***

CalEPA signed a Declaration of Intent with the Norwegian Ministry of Climate and Environment in August 2017, focusing on climate policy, reducing deforestation, zero emission transportation, and a climate friendly energy system. In 2018, CalEPA worked with Norway to finalize a work plan for cooperation and begin its implementation.

## Japan

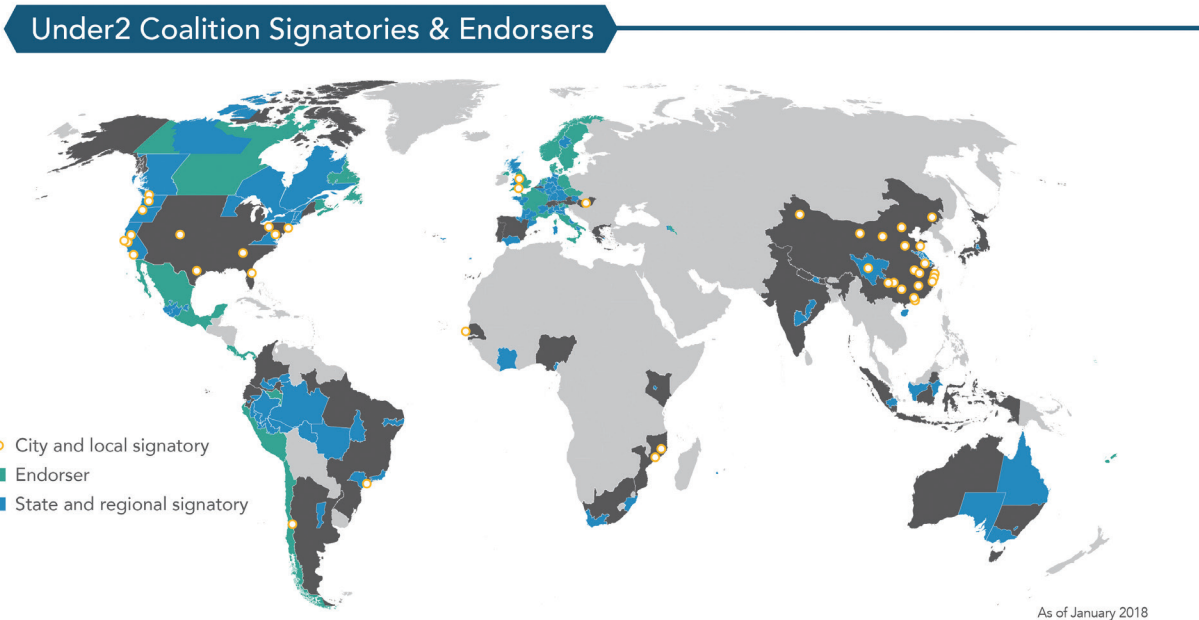
### **Government of Japan**

CalEPA, the Governor’s Office of Business and Economic Development and the California State Transportation Agency were designated as California’s implementing agencies for the “Memorandum of Cooperation on Climate Change, Renewable Energy, Trade and Investment, Vehicles, High-Speed Rail, and Water” signed with the Government of Japan in September 2016. Areas of cooperation include: promoting dialogue and joint projects on climate change mitigation and adaptation, short-lived climate pollutants, and cleaner freight transport; clean energy technology trade and deployment, with particular focus on energy efficiency and renewable energy development; cooperative support for and expansion of the use of energy storage technologies; encouraging economic and business development related to the clean technology sector; ZEV best practices, regulatory requirements, research, incentives, and other measures to accelerate the ongoing rollout of ZEVs, including cooperation on demonstration projects; and water conservation and management.

### **Under2 Coalition**

Founded by Governor Brown and the Minister-President of Baden-Wurttemberg, Germany in 2015, the Under2 Coalition is a group of ambitious state and regional governments committed to keeping global temperature rise to well below 2°C. The Coalition is made up of more than 220 governments who represent over 1.3 billion people and 43 percent of the global economy. *The Climate Group* currently serves as the Secretariat to the Under2 Coalition and works with governments to accelerate climate action through three work streams: 2050 Pathways, Policy, and Transparency.

Since its inception, the Governor’s Office of Planning and Research has led California’s participation in the Under2 Coalition, supported by CalEPA. California is a permanent member of the Steering Committee and has supported recruitments efforts for the Under2 Coalition, adding over 200 signatories in the three years since its founding.



The Under2 Coalition around the world.



## **U.S. Climate Alliance**

The United States Climate Alliance (Alliance) is a bipartisan coalition of 17 governors committed to reducing greenhouse gas emissions (GHGs) consistent with the goals of the Paris Agreement. The Alliance represents 40 percent of the U.S. population and a combined \$9 trillion economy. The Alliance is the first effort to coordinate state actions that is entirely led and implemented by the states themselves, with a small secretariat for support. CalEPA participates in discussions with the other Co-Chairs and secretariat of the Alliance to help define the strategy and priorities of the group. CalEPA and other state agency staff also participate in working groups including those focused on super pollutants, natural and working lands, transportation, and greenhouse gas inventories.

## **WCI, Inc.**

California co-founded WCI, Inc. with the Canadian provinces of British Columbia, Québec, and Ontario in 2011. WCI, Inc. currently provides cap-and-trade administrative support to three “partner jurisdictions”, California, Québec, and Nova Scotia. This essential support includes the system that tracks allowance and offset ownership and trades, and auction services. WCI, Inc. has a staff of six and an annual budget of about \$4 million. Each partner jurisdiction names two directors to its board; by statute, California names the Secretary for Environmental Protection and the Chair of the Air Resources Board. For five of the seven years of WCI, Inc.’s existence, CalEPA Secretary Matthew Rodriguez chaired the Board of Directors and guided its maturation and evolution.

## **International Zero-Emission Vehicle Alliance**

California, led by CalEPA, co-founded the International Zero-Emission Vehicle Alliance (ZEV Alliance) in 2015. The ZEV Alliance has 16 leading national and subnational members (Germany, the Netherlands, Norway, and the United Kingdom; the U.S. states of California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, Washington, and Vermont; the Canadian provinces of British Columbia and Québec; and the German state of Baden-Württemberg). These jurisdictions collaborate to expand the global zero-emission vehicle (ZEV) market and enhance government cooperation on ZEV policies, to strengthen and coordinate efforts to combat air pollution, limit global climate change, and reduce oil dependence. Members commit to make 100 percent of new passenger vehicle sales ZEVs as soon as possible, and no later than 2050. The International Council on Clean Transportation acts as the ZEV Alliance Secretariat, directed by the member jurisdictions. The ZEV Alliance commissions original analysis and has sponsored about a dozen published reports, as well as webinars and meetings, to disseminate its work.

## **Global Climate Action Summit**

The Global Climate Action Summit (Summit), held on September 12-14, 2018 in San Francisco, brought together leaders and citizens from around the world to celebrate the extraordinary achievements of states, regions, cities, companies, investors and citizens on climate action. The Summit was a launchpad for deeper worldwide commitments and accelerated action from countries—to put the world on track to prevent dangerous climate change and realize the historic Paris Agreement. The confidence and support generated by this wave of action should trigger non-party actors to step up their own efforts and embolden national



Governor Jerry Brown at the Global Climate Action Summit closing plenary.

governments leaders to jumpstart the necessary domestic processes needed to enhance their national contributions under the Paris Agreement by 2020. California's climate leadership has made it a role model of ambitious subnational action and a positive force for driving enhanced efforts by national governments around the world. Staff at CalEPA played an integral role in the design, planning and execution of the event, in acquiring and transparently tracking the [commitments made during the Summit](#), and in working to continue the momentum generated by the Summit.

## **California-Mexico Border Relations**

The CalEPA Office of the Secretary promotes additional interagency cooperation on environmental programs in California and Baja California working on California-Mexico air quality, water quality, solid waste and waste tires issues, largely through the California-Mexico Border Relations Council (CMBRC) and the California-Mexico Memorandum of Understanding on Climate Change and the Environment. The coordinated effort includes other California state agencies, border region Tribal Nations, and local, regional, state, and federal governments in the U.S. and Mexico.

## **California-Mexico Border Relations Council**

The CalEPA Secretary chairs the California-Mexico Border Relations Council (CMBRC). Responsibilities of the council were modified by Assembly Bill 690 (Campos, Chapter 716, Statutes of 2014), which directs the actions of the council today. The council works toward improving and protecting trade opportunities, the environment, health, safety and infrastructure along the California-Mexico border and coordinates cross-border programs, initiatives, projects, and partnerships within California's state agencies.

Since 2011, the CMBRC has met 10 times. Meetings were held in both San Diego and Calexico in order to attract local participation from both the western and eastern areas of the border region and bring attention to the salient issues in both areas. Activities and issues on the border were discussed in annual reports prepared and submitted to the California Legislature, as well as other relevant border stakeholders at the local, state and federal levels. Participation from the various agencies represented in the council has grown steadily over the years, and currently all members are represented in the report.

In recent years, the council has elevated priority issues in the border region, including transboundary pollution issues – specifically air quality, water, solid waste and sedimentation. The council has further been an important forum to discuss and report on timely issues such as emergency preparedness; pesticide safety, use and application; Zika virus and other vector borne disease prevention; work related illness reporting; trade summits; clean energy advancement; reduction of cross-border agricultural disease; cross-border police work; and more efficient transportation design at the border.

## **California-Mexico MOU on Climate Change and the Environment**

In 2009, Baja California established an Air Monitoring Network funded by the U.S. Environmental Protection Agency and implemented and managed by CARB until 2012. In 2012, CARB, the State of Baja California, and Mexico's Secretariat of Environment and Natural Resources (SEMARNAT) established the California-Mexico Memorandum of Understanding on Climate Change and the Environment (CA-MX MOU) (See page 9). This MOU provided for the transfer of the network and donation of equipment to Baja California, with CARB continuing to provide laboratory analytical services. At this time, only one station remains operational. In 2016, a second donation of surplus air monitoring equipment was made in order to replace equipment and rehabilitate the nonoperational stations.

The CalEPA Office of the Secretary oversees and reports to the California Governor's Office on its implementation. This MOU has four working groups: air quality, climate change, clean vehicles, and wildfires. The MOU ran from 2014-2018, and both parties have expressed interest in continuing the cooperation from 2019 onward under the new administrations in Mexico and California.

## **Solid Waste Working Group**

The border region faces unique environment challenges such as the flows of solid waste and sediment from Mexico into California through various cross-border canyons and waterways. In order to face these challenges, the Border Relations Council oversees the Solid Waste Working Group established by Senate Bill 83 (Committee on Budget and Fiscal Review, Chapter 24, Statutes of 2015). CalRecycle chairs this group, with support from the Office of the Secretary.

In 2017, the working group prepared and published the Solid Waste and Waste Tire Strategic Plan, and initiated various actions to address waste and waste tire pollution in the border region. The group also oversaw two waste tire demonstration projects from 2016 to 2017, where over 35,000 waste tires were collected and over 6,000 cubic meters of trash were removed. From November 13-14, 2017, with support and participation from CalEPA and CalRecycle, Baja California's Environmental Protection Agency held a workshop in Tijuana to address California-Baja California waste tire and solid waste management. Topics included technical training on end-use tire products, particularly tire-derived aggregate and rubberized asphalt concrete, and waste tire and waste management policies and solutions. Lastly, the state constructed a managed disposal to properly discard waste tires site in Mexicali. By 2017, approximately 1 million tires were disposed at regulated sites and about 90 percent of the properly disposed tires were used as tire-derived fuel in cement kilns.

## **New River Improvement Project**

The New River is a severely polluted cross-border river that flows from Mexicali, Mexico, into the Calexico, California and on to the Salton Sea. Over this administration, the CMBRC has prioritized this project, given the severity and long-standing nature of the problem, in addition to the limited local resources to address the issue. Senate Bill 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016) appropriated \$1.4 million for Phase 1 of the project, specifically the design, engineering and environmental permitting. The CalEPA Office of the Secretary worked with the Colorado River Basin Regional Water Quality Control Board to coordinate all work between stakeholders. Phase 1 was completed in October 2018 with the submittal of a full set of engineering plans and environmental documentation for the project.

In 2017, CalEPA convened biweekly meetings among the local and state agencies to catalyze the development of an MOU relating to the long-term maintenance of the future infrastructure. The MOU, which was signed by the city of Calexico, Imperial County and the Imperial Irrigation District in October 2017, commits each of the local entities to providing \$50,000 in annual funding – a total of \$150,000 a year – for the ongoing operation and maintenance of the project once it is complete.

## **Tijuana River Watershed Coordination**

The CalEPA Office of the Secretary helps advocate for projects that aim to improve water quality in the Tijuana River. Funding is one of the major obstacles for improving environmental issues in the border region. The office worked with Assemblymember Eduardo Garcia to include a cross-border priority to the Proposition 1 California Department of Fish and Wildlife (CDFW) Restoration Grant Program. CalEPA worked with CDFW to conduct outreach workshops to expand awareness in the border region of this opportunity, and in 2017, CDFW received 10 border-related project applications. Two cross-border projects were selected and awarded a total of \$3.2 million. The grants fund acquisition in the Tijuana River watershed and planning for the Brown Property Restoration Project.

A significant cross-border sewage spill that occurred in early 2017 brought increased local, county, state, national and cross-border attention to this long-standing issue. CalEPA reacted quickly to this incident, calling for increased federal attention to the transboundary water pollution in the Tijuana River Valley by both the U.S. Environmental Protection Agency and the International Boundary and Water Commission. Since then, the CalEPA Secretary has participated in meetings convened by U.S. EPA to highlight the state's actions in addressing transboundary flows and calling on the federal government to fulfill its obligations to address this international problem.

## **Border 2020**

The U.S.-Mexico Environmental Program, referred to as “Border 2020,” is the latest cooperative effort under the 1983 La Paz Agreement between the U.S. and Mexico. It is an eight-year (2013-2020) binational effort designed to protect the environment and public health in the U.S.-Mexico border region and led by U.S. EPA and SEMARNAT who provides guidance and oversight to the coordinating bodies composed of the ten U.S.-Mexico border states and tribal nations.

The CalEPA Office of the Secretary leads California’s participation in the Border 2020 program by participating in the National Coordinator and Workgroup meetings and coordinating the participation of the agency’s boards, departments and offices in the Border 2020 working groups, which include Air, Water, Materials Management and Clean Sites, Emergency Preparedness & Response and Cooperative Enforcement and Compliance.

The office also coordinates the input from CalEPA’s boards, departments and office into the U.S. EPA Border 2020 Action Plan and corresponding progress reports.

## **Translation Services**

In order to provide better assistance to the border region, which for the most part is composed of underserved communities whose residents are mostly Spanish speaking, the CalEPA Office of the Secretary has a contract for written and simultaneous translation services for documents and meetings. The office uses translation services for border and environmental justice work and provides the service to its boards and departments as needed. Since 2011, the Border Program has translated over 155 documents and provided translation services for over 87 meetings related to border issues.

## **Environmental Justice**

California was one of the first states in the nation to codify environmental justice in statute. Beyond the fair treatment called for in code, leaders in the environmental justice movement work to include those individuals disproportionately impacted by pollution in decision-making processes. The aim is to lift the unfair burden of pollution from those most vulnerable to its effects. In addition to inter-departmental efforts managed by CalEPA’s boards, departments and office, the Office of the Secretary leads and directly administers two programs supporting environmental justice in California.

## **Environmental Justice Enforcement and Compliance Task Force**

CalEPA’s Environmental Justice Enforcement and Compliance Task Force (EJ Task Force) is dedicated to improving compliance and enforcement of environmental laws in communities that are disproportionately burdened by multiple sources of pollution and are vulnerable to its effects. Comprised of the enforcement staff from CalEPA and each of its boards and departments, as well as federal and local partner agencies, the EJ Task Force conducts geographically focused local Initiatives to address pollution and safety concerns in areas of California with the highest pollution burdens. As part of its mission, the EJ Task Force works closely with local community partners to develop and implement its inspection and enforcement priorities that are uniquely tailored to each Initiative. Since its inception in 2013, the EJ Task Force has conducted six initiatives statewide, including Fresno, East Los Angeles, Oakland, Pomona, Imperial County, and ongoing work in the city of Stockton. A report is prepared at the conclusion of each initiative that discusses the community and the results of these compliance efforts.

Some of the highlights from the EJ Task Force initiatives include:

- Fostering a partnership between Task Force regulatory staff and the Stockton Chamber of Commerce, which successfully increased compliance rates among local industrial pollution sources, and decreased the use of hazardous materials in the Stockton area
- Filing criminal charges against five metal plating facilities for significant violations in the storage, disposal, and management of hazardous waste in the communities of Pacoima and



Boyle Heights in Los Angeles

- The successful removal of harmful and dangerous jewelry products that contained unsafe levels of lead and cadmium from store shelves in Oakland
- The successful execution of a multi-agency sweep of auto dismantlers in Pomona, which led to 11 citations for unlicensed auto dismantling, repair, and hazardous waste management violations across the city

## Environmental Justice Small Grants Program

The CalEPA Environmental Justice Small Grants Program, authorized by Public Resources Code Section 71116, helps eligible non-profit 501(c)(3) community organizations and federally recognized Tribal governments address environmental justice issues in areas adversely affected by environmental pollution and hazards. Since its inception in 2002, the program has awarded over \$3.8 million to 146 projects throughout California. Among them, 94 projects were awarded \$2.9 million in grant funds during the Brown administration. The program secured funding in the fiscal year 2018-19 budget for \$1.5 million.

Some of the program's most notable project awards include:

- In 2016, Asian Health Services received \$50,000. It trained 201 nail salon workers in over 300 nail salons across Los Angeles County on chemical exposure reduction strategies, hazardous waste prevention, and healthy nail salon workplace practices.
- In 2018, the California Environmental Justice Alliance received \$50,000. The alliance's project involved one statewide and a series of four regional "Green Zone" healthy and equitable land-use community trainings. There were over 200 participants from several counties in the San Francisco Bay Area and Southern California, including Ventura, Kern, and Los Angeles counties. Green Zones are neighborhoods burdened by the cumulative impacts of toxins and socioeconomic stressors that seek to reduce pollution and improve local land-use planning, health, the economy, and the environment.
- Green Technical Education and Employment in Sacramento received \$30,000 in 2016 to install commercial grade aquaponics irrigation systems in South Sacramento, and train high school students in the use and maintenance of those systems by building raised garden beds and worm bins, and planting fruit trees in urban areas
- Rose Foundation for Communities and the Environment's \$50,000 project, which trained 16 Oakland high school students to become the next generation of community environmental justice leaders through a six-week,



California Environmental Justice Alliance trains low-income residents in community engagement



Oakland Students trained by the Rose Foundation

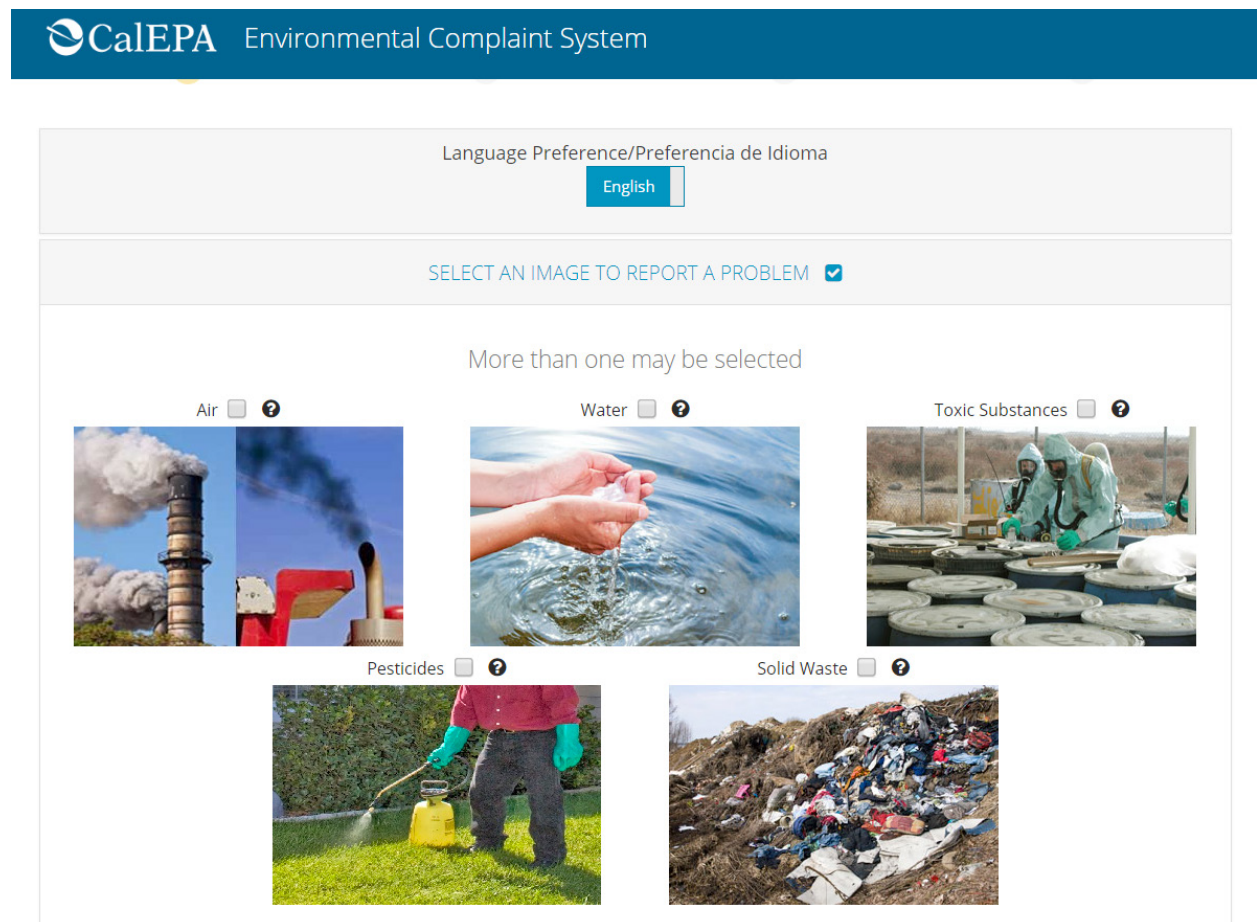
150-hour intensive summer leadership training program focused on climate justice, clean energy, food justice, land-use and transportation, urban greening, and green infrastructure

## Environmental Enforcement

The CalEPA Office of the Secretary is responsible for ensuring that environmental enforcement work is consistent, effective and coordinated across all programs. To do this, CalEPA manages a cross-media enforcement training program, coordinates a steering committee focused on multimedia environmental enforcement, runs a task force designed to promote environmental regulatory compliance in disadvantaged communities, and administers a grant program that provides funds to train environmental regulators and prosecutors. Significant enforcement accomplishments during the Governor Brown administration include improvements to the CalEPA Environmental Complaint System online and the formation of an interagency refinery task force.

## CalEPA Environmental Complaint System

In April 2016, CalEPA updated its online system that provides members of the public with a website to report environmental problems to CalEPA from anywhere in the state. The updated system includes a process for reporting environmental concerns relating to air or water pollution, hazardous or solid waste, or pesticide use. The system is accessible from mobile devices, is able to capture location information of the person lodging the complaint, and allows the uploading of photos, videos, and other documentation of the problem. When a complaint is submitted, it is routed to the appropriate state or local agencies for investigation and enforcement.



The online complaint system serves as an early warning system. It alerts environmental enforcement agencies of potential violations and provides immediate witness accounts and documentation for investigations. This helps CalEPA and other environmental enforcement agencies to address and resolve environmental problems at an early stage. The online complaint system also supports state, federal, and local environmental enforcement efforts by providing a statewide tool that ensures environmental reports reach the proper authority, regardless of the location or the type of pollution. Further, it assists communities and agencies that may not have the resources to build their own online environmental complaint systems.

### **Interagency Refinery Task Force**

Following the August 2012 fire at the Chevron Richmond refinery, Governor Brown appointed a work group to examine the hazards and risks presented by petroleum refining in the state. The subsequent report “[Improving Public and Worker Safety at Oil Refineries](#)” (February 2014) provided recommendations that formed the work plan of the Interagency Refinery Task Force (IRTF), led by CalEPA and composed of state, local, regional, and federal agencies associated with oversight and regulation of refineries.

The focus of the IRTF encompasses safety and prevention, emergency preparedness and response, implementation and enforcement, and community involvement. The emphasis on safety and prevention led to the strengthening and aligning of the Process Safety Management and California Accidental Release Prevention programs resulting in the most comprehensive efforts in the world to protect workers, the community and the environment. There have been over 15 safety forums conducted in refinery communities with active engagement from industry, regulators, communities, and environmental justice organizations. Pursuant to Assembly Bill 1649 (Muratsuchi, Chapter 590, Statutes of 2017), CalEPA has been directed to continue the work of the Interagency Refinery Task Force in consultation with other state, local and federal government entities.

### **Emergency Response**

Fires, floods, earthquakes, and hazardous materials releases are some of the challenges facing California. It is increasingly recognized that the environmental impacts of those incidents require effort to protect public health and the environment.

CalEPA activates from the initial phase of a disaster up to the final recovery. The Office of the Secretary provides support, guidance, and representation of the agency at the State Operations Center. In the past several years CalEPA's boards, departments and office responded to wildfires around the state providing protection of local fresh and waste water systems by the State Water Board, air monitoring by CARB, household hazardous waste sweeps by DTSC, debris management by CalRecycle, toxicological support from OEHHA, and management of pesticides by DPR. In each of these missions, the agencies work with their local counterparts and, as appropriate, federal partners. Their work is seen and felt by millions of Californians when they check the air quality while towns and forests are burning, when residents turn on their tap, and when the toxic metals, asbestos, ash, and debris are removed and the community can begin to rebuild.

### **Natural Disaster Resilience Funding**

In January 2016, California won one of 13 awards in the National Disaster Resilience Competition for the Community and Watershed Resilience Program. The competition was a \$1 billion program administered by the U.S. Department of Housing and Urban Development (HUD) to provide grants to communities to resiliently rebuild following a major disaster. States that had presidential disaster declarations in 2011, 2012, or 2013 were eligible to apply. The competition encouraged communities to consider not only the infrastructure needed to become resilient, but also the social and economic characteristics that allow communities to bounce back quickly after a disruption. California's success

in the competition – especially the community-engagement aspects of application development – helped shape the development of the Strategic Growth Council’s Transformative Climate Communities Program

The Watershed Program employs three interconnected practices to bring economic, social and ecological resilience to Tuolumne County, site of the 2013 Rim Fire, a 257,000-acre wildfire. The total award of \$70.4 million will be used to:

- Complete Forest and Watershed Health projects such as building new livestock fencing, creating critical fire breaks, removing invasive species, and reforesting burned areas - \$28,604,459
- Construct Community Resilience Center(s) connected to transit to create a safe place of retreat in the event of a disaster and a regular gathering space for community events - \$19,755,000
- Design and construct a Biomass Utilization Facility for biomass collected during ongoing forest and watershed health projects and other projects that restore forest resilience - \$22,000,000

CalEPA worked in a partnership with the Governor’s Office of Planning and Research, Housing and Community Development, Tuolumne County, the Sierra Nevada Conservancy, California Office of Emergency Services, California Department of Forestry and Fire Protection, and the U.S. Forest Service, to draft first round and final applications for the program. This partnership continues to collaborate to implement all aspects of the program. The State of California signed its Grant Agreement with HUD in January 2017, and all funds must be expended by September 30, 2022.

### **Governor’s Environmental and Economic Leadership Awards**

The Governor’s Environmental and Economic Leadership Awards (GEELA) program was established in 1993 and is California’s highest environmental honor. The program is administered by CalEPA. The awards recognize individuals, organizations, and businesses that have demonstrated exceptional leadership and made notable, voluntary contributions in conserving California’s precious resources, protecting and enhancing our environment, building public-private partnerships and strengthening the economy in California. The award highlights innovation and sustainable designs. Award recipients are chosen in six categories: Climate Change; Automobile Dealer Zero Emission Vehicle Promotion; Ecosystem and Land Use Stewardship; Environmental Education; Sustainable Practices, Communities, or Facilities; and Waste Reduction. The impact of each submission is measured in nine specific areas including results, transferability, environmental impact, resource conservation, economic progress, innovation and uniqueness, pollution prevention, environmental justice, and public health. More than 250 awards over 25 years have been given, including 105 awards during Governor Brown’s most recent tenure.



# California Air Resources Board

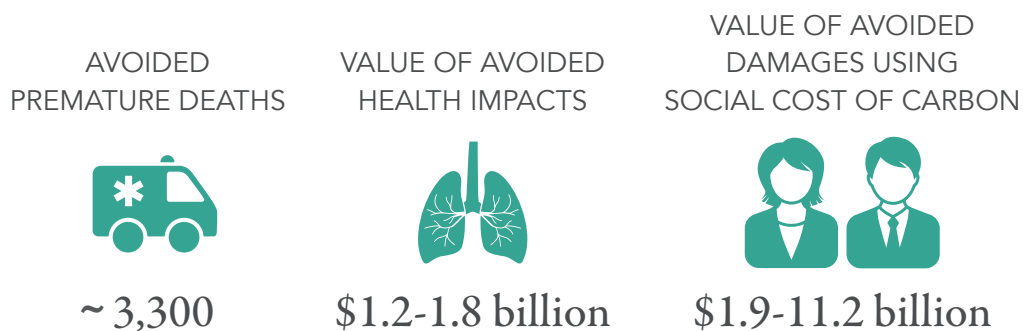
The California Air Resources Board (CARB) is charged with protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change. As a result of the work by CARB and local air districts to limit air pollution, Californians today breathe the cleanest air since measurements have been recorded. The number of first stage alerts in the Los Angeles area has been cut from over 200 per year in the 1970s to less than 10 per year today. Other regions of the state also have improved air quality despite massive increases in population, the number of motor vehicles and the distances they are driven. From requirements for clean cars and fuels to adopting innovative solutions to reduce greenhouse gas emissions, California has pioneered a range of effective approaches that have set the standard for effective air and climate programs for the nation, and the world.

## California's 2017 Climate Change Scoping Plan










Building on the state's success in decarbonizing its economy, in December 2017 the CARB approved a bold plan to accelerate the reduction of greenhouse gas emissions over the coming decade while improving air quality and public health, investing in disadvantaged communities, and supporting jobs and economic growth. The 2017 Climate Change Scoping Plan sets the state on an ambitious course to reduce climate-changing gases an additional 40 percent below 1990 levels by 2030. This will require California to double the rate at which it has been cutting climate-changing gases.

The plan estimates that following through on these actions could save the state as much as \$11 billion in avoided environmental damage from carbon pollution in 2030. Costs of California's 2017 wildfire season alone were more than \$10 billion. The programs detailed in the Scoping Plan will also improve public health while reducing costs associated with healthcare and natural disasters. These include a projected reduction in premature deaths of 3,300 by 2030. The financial benefit from reduced sick days and hospital stays will be more than \$1.2 billion in 2030.

## Climate Plan Provides Health Benefits in 2030



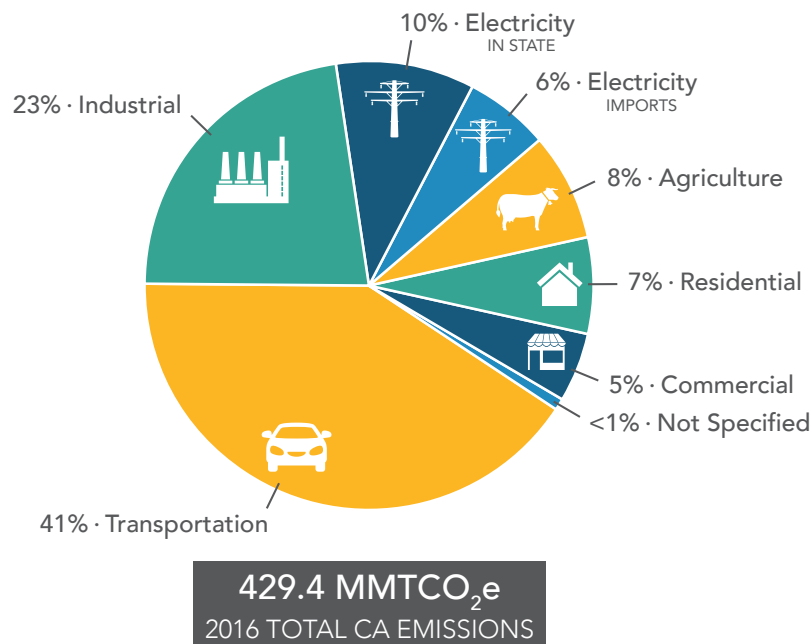
The plan recognizes that every sector, every local government, region and resident is part of the solution, underscoring that there is no single solution and includes a balanced mix of strategies to achieve the state’s target including:

-  Double building efficiency
-  Cleaner freight and goods movement
-  50% renewable power
-  Slash potent “super-pollutants” from dairies, landfills and refrigerants
-  More clean, renewable fuels
-  Cap emissions from transportation, industry, natural gas, and electricity
-  Cleaner zero or near-zero emission cars, trucks, and buses
-  Invest in communities to reduce emissions
-  Walkable/Bikeable communities with transit

### Achieving the State’s Climate Goals

California’s 2016 Greenhouse Gas Emissions Inventory shows that greenhouse gas pollution in California fell below 1990 levels for the first time since emissions peaked in 2004—an achievement roughly equal to taking 12 million cars off the road or saving 6 billion gallons of gasoline a year.

Under Assembly Bill 32 (Nunez, Chapter 488, Statutes of 2006), California must reduce its emissions to 1990 levels (431 million metric tons) by 2020. The 2016 Greenhouse Gas Emissions Inventory shows that California emitted 429 million metric tons of climate pollutants in 2016—a drop of 12 million metric tons, or three percent, from 2015.



The state's annual emissions inventory helps keep the state accountable for meeting its emissions reduction targets. Highlights from the inventory include:

- Carbon pollution dropped 13 percent statewide since a 2004 peak; meanwhile the economy grew 26 percent.
- Per capita emissions continue to be among the lowest in the country. They fell 23 percent from a peak of 14 metric tons per person (roughly equal to driving 34,000 miles) in 2001 to 10.8 metric tons per person in 2016 (roughly equal to driving 26,000 miles). That is approximately half as much as the national average.
- Carbon pollution dropped 3 percent between 2015 and 2016 – roughly equal to taking 2.4 million cars off the road or saving 1.5 billion gallons of gasoline and diesel fuel.
- The “carbon intensity” of California’s economy – the amount of carbon pollution emitted per \$1 million of gross state product – dropped 38 percent since the 2001 peak and is now one-half the national average.

California now produces twice as many goods and services for the same amount of greenhouse gas emissions as the rest of the nation.

### Addressing Community Air Protection

Signed by Governor Brown, Assembly Bill 617 (Garcia, Chapter 136, Statutes of 2017) established the Community Air Protection Program, is a first-of-its-kind effort to improve air quality in local communities that face the worst impacts of air pollution. In September 2018, CARB adopted a blueprint for the program describing how CARB will work with local residents, air districts and other partners to identify local air quality problems, develop solutions and track progress together.

The blueprint describes:

- Steps CARB will take to work with communities and air districts to improve air quality in impacted communities statewide
- Process for selecting communities for targeted clean air improvements
- Procedures for air districts and communities to set up air pollution monitoring
- Better data on pollution sources and making data more accessible
- Required elements to be included in community emission-reduction programs
- Incentive investments to help purchase cleaner vehicles and equipment
- Metrics to track and report progress in reducing emissions

The board also selected the first 10 communities that will be the focus of additional targeted actions in the program’s first year. Located across the state and varying in size and population,



these communities have among the highest cumulative impacts from multiple air pollution sources in California. More communities will be added to the program in the future.

The 10 communities selected by the board for focused action face disproportionate impacts from multiple sources of air pollution, including freight facilities, ports, large and small industrial facilities, freeways, oil and gas facilities, and busy border crossings. Residents of these communities also experience high levels of poverty and unemployment.

Under the Community Air Protection Program, these communities will be targeted for focused actions to improve air quality. These include setting up community air pollution monitoring systems, developing community clean air programs focused on cutting emissions from local pollution sources, or both.

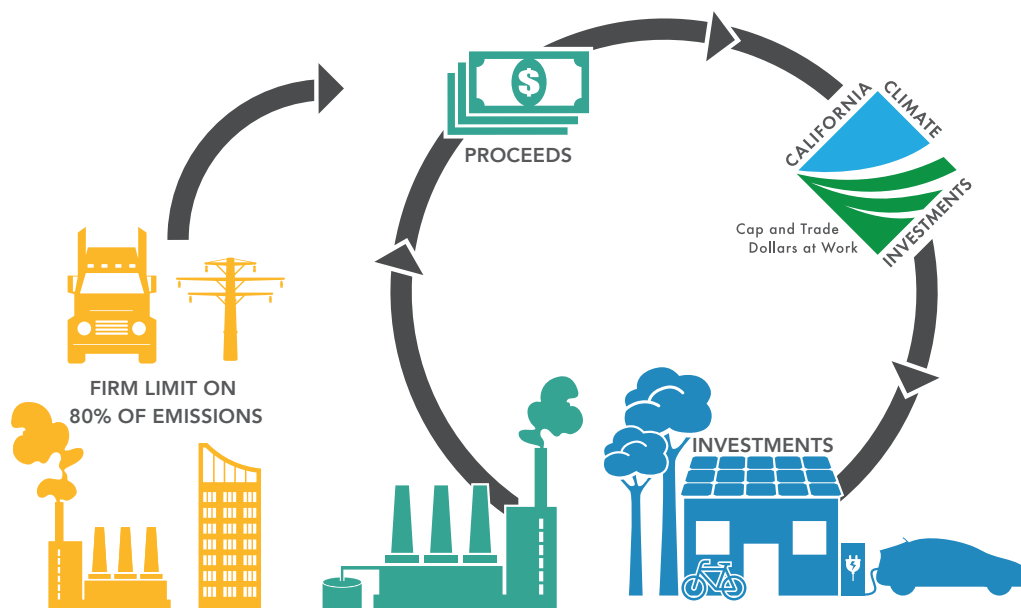
Strategies required to be considered under the blueprint include new regulatory and enforcement actions, facility risk-reduction audits, enhanced air quality permitting requirements, incentive programs, and land use and transportation planning.

These actions are part of the state's ongoing commitment to address the disproportionate impacts of air pollution on disadvantaged communities. Other actions include the following:

- CARB awarded \$10 million in grants to help 25 community-groups and three Native American Tribes reduce air pollution in their neighborhoods in support of AB 617 implementation.
- CARB also selected four Los Angeles and Kern County communities for an in-depth study of air quality impacts near oil and gas facilities.
- CARB announced more than \$200 million in new state funding for clean freight transportation. This is in addition to the \$1.2 billion the state has already pumped into projects that put a growing number of zero-emission and low-carbon buses, trucks and cars onto California's roads and highway as of May 2018.

## Carbon Pricing & Investment

Launched in 2013, the cap-and-trade program is fundamental to meeting California's long-range climate targets at low cost. It includes GHG emissions from transportation, electricity, industrial, agricultural, waste, residential and commercial sources, and caps them while complementing the other measures needed to meet the 2030 GHG target. Altogether, the emissions covered by the cap-and-trade program total 80 percent of all GHG emissions in California.

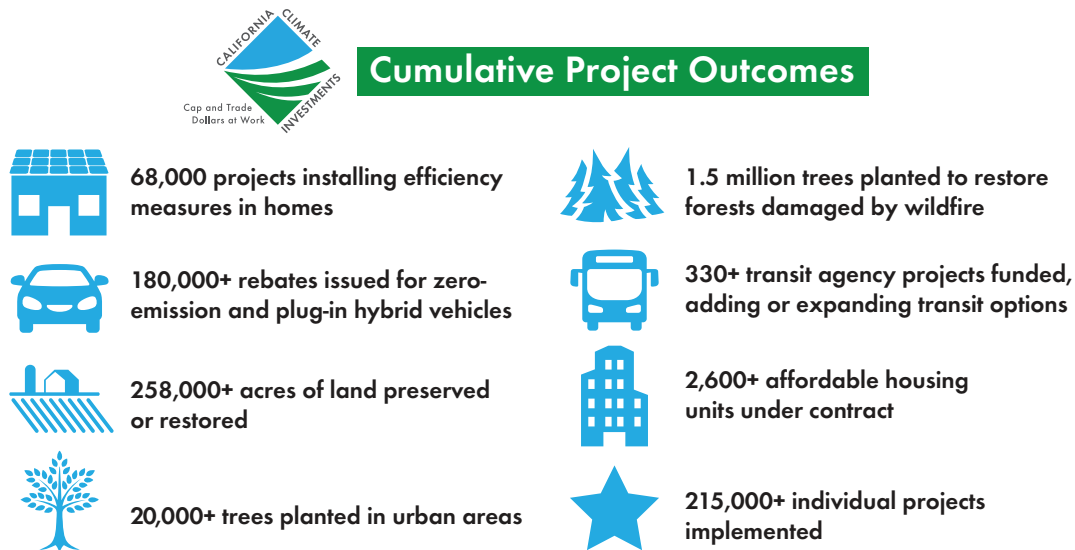


The program guarantees emissions reductions through a strict overall emissions limit that decreases each year, while trading provides businesses with flexibility and creates a financial incentive for industries to invest in clean technologies and develop innovative ways to reduce pollution.

Proceeds from the cap-and-trade program facilitate comprehensive and coordinated investments throughout California that further the state’s climate goals. These investments support programs and projects that reduce GHG emissions in the state and deliver major economic, environmental and public health benefits for Californians, including meaningful benefits to the most disadvantaged communities.

Communities where investments occur are realizing a wide range of benefits, including increased affordable housing opportunities; improved mobility options through transit, walking, and biking; cleaner air through zero-emission vehicles; job creation, energy and water savings; and greener, more vibrant communities.

These investments are strengthening the economy and improving public health – especially in the areas of the state most burdened by pollution. As of May 2018, more than \$8 billion dollars have been appropriated by the Legislature to state agencies implementing GHG emission reduction programs and projects.



As of May 2018

### Investing in Disadvantaged Communities

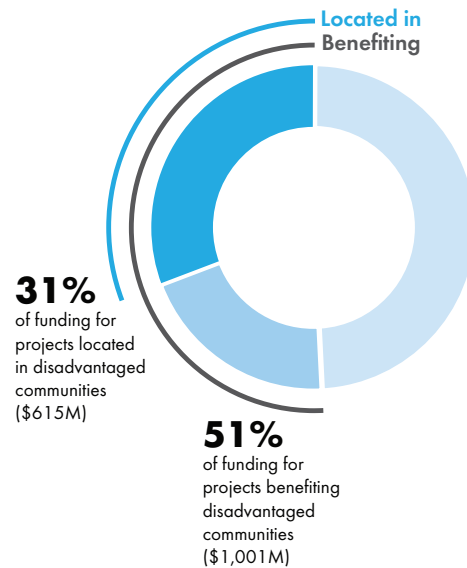
Senate Bill 535 (de León, Chapter 830, Statutes of 2012) directs the Secretary for Environmental Protection to identify disadvantaged communities for investment of cap-and-trade auction proceeds. The CalEnviroScreen tool identifies these communities by ranking each of the state’s 8,000 census tracts using data on 20 indicators of pollution, environmental quality, and socioeconomic and public health conditions.

Under SB 535, a minimum of 25 percent of the total investments were required to benefit disadvantaged communities; of that, a minimum of 10 percent were required to be located within and provide benefits to those communities. For projects implemented to date, 51 percent of investments are benefiting disadvantaged communities, and 31 percent are located within disadvantaged communities. Cumulatively, projects have been implemented in 98 percent of the census tracts identified as

disadvantaged communities, providing a variety of benefits to these communities.

In September 2016, Governor Brown signed Assembly Bill 1550 (Gomez, Chapter 369, Statutes of 2016) modifying the SB 535 disadvantaged community investment minimums. AB 1550 requires that a minimum of 25 percent of the proceeds be invested in projects that are located within and benefiting individuals living in disadvantaged communities; it requires an additional minimum of 5 percent of funds be invested in projects that benefit low-income households or communities statewide; and that an additional 5 percent be invested in projects that benefit low-income households or communities that are within a 1/2 mile of a disadvantaged community. Administering agencies are currently in the process of transitioning to full implementation of AB 1550.

### \$2.0B in Cumulative Implemented Funds\*



\* Total amounts do not include benefits attributable to the High-Speed Rail Project

## Short-Lived Climate Pollutant Strategy

California's Short-lived Climate Pollutant Reduction Strategy (SLCP Strategy) is a critical part of California's climate policy portfolio designed to achieve targets established by Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) including reductions in methane emissions of 40 percent below 2013 levels by 2030, a 40 percent reduction in hydrofluorocarbons (HFCs) and a 50 percent reduction in black carbon.

Super pollutants have more potent, heat-trapping effects, but remain in the atmosphere for a shorter time than carbon dioxide. Reducing these pollutants can have a more immediate beneficial impact on climate change – and reduces harmful toxins, such as cancer-causing particulates, in California communities.

A key piece of the SLCP Strategy is a new regulation aimed at reducing methane leaks from oil and gas operations. It requires emissions-capture technology and stricter monitoring and reporting of potential methane leaks as a means of isolating and fixing them more quickly.

The SLCP Strategy also reduces hydrofluorocarbons, traditionally used in refrigeration, air conditioning, insulation and propellants. Substitutes for HFCs are growing in use and continue to be developed.

The major sources of methane are livestock, particularly dairy cattle, landfills, and the oil and gas industry. Livestock is responsible for 55 percent of state methane emissions. The SLCP Strategy calls for capturing methane from manure at large dairies, pursuing opportunities to reduce methane emissions from enteric fermentation, significantly reducing disposal of organics in landfills, and reducing methane emissions from oil and gas operations.



Dairy digester



California has already reduced black carbon emissions 90 percent since the 1970s, largely through the state’s stringent diesel regulations. The SLCP Strategy will rely on a variety of tools, including putting zero-emission vehicles on the road and into ports and rail yards, more mass transit, cleaning up woodstoves, and cleaner fuels.

### **Low Carbon Fuel Standard (LCFS)**

Since 2011, the LCFS has been a cornerstone of California’s effort to reduce GHGs emissions and has spurred innovation in low-carbon transportation fuels such as hydrogen, electricity and biodiesel. In 2017, the LCFS resulted in more than two billion gallons of petroleum and natural gas being replaced with cleaner, renewable transportation fuels. The standard currently requires a 10 percent reduction in the “carbon intensity” of California’s transportation fuels by 2020. Carbon intensity is determined by the amount of carbon emitted throughout a fuel’s entire life cycle, from extraction or production to combustion.

The amendments approved by the board in 2018 require a 20 percent reduction in carbon intensity by 2030, the most stringent requirement in the nation. The new requirement aligns with California’s overall 2030 target of reducing climate-changing emissions 40 percent below 1990 levels by 2030, which was set by Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016).

The LCFS amendments also incentivize development of additional zero emission vehicle infrastructure and the sale of electric and hydrogen vehicles, building on utilities ability to collect LCFS credits based on charging, and adding provisions to jump start infrastructure installation through credits generated based on the expected capacity of fast charging and hydrogen refueling stations.

### **Cleaning Up the Freight Sector**

In 2018, CARB committed \$205 million in grants for projects designed to accelerate the adoption of clean freight technologies and reduce air pollution caused by the movement of goods throughout the state.

Eleven projects received \$150 million from California Climate Investments – using proceeds from the state’s landmark cap-and-trade program. The grants will be matched by \$210 million invested by private and public partners, bringing total investment to more than \$400 million. The projects range from electric locomotives, trucks and refrigeration trailers at railyards in Stockton and San Bernardino, to a hybrid tugboat and electric cranes and forklifts at the Port of Long Beach. All 11 projects are located within disadvantaged communities that are heavily impacted by air pollution from freight facilities.



Electric drayage truck project

All 11 projects are located within disadvantaged communities that are heavily impacted by air pollution from freight facilities.

The goal of CARB’s Zero and Near Zero Emission Freight Facility program is to support transformative, cost-effective clean technologies that can be adopted by other freight facilities and accelerate the commercialization of these technologies statewide. The projects will reduce pollution that contributes to regional air quality problems, particularly diesel particulate emissions that impact communities located near ports, rail yards and warehouses.

# State Water Resources Control Board

The State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards) are dedicated to a single vision: abundant clean water for human uses and environmental protection to sustain California's future. Under the federal Clean Water Act and the state's pioneering Porter-Cologne Water Quality Control Act, the State and Regional Water Boards have regulatory responsibility for protecting the water quality of nearly 1.6 million acres of lakes, 1.3 million acres of bays and estuaries, 211,000 miles of rivers and streams, and about 1,100 miles of California coastline. The Water Boards work to ensure the protection of water quality across a diverse range of topics, such as storm water, drinking water, wastewater treatment, water quality monitoring, wetlands protection, ocean protection, contaminated sites cleanup, low-impact development, and enforcement. Most recently, the Water Boards have been significantly involved in addressing both water quality and water rights issues related to the state's continuing drought.

## Improving Resilience of California's Bay-Delta

The Bay-Delta is both the hub of California's water supply system and the most valuable estuary on the west coast, serving cities, farms, fishing communities, boaters, fish, and wildlife. The Bay-Delta is now in an ecological crisis and becoming increasingly vulnerable to flooding, drought, and climate change.

The State Water Board is nearing completion of a comprehensive update of its Bay-Delta Plan, which establishes water quality objectives to protect water uses, including drinking water, irrigation supply, and fish and wildlife. The Bay-Delta Plan is being updated through two separate processes (Plan amendments). The first Plan amendment, adopted by the board in December 2018, is focused on San Joaquin River flows and southern Delta salinity. The second Plan amendment is focused on the Sacramento River and its tributaries, Delta eastside tributaries (including the Calaveras, Cosumnes, and Mokelumne rivers), Delta outflows, and interior Delta



San Joaquin River



Salmon Slough at Grantline Canal



flows (Sacramento/Delta). The Sacramento/Delta update is expected to be released as a public draft in early 2019 and completed by December 2019. The proposed updates would substantially increase environmental water flows and ensure they are provided in a more holistic and natural manner that protects the entire ecosystem. The updates will also accommodate voluntary agreements that could integrate flow and non-flow actions while bringing more timely and durable ecosystem benefits at the least cost to water supply.

In parallel, the Department of Water Resources is proposing to construct the California WaterFix project. As part of its duties as the arbiter of water rights in the State, the State Water Board can approve, disapprove, or condition water rights applications or petitions for change. In 2016, the State Water Board began an evidentiary hearing to consider whether to approve a petition for change for the WaterFix Project. The hearing is one of the largest and most complex water right hearings the State Water Board has held, with over 80 parties, tens of thousands of exhibits, hundreds of witnesses, and over a hundred days of hearing so far.

### **Supporting Salmon Recovery in the Klamath River**

The Klamath River, located in southern Oregon and Northern California, once was home to the third-largest salmon run on the West Coast. In recent years, however, its salmon fishery has significantly declined, leading to restrictions on commercial, recreational, and tribal fishing. The salmon fishery decline is partly due to four dams on the Klamath River that block upstream salmon access to historic habitat and contribute to poor water quality, fish disease, and annual toxic blue-green algal blooms that pose public health risks.



Klamath River Estuary

In 2016, Governor Brown signed the Amended Klamath Hydroelectric Settlement Agreement to address longstanding water quality and public health issues associated with the dams and hydropower project operations. The agreement outlines a process for removing these four dams to create a free-flowing Klamath River and provide for unaided fish passage. This process requires a water quality certification from the State Water Board.

The State Water Board took a significant step in June 2018 by releasing a draft certification with conditions to protect, among other things, water quality, salmon, and water supplies for fire emergencies and local communities. In its environmental review, the State Water Board has actively consulted with three California Native American tribes and is thoroughly assessing potential impacts to environmental and tribal cultural resources.

Though additional work remains, execution of the agreement, development of draft certification conditions to protect water quality, and evaluation of the project's potential impacts are important steps in addressing water quality impairments and salmon recovery in the Klamath River.

### **Restoring the Salton Sea to Protect Public Health and Wildlife**

Located in the Imperial Valley, the saline Salton Sea is the largest lake in California. This desert lake provides critical habitat and an abundant food supply to migratory birds on the Pacific Flyway. The sea is shrinking and its receding shoreline presents public health risks due to fine particulate air pollution from dust blown from the exposed lakebed. Declining water levels are increasing the sea's salinity, threatening fish habitat and wildlife food sources, and impacting migratory bird habitat,

including several threatened and endangered species that use the sea as a critical stop on the Pacific Flyway.

In November 2017, after a series of public workshops, the State Water Board accepted a landmark agreement that helps define the state's commitment to restore and manage the sea. The agreement outlines the State Water Board's oversight role in monitoring and ensuring progress toward the goals of the state's Salton Sea Management Plan, including annual milestones for restoration of the exposed lakebed. Starting in early 2019, the State Water Board will hold annual public meetings to track progress on the construction of approximately 29,800 acres of ponds, wetlands, and dust-suppression projects and provide a forum for stakeholder input. The annual milestones provide a roadmap for expediting implementation of the Management Plan, while the public meetings ensure the effort remains transparent. Additionally, in November 2017, the Colorado River Basin Regional Water Board developed an online forum to enhance communication and coordination among stakeholders and the California Natural Resources Agency's advisory committees involved in restoration at the sea.



The Salton Sea

### **Ensuring a Safe, Reliable, and Affordable Water Supply for all Communities**

Ensuring communities have safe, affordable, and accessible drinking water is a priority of the board, consistent with Assembly Bill 685 (Eng, Chapter 524, Statutes of 2012), which declares every human being has the right to safe, clean, affordable, and accessible water adequate for consumption, cooking, and sanitary purposes. The State Water Board works to carry out the human right to water through its actions.



Leonicio Ramirez & Guillermina Avila, the first residents to receive water through a water distribution system in East Porterville

To benefit disadvantaged communities immediately, the State Water Board provided replacement water and worked towards long-term solutions. The State Water Board funded 159 projects to supply bottled and hauled water to communities throughout the State that had drinking water impacted by contaminants, including nitrate.

Through new authorization from the Governor and the Legislature, the board has used new legal, technical and financial tools to help myriad communities gain safe, clean, and affordable water, though much more needs to be done. The board has used drinking water system consolidation as a tool to help dozens of communities over the past three years. Senate Bill 88 (Committee on Budget and Fiscal Review, Chapter 27, Statutes of 2015) allows the board to require consolidations of drinking water systems with contamination issues or inadequate water supplies that serve disadvantaged communities, if a voluntary solution is not possible. Connecting small, drinking water systems with larger, nearby public systems better allows for wider provision of safe and affordable water. Prior to

the drinking water program joining the State Water Board, approximately four water systems per year were consolidated; in 2017, nearly 50 water systems were consolidated. As of 2018, almost 80 systems are [assessing consolidation](#) with help from the Water Boards, and another 50 are in process of consolidating through planning or construction funding.

Since 2014, the State Water Board has provided technical assistance to more than 232 communities (two-thirds of which were communities with under 200 connections), to help them apply for funding and to complete projects related to drinking water. During the drought, the board funded 238 projects to provide drinking water to communities experiencing drought-related drinking water emergencies. The State Water Board has provided financial assistance to more than 125 small public water systems that serve disadvantaged communities, including funding from Proposition 1 (2014), which authorized \$260 million of drinking water grants and loans to assist public water systems in making the necessary improvements to meet safe drinking water standards. For example, in a key collaborative effort with the Office of Emergency Services, the Department of Water Resources, local government, and local community groups, the board helped consolidate and extend drinking water services to the community of East Porterville. The predominantly Spanish-speaking agricultural community of 7,500 residents faced deteriorating water quality from nitrate contamination. Hundreds of households relied on contaminated groundwater wells that went dry during the drought. Nearly 1,000 households have been connected to the city of Porterville's water distribution system.

The State Water Board has funded new, promising technologies to address nitrate contamination of drinking water including biological treatment of both nitrate and perchlorate and distributed "smart" treatment of multiple small water systems using reverse osmosis.

### **Managing Nutrient Loading to Groundwater**

Nearly 80 percent of the State's population obtains their drinking water from a public water system that relies on groundwater for at least part of their drinking water supply. The use of fertilizers and pesticides in agricultural operations has caused chronic nitrate contamination in groundwater that is the source of drinking water for many communities, many of which are disadvantaged or located in rural areas of the State, particularly in the Tulare Lake Basin and Salinas Valley.

In 2013, the State Water Board [developed recommendations](#) for addressing nitrate-contaminated groundwater, including remediation solutions, funding sources, and steps to ensure safe drinking water to all California communities. The Water Boards have made substantial progress in implementing many of these recommendations, including the funding of projects to clean up and prevent contamination of groundwater that serves as a drinking water source. Major actions included efforts under the board's Irrigated Lands Regulatory Program and in the Salinas Valley, as discussed below.

To manage discharges from commercial farming operations, in 2012, the Water Boards began requiring growers to implement practices, including monitoring groundwater quality, to reduce nitrate leaching into groundwater sources of drinking water under the Water Board's Irrigated Lands Regulatory Program. In addition, the Regional Water Boards will revise their irrigated lands agricultural orders to incorporate requirements to test and monitor the drinking water quality of wells on farms.

Other efforts to address nitrate contamination in drinking water are ongoing, for example, in the Salinas Valley. Working closely with the State Water Board and the Central Coast Regional Water Board, in 2017, a coalition of local agricultural owners and operators agreed to organize, fund, and supply replacement drinking water to Salinas Valley communities whose drinking water exceeds the nitrate drinking water standard. The program covers small water systems and domestic wells used by approximately 850 residents. The program covered small water systems in the first year and expanded to domestic water supply wells in the second year. Initially expected to last two years, the program may now extend indefinitely while the parties work toward permanent solutions. The State Water Board conducted extensive public outreach to inform and engage remote Salinas Valley residents



regarding the replacement drinking water program.

### **Transitioning California’s Drinking Water Program to the Water Board**

In July 2014, the State’s drinking water regulatory program and associated financial assistance programs, previously housed in the California Department of Public Health, were integrated into the board. The Brown administration proposed the transition to better position the state to protect water quality and public health effectively while meeting current needs and future demands on water supplies. Since the transition to the board, the Division of Drinking water has been able to improve protections for public health and expand options for meeting safe water supplies.

- The Division continues to increase inspections and sanitary surveys each year since transitioning to the board. This enables the board to better identify, and work with, water systems in violation of water quality standards or treatment techniques.
- In 2017, the board set a new drinking water standard for 1,2,3-trichloropropane, a human-made chemical and recognized carcinogen. Water systems are testing for compliance with this standard and adding treatment systems where appropriate.
- In 2018, the board issued new drinking water notification levels for the two carcinogenic contaminants perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in drinking water. Notification levels are advisory and allow water systems to take early actions on their own for new contaminants of concern. Investigations continue as to the extent of these contaminants’ presence in California drinking water and whether water quality standards should be established to protect the public’s health.

### **Drought, climate, and water supply and demand management**

#### **Enhancing Sustainable Groundwater Management**

California depends heavily on groundwater to meet its water supply needs and to buffer against hydrologic extremes. In a typical year, approximately 40 percent of the State’s water supply comes from groundwater. In dry years, groundwater can make up 60 percent or more of the State’s supply. Some communities are entirely dependent upon groundwater, while others have none.

In 2014, Governor Brown signed into law the landmark Sustainable Groundwater Management Act, which empowers local agencies to manage groundwater resources and empowers the State to act if local management fails to meet prescribed deadlines. The Board has conducted outreach in over drafted groundwater basins to inform local agencies and stakeholders of the Act’s timelines. Board actions will include preparing procedures to implement probationary designations, interim plans, extraction reporting, and enforcement for noncompliant groundwater basins.



Groundwater recharge ponds are located on the grounds of the Stockton East Water District (SEWD)

#### **Improving Reports for Water Diversions and Use**

The Board has made significant progress in water diversion and use reporting, increasing the State’s capacity to effectively manage our system of water rights and better respond to California’s next drought. Governor Brown signed SB 88 (Committee on Budget and Fiscal Review, Chapter 27, Statutes of 2015) that requires comprehensive annual reporting of water diversion and use for all

water right holders. The State Water Board adopted a Resolution to adopt Emergency Regulations for measuring and reporting water diversions on January 19, 2016, to implement the new law, and to describe requirements for measuring and reporting water use. These water use reports are critical for managing California's limited water resources, helping to protect both senior water rights and environmental flows, and providing the basis for water availability determinations during times of water conservation and drought. Compliance with water use reporting requirements has steadily improved since 2016 due to extensive outreach and switching from paper to electronic reporting. The State Water Board receives over 35,000 reports of water use each year, a number that is expected to grow as new types of regulated water users (such as cannabis cultivators) begin to obtain water rights.

### **Protecting Fish and Wildlife during Drought**

Governor Brown's Executive Orders during California's historic drought, from 2014-2016, provided the direction, authority, and support for many actions, including emergency regulations to provide water for threatened and endangered fish in the Sacramento and Russian River watersheds.

- In four Russian River tributary watersheds (Dutch Bill, Green Valley, Mark West, and Mill Creeks), the State Water Board required all water users to implement enhanced water conservation measures and provide information on their water sources and uses. While the enhanced water conservation measures were designed to provide threatened and endangered fish with enough water to support their survival through the dry season, the information collected can also inform potential actions during future dry or drought conditions.
- The board developed emergency regulations in three Sacramento River tributary watersheds (Mill, Deer, and Antelope Creeks) to establish sufficient flows for fish to access their spawning grounds. The emergency regulations also included provisions for issuing curtailments on water diversions if voluntary agreements were insufficient to support fish flows during critical periods.
- During the drought, the board worked closely with federal, state, and local water managers, fisheries agencies, and stakeholders on numerous emergency actions in the Sacramento-San Joaquin Delta to control salinity in the Delta, preserve cold water supplies for fish, and provide water for people and farms, including minimum health and safety water supplies on the American River and south of the Delta. Actions included approving temporary urgency changes to water rights and associated reservoir and hydropower operations plans. While temperature control was lost in 2015 on the Sacramento River to the detriment of endangered winter-run Chinook salmon, salinity on the river was maintained throughout the drought. Moreover, the board's efforts during the drought set the foundation for lasting changes to improve temperature management, including improved transparency, accounting, coordination, planning, and response efforts.
- These actions protected the State's important public trust resources and established a playbook for future droughts and enhanced communication and coordination between agencies, interested parties, and the regulated community.

### **Making Water Conservation a Way of Life**

Following the Brown administration's declaration of the drought emergency in 2014 and a 2015 Executive Order, the board adopted a series of emergency regulations requiring reduction in potable urban water use statewide. Communities that had already reduced residential water use through conservation measures had lower mandates than those that had not made such gains since the last major drought. From June 2015 through April 2017, when the drought proclamation was lifted, more than 2.8 million acre-feet of water were conserved throughout California, enough to supply 14 million people with water for an entire year. This was a 22.4 percent drop in water use compared to those same months in 2013, the baseline year. To further support urban water management, the State Water Board awarded more than \$3 million for water loss audits and validation through the water loss assistance program.

Governor Brown’s Executive Order B-37-16 kicked off efforts to develop a framework for actions to make water conservation a way of life in California and to develop and pass Assembly Bill 1668 (Friedman, Chapter 15, Statutes of 2018) and SB 606 (Hertzberg, Chapter 14, Statutes of 2018). AB 1668 requires the State Water Board, in coordination with the Department of Water Resources, to adopt long-term standards for efficient use of water. SB 606 requires an urban retail water supplier to calculate an urban water use objective. Both laws built on the 2014 *California Water Action Plan* and past successful conservation efforts. Now, the Department of Water Resources and the State Water Board are working closely together to enhance water conservation and drought planning for urban water suppliers, agricultural water suppliers, small water suppliers, and rural communities. In time, thanks to these efforts, the State will have information that is more robust and will use water more wisely – with reduced water waste, greater drought resilience, and improved agricultural water use efficiency. The conservation of water will also save energy and reduce greenhouse gas emissions.



County Water District uses reverse osmosis to treat wastewater for its seawater intrusion barrier.

### Expanding Safe Use of Recycled Water

California’s most recent drought increased interest in the beneficial reuse of treated municipal wastewater (recycled water) as one component of a broader strategy to secure sustainable water supplies. Through Proposition 1 bond funding and the Clean Water State Revolving Fund, the State Water Board has provided \$1.74 billion for planning and construction of recycled water projects since 2014. Projects funded between 2014 and 2018 may increase the use of recycled water statewide by as much as 183,000 acre-feet per year.



Pipes, laid in 2015, carry recycled water to irrigate residential property in gated Serrano subdivision in El Dorado Hills.

A range of actions provided a breadth of permitting tools for prospective recycled water projects and represents strong support from the board for the development of recycled water amid a changing landscape of water supply options. These actions have helped California lead the nation in developing a regulatory structure that can accommodate diverse types of recycled water projects while protecting water quality and human health.



Low volume watering device being used in a Serrano El Dorado Owners’ Association park in El Dorado Hills

- The State Water Board adopted rules for adding recycled water to groundwater



basins and reservoirs that serve potable water.

- The State Water Board is funding research toward developing rules for direct potable reuse of recycled water by 2023.
- To further promote and facilitate production and use of recycled water as a resource while protecting human health and the environment, the State Water Board developed a statewide permit for recycled water use to expedite permitting of low-threat, non-potable recycled water projects.
- The State Water Board is amending its Recycled Water Policy to provide statewide consistency for permit requirements for all recycled water projects.

### **Putting Storm Water to Use**

In most urban situations, storm water flows directly to water bodies through sewer conveyance systems. Storm water mobilizes pollutants such as motor oil and trash and is a major source of pollution to rivers, lakes, and the ocean. When properly managed, however, storm water can be a resource and recharge groundwater.

The Water Boards are actively involved in initiatives to improve the management of storm water as a resource. As called for in the 2014 *California Water Action Plan*, in 2016, the board adopted a strategy to lead the evolution of storm water management in California. The strategy reframes storm water as a valuable resource, supports policies for collaborative watershed-level storm water management and pollution prevention, removes obstacles to funding, develops resources, and integrates regulatory and non-regulatory interests.

The State Water Board recently adopted significant municipal storm water permits that include watershed-based storm water planning and implementation:

- The most recent Los Angeles County Municipal Separate Storm Sewer System Permit allows permittees to develop and implement the permit on a watershed scale to incentivize coordinated watershed-based solutions, facilitate collaboration and cost-effectiveness, and ensure improved water quality.
- The San Francisco Bay Regional Water Board is working on similar issues, promoting use of green infrastructure plans.

With these actions, the State can help communities improve local flood control, water quality, and water supply, including groundwater recharge, while contributing to urban greening.

### **Enforcing Water Rights in the Carmel River**

The State Water Board has been engaged in efforts to eliminate California American Water Company's unauthorized diversions from the Carmel River since 1995, when the State Water Board determined the company was diverting substantially more water than it is entitled to. The unauthorized diversions contributed to lost riparian habitat in the lower river and the near-extinction of the Carmel River steelhead salmon run. The State Water Board issued a Cease and Desist Order to the Company in 2009 (Order WR 2009-0060), setting timelines for ceasing unlawful diversions and conditioning the continued diversion of water. The State Water Board further modified the order in 2016 (Order WR 2016-0016) to extend the compliance



SLO Creek Parkway Downtown

timeline to allow for further progress. The company must cease unlawful diversions from the Carmel River on or before December 31, 2021, and must adhere to a number of requirements and restrictions in the interim. To help address the need for additional water supply to replace the company's past unauthorized diversions, the Central Coast Regional Water Board permitted the Pure Water Monterey groundwater replenishment project in 2017, allowing 3,500 acre-feet per year of highly treated recycled wastewater to be recharged into the Seaside groundwater basin. The State Water Board also provided over \$100 million in state funding for implementation of the project.

## Improving Surface Water Quality

### Regulating Cannabis Cultivation

In 2016, the Legislature passed bills creating a regulatory framework for medical cannabis and the voters approved the Adult Use of Marijuana Act, legalizing recreational cannabis. Commercial cannabis is expected to grow significantly and spread to new areas of the state. If left unregulated, cannabis cultivation would pose serious threats to water quality, fish, and wildlife due to unauthorized water diversions and the discharge of fertilizers, pesticides, and sediments into waterways.



Illegal cannabis cultivation site

The State Water Board met the challenge by adopting its Cannabis Cultivation Policy in October 2017, less than 16 months after authorizing legislation, Senate Bill 837 (Committee on Budget and Fiscal Review, Chapter 32, Statutes of 2016) became law. The Cannabis Cultivation Policy was developed in consultation with the California Department of Fish and Wildlife and the California Department of Food and Agriculture. The policy sets strict standards for cannabis cultivation to protect water quality and instream flows for California's streams and rivers. These policy requirements are implemented through the State Water Board's Cannabis General Permit and as conditions in cannabis-related water rights. They will also be incorporated into all commercial cannabis licenses issued by the California Department of Food and Agriculture. To assist cultivators, the State Water Board developed an online portal where cultivators can apply to obtain permit coverage and a streamlined water right. The State Water Board also created an online compliance-mapping tool that helps cultivators determine whether they can divert water for cannabis cultivation on a specific day.

### Reducing Trash Pollution in California Waterways

Trash becomes a threat to aquatic habitat and life as soon as it enters waterways. Aquatic life and wildlife can be endangered from ingestion, entanglement, and habitat degradation from trash. Trash can also jeopardize public health and safety and poses a hindrance to recreational, navigational, and commercial activities.

In 2015, after an extensive stakeholder process that resulted in a surprising amount of agreement, the board adopted a statewide



Trash littered waterway



water quality objective to reduce trash entering water bodies. The objective, known as the “Trash Amendments,” provides statewide consistency for the Water Boards’ regulatory approach to protect aquatic life and public health, while focusing limited resources on high trash-generating areas. California was the first in the nation to establish regulatory controls to reduce trash into State water bodies.

### **Making Seawater Desalination Safer for Marine Life**

California’s multi-year drought increased interest in expanding water supplies, including the desalination of ocean waters. While desalination is a viable component of California’s water supply portfolio, seawater desalination facilities can negatively impact marine life: organisms may be drawn in with the source water and destroyed in the desalination process and the dense, extremely salty brine discharged into ocean waters tends to sink and spread on the seafloor and adversely impact bottom-dwelling marine organisms and communities. Prior to settling, brine discharges may adversely impact other marine life.

In 2015, the State Water Board adopted an amendment to the Water Quality Control Plan for the Ocean Waters of California (“Desalination Amendment”) to address these issues for seawater desalination facilities in California. The Desalination Amendment supports the use of ocean water as a reliable supplement to traditional water supplies while protecting marine life and water quality. New or expanded seawater desalination plants are required to use the best available site, design, technology, and mitigation measures feasible to minimize intake and mortality of all forms of marine life. The Desalination Amendment is the first to provide a uniform, consistent process for permitting of seawater desalination facilities statewide. In doing so, it provides direction to Regional Water Boards when permitting new or expanded facilities, provides specific implementation, monitoring and reporting requirements, and gives clarity to project proponents.

### **Regulating Contaminated Sediment in Bays and Estuaries**

Sediments in bays and estuaries are often contaminated with a variety of pollutants stemming from sources including industrial and agricultural discharges, municipal wastewater treatment plant discharges, and storm water. Toxic pollutants in contaminated sediments can affect bottom-dwelling (benthic) organisms and accumulate in fish tissue, posing health risks to humans and wildlife that eat the fish. These effects underscore the need to develop sediment quality objectives that protect aquatic ecosystems and human health.



Trinidad State Beach

In 2018, the State Water Board adopted regulations that establish sediment quality objectives to protect benthic organisms from exposure to pollutants in sediment and protect human consumers of sportfish from contaminants from sediment that accumulate in fish tissue. These will be implemented by the Regional Water Boards to establish clean-up levels in enclosed bays and estuaries and to identify where sediment contamination is impacting aquatic life and human health. The regulations provide a transparent, scientifically sound, and effective process to better assess the effects caused by pollutants in sediments, and will improve consistency in these assessments, reducing monitoring and regulatory requirements and costs while still protecting water quality.

## Protecting Consumers of Mercury-Contaminated Fish

Mercury from human activities can enter surface water bodies and accumulate in fish tissue to levels that pose a risk for humans and wildlife that eat the fish. This is a problem statewide.

In May 2017, the State Water Board adopted statewide mercury limits to reduce mercury levels in California's water bodies to protect beneficial uses associated with consumption of fish by both people and wildlife. This regulatory approach established new beneficial use definitions to protect California Native American cultural and subsistence fishing and non-tribal subsistence fishing uses. In addition, the action established five

new water quality objectives that set safe consumption levels for fish known to contain accumulated mercury. The objectives are based on the consumption rates for three populations at a higher risk of mercury exposure because they depend on these fish as a regular part of their diet: recreational sport fishers, tribal subsistence fishers, and non-tribal subsistence fishers. In addition, two objectives were established to protect wildlife from the harmful effects of mercury. The program focuses on controlling sediment from non-point sources, particularly in areas known to be contaminated by mercury, and updates the level of protection for recreational consumers of fish.



Miners Slough Salmon Lecture

## Prosecuting the *Cosco Busan* Oil Spill in San Francisco Bay

One of the worst environmental disasters in San Francisco Bay occurred in 2007 when the *Cosco Busan*, a container ship owned by Regal Stone Limited, collided with the Bay Bridge and spilled over 53,000 gallons of bunker fuel oil into San Francisco Bay, the Pacific Ocean, and adjoining shorelines. The spill caused more than 6,800 bird fatalities, decimated local fish populations, and caused prolonged beach closures across San Francisco Bay, resulting in significant economic losses.



Herring fishing boats in Sausalito

The State Water Board worked closely with the San Francisco Bay Regional Water Board, the California Attorney General's Office, and other local, state, and federal agencies to prosecute the action in federal court. In 2011, a consent decree was issued under which Regal Stone Limited agreed to pay more than \$43 million in natural resource damages, restoration costs, and civil penalties. The consent decree provided substantial funding for projects that restored and enhanced fish and bird populations, and their habitats, and for projects that enhanced public recreational opportunities. The Water Boards received reimbursement from the settlement for costs associated with the incident. Also, \$350,000 from the settlement was deposited into the State Water Board's Waste Discharge Permit Fund, which supports regulatory activities.



## Settling with City of San Diego over Storm Water Permit Violations

Erosion and sediment pollution in runoff from construction sites can alter water flows and result in flooding. Abnormally high levels of sediment in runoff can also negatively impact aquatic animals and habitats by reducing water clarity and carrying metals, pesticides, and other chemicals from urban areas into natural waterways.

Los Peñasquitos Lagoon and the Tijuana River Estuary, near San Diego, are degraded due to excessive sedimentation. During inspections of construction sites from 2010 and 2015, the San Diego Regional Water Board identified numerous sites throughout the city of San Diego that failed to implement

erosion and sediment control practices required by the city of San Diego's municipal storm water permit, posing a threat to the Lagoon, the Estuary, and other local streams and coastal lagoons.

In 2017, the San Diego Regional Water Board reached a [\\$3.2 million settlement agreement](#) with the City over the violations. Half of the penalty, \$1.6 million, was deposited into the Cleanup and Abatement Account, which is used towards grants for pollution cleanup when there is no viable responsible party. The City used the remaining half to complete four Supplemental Environmental Projects in the San Diego Region. The projects include two restoration projects, a restoration opportunities assessment (completed in 2018), and development of a bioassessment tool. The City has also committed to make changes to comply with its storm water permit.



San Diego Bay

## Catching Fraud in Underground Storage Tank Cleanup Fund

Leaking underground storage tanks (USTs) are a source of groundwater contamination from releases of petroleum and other hazardous substances, and can threaten human health, safety, and the environment. The State Water Board's UST Cleanup Fund assists UST owners and operators by providing reimbursement for certain expenses associated with the cleanup of leaking USTs.

In 2017, Board's Office of Enforcement permanently disqualified 100 UST claims from receiving monies from the Cleanup Fund as part of a whistleblower action under the False Claims Act. These claims are related to sites owned by the oil company Shell (Equilon), which requested reimbursement through false or misleading statements; Shell failed to disclose reimbursements it received from insurance companies for the same sites.

Disqualification of these 100 claims could save the Cleanup Fund up to \$150 million, which will be used to reimburse other Cleanup Fund claims. In addition, the settlement resulted in the oil company paying \$11.4 million to the State Water Board, which was added to the Cleanup Fund, and \$8.6 million to the Office of the Attorney General and the whistleblower.



Carneros Creek

# Department of Resources Recycling and Recovery (CalRecycle)

CalRecycle administers and provides oversight for all of California's state-managed non-hazardous waste handling and recycling programs. Known mostly for overseeing beverage container and electronic-waste recycling, CalRecycle is also responsible for organics management, used tires, used motor oil, carpet, paint, mattresses, rigid plastic containers, newsprint, construction and demolition debris, medical sharps waste, household hazardous waste, and food-scrap composting. CalRecycle's vision is to inspire and challenge Californians to achieve the highest waste reduction, recycling and reuse goals in the nation.

CalRecycle continues to strengthen its legacy of environmental protection, most notably by establishing an unequivocal link between waste diversion and greenhouse gas reduction. With California Climate Investment funding, the department supported the development and expansion of recycling infrastructure throughout the state. This infrastructure is critical to reducing both the disposal of compostable organics and the state's reliance on the export of recyclable materials.

CalRecycle's waste reduction and materials management efforts have evolved with the ever-changing waste stream and now global commodities market change. As a response, the department has developed a sharp focus on organic waste reduction, including diverting edible food and making it available to the 1 in 8 Californians who are food-insecure, and packaging reform.

In addition, CalRecycle has begun to serve a critical role, alongside other state and federal agencies, in debris cleanup in the wake of devastating wildfires across the state.

## **California Climate Investments**

California Climate Investments from CalRecycle's Greenhouse Gas Reduction Grant and Loan Programs put cap-and-trade dollars to work for California by reducing greenhouse gas emissions, diverting material from landfill disposal, strengthening the state's economy, and improving public health and the environment, particularly in low-income and disadvantaged communities. The programs are focused toward building the infrastructure and obtaining the equipment necessary to meet the state's solid waste diversion and greenhouse gas emission reduction goals pursuant to legislation Governor Brown signed into law: Assembly Bill 341 (Chesbro, Chapter 476, Statutes of 2011), Assembly Bill 1826 (Chesbro, Chapter 727, Statutes of 2014), and Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016).

Since 2014, CalRecycle has awarded \$64 million to 25 projects for the Organics Grant Program and \$14 million to six projects for the Recycled Fiber, Plastic, and Glass Grant Program. In 2018, CalRecycle awarded \$9.4 million to 32 projects in the new Food Waste Prevention and Rescue Grant Program; and the Greenhouse Gas Reduction Loan Program loaned \$3.6 million to three businesses.

The Greenhouse Gas Reduction Grant and Loan Program projects are expected to divert approximately 2.6 million tons of organic and recycled materials (fiber, plastic and/or glass) from landfill disposal and reduce approximately 1.5 million metric tons of CO<sub>2</sub> equivalent greenhouse gas emissions during a three- to four-year grant period. The Legislative Analyst's Office reports CalRecycle's cap-and-trade

grant programs are among the most cost-effective, with the organics grant program spending about \$9 million to \$30 million in grant funds for each metric ton of CO<sub>2</sub> equivalent reduced.

CalRecycle is also developing a pilot Reuse Grant Program for potential solicitation in 2019. The purpose of the program is to replace single-use products destined for disposal with products that can be used again. CalRecycle conducted a stakeholder workshop in December 2018 to discuss potential project types, eligible entities, reuse activities, and verification of reuse.

## **Reducing Organic Waste Disposal**

SB 1383 requires CalRecycle, in consultation with CARB, to reduce significantly the emissions of short-lived climate pollutants by reducing organic waste disposal 50 percent below 2014 levels by 2020 and 75 percent by 2025. The legislation also requires that not less than 20 percent of disposed edible food be recovered for human consumption by 2025.

In early 2017, CalRecycle began a series of informal stakeholder workshops to discuss the SB 1383 implementation process and to review draft regulatory language. CalRecycle anticipates completing the formal rulemaking process by late 2019, which will provide local jurisdictions with approximately three years to plan and implement the budgetary, contractual, and other programmatic changes needed to be in compliance when the regulations go into effect in 2022.

Additionally, CalRecycle provided technical assistance to CARB in the development of the Low Carbon Fuel Standard for the production of biomethane from organic food and green wastes. This collaboration has led to an increase in the diversion of organic waste from landfill disposal by providing economic incentives for the production of biomethane fuel. CalRecycle also worked extensively with the CARB to develop the quantification methodologies and calculators used to calculate emission reductions for Greenhouse Gas Reduction Fund grant and loan projects.

CalRecycle has provided technical support to the California Department of Food and Agriculture on its dairy digester grant program and the Healthy Soils Initiative. CalRecycle served as a member of the California Energy Commission Alternative and Renewable Fuel and Vehicle Technology Program Advisory Committee, which has provided more than \$40 million in grants to anaerobic digestion projects that convert organic waste to renewable vehicle fuel.

## **75 Percent Recycling Goal and Commercial Recycling**

In 2011, California implemented a new approach to the management of solid waste with AB 341, directing CalRecycle to oversee mandatory commercial recycling and establishing a new statewide target of 75 percent recycling by 2020 through source reduction, recycling, and composting. CalRecycle's recommendations on how to meet these requirements are outlined in an AB 341 report released to the Legislature in August 2015.

Under AB 341, jurisdictions are required to annually contact, educate, and monitor businesses and multifamily complexes that meet certain thresholds. CalRecycle worked with all jurisdictions in the state to help them develop their education, outreach, and monitoring activities and ensure they are fulfilling these requirements. The law has been instrumental in expanding commercial recycling programs statewide and significantly increased investment in recycling processing and infrastructure in California.

## **Packaging**

In 2012, recognizing that packaging comprises about 25 percent of California's disposal stream, CalRecycle began its packaging reform process as a strategy to reach the 75 percent recycling target, per Assembly Bill 341. The process included extensive stakeholder consultation for feedback on how to significantly reduce packaging waste. Based on this feedback, CalRecycle issued the Manufacturers Challenge and called for voluntary industry proposals to achieve a 50 percent



reduction in landfilling of packaging materials in California by 2020. While CalRecycle received good industry participation, overall it was determined that the actions presented would not accomplish the 50 percent reduction goal.

Consequently, CalRecycle is developing a model policy to reduce packaging waste significantly. Staff consulted with numerous stakeholders to help inform the adoption of a state policy model.

## **Extended Producer Responsibility Programs**

Extended Producer Responsibility is a strategy to place a shared responsibility for end-of-life product management on producers rather than the general public and local governments, with oversight and enforcement provided by a government agency.

In 2010, Governor Schwarzenegger signed Assembly Bill 1343 (Huffman, Chapter 5, Statutes of 2010). This bill established a paint stewardship program to reduce the generation, promote the reuse, and manage the end of life of postconsumer architectural paint in an environmentally sound fashion. An industry-run stewardship organization, PaintCare, has managed the program since 2012. In fiscal year 2016/2017, PaintCare collected roughly \$35 million in assessments from paint sales to operate its program. To date, this high-performing program has exceeded its convenience goals, with 98 percent of California's population living within 15 miles of a permanent paint drop-off location. The number of drop-off sites and amount of paint collection have steadily increased, and the financial burden on local governments associated with the management of leftover paint has steadily declined.

That same year, the Governor signed Assembly Bill 2398 (Perez, Chapter 20, Statutes of 2010), which established the United States' first carpet stewardship program to increase the amount of carpet diverted from landfills and manage it in a manner consistent with the state's waste management hierarchy. Carpet America Recovery Effort, known as CARE, is the industry-run stewardship organization that has managed the program since 2011. In 2017, CARE collected roughly \$23 million in assessments from the sale of carpet to operate its program. Although CARE has not yet met its recycling goals, in 2017 it reported recycling 47 million pounds of carpet materials. In 2017, Governor Brown signed Assembly Bill 1158 (Chu, Chapter 794, Statutes of 2017) into law. This statute provides CalRecycle with statewide recycling metrics and expanded information collection authorities and other tools to help hold carpet recyclers accountable for improving the performance of their recycling programs.

Governor Brown also signed into law Senate Bill 254 (Hancock, Chapter 21, Statutes of 2013), which established the Used Mattress Recovery and Recycling Act to reduce illegal dumping, increase recycling, and reduce public agency costs for the end-of-life management of used mattresses. The Mattress Recycling Council is the industry-run stewardship organization that has managed the program since 2015. In 2017, the Council collected roughly \$45 million in assessments from mattress sales, collected more than 1.2 million mattresses, and recycled more than 39 million pounds of mattress materials.



Mattress Recycling Facility

Most recently, Governor Brown signed Senate Bill 212 (Jackson, Chapter 1004, Statutes of 2018) which establishes the nation's first extended producer responsibility program for sharps and pharmaceuticals. Much like CalRecycle's current stewardship programs for paint, mattresses, and carpets, responsibility will be placed on a stewardship organization to design, fund (usually through a consumer fee), and implement a takeback program for these products at the end of their useful lives.

### **Single-Use Carryout Bag Ban**

Senate Bill 270 (Padilla, Chapter 850, Statutes of 2014), the statewide Single-Use Carryout Bag Ban, was signed into law in 2014 and went into effect in November 2016 when voters passed Proposition 67. Under SB 270, a store is prohibited from distributing single-use carryout bags. Instead, stores may sell reusable grocery bags, recycled paper bags, or compostable bags that meet statutory requirements. The law requires CalRecycle to accept proofs of certification for reusable grocery bags, post on its website a list of certified reusable grocery bag producers that have submitted the required documentation, and establish an administrative certification fee to cover the reasonable costs of implementation. A survey conducted by CalRecycle indicates there was an 85 percent reduction in the number of plastic bags and a 61 percent reduction in the number of paper bags provided by stores to customers in the first six months after the law went into effect. CalRecycle has initiated the rulemaking process to establish the administrative certification fee and clarify administrative procedures related to payments, submittal, and resubmittal of proofs of certification by reusable grocery bag producers.

### **Future of Covered Electronic Waste**

In 2017, CalRecycle's Covered Electronic Waste Recycling Program reached the milestone of 2.2 billion pounds of used TVs and monitors recovered and recycled. CalRecycle continues to collaborate with the Department of Toxic Substances Control to ensure residual cathode ray tube glass ultimately reaches appropriate dispositions in an ever-shrinking marketplace. CalRecycle also split the single payment rate paid to recyclers to establish separate rates for CRT (cathode ray tube) and non-CRT (flat screens) waste, and subsequently increased the payment rate for non-CRT to address the challenges of managing these devices. However, the state's Electronic Waste Recycling Program includes just a fraction of the estimated 120 million electronic devices purchased in California each year. In an effort to keep pace with rapidly evolving technology and global market conditions, CalRecycle worked with stakeholders and adopted a set of recommendations to redesign California's Electronic Waste Recycling Act. Key recommendations include:

- Expanding the number and types of products covered under the electronic waste recycling program to include most electronic devices requiring batteries or mercury containing lamps
- Incentivizing greater repair and reuse of electronic devices
- Increasing manufacturer responsibilities, including labeling and greater attention to durability/recyclability
- Adjusting recycling and recovery payments annually to authorized electronic waste collectors and recyclers to be more responsive to global market changes
- Encouraging industry take-back programs for emerging technologies like electric car batteries and solar panels

Most of the proposed recommendations would require new legislation.

### **Private Property Disaster Debris Removal Program**

California is subject to natural disasters that can generate a significant volume of debris, which must be removed and recycled, or disposed expeditiously to protect public health, safety and the environment and to help communities recover. Debris management is complicated and challenging for local jurisdictions and state agencies because it requires specialized, available personnel and resources to conduct these critical activities. In response to a Governor's declared State of

Emergency and a request for assistance from a local government, the California Office of Emergency Services regularly tasks CalRecycle to support communities in the management and implementation of debris removal operations, including wildfire cleanups. CalRecycle conducted debris removal operations for 13 incidents from 2014 to the spring of 2018. In the fall of 2018, CalRecycle simultaneously implemented four additional wildfire debris removal operations in Northern California. The time and funding required to complete debris removal activities is dependent on several factors, including the number of destroyed structures, location, terrain, availability of debris recycling and disposal infrastructure, and weather. Historically, CalRecycle's staffing and funding model was adequate to address small, short-term responses. However, larger events (such as the Valley and Butte fires of 2015/16) strained staff resources and taxed the ability of CalRecycle to effectively manage debris removal projects and conduct its mandated missions (including other cleanups such as the remediation of illegal disposal sites). The fiscal year 2018/19 Budget included authorization for CalRecycle to create a new unit consisting of six permanent full-time staff to support local governments in the management and implementation of wildfire debris removal operations.



Babel Slough Cleanup

### **Solid Waste Disposal Cleanup Program**

An important part of its charter to protect human health and the environment, CalRecycle's Solid Waste Disposal and Co-Disposal Site Cleanup Program provides assistance to clean up sites where the responsible party either cannot be identified or is unable or unwilling to pay for a timely remediation. From 2011 through 2018, program staff managed several important cleanup projects in California. CalRecycle remediated three large legacy burn dumpsites by consolidating and soil capping waste materials at the Fortuna Burn Dump, the Red Bluff Burn Dump, and the Cactus Road Burn Dump (San Diego County). Several other legacy disposal sites were remediated through grants, most notably the Water Tank Ravine burn dump in the city of Laguna Beach, a burn dump at Carpinteria, and the Cummins Road Burn Dump in Humboldt County. CalRecycle also administers several grants each year to help local agencies clean up illegal disposal sites. In the past few years, these grants have also been used to address solid waste issues related to homeless encampments in the city of Petaluma, Sonoma County, and the city of Santa Rosa.

### **Beverage Container Recycling Program**

During Governor Brown's administration, CalRecycle continued its efforts to improve the Beverage Container Recycling Program by protecting its long-term viability, combating fraud, and ensuring the integrity of the recycling fund. These efforts included:

- Increasing the reasonable financial return used for calculating processing payment to 11.5 percent for non-rural regions and 16.6 percent for rural regions. This will help recycling center operators better cover the costs of managing lower-value beverage container materials.
- Fraud prevention through interdicting imports of ineligible out-of-state bottles and cans heading for illegal redemption in California
- Gathering data on the amounts of recycled plastic being used to manufacture beverage containers
- Working with the Governor's Office to issue a policy paper titled "Modernizing the Beverage

Container Recycling Program” (The paper outlines several key recommendations that would improve the program’s ability to adapt to fluctuations in commodities markets, address changes to consumer recycling behaviors, and increase in-state remanufacturing capacity for recyclable materials.)

Several changes to the Beverage Container Recycling Program took root earlier in the Brown administration as CalRecycle expanded its efforts to protect the program’s long-term viability, combat fraud, and ensure the integrity of the recycling fund. These included:

- Elimination of the commingled rate, which allowed recycling centers to pay a lower per-pound refund for consumer loads that included non-California Redemption Value bottles and cans
- Establishment of pre-certification training requirements for new and recertifying recycling center operators, helping operators succeed while at the same time reducing losses to the fund due to errors, omissions, and fraudulent behavior
- A reduction in the daily load limits at certified recycling centers to deter individuals/entities importing empty beverage container material into California and illegally redeeming it for California Reduction Value (CRV)
- New requirements on people importing more than 25 pounds of empty beverage containers into the state (They now must pass through a California Department of Food and Agriculture border inspection station, leave identifying information, and fill out a report on where they are taking the material.)

### **Better Data on Recycled Material Volume and Flow**

With his signature of Assembly Bill 901 (Gordon, Chapter 746, Statutes of 2015), Governor Brown dramatically improved the department’s ability to measure progress toward mandated targets by expanding reporting to include data on recycling and composting. Disposal, recycling, and compost facilities, as well as exporters, brokers, and transporters of recyclables or compost, will be required to submit information directly to CalRecycle on the types, quantities, and destinations of materials that are disposed, sold, or transferred inside or outside the state. The statute also provides CalRecycle with enforcement authority to collect this information.

The Recycling and Disposal Reporting System being developed to collect the information required by AB 901 will replace CalRecycle’s current Disposal Reporting System. The additional data collected under the new law will help the department estimate total recycling and composting, understand the flow of materials, and track progress toward statewide goals. It will also help CalRecycle respond to changes in the recycling marketplace and increase the department’s ability to improve operational efficiencies and target resources to expand the state’s recycling infrastructure.

CalRecycle is currently in the formal rulemaking process for the AB 901 regulations, and it is anticipated the regulations will be approved and adopted in 2019.

CalRecycle also closely monitors data from local jurisdictions to calculate annual disposal tonnages as part of its evaluation of local diversion mandates required under state law. This data is used, in part, to determine progress toward the AB 341 75 percent recycling target.

CalRecycle also closely monitors data from local jurisdictions to calculate annual disposal tonnages as part of its evaluation of local diversion mandates under Assembly Bill 939 (Sher, Chapter 1095, Statutes of 1989 as amended [IWMA]). This data is used, in part, to determine progress toward the AB 341 target of 75 percent recycling.

The department also continues to analyze recyclable material exports from California ports. The information is documented in two annual reports: State of Disposal and Recycling in California, and California Exports of Recyclable Materials. (Prior to 2017, disposal and recycling information was published in two separate reports.) In addition to disposal and recycling data, these reports provide



background information and analysis of emergent issues that affect the recycling and disposal waste stream and progress toward AB 341 targets. These issues include but are not limited to changes in international recycling export markets and policies; reductions in biomass capacity in the state; impacts of the growing economy on disposal; the impacts of millions of dying trees from drought that may enter the waste stream; and increases in disaster debris due to wildfires.

### **Waste Characterization Studies**

Through periodic waste composition studies, CalRecycle tracks California's ever-changing waste stream, while gathering new information on materials of concern and new disposal trends. CalRecycle's last two waste characterization studies were completed in 2008 and 2014; the findings of the 2014 study were published in 2015.

Data generated from the 2014 study provided updated information on the composition of materials in the state's waste stream, the origin of waste by source sector, and the composition of disposed and recycled materials generated by commercial businesses.



Waste Characterization Study

Study results showed significant changes in the waste stream compared to 2008, especially in the areas of organic and inert waste. The study also demonstrated that many of the materials disposed by the commercial sector could be recycled. This data is used to assess progress toward the AB 341 recycling target and helped the department identify waste streams to prioritize.

CalRecycle is currently conducting a 2018 waste characterization study, including a detailed generator-based study on food waste for information on potentially recoverable food. The data will also be used to provide a baseline for SB 1383 organics diversion efforts.

### **Recycling Manufacturing Assistance**

CalRecycle has increased its efforts to expand and attract new and existing recycling manufacturing facilities within California. As a result, business assistance requests have increased significantly during the Brown administration, with more than 100 recycling manufacturers requesting assistance annually. These requests include financial, permitting, siting, marketing, feedstock, and location information. CalRecycle collaborates with Recycling Market Development Zones, other state agencies (e.g., Governor's Office of Business and Economic Development), and local agencies (e.g., Economic Development Corps and Small Business Development Centers). Over the past several years, the state has provided millions of dollars to recycling manufacturing companies in the form of grants, loans, and tax incentives, such as the California Alternative Energy and Advanced Transportation Financing Authority. For example, the Recycling Market Development Zone Loan program has provided more than \$30 million in low-interest loans to recycling manufacturers in the last eight years. The benefits of expanding recycling manufacturing in California include creating a stronger and sustained recycling infrastructure that is not reliant on foreign markets, reducing greenhouse gas emissions, and creating new jobs. Developing such facilities is a critical component of CalRecycle's efforts under AB 341 and SB 1383, as well as CARB's efforts under the 2017 Scoping Plan Update.



## Education and the Environment Initiative

Through its Education and the Environment Initiative (EEI), CalRecycle's Office of Education and the Environment has brought environmental literacy to more than 15,000 K-12 classrooms during the Brown administration. The environment-based EEI model curriculum was approved by the State Board of Education in late 2010, and the years since have focused on training teachers and bringing more than 1.6 million copies to California students. Environmentally literate students understand how they depend upon and influence the world in which they live and are environmentally informed decision makers. Topics addressed in the EEI curriculum include climate change, water, air, and resource conservation. The EEI curriculum incorporates California's five Environmental Principles and associated Concepts, which focus on how humans depend upon and influence the environment. These principles are now included in the State Board of Education's criteria for instructional material adoption. Moreover, textbook publishers recently incorporated them into their newest instructional materials for science and history/social science, negating the need for supplemental instructional materials. Students in California have increasingly grown to be environmentally literate, a trend that is anticipated to continue in the years to come.



Fourth-grade teacher Laura Honda teaches environmental literacy.

## Changes to Rigid Plastic Packaging Container Program

California's Rigid Plastic Packaging Container law was enacted in 1991 as part of an effort to reduce the amount of plastic waste disposed in California landfills and to increase the use of recycled postconsumer plastic. Due to the complexity of the changes and the need for stakeholder feedback, the department adopted new regulations in January 2013 to establish assistance and education tools for the program. Since those tools have been developed, 1,817 companies have been registered, and the number of companies selected to demonstrate full compliance (compliance certification) has increased from five companies a year to 35 per year.

# Department of Pesticide Regulation

The mission of the California Department of Pesticide Regulation (DPR) is to protect human health and the environment by regulating pesticide sales and use, and by fostering reduced-risk pest management. DPR's work includes product evaluation and registration, environmental monitoring, residue testing of fresh produce, and statewide licensing of commercial applicators, dealers and advisers. DPR provides oversight of the local pesticide enforcement programs of all 55 County Agricultural Commissioners and their combined staffs of approximately 400 biologists.

## Neonicotinoid Reevaluation and Pollinator Protection Plan

DPR is at the national forefront of the effort to protect bee health, taking proactive steps and a scientific approach to address concerns about the impact of pesticides on bees. In 2009, DPR initiated the reevaluation of certain pesticide products containing four neonicotinoid chemicals: imidacloprid, thiamethoxam, clothianidin, and dinotefuran. DPR partnered with scientists at the U.S. Environmental Protection Agency's Office of Pesticide Programs and Pest Management Regulatory Agency (PMRA) Health Canada to ensure that the required studies, methods, and procedures used to conduct studies on the effects of neonicotinoids, provide useful and reliable information to all three agencies for use in guiding their regulatory actions.



DPR & Fresno County Agricultural Commissioner's Office participate in a pollinator workshop

In 2018, DPR published the California Neonicotinoid Risk Determination. It is now working on the development of mitigation measures consistent with the evaluation. Additionally, it also published California's Managed Pollinator Protection Plan. The plan recommends best practices to protect bees from the risks of pesticide usage.

## Regulation of Pesticide Applications near Schools and Child Care Centers

In 2017, DPR finalized a regulation that addresses agricultural pesticide applications near school sites. In general, the new regulation prohibits many agricultural pesticide applications within a quarter mile of public K-12 schools and licensed daycare centers on weekdays from 6 am to 6 pm. It also requires annual notifications of pesticides that may be used within a quarter mile of schools and daycare facilities during the upcoming year. The goals are to reduce the chances of unintended pesticide exposure to children and to increase communications between growers, County Agricultural Commissioners and school sites. The regulation took effect January 1, 2018.

## Healthy Schools Act Revisions

Senate Bill 1405 (DeSaulnier, Chapter 848, Statutes of 2014) amended the Healthy Schools Act (HSA). The HSA requires schools to maintain records of pesticide use for four years, and to post notices in advance of pesticide applications on school grounds. It also directs DPR to encourage schools to adopt integrated pest management (IPM) programs on campus. The program can reduce conventional pesticide use by encouraging prevention and non-pesticidal controls. SB 1405 built upon the act by requiring schools to report pesticide use to DPR annually and requiring DPR to create training courses for school employees and contractors who use pesticides on campus—including anti-microbial cleaning products. DPR has developed a database that tracks pesticide applications in schools. It also provides online training courses for licensed pesticide applicators and staff in school districts and childcare centers. DPR launched the first of its free training modules on its website in 2016, and then added more-advanced training modules in 2017.



DPR's School & Child Care Integrated Pest Management program promotes less-toxic alternatives to pesticides for school administrators.

## Advancing Air Monitoring for Pesticides

DPR expanded its capacity to conduct air monitoring for pesticides. Two new air-monitoring stations were added to bring the total number of stations to eight when all sites have been initiated. Three stations are located in Chualar (Monterey County), Santa Maria (Santa Barbara County), and Monterey County south of Watsonville. Another five sites will be operated by CARB in cooperation with DPR: Shafter (Kern County), El Rio/Oxnard (Ventura County), Cuyama (Santa Barbara County), Lindsay (Tulare County), and San Joaquin (Fresno County). DPR will be monitoring for 31 pesticides and five pesticide breakdown products at all sites. Previously only three sites monitored for all 31 pesticides. California is the only state that monitors air as part of its continuous reevaluation of pesticides to ensure the protection of workers, public health, and the environment.

## Grant Projects to Reduce Pesticide Use

DPR has awarded nearly \$8 million in integrated pest management (IPM) grants since 2012 to projects furthering DPR's mission of fostering reduced-risk pest management.

- **Alliance grants:** Funds projects that increase broader adoption of IPM practices through the creation of alliances that include state, local, public, private, educational, and other stakeholders – \$2.6 million awarded for 14 grants
- **Research grants:** \$5.2 million awarded for 22 grant projects to research pesticide alternatives
- **Fumigant alternatives:** California



DPR funded research on fumigant alternatives using steam as an alternative to injecting chemicals into the ground to control soil-borne pests and diseases



strawberry farmers, who grow over 85 percent of the nation's strawberries, generally use fumigants – gaseous pesticides injected into the soil prior to planting – to protect their crops from harmful pests. However, fumigants must be strictly regulated to protect public health and one major fumigant (methyl bromide) is being phased out under international law. To assist this transition, DPR has been working closely with strawberry growers and other stakeholders to find practical and cost-effective alternatives to soil fumigants. In 2012, DPR convened the Non-Fumigant Strawberry Production Work Group, a diverse group of scientists and stakeholders to address this complex issue. In 2014, DPR convened the first-ever soil symposium at UC Davis as a follow up to a recommendation by the Non-Fumigant Strawberry Production Work Group.

- **Strawberry partnership:** In 2013, DPR and the California Strawberry Commission launched a three-year, \$500,000 research partnership to explore ways to grow strawberries in peat or substances other than soil that are less pest-susceptible. \$500,000 was awarded for research grants to analyze alternative, non-fumigant production practices.

### **Promoting IPM in Society: IPM Achievement awards**

Since January 2011, DPR has awarded 30 IPM Achievement Awards. The achievement and innovator awards honor agricultural and nonagricultural California groups, organizations, companies, or schools for their achievements in IPM and reduced-risk pest management. The awards recognize a variety of accomplishments in the areas of innovation, education and outreach, and leadership in promoting IPM practices. In 2018, DPR and UC Davis convened the “Pests, Pesticides and Society” working group to recommend solutions for further expanding IPM practices in nonagricultural settings.

### **Chlorpyrifos Restrictions**

In 2015, chlorpyrifos was listed as a restricted material, meaning only trained, licensed professionals who have a permit from a local County Agricultural Commissioner would be able to use products containing this pesticide. DPR scientists completed a draft risk assessment of chlorpyrifos in 2017 and initiated the statutory process for listing and mitigating that chemical as a toxic air contaminant. The draft risk assessment was later updated after review by the Scientific Review Panel on Toxic Air Contaminants. The review panel consists of nine highly qualified scientists engaged in research in their respective fields. Based on the revised risk assessment, DPR is proposing to adopt a regulation to list chlorpyrifos as an air toxin. If listed, DPR will have two years to prepare final control measures for the use of chlorpyrifos. In the meantime, in late 2017, DPR implemented recommended interim guidelines for chlorpyrifos use, which restricted application methods and increased distances between sites where the chemical is applied and sensitive locations, such as homes and schools. Modified guidelines recommending further restrictions were proposed in late 2018.

### **Control Measures for Chloropicrin**

DPR added controls for chloropicrin when it is used as a soil fumigant, including use in combination with 1,3-Dichloropropene (see below). The controls are intended to reduce risk from acute (short-term) exposures that might occur near fields fumigated with products containing chloropicrin. Although chloropicrin is often added to other fumigants to act as a warning agent, the controls DPR is implementing are only for its use as a soil fumigant. DPR studied the effects of chloropicrin in a risk assessment, which was completed in 2010. The risk assessment determines how toxic the chemical is, how people could be exposed when the chemical is applied, the possibility that the chemical will cause harm, and how great the risk is that people will be harmed from the chemical's use. The chloropicrin risk assessment identified potential risks to persons working or living near fields that were fumigated with chloropicrin. DPR has developed extra control measures to protect persons from these potential hazards based on a risk management directive and refinements to exposure estimates used in the risk assessment.



## **1,3-D Management Plan**

1,3-Dichloropropene (brand name Telone) is a fumigant used by farmers as a pre-plant soil treatment for fruit and nut trees, strawberries, grapes, carrots, and a host of other food and non-food crops. In 2016, DPR developed and implemented a plan to manage health risks to bystanders from exposure to 1,3-D. The plan restricted usage by limiting product sales to 136,000 pounds for each township (a 36 square-mile area) in the state. It also ended a previous system that allowed any unused township allocation of 1, 3-D to be saved for use in later years. Further, the plan banned the use of this pesticide during December, when it was thought weather conditions would make air concentrations higher.

In May 2018, the Alameda County Superior Court determined in a lawsuit filed by groups and individuals concerned about the potential adverse human health effects of 1,3-D that the township cap plan was an unlawful underground regulation. The court ordered DPR to prepare and submit to the Office of Administrative Law an administrative rulemaking package to address potential cancer risks to bystanders from the use of 1,3-D no later than a one year following issuance of its order. The court also ordered DPR to temporarily maintain the annual township cap of 136,000 pounds as an interim measure to address potential cancer risks to bystanders from the use of 1,3-D. DPR is working with other regulatory agencies, including OEHHA, CARB, local air districts, and U.S. EPA, to finalize its rulemaking package for 1,3-D mitigation conditions to address potential cancer risk to bystanders.

## **Regulating Pesticides and Cannabis**

DPR undertook a number of projects in preparation for the state's transition toward legalized recreational cannabis effective January 2018, including:

- Creating a cannabis information webpage where growers, hydroponic shop operators, and consumers can access information about laws and regulations affecting cannabis and lists of pesticides that are legal (or illegal) to use on cannabis
- Establishing pesticide residue thresholds. Aiding the new California Bureau of Cannabis Control, DPR created a list of suggested science-based pesticide residue thresholds on cannabis products. This will help guide the Bureau in determining whether cannabis being sold has dangerous concentrations
- Providing guidance and outreach to County Agricultural Commissioners

## **Protecting Wildlife: Second Generation Anticoagulant Rodenticides Regulation**

In 2014, DPR adopted a regulation to restrict the sale of certain types of rat poisons known as Second Generation Anticoagulant Rodenticides (SGARs). Effective July 1, 2014, all SGARs containing the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone, are designated as California restricted materials, and thus no longer allowed to be sold to consumers. The regulation is intended to protect wildlife (e.g., owls, coyotes, bobcats, and foxes) from exposure to these SGARs. DPR proposed beginning a reevaluation of pesticide products containing these Second Generation Anticoagulant Rodenticides.

## **Endangered Species Protection**

PRESCRIBE is an Internet database application implemented by DPR that provides recommended measures to protect threatened and endangered species from exposures to user-selected pesticides at specified locations. A new mobile application also yields protective measures and adds a feature that uses a smart phone's locator function to identify a user's current location and proximity to listed species' habitat.

## Environmental Justice Outreach and Workshops

DPR partnered with the Central California Environmental Justice Network (CCEJN), Lideras Campesinas and the Fresno, Kern, Santa Barbara, and San Joaquin County Agricultural Commissioners on workshops to strengthen partnerships with the community by providing attendees a working knowledge of pesticide use enforcement, reporting, and worker safety.



Agricultural standards investigators with the Riverside County Agriculture Commissioner's office, leads a discussion about worker-safety inspections

## Worker Protections

DPR moved forward with additional changes to the state's worker protection regulations. The regulations expand pesticide handler and fieldworker training and clarify field posting requirements. These – in addition to providing fieldworker decontamination water, enclosed space ventilation, and other criteria – were put in place in March 2018.

## Sanitizer Safety Outreach to Restaurant Workers

In 2015, DPR scientists in the Pesticide Illness Surveillance Program performed an analysis of the associated nonagricultural occupational illness data (2005-2014) which revealed that approximately one quarter of these cases occurred in retail food facilities. Over 90 percent of the cases involved the use of antimicrobials (sanitizers), a type of pesticide. Many workers in food facilities are not aware that sanitizers are pesticides that may pose a risk to human health. In 2016, DPR developed outreach posters and flyers, with feedback from the California Conference of Environmental Health Directors, the Department of Industrial Relations, industry, and others on the safe use of sanitizers. The posters and flyers were mailed to county and city environmental health departments and County Agricultural Commissioners in December 2016. In addition, DPR created a website on sanitizer safety for food service employers and employees in an effort to reduce sanitizer-related exposures and illnesses.

## Expanded Protection for Groundwater

DPR's Ground Water Protection Program evaluates and samples for pesticides to determine if they may contaminate ground water, identifies areas sensitive to pesticide contamination, and develops mitigation measures to prevent that movement. From 2011 through 2018, several steps were taken to protect ground water including:

- Posted the well inventory database publically available through the DPR website
- Updated the Pesticide Contamination Prevention Act to include degradates
- Initiated formal review process for pesticides alachlor, metolachlor/s-metolachlor, and chlorthal-dimethyl
- Updated and expanded the soil and water requirements for Terrestrial Field Dissipation studies to define California conditions
- Added 41 pesticides to the annual sampling of the Well Monitoring Network

# Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) was established to protect California against threats to public health and the environment and to restore properties degraded by environmental contamination. DTSC uses its statutory authorities and scientific and technical expertise to clean up existing contamination, regulate the safe management of hazardous wastes, and prevent pollution by working with businesses to reduce their hazardous waste and use of toxic materials.

## **A Commitment to Safer Consumer Products**

In 2013, DTSC adopted regulations to implement a groundbreaking program, called the Safer Consumer Products Program. This program implements California's 2008 Green Chemistry Laws, designed to reduce toxic chemicals in consumer products and foster green chemistry innovation. This program works in four steps: (1) DTSC lists Candidate Chemicals, (2) DTSC identifies Priority Products, (3) Businesses produces Alternatives Analyses to the use of dangerous chemicals in products, which is subject to DTSC review and approval, and (4) DTSC develops Regulatory Responses to address the hazards identified from the use of dangerous chemicals.

Fulfilling the first step, DTSC established a list of 2,300 hazardous Candidate Chemicals in 2013 from authoritative, peer-reviewed lists developed by national and international environmental agencies.

As a second step, DTSC then adopted the first three Priority Products with public review and input:

- Children's foam-padded sleeping products (2017)
- Spray polyurethane foam (2018)
- Methylene chloride paint strippers (2018)

DTSC also launched the online CalSAFER information management system to facilitate a transparent process of stakeholder information exchange. In 2018, three additional products were proposed – carpets and rugs with perfluoroalkyl and polyfluoroalkyl substances (PFASs), laundry detergents containing nonylphenol ethoxylate surfactants, and paint strippers containing N-methylpyrrolidone.

The third step of the safer consumer products process requires manufacturers of Priority Products to prepare an Alternatives Analysis considering the entire product life cycle in answering two questions:

- Are the Candidate Chemicals in their Priority Products necessary?
- What alternatives could make the products safer?

In the fourth step of the process, DTSC will use submitted Alternatives Analyses to determine the appropriate regulatory



Safer consumer products

response to reduce or avoid potential impacts from the Priority Products. Responses can include a range of actions, such as reformulation, use restrictions, consumer information, or product bans.

To date, manufacturers of regulated children's products sold in California have already removed the carcinogenic flame retardants. Other manufacturers have proactively begun to remove Candidate Chemicals from products that fall within the scope of the program's work plan.

### **Permitting Overhaul**

Since 2011, DTSC has dramatically improved its oversight of hazardous waste facilities. Under state and federal law, DTSC has primary responsibility to review and approve or deny permit applications for facilities that treat, store, or serve as disposal sites for hazardous waste. Prior cuts in staffing along with outdated procedures had caused long delays in permit review, resulting in a backlog that allowed facilities to operate for many years under the terms of old, expired permits.

In 2013, DTSC commissioned an external audit of its permitting program to look for solutions. Beginning in 2015, DTSC implemented rigorous, data-driven process improvement strategies, such as Kaizen and Lean Six Sigma, to increase the efficiency and effectiveness of this program. To date, the program has completed six structured improvement projects, which are focused on reducing the average permit processing time from over five years to approximately two years for 90 percent of permits. These improvements also yielded clearer, more enforceable permits.

In 2016, using surveys and stakeholder input, DTSC redesigned public input into permitting decisions to support earlier and more meaningful engagement with affected communities, tailored to suit communities' particular needs.

In 2018, after several years of extensive public input, DTSC adopted more rigorous and protective permitting regulations. The revised regulations require community and health risk assessments, and improved safety training and financial assurance at facilities that manage hazardous waste. DTSC's regulations also incorporate a novel, quantitative scoring procedure for each facility's violations, along with transparent processes for considering compliance history in permit decisions.

DTSC is currently engaging stakeholders, academics, and government partners on ways for the Department to assess and address cumulative impacts and community vulnerability in permit decisions.

### **Taking on Exide to Restore a Community**

The Exide Technologies Inc. battery recycling facility in Vernon, near Los Angeles, has left a legacy of lead contamination in the surrounding communities.

In 2013, 2014, and 2015, DTSC ordered Exide to pay penalties, improve its operations, conduct on-and off-site corrective action, and provide financial assurance for facility closure. Finally, in February 2015, DTSC denied Exide's permit application. Following extensive environmental and public review and input, DTSC approved a closure plan for the facility, which began in 2017 and is proceeding on schedule.

In 2016, Governor Brown approved \$176.6 million to expand investigation and cleanup in the area surrounding the facility. DTSC approved a Cleanup Plan in 2017 following an environmental review and public comment. As part of the remediation process, DTSC established a workforce training program for community members, from which more than 40 people have graduated. DTSC also prioritized local hiring for the cleanup under a Project Labor Agreement.

To date, the Department has tested approximately 85 percent of the estimated 10,000 parcels in the area and prioritized those with the highest lead levels for cleanup. In 2018, DTSC awarded contracts for the cleanup of 2,025 parcels. Through the end of December 2018, DTSC has overseen the cleanup of 569 parcels within 1.7 miles of the facility with the highest lead levels and greatest exposure risk.



DTSC is also using an additional \$6.5 million to test and clean up parkways in the 1.7-mile area around Exide. DTSC is currently in solicitation for a contractor to conduct the sampling of soil in parkways.



Exide



Exide



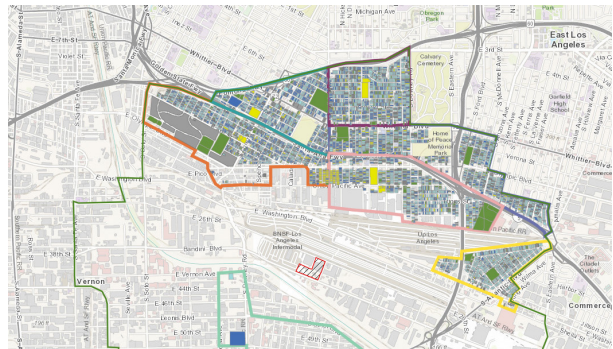
Exide



Exide: WERC graduates in the field



Exide: WERC graduates in the field



Exide: Interactive Map

## Providing Leadership in Cleaning Up Contamination

Under the Brown administration, DTSC adopted new regulations in 2018 to strengthen the protectiveness and enforceability of cleanups across the state. The Toxicity Criteria rule requires that cleanups use the best available, peer-reviewed science on contaminants' harmful health effects. The rule defines the process for selecting toxicity criteria and ensures that risk assessments and the cleanup process will be based on data that best represent California's diverse population.

DTSC also approved a rule that authorizes use of an enforcement order to require ongoing operation and maintenance at closed hazardous waste facilities. This rule provides another tool in DTSC's toolbox to hold companies accountable for addressing contamination on their sites.

### **The Stringfellow Project**

In July of 2016, DTSC dedicated a new \$52 million groundwater treatment facility at the Stringfellow Superfund site in Riverside County's Jurupa Valley. The state-of-the-art Pyrite Canyon Treatment Facility is an upgraded, modernized, and reliable replacement for an aging pretreatment plant, and is designed to provide efficient, reliable cleanup for the next 30 years.

Stringfellow was operated as a liquid industrial waste disposal site from 1956 until its closure in 1972. During that period, 34 million gallons of liquid hazardous waste from metal finishing, electroplating, DDT production and aerospace propulsion industries were disposed of in unlined evaporation ponds at the 17-acre disposal area. Over the years, the contents of the ponds moved through the underlying soil and fractured bedrock, entered the groundwater and migrated south under the community of Jurupa Valley (formerly Glen Avon).

The new treatment facility, which took about three years to construct, can treat 120 gallons of contaminated water per minute, or about 173,000 gallons per day, and can support expansion if additional treatment processes are needed. The plant is a Leadership in Energy and Environmental Design (LEED) certified facility.

The facility is a testament to the collaboration of DTSC with local, state, and federal agencies, which include the Department of General Services, Santa Ana Watershed Protection Authority, city of Jurupa Valley, Chino Basin Watermaster, Jurupa Community Services District, and the Orange County Sanitation District.



The Stringfellow Project

### **The Argonaut Mine**

The historic Argonaut Mine dam in Amador County holds back 165,000 cubic yards of soil and mine tailings that are contaminated with arsenic, lead and mercury. In a 2015 U.S. EPA study, engineers predicted the dam could fail in a heavy rain event. Dam failure would bury the nearby town of Jackson in up to 14 feet of contaminated sludge, causing possible loss of life and an estimated \$120 million in damages. U.S. EPA turned to the state of California, including DTSC, to work collaboratively to address this threat.

Knowing El Niño storms were forecast for that winter, Governor Brown provided emergency funding that allowed DTSC to build a stormwater diversion system, to stop rainwater from building up and increasing pressure on the dam. The team completed the project in under four months – the diversion system was operational when the first storm arrived in November 2015 and withstood a downpour that dropped nearly five inches of rain in 24 hours.



DTSC staff inspect part of the Argonaut Mine Dam



The mine was listed by U.S. EPA as a Superfund site in 2016, and DTSC continues to oversee and fund the retrofit of the dam. The retrofiting phase of the project began in June 2018. Concrete was used to strengthen the historic dam's structural integrity, followed by securing it with an earthen embankment and a surface water drainage structure.

### **A Focus on Recovery: Wildfire Crews Clear Burn Sites of Hazards**

DTSC emergency responders are the first on the scene at residences and burn sites to begin restoration efforts after wildfires. In collaboration with local, state, and federal agencies, DTSC removes asbestos, batteries, gas cylinders, chemicals, paints, pesticides, and other hazardous waste. This critical first step in restoring fire-damaged properties allows fire victims to begin the recovery of their homes and property.

Since 2011, DTSC has responded to 27 wildfires, removing more than 5 million pounds of hazardous debris. In one DTSC fire response action in 2017, DTSC personnel spent 35 days in Ventura County, clearing hazardous waste from 1,000 properties burned in the Thomas Fire. In other response action in 2018, DTSC evaluated more than 1,100 properties and removed hundreds of thousands of pounds of hazardous waste from homes burned in the Carr Fire in Shasta County.

To speed the recovery effort, DTSC developed geolocation technology tools to provide crews in the field with accurate data about their surroundings, enabling them to catalogue, reference, and share important information in real time. The new platform has allowed rapid coordination among agencies and reduced DTSC's response times by more than 20 percent. The information is also displayed in a simple visual format on DTSC's website, providing residents and other members of the public with the opportunity to track the fire recovery progress.

### **Enforcing California's Metal-Containing Jewelry Law**

In April 2018, DTSC won a \$1.6 million case against a Los Angeles-based manufacturer and distributor of jewelry, including children's jewelry, containing dangerous levels of lead and cadmium. A multiyear DTSC investigation revealed that Luxy Accessory Inc. and other companies sold lead-tainted jewelry and falsely labeled goods that they had marketed to adults and children.

In 2011, Governor Brown signed Senate Bill 646, expanded the definition of jewelry and clarified certification requirements for jewelry suppliers and manufacturers.

A year later, DTSC filed lawsuits against 16 Southern California jewelry stores and distributors that failed to comply with this state law that restricts the amounts of lead and cadmium in jewelry made or sold in California. The law also established separate provisions for children's jewelry, body piercings, and other forms of metal-containing fashion accessories.

Individuals exposed to high levels of these metals can suffer from serious health issues, including abdominal pain, anemia, nausea, and even death. Toxic metals can also lead to joint weakness, behavioral issues, and learning disabilities, especially in young children.

Since 2011, DTSC's enforcement actions under the Metal-Containing Jewelry Law has removed more than 10,000 noncompliant children's and adult jewelry items from store shelves.



Lead in Jewelry

## **Community Engagement: The Kettleman Agreement**

In 2016, DTSC and CalEPA announced a historic agreement with Greenaction for Health and Environmental Justice and El Pueblo/People for Clean Air & Water of Kettleman City, resolving a civil rights complaint over DTSC's 2014 decision to approve a permit modification to expand the Kettleman Hills Hazardous Waste Landfill. The agreement is the first voluntary resolution jointly developed by state agencies and community groups under Title VI of the federal Civil Rights Act.

DTSC and CalEPA meet regularly with the agreement signatories to provide detailed updates and receive input on actions related to the Kettleman Hills hazardous waste landfill site and surrounding Kettleman City community. As part of the agreement, CalEPA works with the state Water Quality Control Board to track progress in completing a project to provide clean water for Kettleman City, now scheduled to complete construction in February 2019. DTSC supported a community-based environmental health project in Kettleman City through a grant with the National Institute of Environmental Health Sciences and UC Davis. Kettleman City will also receive community-based air monitoring through a grant from the California Air Resources Board.

Under the agreement, DTSC revised its civil rights and language access policies with extensive input from the signatories and the public. DTSC is also developing a comprehensive implementation plan that provides specific, practical internal guidance on implementing the policies. In reviewing the Kettleman facility's current application for a permit renewal, DTSC will further evaluate potential impacts from facility operations as well as opportunities to reduce or eliminate such impacts on the community.



Kettleman

## **Ensuring Accountability for Recovering Costs related to Contaminated Sites**

Under the Brown administration, DTSC instituted major reforms in the way it recovers costs incurred from investigating and cleaning up contaminated sites. In 2013, DTSC determined that as much as 10 percent of total cleanup costs from the previous 25 years were unrecovered. The California State Auditor confirmed that DTSC did not complete cost recovery of \$194 million from 1,621 sites.

A multidisciplinary DTSC strike team evaluated outstanding costs and actions taken at all 1,621 sites to develop and implement a cost recovery strategy at each site. Work has been completed and costs fully resolved at 1,477 of these sites. DTSC continues to pursue cost recovery at 144 remaining sites through litigation and by searching for and negotiating settlements with potential responsible parties. In addition, working with the Attorney General, DTSC recently secured costs in several major cases, including \$86 million at the BKK Landfill site in Los Angeles County and \$2 million at the Chicago Musical Instruments site in Fullerton.

This success was built on the complete re-engineering of cost recovery procedures. DTSC retooled its process, creating 27 detailed guidance documents and enhanced training for hundreds of staff. The new process includes a status dashboard for transparent, real-time tracking of costs recovered for each project. DTSC tracks responsible party searches, property liens, and settlements. It has also worked with the Legislature to craft legislation to improve cost recovery outcomes. DTSC continues to improve its cost recovery program. A new cost recovery management system is in the third stage of Information Technology development, and new cost recovery specialists are joining the team in 2018.



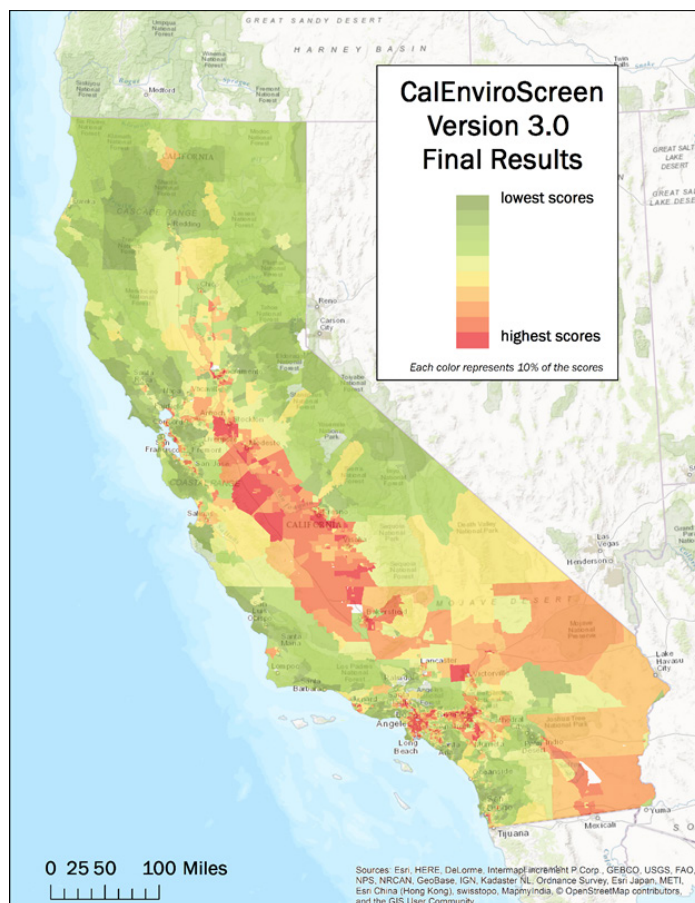
# Office of Environmental Health Hazard Assessment

The Office of Environmental Health Hazard Assessment (OEHHA) is the lead state agency for the assessment of health risks posed by environmental contaminants. OEHHA's mission is to protect and enhance the health of Californians and our state's environment through scientific evaluations that inform, support and guide regulatory and other actions. OEHHA implements the Safe Drinking Water and Toxic Enforcement Act of 1986, commonly known as Proposition 65, and compiles the state's list of substances that cause cancer or reproductive harm. OEHHA also develops health-protective exposure levels for contaminants in air, water, and soil as guidance for regulatory agencies and the public. These include public health goals for contaminants in drinking water and both cancer potency factors and non-cancer reference exposure levels for the Air Toxics Hot Spots Program.

## CalEnviroScreen

CalEnviroScreen is the nation's first comprehensive environmental health screening tool. It identifies California communities most likely to be affected by multiple sources of pollution, and communities that may be more vulnerable to pollution's effects. Developed by OEHHA in partnership with CalEPA, it helps further the Agency's commitment to consider the cumulative impacts of multiple pollution sources on vulnerable communities in its decision-making. CalEnviroScreen is a core element for CalEPA's environmental justice programs.

CalEnviroScreen evaluates each of the state's 8,000 census tracts based on environmental, health, and socioeconomic data from numerous state and federal government sources. The tool assigns a score to each census tract, based on levels and sources of pollution as well as socioeconomic and public health factors indicating the vulnerability of residents to pollution's health effects. OEHHA scientists published several scientific papers



CalEnviroScreen as illustrated in the CalEnviroScreen Data Update for the Border Region (2017)

between 2011 and 2018 on the tool's methodology and analyses using CalEnviroScreen data.

State policymakers have used CalEnviroScreen as guidance in distributing millions of dollars in funding for environmental projects that benefit and are located in disadvantaged communities. CalEPA programs also use CalEnviroScreen in their regulatory decision-making. Local government agencies and community groups throughout California are also using CalEnviroScreen to inform their activities.

The first version of CalEnviroScreen was released in 2013, followed by later versions in 2014 and 2017. Each release was preceded by public comment periods, webinars, and multiple community workshops. The participation of community members, non-governmental organizations, industry, and local government representatives in this process has been vital to the tool's acceptance and use.

## **Glyphosate**

The 2017 Proposition 65 listing of glyphosate as a carcinogen has been one of OEHHA's most contentious actions. Lawsuits have raised constitutional challenges to the listing and the core requirement for businesses to warn Californians when they knowingly cause exposures to chemicals causing cancer or reproductive effects.

Glyphosate – the world's most widely used herbicide – was identified as a carcinogen by the International Agency for Research on Cancer (IARC) in 2015. This required the Proposition 65 listing of glyphosate. OEHHA's 2015 notice of its intent to list glyphosate drew 9400 public comments, more than any other Notice in OEHHA's history, reflecting the larger national controversy over its health effects.

OEHHA successfully defended the glyphosate listing in a 2016 state court lawsuit by Monsanto Corporation, the developer and leading manufacturer of glyphosate. Monsanto presented novel arguments that listings based on IARC findings were unconstitutional. Various groups, including the California Chamber of Commerce and the Sierra Club, intervened on both sides of the case. In July 2018, OEHHA adopted a No Significant Risk Level providing guidance on levels of glyphosate exposure that require Proposition 65 warnings.

In addition to the unsuccessful state court challenge, in 2017 a coalition of national agricultural interests filed a federal court challenge to the glyphosate listing and to the Proposition 65 warning requirement associated with the listing. The federal district court rejected the challenge to the listing, but granted a preliminary injunction enjoining enforcement of the warning requirement for glyphosate. The preliminary injunction is based on an argument that a Proposition 65 warning on glyphosate would violate businesses' First Amendment rights given that there is controversy about whether glyphosate is a carcinogen. Because the Attorney General and private parties, rather than OEHHA, enforce the Proposition 65 warning requirement, OEHHA has been dismissed from the federal action. The Attorney General remains a party to the action, which is currently stayed pending a decision by the Ninth Circuit Court of Appeals in a similar First Amendment case.

## **Proposition 65 Reform**

In 2016, OEHHA adopted new regulations to make Proposition 65 warnings more informative. The action addressed a longstanding concern that Proposition 65 warnings have not provided meaningful information and represented the biggest change to Proposition 65 implementing regulations since the 1980s. Under the new regulations, OEHHA developed warning guidelines and a warning website, which contains additional information on listed chemicals, the products and places commonly associated with those chemicals, and advice on how people can reduce their exposure to the chemicals. OEHHA spent three years developing the regulation, which involved extensive participation by numerous business groups and non-governmental organizations.

From January 2011 through September 2018, OEHHA listed 107 chemicals, such as bisphenol-A (a reproductive toxicant widely used in plastics and food-can liners) and styrene (a carcinogen used in

many products, including food packaging). These listings sparked business interest in requesting OEHHA's development of safe harbor numbers that provide guidance on when warnings are required, and Safe Use Determinations (SUDs) as to whether a product requires a warning. OEHHA is currently working on an unprecedented number of SUD requests.

### **Artificial Turf**

Under a four-year contract with CalRecycle, OEHHA is conducting the world's most comprehensive assessment of potential health risks from the use of recycled waste tires in synthetic turf fields and playground mats. The study, scheduled for completion in late 2019, was commissioned due to public concern that toxic chemicals in crumb rubber may be posing risks of cancer and other effects in turf users, particularly soccer players. CalRecycle will use the study results as guidance in regulating the safe use of recycled tire materials.



Artificial turf

OEHHA has obtained samples for chemical analyses of air and synthetic turf from 35 fields across California and has videotaped male and female soccer players of various ages during practices and games to evaluate how they may be exposed to crumb rubber. These data will enable OEHHA to evaluate the level of exposure to chemicals in the crumb rubber and any resulting health risks. The Lawrence Berkeley National Laboratory and researchers from the University of California, Berkeley and the University of Arizona are assisting OEHHA with the study. OEHHA held several public workshops to receive input on study design, and regularly convenes a seven-member Scientific Advisory Panel (SAP) of independent experts that meets publicly to provide guidance and feedback to OEHHA.

### **Investigating and Encouraging the Development of Safer Alternatives to BPA**

The Proposition 65 listing of bisphenol A (BPA) as a reproductive toxicant in 2015 accelerated efforts underway in the food industry to phase out the chemical's use in food-can liners to prevent microbial contamination and spoilage. Food businesses expressed concern about their ability to identify effective BPA alternatives in time to avoid putting Proposition 65 warnings on a broad spectrum of canned food products. To help facilitate the transition, OEHHA took two actions:



Canned food contains BPA

- In 2016, OEHHA promulgated a regulation that temporarily allowed the use of a point-of-sale warning by retailers that provided general information about exposures to BPA from canned foods, and included an OEHHA website address with more information. The regulation, which expired at the end of 2017, provided the public with an informative warning while avoiding an overwhelming number of warnings on store shelves covering numerous individual products.
- Also in 2016, OEHHA in collaboration with the UC Berkeley Center for Green Chemistry convened a public forum to discuss strategies for identifying safer alternatives to bisphenol A in can linings. The forum was attended by academic experts in green chemistry principles,

materials experts from the food industry, major food packaging firms, non-governmental organizations, and government regulators and scientists. Discussions centered on can-lining function and the food-packaging system, evaluating chemical migration from linings into foods, and evaluating the toxicity of BPA alternatives and integrating various concerns and findings into decision-making.

By the end of 2017, food businesses and NGOs reported that BPA had been phased out of most food-can liners.

### **Perchlorate Public Health Goal**

In 2015, OEHHA continued its pioneering work in assessing the health risks of perchlorate in drinking water by updating its Public Health Goal (PHG). One part per billion (ppb) was identified as a level of perchlorate in drinking water that would not pose a health risk; this replaced OEHHA's original 2004 PHG of 6 ppb. The 2004 PHG was the first in the nation for perchlorate, and the approach used was cited by the National Academy of Sciences in 2005 as a model for perchlorate assessments.

The 2015 updated PHG reflects current science on the increased susceptibility of infants to the health effects of perchlorate and accounts for their high water consumption per body weight relative to adults. The State Water Board uses OEHHA's PHGs as guidance to set California's drinking water standards (Maximum Contaminant Levels, or MCLs). There is no federal MCL for perchlorate.

Perchlorate occurs naturally in the environment and can also be found in rocket fuel, fireworks, vehicle airbags, and herbicides. Perchlorate prevents iodide uptake into the thyroid, resulting in decreased thyroid hormone production. This can affect many critical body functions, including brain development. Infants may be particularly susceptible to perchlorate because their rapidly developing brains are critically dependent on adequate thyroid hormone. Infants have much lower thyroid hormone reserves than adults, making them less able to adapt to periods when iodide levels might be low.

OEHHA is in the process of developing PHGs for other high priority chemicals, including the by-products of water disinfection.

### **EPA Toxcast Program and Integrating New Data Streams into Risk Assessments**

OEHHA scientists have kept up with the rapidly changing field of toxicology due to increased use of cell-based testing and computer modeling as an alternative to traditional animal testing methods to predict chemical toxicity. For example, OEHHA scientists have evaluated and critiqued the U.S. Environmental Protection Agency's ToxCast program, which uses these innovative, rapid testing methods in an effort to profile and predict potential chemical toxicity. These novel data streams are especially critical for characterizing the potential health hazards of data-poor substances, such as the emerging chemicals of concern that are examined in the California Environmental Contaminant Biomonitoring Program, and others that are of interest to a variety of CalEPA environmental programs. OEHHA has also integrated these data in the evaluation of chemicals considered under Proposition 65.

OEHHA is currently collaborating with the U.S. National Toxicology Program, U.S. Environmental Protection Agency and several academic institutions to advance and apply the new toxicological methods like the ToxCast assays in assessments of data-sparse chemicals, with an emphasis on "PFAS" chemicals (per- and poly- fluorinated chemicals).

### **Indicators of Climate Change in California**

In reports issued in 2013 and 2018, OEHHA documented many of the key impacts that climate change is having on California. Some of these impacts are well known, such as rising sea level, hotter



temperatures (particularly at night), more frequent and severe periods of drought, diminishing snowmelt runoff, and increasing extent of wildland fires. The reports also discussed subtler and less well-known impacts, including the movement of species and habitats to higher elevations and latitudes, the increasing dominance of small trees and decreasing areas with pine trees in California's forests, changes to bird migratory patterns, and changes in the maturation times of certain agricultural crops.

The reports are based on information from 36 indicators of environmental conditions that can be affected by climate change. They discuss the importance of each indicator and the various factors that may be influencing them. An initial report was issued in 2009, and OEHHA expects to produce new reports with updated information periodically.

By measuring and tracking the changes occurring in California's physical environment and ecosystems, as well as the human-influenced emissions that drive climate change, the reports provide an essential scientific foundation to inform the state's efforts to respond to climate change.

OEHHA monitors the scientific literature and publications of research organizations, governmental entities and academia for relevant information, and prepares the reports in close collaboration with scientists from state and federal agencies, universities, and research institutions.

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California Department of Resources Recycling and Recovery

California Department of Toxic Substances Control

California Office of Environmental Health Hazard Assessment

California State Water Resources Control Board