2016 Programs and Accomplishments Report

California Department of Toxic Substances Control

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

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Sculpture outside the CalEPA Headquarters building by artist Beverly Pepper

DTSC: Stepping Up for Cleaner and Safer Communities

The important work DTSC is doing to enforce hazardous waste laws, restore contaminated sites, and safeguard communities is more than just a list of regulated chemicals or the tally of acres cleared for reuse. We are committed to demonstrating the values that drive the technical work we perform: reinforcing our commitment to environmental justice by protecting underserved communities; providing excellent public service by being accountable for, and providing transparency in, our decisions; and creating a diverse and inclusive workforce capable of handling the future challenges we will face. These values weave throughout the reforms we have undertaken, and they underpin the delivery of our core services. As we look to the future, these values are providing both the foundation on which we are building our next strategic plan, and the compass that guides our decisions and actions as we move towards 2020 and beyond.

In 2015, the Legislature established, and Governor Brown appointed, an Assistant Director of Environmental Justice and Tribal Affairs for DTSC. With the 2016 creation of the Office of Environmental Justice and Tribal Affairs, we are working closely with communities and Native American tribes to more fully understand their needs and concerns. DTSC is systematically evaluating all aspects of our programs and services to better meet these needs and address concerns.

As an example, in response to community concerns about impacts from metal recycling

(which is primarily regulated by local agencies), DTSC inspected metal recyclers in vulnerable communities around the state. We are following through with administrative, civil and criminal enforcement of the many violations we found, and are working with local agencies to provide guidance and training on hazardous waste to improve compliance at all metal recyclers in the future.

Also in response to community concerns, we are adopting practices used by performance management experts and implementing these best-practice tools throughout the Department to be more rigorous, efficient, transparent and accountable. DTSC developed a draft violation scoring protocol to evaluate facility compliance history when we make permit decisions. We improved our enforcement case management, strengthened our penalty review process, and enhanced enforcement policies and procedures. New performance metrics will allow staff, management and stakeholders to better monitor program performance. A new Strategic Program Development team coordinates this work, assessing statutory mandates for each program area, and soliciting input from staff and stakeholders to ensure we use our resources efficiently and

effectively, fully aligned with our mission and vision.

Since DTSC's creation, we have overseen the investment of more than $1.9 billion to restore contaminated sites; by 2014 we had recovered about 90% of those costs. DTSC has now completed a detailed review of the remaining 10% of costs and re-engineered our cost recovery process to ensure we assign and recover response costs. In a successful cost recovery action in 2016, we announced an $85 million settlement with J.P. Morgan for the BKK Landfill in West Covina, including past response costs and funds for future cleanup.

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A redesign of the permitting process aims to reduce the average time for permit renewal from nearly 5 years to 2 years for 90% of permits – recognizing that about 10% of hazardous waste facility permits require additional review and public engagement. This redesign was motivated, in part, by broad concern about the Exide Technologies battery recycling facility in Vernon, CA, operating on an interim permit. In February of 2015, we informed Exide that the facility's permit would be denied; DTSC's March 2015 order structured the closure of the facility and underscored that Exide is legally required to clean up its contamination onsite and in surrounding communities.

Rather than wait for the closure process to assess and address contamination at residential properties around the facility, DTSC ordered Exide to sample and clean up the nearest properties. Governor Brown directed $7 million in emergency funding to further sampling and cleanup in 2015, followed by $176.6 million in early 2016. These funds allow DTSC to sample approximately 10,000 residential properties, schools, parks and daycare centers, and clean up about 2,500 properties with the highest levels of lead and the greatest potential exposure. The project includes an advisory group of community members, leaders and advocates. Our Public Participation team has conducted over 100 canvassing sessions in the communities around Exide, walking door-to-door talking to residents. In addition, through our Workforce for Environmental Restoration in Communities program, we provided job skills training to nearly 50 community members who received jobs restoring their neighborhoods.

DTSC is addressing the impacts of lead acid batteries on human health and the environment in other ways as well. Through our Community Protection and Hazardous Waste Reduction Initiative, the Department worked with a diverse advisory group to evaluate opportunities to reduce community exposure to hazardous waste generated from the use and handling of batteries throughout their lifecycle. Through our Safer Consumer Products (SCP) program, DTSC began its review of lead acid batteries for potential listing as a Priority Product under the SCP regulations.

The SCP program approved a three-year work plan with product categories including products that contain chemicals of concern for the health of infants and children, and workers. In addition, DTSC is reviewing nail salon products and their workplace exposures to women who are particularly vulnerable because of widespread language barriers and lack of control over working conditions: the Program Guidelines and accompanying outreach materials will be translated into the native languages of salon workers to help them become aware of, and mitigate, the occupational hazards associated with working in nail salons.

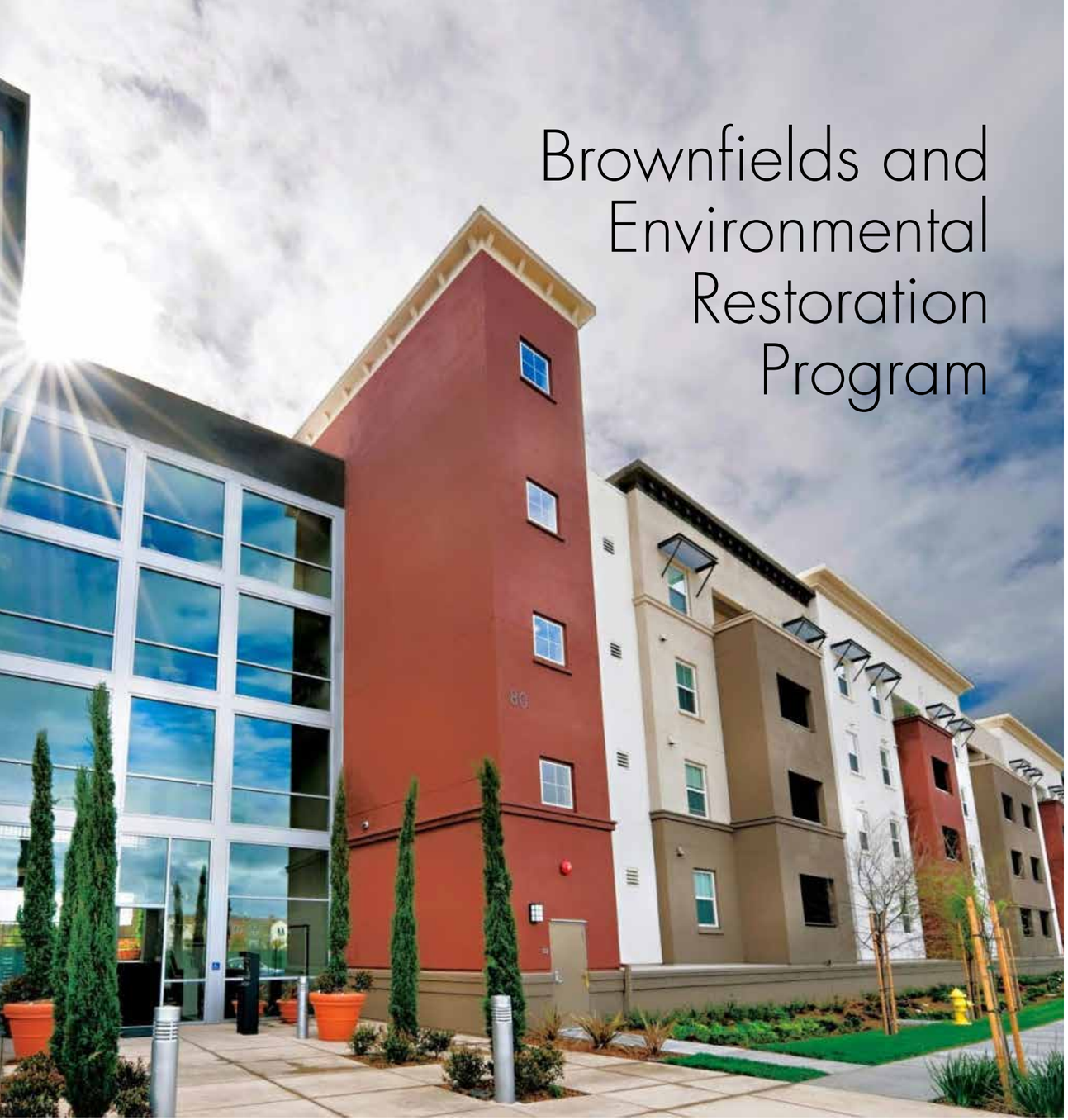
DTSC began modernizing our Public Participation program, including extensive surveying of communities and other stakeholders, to better meet their diverse needs, and more fully include them in Department decision-making.

In 2016, we established a Diversity and Inclusion Work Group to promote a culture of understanding and respect for the diverse heritage, experiences and perspectives of DTSC's employees and the people of California. The recommendations of this group will be woven into our 2018-2022 strategic plan with the principles of environmental justice, transparency, accountability, diversity and inclusion – to support a culture of excellence in the service of a clean and healthy California.

Maya Angelou wrote, "All of us knows, not what is expedient, not what is going to make us popular, not what the policy is, or the company policy – but in truth each of us knows what is the right thing to do. And that's how I am guided."

This report outlines our programs, and what we have accomplished, illustrated by stories of how our work touches people in communities throughout the state. Our work is not easy, but it is vitally important. We are up to the challenge. Today and into the future, we continue to engage communities, hold polluters accountable, make products safer, and reclaim land for productive uses…because it is the right thing to do.

Warm Regards,
Barbara Lee, Director



Brownfields and Environmental Restoration Program

The DTSC Brownfields and Environmental Restoration Program, also known as the Cleanup Program, is charged with restoring and safeguarding communities through the investigation and cleanup of contaminated properties.

The Cleanup Program has approximately 375 staff, including engineers, scientists, geologists, toxicologists, analysts and other professionals. The Program is organized into two divisions and a special project which is the cleanup of the residential area around the former Exide Technologies facility in Vernon, California. In addition to regional branches, the program includes the following statewide special focus operations: Schools Evaluation and Brownfields Outreach, Legacy Landfills, Human and Ecological Risk Office, Engineering and Special Projects Office, Geological Services Office, Santa Susana Field Laboratory Project Support, and Grants and Program Support.

Program Overview

The mission of the Cleanup Program is to provide regulatory oversight for the investigation and restoration of contaminated properties within California. A substantial subset of these properties includes "Brownfields," which are developed urban properties where known or suspected contamination is preventing their full beneficial use, and often contributing to urban blight. Restoring these properties revitalizes local economies with investments during the investigation and remediation phase and offers sustainable reuse once the cleanup is complete. It also reduces sprawl by focusing development near existing services, and preserves open spaces and critical habitat. Most importantly, site cleanup for all contaminated properties protects Californians from exposure to harmful contamination where they live, work, attend school and play.

The Cleanup Program oversees restoration of approximately 1,700 sites in California that are in different stages of investigation and cleanup. There are 98 sites in California on the federal National Priorities List (NPL),under the Superfund program.

There are also 43 state orphan sites, which are contaminated sites without known financially viable responsible parties. However, the funds available for cleanup have not met the historic demand. Since its inception, the Cleanup Program has spent more than $1.9 billion in resources to clean up contaminated sites in California, restoring around a million acres of contaminated land at almost 4,500 sites for productive reuse.

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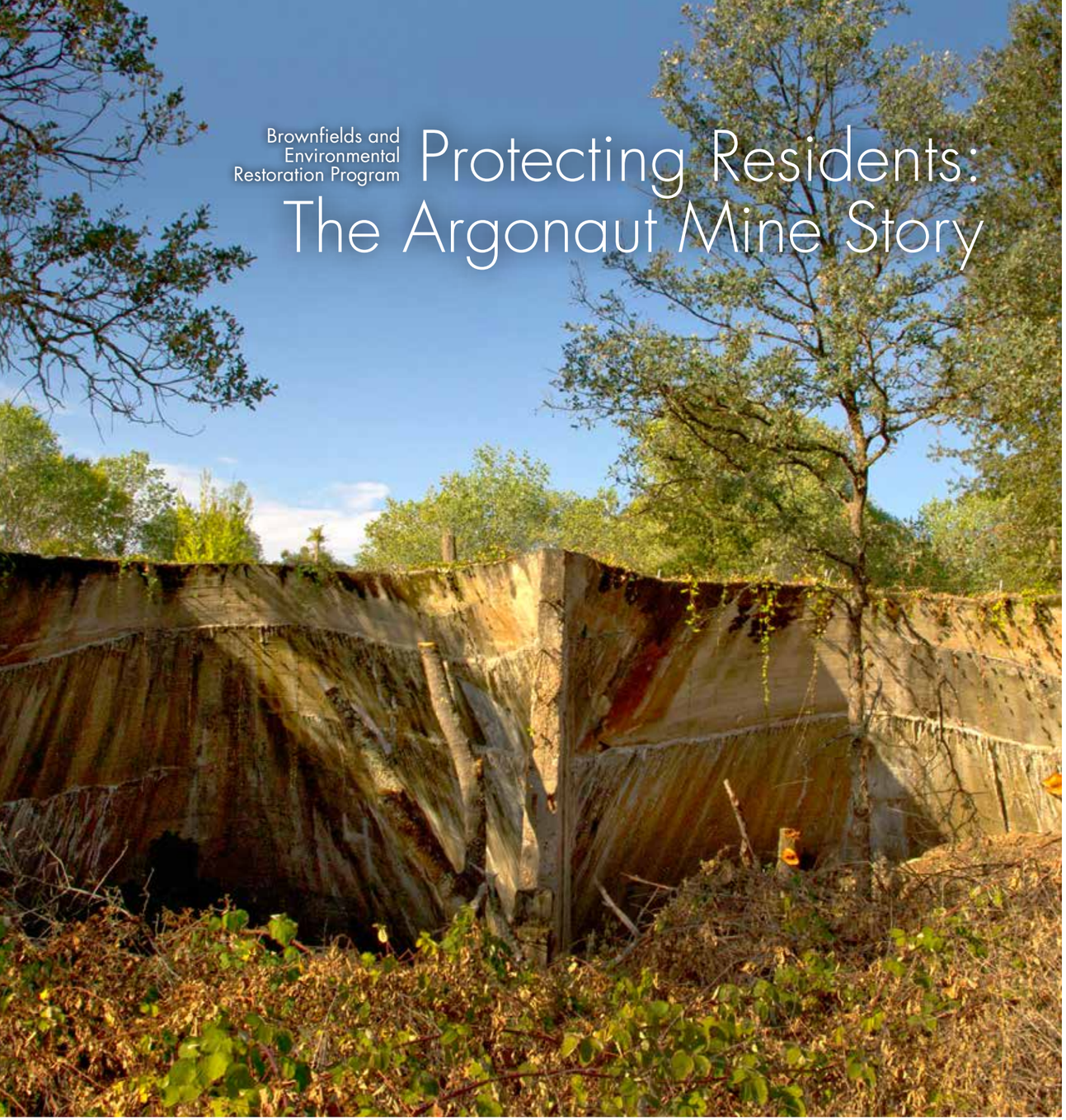


Brownfields and Environmental Restoration Program

Protecting Residents: The Argonaut Mine Story

At the historic Argonaut Mine above the City of Jackson in Amador County, a 100 year-old dam holds back one million cubic yards of soil and mine tailings highly contaminated with arsenic, lead and mercury.

A study released in June 2015 by the U.S. Army Corps of Engineers and the U.S. EPA found the dilapidated Eastwood Multiple Arch Dam was likely to fail in a large rain event, possibly burying the City of Jackson in up to 14 feet of arsenic-laden sludge and causing $120 million in economic damage.

Jared Blumenfeld, then administrator of the Pacific Southwest Region for U.S. EPA, told The Sacramento Bee, "Dam failure would be catastrophic for the town of Jackson."

Without funds to respond to the threat, the federal EPA turned to the State of California and DTSC.

"We had to work swiftly to reduce the threat of a catastrophe," said Charlie Ridenour, a branch chief in DTSC's Cleanup Program. "The threat was real, and imminent."

The winter of 2015 held the looming threat of El Niño storms. DTSC staff acted quickly with the City of Jackson. Governor Brown provided emergency funding and DTSC staff built a system to divert storm water around the dam. It stopped rain-soaked soil and mine tailings from building up and exerting pressure.

"We had to overcome significant hurdles to construct this temporary fix," said DTSC Engineering Geologist Tami Trearse. Located on private land, the dam had been seriously neglected since it was closed in 1942.

The team completed the project in under four months, and the diversion system was in place and operational when the first storm arrived in November, dropping a whopping 4.5 inches of rain.

DTSC continues to work on the dam's retrofit design with help from the Department of Water Resources and the EPA. The retrofit is scheduled to begin in 2018.

"This is government solving a problem before it happens, and they should get the kudos for doing that," said City of Jackson Mayor Patrick Crew.

In September 2016, the EPA listed the Argonaut Mine as a Superfund site.

Below: Cleanup Program Branch Chief Charlie Ridenour discusses the project with a member of the media.

Brownfields and Environmental Restoration Program

LEEDing the Way: The Stringfellow Treatment Facility

On July 21, 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 (PCTF) is an upgraded, modernized and reliable replacement for the aging Pre-Treatment 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).

In 1983, the Stringfellow Hazardous Waste Facility became one of the first federal Superfund sites in California. Fifteen years later in 1998, DTSC assumed sole responsibility for the site's future cleanup work on behalf of the State of California.

The PCTF, which took about three years to construct, can treat 120 gallons of contaminated water per minute, 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 more effective, streamlined and automated system and it signals DTSC's commitment to a durable, reliable remedy to treat groundwater," said Richard Hume, Chief of DTSC's Legacy Landfills Office.

Below: DTSC Stringfellow Project Manager Sam Martinez conducts a public tour of the new PCTF.

Brownfields and Environmental Restoration Program

Sacramento Railyards Restoration

The Sacramento Railyards is the largest and most complex urban infill project in the country. It is a 240-acre site in which a 125-year legacy of rail maintenance and repair, and coal and diesel storage left extensive soil and groundwater contamination. In November 2015, the Cleanup Program certified the remediation of 158 acres of soil at the site. A land use covenant and other binding agreements mandate clean fill, vapor mitigation, and oversight of future actions.

Remediation efforts will allow development of the largest and most complex urban infill project in the country.

In March 2016, the Cleanup Program approved a design/implementation work plan for soil excavation for the final portion of the site. These remediation efforts will allow a large mixed-use project on the site that is expected to include up to 10,000 housing units with ground-level retail, 3,857,027 square feet of office space, a Kaiser hospital/medical center, a 25,000-person major league soccer arena, and hotels, museums, parking and open spaces.

Above: One of two new bridges spanning the railroad tracks that connect Downtown Sacramento with the future development.

Hazardous Waste Management Program

The Hazardous Waste Management Program (HWMP) is charged with enforcing California's laws and regulations for protecting people and communities from toxic waste.

HWMP has 266.5 staff positions, including engineers, scientists, investigators, and other professionals and support staff. Staff are organized into four divisions: Permitting, Enforcement and Emergency Response, Office of Criminal Investigations, and Policy and Program Support.

Program Overview

HWMP staff issues, denies, revokes and modifies hazardous waste facility permits, conducts regular and targeted inspections of facilities that manage hazardous waste, responds to complaints of illegal storage, treatment or disposal of hazardous waste or other illegal activities, and assists local law enforcement agencies with hazardous waste investigations.

HWMP staff responds to emergencies involving the release of hazardous materials, in coordination with other federal, state and local emergency responders. Staff assists with, clarifies, and interprets statutory and regulatory requirements, and manages certain compliance and tracking data. The program also inspects hazardous waste transporters, tracks waste shipments to and from California locations, and enforces various statutory restrictions and bans on the use or sale of toxic materials. In addition, HWMP investigates illegal disposal of hazardous waste. When violations are found, HWMP takes criminal, civil or administrative enforcement action.

HWMP also provides guidance on regulatory interpretations and compliance. Staff offers training to agencies that oversee local hazardous waste programs, and participates in site audits of local programs.

HWMP Accomplishments by the Numbers

(July 1, 2015 - June 30, 2016)

12	Permit decisions completed
20	Class 1 permit modifications completed
2	Class 2 permit modifications completed
5	Closure activities completed
49	Emergency permits completed
313	Regulated facility inspections completed
133	Electronic waste inspections completed
81	Reviews of financial assurance documents related to the inspections completed
48	Administrative or civil enforcement actions initiated
43	Administrative or civil enforcement actions settled
21	CUPA evaluations conducted
31	CUPA oversight inspections conducted
3,009	Trucks at the U.S./Mexico border inspected for hazardous waste violations
85	Emergency response actions conducted
$5.236 MILLION	In penalties collected

Hazardous Waste Management Program

Holding Polluters Accountable: The Electro-Forming Case

A former plating employee's tip sparked a DTSC investigation that found Electro-Forming, Inc., a Richmond metal plating business, had violated major provisions of the Hazardous Waste Control Law.

When the company refused to stop, DTSC ordered it to shut down, assisted the district attorney in prosecuting the corporation and the owner, and supervised the removal of abandoned hazardous waste. The waste included cyanide, nitric acid, hydrochloric acid, and plating solutions containing copper and hexavalent chromium.

Owner and operator Marion Patigler pleaded guilty to nine misdemeanor charges and, on behalf of the company, to an additional four felony counts. She received a fine, followed by court probation and a suspended jail sentence. After failing to clean up hazardous waste on the site under the terms of her probation, she was sentenced to three years in jail.

DTSC used a full range of its resources in this case, including staff from site mitigation and the Office of Criminal Investigations; as well as staff from the Enforcement and Emergency Response Division, Environmental Chemistry Laboratory and Office of Legal Counsel. DTSC also received assistance from the State Attorney General's Office and the Contra Costa County District Attorney's Office.

"This criminal case was filed to hold Marion Patigler and her company accountable for their conduct, protect the public and ensure a safer worker environment at the facility," Contra Costa County District Attorney Mark Peterson said. "The prosecutors and investigators in the Contra Costa County Environmental Protection Unit worked closely with the DTSC Office of Criminal Investigations. We thank them because without their hard work and support, this case would never have occurred."

> "We thank [DTSC's Office of Criminal Investigations] because without their hard work and support, this case would never have occurred."
>
> – *Mark Peterson, Contra Costa County District Attorney*

Turning the Tide: The Exide Cleanup

Closure of the Exide Technologies facility in Vernon, and the subsequent $176.6 million lead cleanup project authorized by Governor Brown, remains one of DTSC's top priorities. It is the largest residential cleanup of its kind in California history, both in size and financial commitment, and one of the largest in the nation.

The plant suspended operations in 2014 and never reopened after DTSC initiated the process of denying Exide's permit application in 2015. DTSC concluded the plant could not operate in compliance with California standards, and issued an order structuring Exide's obligations to close the facility and clean up its contamination.

In February 2016, Governor Brown committed $176.6 million to expedite and expand testing and cleanup of the community, including residential properties, schools, daycare centers and parks near the closed Exide plant. By the end of 2016, DTSC's project team:

- Finalized a plan to safely close the 15-acre Exide site, and dismantle and remove hazardous waste management buildings and equipment on the property, while keeping nearby residents safe from exposure to harmful air emissions and other demolition hazards.
- Proposed a comprehensive draft cleanup plan to remove lead-contaminated soil from about 2,500 residential properties. DTSC will finalize the plan, and in fall 2017 begin cleanup.
- Created a program to provide job skills to community residents near the Exide plant, so they can be hired to help restore their neighborhoods.
- Forged relationships with local community groups, government agencies and elected representatives. These community partnerships are crucial for gaining trust and obtaining permission from property owners and tenants to test for lead in soil.
- Investigated the industrial neighborhood around the plant to identify environmental impacts, and order the company to take corrective action.

Current efforts include proactively connecting with impacted environmental justice communities. "DTSC has set an aggressive schedule for cleaning up neighborhoods that have historically been marginalized," said Deputy Director of Public Participation, Jerilyn López Mendoza.

Office of Environmental Justice and Tribal Affairs

The DTSC Office of Environmental Justice and Tribal Affairs seeks to better serve communities by embedding the principles of environmental justice throughout DTSC's work and by approaching tribes for respectful coordination.

The Office of Environmental Justice and Tribal Affairs has nine staff, including environmental scientists and analysts. They are in Sacramento and Chatsworth.

Program Overview

The Office of Environmental Justice and Tribal Affairs was created with the 2016-2017 Budget Act. This new program aims to build on DTSC's efforts to enhance protections for vulnerable communities, and ensure that those most impacted by multiple sources of pollution have a voice in the decision-making process. Under the direction of the Assistant Director for Environmental Justice and Tribal Affairs, program staff collaborate with impacted communities and government agencies to promote equitable data collection and communication, improve public access to technical resources and decision-makers, and enhance protections for vulnerable communities.

The team has worked on a variety of projects including DTSC's first Draft Tribal Consultation Policy, the Workforce for Environmental Restoration in Communities (WERC) program, and a landmark civil rights agreement that benefits environmental justice communities and resolves a complaint on a Kettleman Hills hazardous waste landfill permitting decision.

This new program aims to build on DTSC's efforts to enhance protections for vulnerable communities.

Office of
Environmental Justice
and Tribal Affairs

Revitalizing Communities Through WERC

The Workforce for Environmental Restoration in Communities (WERC) program supports public health, community engagement, and the local economy. It was established by Assembly Bill 118 (Santiago) and Senate Bill 93 (De León) to train under-employed residents of the communities surrounding Exide, and directly supports DTSC's plan to advance and expand the cleanup of residential properties, schools, daycare and childcare centers, and parks around the Exide Technologies facility in Vernon.

Between July and December 2016, the WERC program trained residents to become Certified Lead Sampling Technicians and safely sample soil for lead in their communities. This was done in partnership with the Los Angeles Trade-Technical College, the UCLA Labor Occupational Safety and Health Program, the National Association of Training and Environmental Consulting International, Inc., and ThermoFisher Scientific.

Elizabeth Ines, a WERC graduate from Boyle Heights, said, "This is a great investment in our education. It's opening doors to other jobs that I didn't have before, and I am helping out my community by being of service to it."

Forty-nine community members graduated from the WERC program in 2016 – a 100 percent graduation rate. Students received OSHA 40-hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) certification, health and safety training, Lead Sampling Technician Certification, XRF Operator training, and pre-employment and job placement assistance.

The contractors sampling residential properties have hired 45 WERC graduates. More than 50 percent of total hours worked on the Exide project have been performed by residents who live in the surrounding communities of Boyle Heights, Maywood, Commerce, Huntington Park, Bell, Vernon, and unincorporated East Los Angeles.

"It's a privilege and an honor, not only because it's the first class of its kind, but also because I am going to be working in my own city and my own community," said WERC graduate Carlos Jimenez of Maywood.

A second phase is under way, and includes training for skilled jobs in soil remediation, lead hazard control, interior home cleaning, landscaping, and health education.

Left and below: WERC trainees learn to sample for lead.

Safer Products and Workplaces Program

The Safer Products and Workplaces Program (SPWP) is tasked with managing the ground-breaking Safer Consumer Products Program (SCP) and the Health and Safety Branch (HSP).

The Safer Consumer Products Program is the main focal point of the SPWP, and is charged with accelerating the quest for safer chemicals in consumer products. The Health and Safety (HSP) Branch provides training and support to ensure the highest level of protection to DTSC staff operating in the field and in DTSC offices.

Through a robust and transparent process, the SCP program aims to reduce toxic chemicals in consumer products, create new business opportunities in the emerging green chemistry industry, and help consumers and businesses identify what chemicals are in the products they buy.

To accomplish these goals, SCP relies on a four-step process:

1. The Candidate Chemicals list is compiled from authoritative bodies across the globe. A chemical placed on the list is an indication of its potential to cause harm to people or the environment.
2. SCP researches how Candidate Chemicals are used in specific consumer products that may cause harm, and, if warranted, adopts regulations to designate those products as Priority Products.
3. Priority Product manufacturers are required to notify DTSC and engage in the Alternatives Analysis process to determine if the chemical is truly necessary, establish safer alternatives, and report their findings.
4. Regulatory Response, the final step of the process, allows additional requirements for manufacturers based on the results of their Alternatives Analysis process.

The publication of DTSC's Work Plan had an immediate effect industry-wide. The trade association for the vinyl flooring industry immediately spurred its membership to remove a Candidate Chemical in favor of a safer alternative.

Since inception, the program has developed processes to support the initial steps: establishing the list of Candidate Chemicals, selecting Priority Products and drafting associated regulations; and providing guidance for manufacturers to conduct Alternatives Analysis.

In 2015, SCP developed CalSAFER, its information management system, to facilitate stakeholder engagement. The Candidate Chemicals list was one of the first modules completed. The database, which was enhanced in 2016, now serves as a central repository for specific chemical information about why a chemical is listed and therefore subject to SCP's regulatory process.

Significant effort was given to the preparation of rulemaking packages for the initial Priority Products:

1. **Children's foam padded sleeping products –** completed external scientific peer review and Economic and Fiscal Impact Statement
2. **Paint and varnish removers –** completed external scientific peer review
3. **Spray polyurethane foam systems –** initiated external scientific peer review, surveyed key industry stakeholders, and obtained the Department of Finance's support for SCP's Economic and Fiscal Impact Statement approach.

Below: The CalSafer Website.

In April 2015, SCP published its first three-year Priority Product Work Plan (2015-2017). The Work Plan identified seven product categories of interest from which specific Priority Products may be selected, and alerts the market to DTSC's policy priorities and areas of focus. The publication of this Work Plan had an immediate effect industry-wide. The Resilient Floor Covering Institute – the trade association for the vinyl flooring industry – promptly spurred its membership to remove a Candidate Chemical (the ortho-phthalate DINP) in favor of a safer alternative.

"SCP's objective, when creating the Priority Product Work Plan, is to send a signal to industry about what chemical-product combinations are rising to the level of concern. The question is, are they listening? Based on my conversation with floor covering leadership, I'm confident that industry is receptive to these signals," said Meredith Williams, Ph.D, Deputy Director, Safer Products and Workplaces Program.

Under Senate Bill 346, a law that went into effect on January 1, 2017, SCP also initiated regulations establishing criteria for testing and making brake pads that meet the restrictions on copper and other constituents. While not a Priority Product, establishing criteria for manufacturers to make brake pads environmentally safer helped the program develop expertise in Alternatives Analysis and the rulemaking process.

In September 2015, staff released the Draft Stage 1 Alternatives Analysis Guide which details the initial steps of conducting an analysis. When completed, the Draft Guide will provide a compendium of resources and tools in the fields of hazard assessment, exposure analysis, life cycle analysis, and economics analysis. The purpose of the Draft Guide is to help manufacturers make sound choices when replacing chemicals of concern in their products and reduce the risk of regrettable substitutions. Public comment was managed through CalSAFER and staff revised the Draft Guide in response. The Final Stage 1 Alternatives Analysis Guide will be released in 2017.

Above: With Environmental Program Manager Karl Palmer at her side and her staff behind, Deputy Director Dr. Meredith Williams (center) addresses the Green Ribbon Science Panel, including Co-Chairs Art Fong (Apple Inc.) and Kelly Moran (TDC Environmental). The panel of experts advises the SCP program.

In collaboration with the U.S. EPA, the SCP program has played a pioneering role that is being closely scrutinized by other environmental programs around the world.

Due to this global attention, it's important SCP transparently interact with stakeholders to serve as a bellwether for regulators, researchers, and industry.

This will advance the stated goal of the California Green Chemistry Initiative: That California be a leader in the innovation, manufacture, and use of safer, more environmentally benign products and processes in the protection of public health and the environment from toxic harm. By implementing new processes and tools, developing internal expertise, cultivating relationships with key stakeholders and setting a standard for excellence, SCP has embraced the challenge of making Green Chemistry a reality for the people and environment of California.

Environmental Chemistry Laboratory

The DTSC Environmental Chemistry Laboratory (ECL) provides scientific leadership in analytical and environmental chemistry to DTSC and other CalEPA programs supporting decision-making that protects public health and the environment.

ECL scientists work in the Analytical Chemistry, Environmental Chemistry, and Biomonitoring branches in laboratories in Berkeley and Pasadena. Fifty DTSC scientists and support staff, and 10 grant-funded visiting scholars carry out its work. More than one-third of ECL scientists have doctoral degrees and more than half have a graduate degree.

ECL by the Numbers

50	Scientists and support staff spread between labs in Berkeley and Pasedena
10	Grant-funded visiting scholars
33%+	Scientists with doctoral degrees
50%+	Scientists with graduate degrees
230+	Scientific papers published since the mid-1980's

Program Overview

ECL is the state's reference laboratory under state regulation and provides legally defensible data for the Department and its programs. Work includes responding to requests from project managers, participating in special projects and initiatives, researching and identifying emerging chemicals; and exploring new technologies to address concerns and issues. Activities include:

- Sample analysis, consultation, and expert witness testimony in support of DTSC enforcement and criminal investigations
- Measurement of chemicals in soils and groundwater from contaminated sites
- Development of new methods to measure emerging contaminants
- Special studies on toxic chemicals in consumer products
- Providing data to support new statutes and regulations
- Biomonitoring studies and exposure assessment

Environmental Scientist Carol Wortham works in the Berkeley laboratory.

of persistent, bioaccumulative and toxic chemicals in humans and wildlife.

ECL also collaborates with universities and state and federal agencies to investigate the presence of persistent, bioaccumulative and toxic chemicals. Through federal grants, ECL provides information on fate and transport, biomonitoring, and health effects of these chemicals on humans and wildlife. The science and data provided by ECL are essential to developing new regulatory standards.

Since first discovering high levels of flame retardants in the blood of Californians, ECL scientists have become world leaders in that field. ECL's data were used to legislatively ban some flame retardants and to revise the flammability standard.

ECL Accomplishments

ECL has provided analytical support and expert testimony to several DTSC investigations on improper disposal of hazardous waste – mostly electronic equipment. Recently, AT&T and Comcast Corp. agreed to pay several million dollars in settlements of cases ECL supported.

Because commercial laboratories generally do not test for total metals in glass, ECL developed and validated a procedure that ensures complete recovery of arsenic, cadmium, chromium, lead and mercury. This gives ECL the capability to support enforcement efforts, product testing, and requests from other state agencies for assistance.

Since first discovering high levels of flame retardants in the blood of Californians, ECL scientists have become world leaders in that field, studying these chemicals in humans, wildlife, dust and consumer products. ECL's data were used to legislatively ban some flame retardants (PBDEs) and to revise the flammability standard. To assess the effect of the phaseout of PBDEs, ECL scientists examined California breast milk collected before and after the phaseout and found that levels dropped by 39%. A newer study, however, showed that PBDE levels may have plateaued and are starting to increase. Further biomonitoring to ascertain current trends and determinants of population exposures is warranted. This work was reported by various media outlets including Newsweek.

As a partner of the California Biomonitoring Program, ECL has measured chemical contaminants in the blood and urine of over 5,000 Californians in studies of mothers and infants, firefighters, teachers, Central Valley residents, pregnant women and underprivileged Asian American communities. A study of LA County residents launched the California Regional Exposure Studies to assess differences in the total amount of toxic chemicals in Californians.

Above: Chemist Guilan Sartippour (left) and Research Scientist Anna Toma in the new laboratory in Pasadena.

Peer-Reviewed Publications

Since the mid-1980s, ECL scientists have published more than 230 scientific papers, averaging six to seven papers per year. A list of publications and ECL reports is maintained, updated regularly, and reprints are made available to the public (http://www.dtsc.ca.gov/ECL/upload/ECL_Publication_List.pdf).

Above: Research Scientist Dr. Reber Brown

A Culture of Excellence

The journey to nurture and foster a culture of innovation, excellence and success begins with a foundation of stellar leaders.

DTSC Director Barbara Lee assembled a group of credentialed, knowledgeable and committed deputies to further the organization's goals.

The first initiative launched was an organizational health assessment, to obtain employees' knowledge and perspective for tracking progress, and to get a snapshot of the Department's current organizational health. An astounding 75% of employees participated.

In addition to the survey, more than 100 DTSC staff participated in focus groups to identify strengths and opportunities for improvement, and develop change resiliency strategies at all levels of the organization. The focus groups emphasized management structure, communication, decision-making processes and organizational structure.

Leadership development is a crucial element in creating organizational excellence. DTSC established a Leadership Academy, including a pilot program for aspiring leaders. This program will enhance the skills of analysts, engineers, scientists, and others who aspire to assume leadership positions. Academy courses include communicating effectively, cultural proficiency, team motivation, conflict resolution, and succession planning.

To complement leadership training and development efforts, DTSC formed a Strategic Development Team to develop and implement performance management strategies across the Department. The team works with the Department's core programs and support services to evaluate their strengths and opportunities. The work is completed in collaboration with program staff and management, and in partnership with the Department's Office of Environmental Justice and Tribal Affairs.

Barbara A. Lee

Director

Francesca Negri

Chief Deputy Director

Meredith Williams

Safer Products and Workplaces Program, Deputy Director

Mohsen Nazemi

Brownfields & Environmental Restoration Program, Deputy Director

Ana Mascareñas

Assistant Director for Environmental Justice

Amilia Glikman

Office of Legal Affairs, Chief Counsel

Rosanna Westmoreland

Office of Communications, Deputy Director

C. David Johnson, Jr.

Office of Legislation, Legislative Director

Jerilyn López Mendoza

Public Participation, Deputy Director

Andrew Collada

Administrative Services, Deputy Director

Bruce LaBelle

Environmental Chemistry Lab, Research Scientist Manager

Litiana Patino

Office of Civil Rights, Chief

Diversity and Inclusion

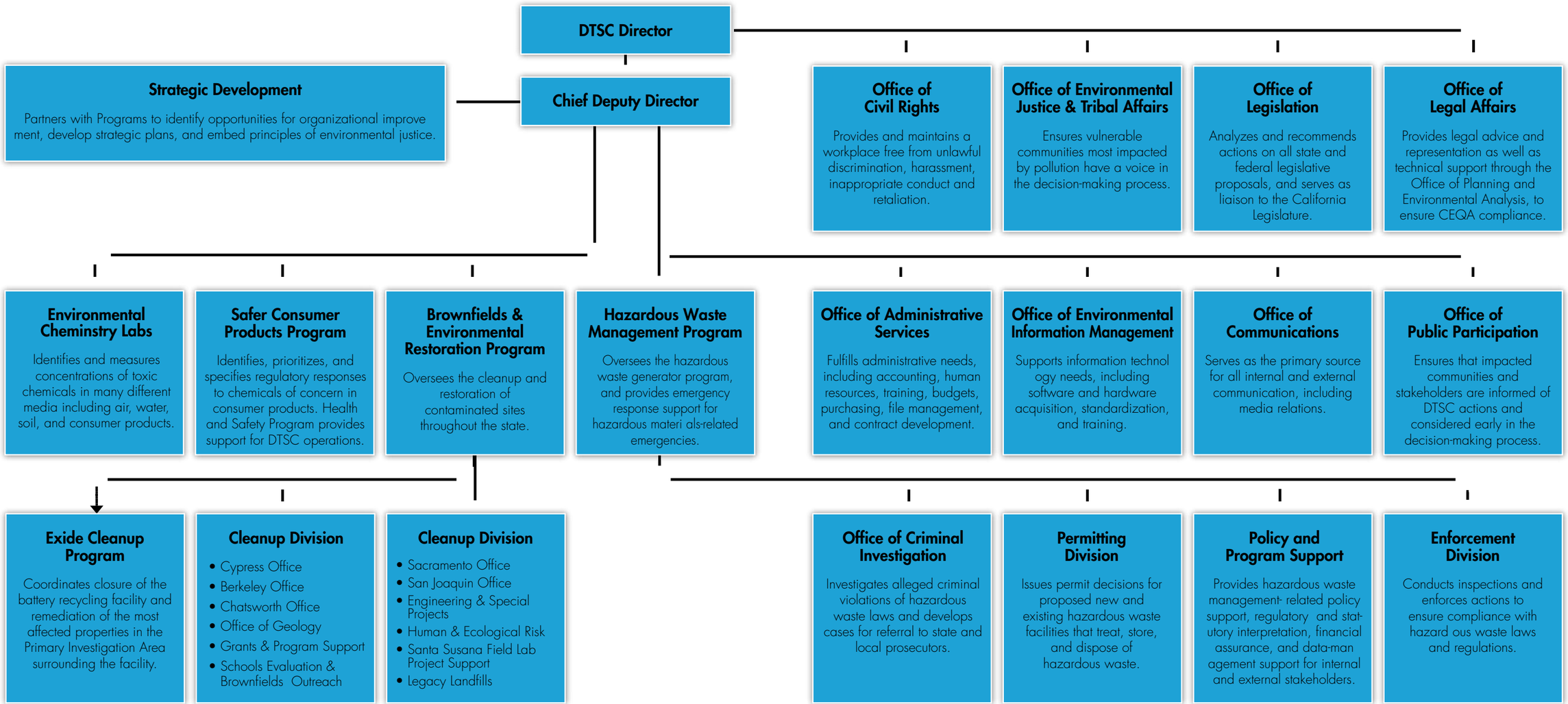
DTSC recognizes and embraces diversity. In September 2016, in partnership with the UC Davis Extension Collaboration Center, DTSC launched a Diversity and Inclusion Workgroup, comprised of 17 staff members from a variety of job classifications and cultures. They were asked to identify opportunities for embracing diversity and cooperation, and to nurture intercultural and cross-cultural understanding throughout DTSC and in its interactions with California's communities.

The group is recommending strategies and best practices to achieve a sustainable culture of inclusion and diversity. A final report is expected to be completed in the fall of 2017.

"I'd like DTSC to be the kind of workplace where everybody is respectful of others and at the same time able to express their own individuality," said Claudio Sorrentino, a Senior Toxicologist Supervisor at Cal Center. "A workplace as diverse as the communities that we are here to serve."

Below: The Diversity and Inclusion Workgroup in front of the CalEPA Building in Sacramento.
Front row, left to right: *Bernardo Ferdman, Sergio Chavez, Ky Gress, Brittany Sheahan, Elena Joy Pelen, Veronica Villasenor, Scott Warren, Claudio Sorrentino*. Back row, left to right: *Fred Zanoria, Joel Brown, Dot Lofstrom, Florence Howard, Renée Avila, Lazaro Cardenas, Tom Price*. Not pictured: *Mui Koltunov, Patrick Movlay, Jim Polisini*.

Organizational Chart



DTSC Administration and Budget

During the fiscal year 2016-2017, DTSC had a little more than 1,000 employees and a budget of $280 million. This represents a 19 percent increase from the year before (FY 2015-2016 budget of $235 million), but most of the additional resources (82 percent) are allotted for the Exide Technologies residential cleanup program.

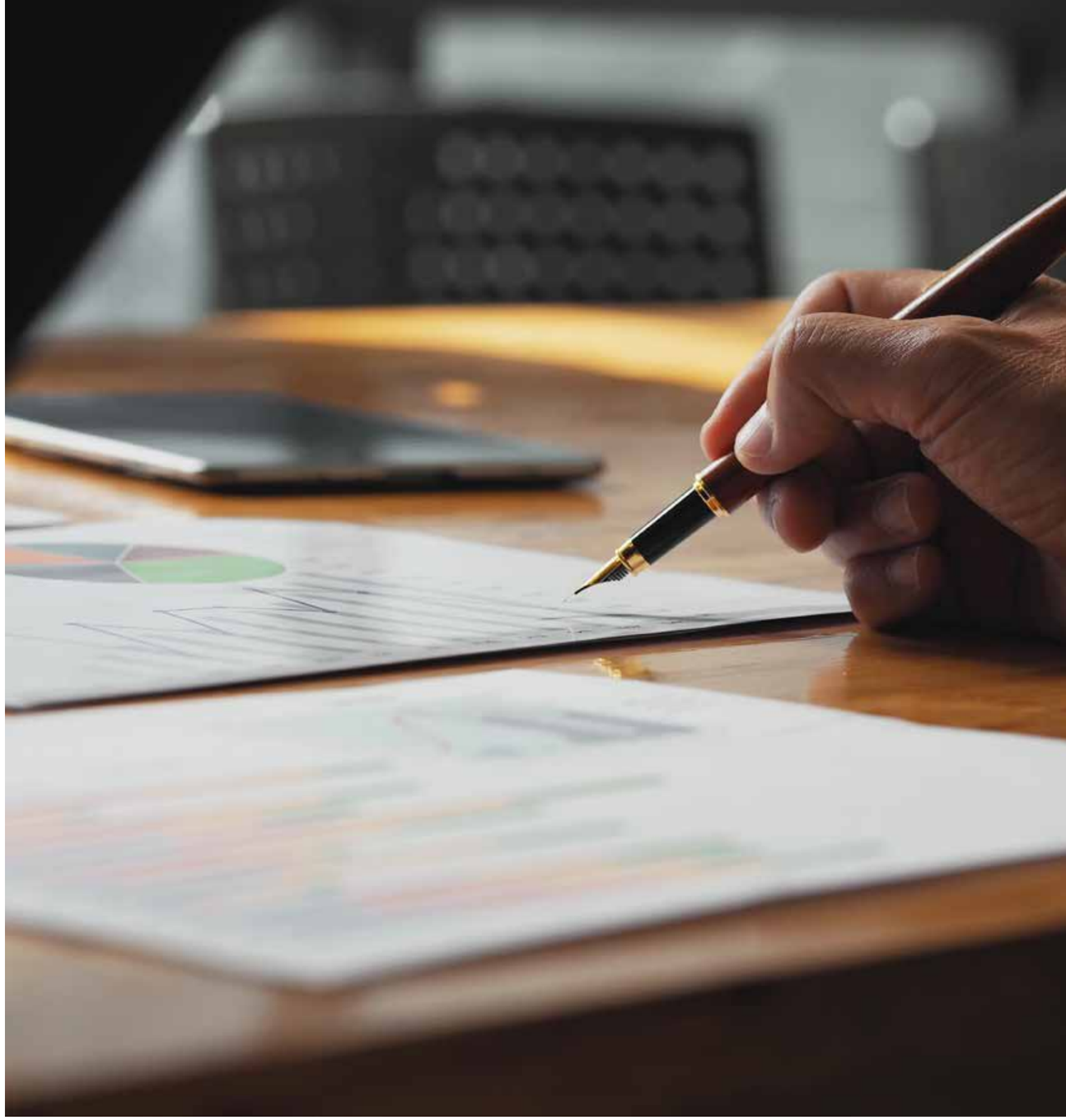
When you consider DTSC's funding history in real dollars, there has been an overall downward trend since the Department was formed in 1991. While DTSC staffing has remained constant, actual spending has declined by 26 percent when adjusted for inflation, and legislative mandates have increased considerably.

> "Additional funding for the Site Remediation Account may be necessary to provide resources for cleaning contamination at orphan sites."
>
> – *Mohsen Nazemi, Deputy Director for the Brownfields and Environmental Restoration Program*

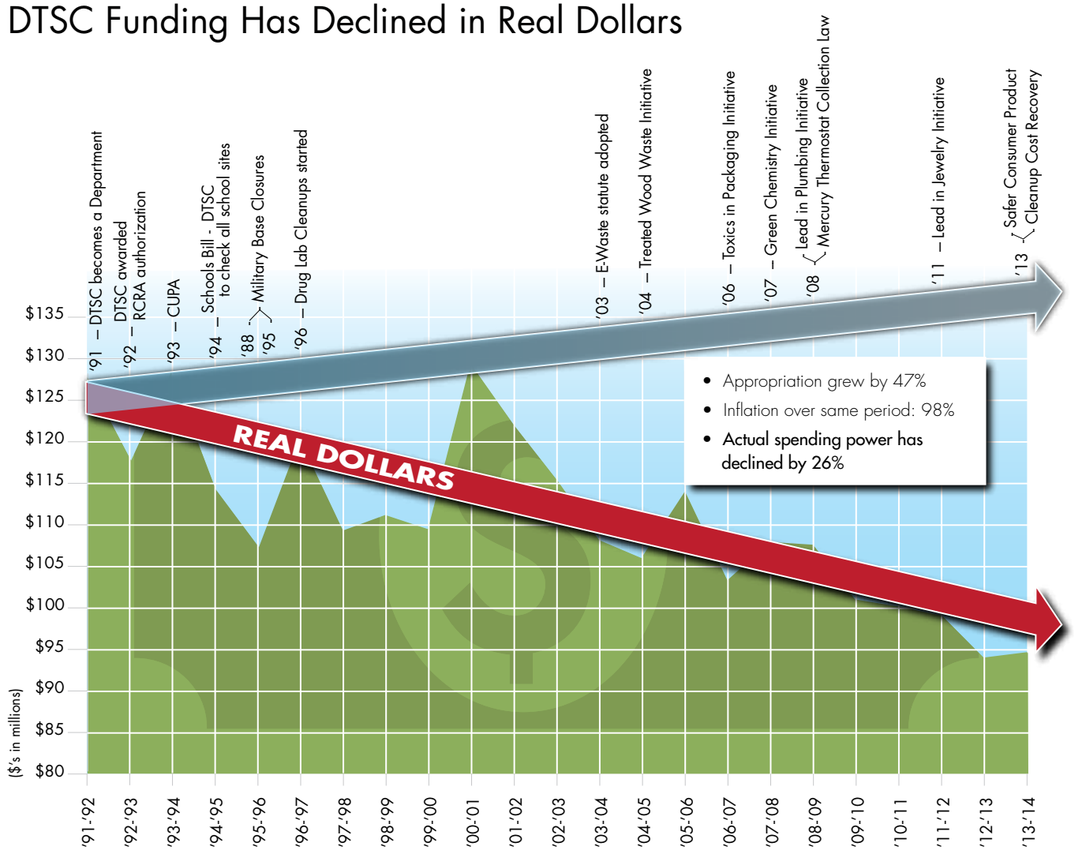
DTSC's two largest funding sources are the Hazardous Waste Control Account (HWCA) and the Toxic Substances Control Account (TSCA). These funds comprise more than half of the Department's spending authority. They provide funding for the Hazardous Waste Management Program, the Cleanup Program and the Safer Consumer Products Program. They are also the primary funding source for DTSC's support programs, including administration, information technology, legal and communications.

Toxic Substances Control Account (TSCA)

TSCA is adversely impacted by new statutory mandates, cost of living increases and the growth of various programs. This account is in structural deficit, meaning DTSC expenditures are greater than our revenues, and our reserves have been depleted. Of concern is the need to fund the U.S. EPA National Priorities List (NPL) sites and state orphan sites, which are highly contaminated properties that lack responsible parties to pay for cleanup. DTSC estimates the demand for funding



DTSC Funding Has Declined in Real Dollars



NPL and state orphan sites to be $15 - $20 million annually for the next few years. Failure to address this revenue shortfall could prevent DTSC from carrying out its core mission, cause the state to default on its obligations, and compromise priority programs.

Site Remediation Account (SRA)

Under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the U.S. EPA pays 90 percent of the cost for constructing an NPL site cleanup remedy, while the state pays the remaining 10 percent. The state's financial responsibility increases to 100 percent when sites transition from construction to operation and maintenance. This amounts to millions of dollars in new costs that must be borne by DTSC and funded through an annual transfer from TSCA to the SRA.

Historically, the Department has been allocated $10 million a year for remediation of orphan sites and federal NPL (Superfund) sites. Superfund and orphan site demand fluctuates and for future years is expected to exceed the current annual appropriation.

"Additional funding for the Site Remediation Account may be necessary to provide resources for cleaning contamination at orphan sites," said Mohsen Nazemi, Deputy Director for the Brownfields and Environmental Restoration Program.

DTSC is evaluating options to ensure adequate funding in the TSCA.

Hazardous Waste Control Account (HWCA):

HWCA is the second largest fund available to DTSC. A structural deficit has steadily depleted its reserves for several years. To address the true cost of processing permit applications, the FY 2016-17 Budget Act adjusted the Department Permit Fees to a cost-reimbursement basis. Prior to this change, applicants had the option of paying either a flat fee, or a reimbursement fee for the actual costs of reviewing permit applications. This change is expected to lessen pressures on the account, although it will not completely resolve them. DTSC is also evaluating potential solutions for the HWCA.

Federal Superfund Demands Compete with Orphan Site Cleanups*

*Excludes legacy landfills

Office of Legislation

The Office of Legislation engages with legislators on issues related to DTSC's mission of protecting California's people and environment from the harmful effects of toxic substances. This includes reviewing, analyzing, and monitoring proposed environmental legislation, helping develop DTSC-sponsored legislative proposals, representing DTSC before legislative committees, acting as a liaison to legislators, and helping develop legislative strategies.

The Office of Legislation tracks around 200 bills each legislative session. Since 2014, 31 bills have been signed into laws that affect DTSC's authorities.

Senate Bill 1249 requires that metal shredding facilities be thoroughly evaluated and regulated by DTSC to ensure adequate protection of human health and the environment.

Recent Legislation Affecting DTSC

- The most significant recent legislation was Assembly Bill 118 by Miguel Santiago (D-Los Angeles) and Senate Bill 93 by Senate Pro Tem Kevin De León (D-Los Angeles) and Senator Ricardo Lara (D-Bell Gardens), which in 2016 implemented Governor Brown's plan to earmark $176.6 million for the largest residential lead sampling and cleanup program in California history. Its purpose is to ensure that all residential properties, schools, parks and day care centers within a 1.7-mile radius of the former Exide Technologies battery recycling facility in Vernon, CA are tested for lead contamination, and that cleanups occur at properties with the highest lead levels and the greatest potential for exposure.

- In 2014, Senate Bill 1249 (Hill) was signed. The bill requires that metal shredding facilities be thoroughly evaluated and regulated by DTSC to ensure adequate protection of human health and the environment. In 2017, DTSC will issue a report summarizing the evaluation, findings, and regulatory enhancements.

- In 2015, Senate Bill 83 (Committee on Budget) amended the Health and Safety Code to establish a panel to review and make recommendations for improving DTSC's permitting, enforcement, public outreach and fiscal management. The Independent Review Panel has been holding regular public meetings, issuing reports, and making recommendations to the Governor and Legislature.

- Gov. Brown approved Senate Bill 673 (Lara) in October 2015. The bill requires the Department to adopt and revise regulations that consider enhancements to the permitting criteria that DTSC uses when deciding whether to issue or renew a permit. The goals are to create clear and objective criteria for permit decisions based on valid standards of performance, and to propose new requirements if necessary.

  DTSC has considered all of the listed criteria in the law and is implementing the rulemaking in two phases. The first rulemaking package incorporates requirements addressing permit criteria for compliance history, data for a community involvement profile, financial responsibility, training for facility personnel, and a health risk assessment for hazardous waste facility operations. DTSC will begin the formal rulemaking for this in September 2017.

  DTSC is also pursuing a broad stakeholder process to develop data, tools, and permitting criteria to consider cumulative impacts and community vulnerability, as well as land use considerations, such as setback distances from sensitive receptors, for a second rulemaking. In 2017, DTSC will convene symposia, workshops, and other revenues to advance these concepts.

- In 2016, Legislators passed Assembly Bill 2125 (Chiu), which requires DTSC to publish by 2018 guidelines for Healthy Nail Salon Recognition programs. Toward that end, in 2017 the Department will host a daylong workshop on the potential health and safety impacts of chemicals in nail products.

- Governor Brown also signed four bills introduced by the Environmental Safety and Toxic Materials Committee, then chaired by Assembly member Luis Alejo, that addressed cost recovery. Assembly bills 273-276 increased interest rates on late payments to DTSC, revised the statute of limitations on cost recovery, and authorized DTSC to compel potential responsible parties to submit certain financial information.

- Most recently, Assembly Bill 2153 (Garcia) established fees on lead-acid batteries to fund the cleanup of areas contaminated by them. The funds may also be used to repay the $176.6 million General Fund loan intended for the cleanup and cost recovery efforts related to Exide.

Independent Review Panel

DTSC has worked with the Independent Review Panel (IRP) in fulfilling its statutory mandate. The IRP is comprised of three individuals: an appointee of the Speaker of the Assembly with scientific experience related to toxic materials, an appointee of the Senate Rules Committee who is a community representative, and an appointee of the Governor who is a local government management expert.

DTSC has worked closely with the IRP by providing panel members with important programmatic background information, Department enforcement and permitting data, presentations, reports, summaries of the many reforms currently underway, and recommendations. Through April 2017, the IRP made 86 information requests, and DTSC provided 3,357 pages of documents to the panel.

The IRP has submitted seven reports to the Governor and the Legislature, outlining several recommendations to the Department, many of which have been informed or recommended by the Department. The Department has thoughtfully considered all the IRP recommendations as well as community input and is pursuing a comprehensive suite of reforms that will continue to strengthen the Department's programs.

DTSC understands and appreciates the significant time the IRP has put into reviewing the information and materials the Department has provided, and we thank the Panel for incorporating many of our reforms in their recommendations. The Department is committed to continuing to improve the quality of its programs and engaging stakeholders in shaping DTSC's path forward.

Looking Toward the Future

As we look toward the future, DTSC is embracing a culture of engagement, performance and excellence.

In the near term, each DTSC program is developing a strategic vision and plan, including key performance indicators and performance metrics. DTSC's leadership will ensure these individual program plans are interconnected and align with our strategic vision for the Department. This will culminate in a Department-wide strategic plan. DTSC will engage with stakeholders as we develop this plan, and will complete it in 2018.

Our new strategic plan is rooted in a culture of engagement; principles of environmental justice, diversity and inclusion underpin everything we do. DTSC's Office of Environmental Justice and Tribal Affairs will lead the development of key policies in the coming year, paying close attention to the reduction of language barriers and safeguarding civil rights.

In the near term, our Diversity and Inclusion Workgroup will share recommendations on how to fully embrace cultural diversity within DTSC and the communities we serve. Those recommendations will be woven into the new strategic plan. Also, our Office of Public Participation will soon release a modernization work plan, and begin implementing strategies to ensure communities are more fully included in DTSC's decision-making. Early actions include pilot projects in community assessment; more robust, early engagement in the permitting decision-making process; and updating our Public Participation Handbook. We will invite stakeholders to share their ideas and help shape these and many other strategies in the coming year.

DTSC's Strategic Development Team is coordinating a systematic and data-driven review of all programs and services, using Lean Six Sigma evaluations to eliminate waste and inefficiency, and improve overall quality. Each year, DTSC sends teams with focused projects through intensive Green Belt training with the Governor's Office of Business and Economic Development (GOBiz). By mid-2017, DTSC will have completed 10 Lean Six Sigma projects with GOBiz.

The Department has leveraged other opportunities for additional projects, and is pursuing Black Belt certification, the highest level of Lean Six Sigma practitioner, for some of our most talented staff. "DTSC has continued to send excellent Green Belt candidates to participate in the Governor's Office Lean Six Sigma program, dating

Our new strategic plan is rooted in a culture of engagement. Principles of environmental justice, diversity and inclusion underpin all aspects of our programs and services.

Our work today will ensure that tomorrow:

- Our creative solutions to challenges faced by vulnerable communities serve as models for other agencies.
- Our professional conduct and efficient work are respected by those we regulate and the communities we serve.
- Our innovative science and policy shine as a beacon throughout the state and across the nation.

back to the first cohort in 2014," said Rob Brogle, a Lean Six Sigma Master Black Belt and a consultant to GOBiz working with Department. "In this year's cohort, DTSC Green Belts completed five very successful projects that demonstrated significant improvements in performance to customers, and also substantial savings to taxpayers."

Hard work over the last two years will yield results in 2017 and 2018 as DTSC proposes and adopts regulations to improve clarity, efficiency, effectiveness and protectiveness in core program areas. Regulations will improve decision-making in our Permitting, Enforcement and Cleanup programs. Our Safer Consumer Products program will complete its first round of Priority Product regulations, propose at least two additional Priority Product listings, finalize guidance on an Alternatives Analysis, and develop a work plan that will carry the program through 2020.

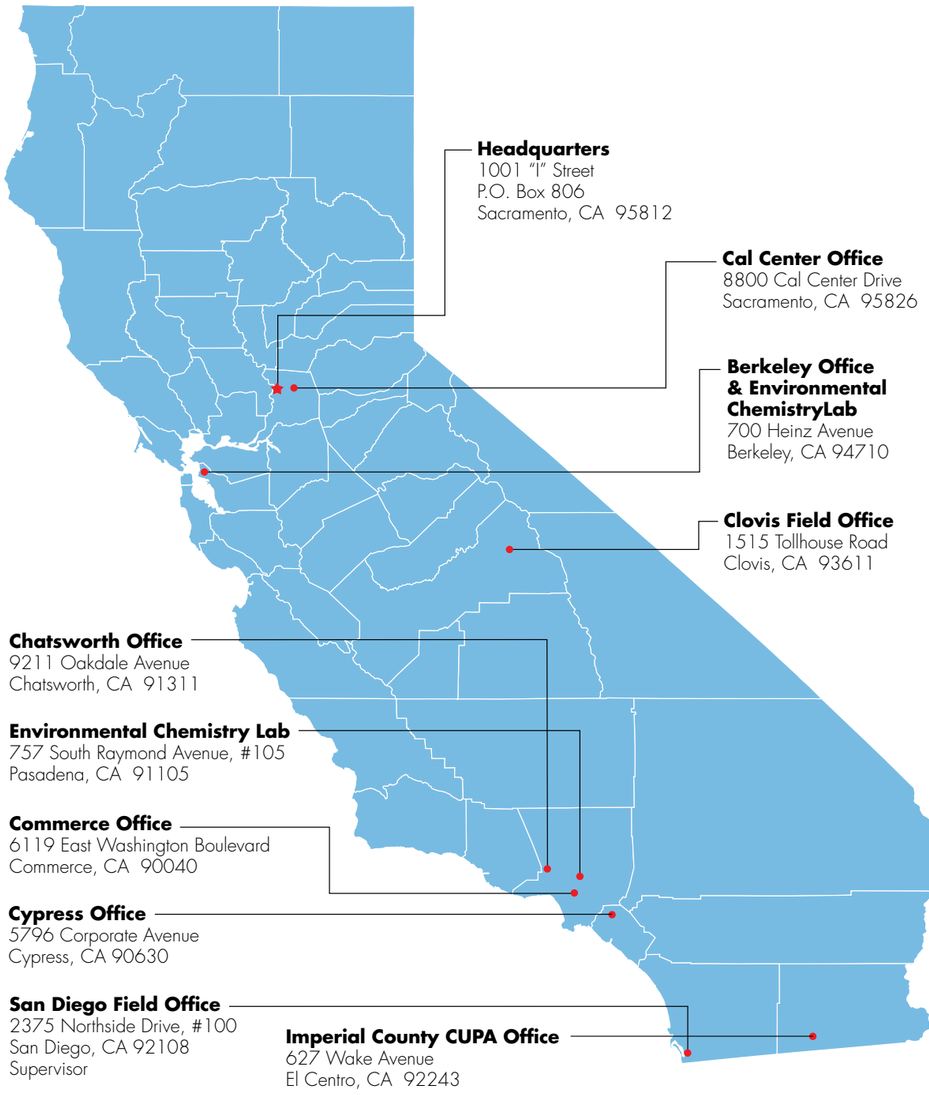
In the coming years, we will systematically develop, implement, adjust, and report on our strategic plan and accomplishments. We will take a Lean Six Sigma approach to improve, problem solve and track performance. Our employees will be recognized for their successes and will feel valued. Our leaders and staff will seek and find innovative ways to achieve our mission.

We are building the DTSC of the future, and leading the way so Californians can enjoy a clean environment, healthy communities and safe products. Our work today will ensure that tomorrow:

- Our creative solutions to challenges faced by vulnerable communities serve as models for other agencies.
- Our professional conduct and efficient work are respected by those we regulate and the communities we serve.
- The Department is a model for other agencies in the state and nation.

DTSC's employees will be recognized for their passion and commitment to success. We are and will continue to be environmentally just, diverse and inclusive, transparent, accountable and excellent in public service.

DTSC Offices



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www.dtsc.ca.gov • 1001 I Street, P.O. Box 806, Sacramento, CA 95812