2024-25 Estimated Direct Site Remediation Costs

DTSC
Department of Toxic Substances Control

CalEPA
California Environmental Protection Agency

Riverfront Park constructed at the Former Pemaco Maywood Superfund Site

STATE OF CALIFORNIA

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THIS REPORT IS PREPARED PURSUANT TO HEALTH AND SAFETY CODE SECTION 25173.7(C), WHICH REQUIRES THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL TO SUBMIT A REPORT ON ESTIMATED DIRECT SITE REMEDIATION COSTS FOR THE SITE REMEDIATION ACCOUNT.

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ACRONYMS AND ABBREVIATIONS

BTEX	benzene, toluene, ethylbenzene and xylene
CES	CalEnviroScreen
CVCI	Cleanup in Vulnerable Communities Initiative
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DTSC	Department of Toxic Substances Control
FS	Feasibility Study
FY	Fiscal Year
IM	Interim Measures
ISCO	In Situ Chemical Oxidation
MTBE	Methyl tert-Butyl Ether
NPL	National Priorities List
NTCRA	Non-Time Critical Removal Action
O&M	Operation and Maintenance
OU	Operable Unit
PCE	tetrachloroethylene
PRP	Potentially Responsible Party
PP	Proposed Plan
RAP	Remedial Action Plan
RAW	Removal Action Work Plan
RI	Remedial Investigation
RC	Remedy Construction
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RP	Responsible Party

RS	Remedy Selection
SC	Site Characterization
SRA	Site Remediation Account
SVE	Soil Vapor Extraction
TCE	trichloroethylene
TCRA	Time Critical Removal Action
TPH	total petroleum hydrocarbon
TSCA	Toxic Substances Control Account
USEPA	United States Environmental Protection Agency
VI	Vapor Intrusion
VOC	volatile organic compounds
SVOC	semi-volatile organic compounds

EXECUTIVE SUMMARY

The Department of Toxic Substances Control's (DTSC's) mission is to protect California's people, communities, and environment from toxic substances, to enhance economic vitality by restoring contaminated land, and to compel manufacturers to make safer consumer products. State and federal laws governing the cleanup of contaminated sites are rooted in the idea that the people who contaminated a site should pay for the costs of remediating that site. However, sometimes when a site is contaminated, a responsible party either cannot be identified or does not have sufficient funding to complete the work. These sites are called "orphan" sites. Without government funding, these sites would remain contaminated, impacting the surrounding community, public health, and the environment.

Funding for orphan site remediation comes from the Toxic Substance Control Account (TSCA), which is funded by a tax on nearly all businesses across California. Each year the Governor's budget allocates funding from TSCA to the Site Remediation Account (SRA) which DTSC then uses for orphan site remediation. There are two types of orphan sites. Federal fund lead sites are sites designated by the federal government on the National Priorities List through the Superfund program and for which the state has cost sharing obligations. DTSC also designates State orphan sites which then become eligible for orphan site funding.

Each year California invests funding, through the annual Budget Act, to pay for the estimated costs for direct site remediation at these orphan sites.[1] Orphan sites are prioritized to receive the funding necessary to move remediation forward or to maintain remedies in place where long-term operation and maintenance is necessary. This report provides DTSC's cost estimates for orphan site remediation work for fiscal year 2024/25 and the subsequent two fiscal years 2025/26 and 2026/27. DTSC's total estimated direct site remediation costs for state obligations at National Priorities List and state orphan sites for fiscal year 2024/25 is $21 million. Orphan site costs are projected to increase to $34 million in fiscal year 2025/26, and to $26 million in fiscal year 2026/27.

There are two reasons for increasing costs. In fiscal year 2025/26, five of the 22 National Priorities List sites will move into remedy construction for which California must pay a 10% cost share. In addition, DTSC is leveraging federal dollars for cleanups in California, and costs are increasing because more sites are being remediated.

[1] California Health and Safety Code, section 25173.7

The United States Environmental Protection Agency, in coordination with DTSC, has committed to expediting remedy selection and initiating construction at eight additional sites by 2024 using Bipartisan Infrastructure Law (BIL) funding. The use of BIL funding will prompt a waiver of the 10% cost share, saving California millions of dollars. However, the accelerated progress means that sites will have remedies constructed and will move into long-term operation and maintenance. The combined cost for remedy construction and for long-term operation and maintenance will likely continue to increase. The State also invested funding at 21 orphan sites through the Cleanup in Vulnerable Communities Initiative (CVCI), which was established by Chapter 73, Statutes of 2021 (Senate Bill (SB) 158)[2]. DTSC is moving these sites to remedy construction, and as operation and maintenance is implemented, costs will be shifted from CVCI to TSCA increase to maintain them.

Furthermore, SB 158 increased and stabilized DTSC funding sources, increased transparency and oversight of DTSC programs, and provided additional funding to accelerate remediation at contaminated sites. With new funding and additional funding stability, DTSC is taking a fresh look at orphan site management and establishing new programmatic objectives:

- ***Integrate equity –*** over 60% of known orphan sites are in disadvantaged low-income communities with CalEnviroScreen scores greater than 75% that are cumulatively impacted by many different types of pollution sources. Expediting cleanup at orphan sites in disadvantaged communities will build equity and reduce cumulative impacts.
- ***Increase efficiency –*** site remediation can take years. Establishing a goal to complete remediation within 10 years of site identification will increase accountability and move sites through the orphan site funding program more efficiently.
- ***Build climate resilience –*** climate change can impact orphan sites through things like sea level rise, wildfires, droughts, and floods. Going forward, DTSC will build a path to resilience at each orphan site to ensure site remediation remedies will remain effective despite climate change.
- ***Leverage Technology –*** contaminated soils represent 25% to 50% of all manifested waste in California.[3] Reducing the amount of waste from contaminated sites is an important objective in managing hazardous wastes.

  To reduce wastes, new technologies must be developed and used to separate contamination from soils either at a site, or at a treatment facility prior to waste

[2] Statutes 2021, chapter 73, sections 1-108
[3] DTSC (2023) Hazardous Waste Management Report, Section 2: Generation of Hazardous Waste (ca.gov)

disposal. DTSC will seek opportunities to use orphan sites as test beds for these new technologies.

- ***Measure Effectiveness –*** when a site is remediated, contamination on-site is removed or managed. DTSC is developing new metrics for tracking the reduction of risks and management at all orphan sites to assist with prioritizing and communicating the benefits of the orphan site program.

This year's report is a down-payment on these objectives, which may take several years to implement.

DTSC selected 21 orphan sites for CVCI funding to better address equity. These sites are located in disadvantaged communities and are contaminated by high-risk carcinogenic pollutants. Each could be moved quickly to remedy construction. DTSC is making progress on these sites and has moved them closer to remedy over the past year. As these sites are remediated, cumulative impacts will decrease in the disadvantaged communities where these sites are located.

DTSC identified four non-CVCI orphan sites where, by planning for multi-year funding, the sites can be moved to remedy more quickly, which will reduce the cumulative burden of pollution in communities impacted by these four sites.

DTSC is setting a new goal to have a remedy in place within 10 years of discovery for all orphan sites managed by the State and will track key milestones for each site towards meeting this goal. This 10-year commitment is being established to lower the current average 20.5-year time to get remedies in place at orphan sites.

DTSC implemented a public-private partnership called the Technology Treatment Council. This group, comprised of government and industry, has been evaluating ways to encourage the use and development of soil remediation approaches that reduce waste disposal. This is an initial effort to better understand emerging technology, the results from which could be used to inform remedial design approaches at orphan sites, and sites across the State.

Finally, over the course of the coming year, DTSC will be working to assess climate vulnerability at each site to determine if resiliency measures are necessary and developing metrics to measure the success of the orphan site program.

INTRODUCTION AND OVERVIEW

The past 180 years of industrialization of California has left a legacy of contaminated sites across the State. Many of these sites, for example dry cleaners and plating shops, have impacted soil and groundwater, threatening the beneficial uses of our land and potable water sources. These same sites often release toxic vapors from underground contamination which can migrate into adjacent buildings and homes, sometimes exposing people to toxic materials through indoor air. DTSC was created, in part, to oversee remediation of these sites to ensure they are protective of public health and the environment. DTSC programs rely on state and federal laws that require those responsible for contaminating sites to clean them up – the polluter pays principle.

When contamination is found, government agencies such as the United States Environmental Protection Agency (USEPA), the Department of Toxic Substances Control (DTSC), the State and Regional Water Quality Control Boards, or others identify potentially responsible parties (PRPs) to fund the investigation and complete the cleanup. At many of the sites, PRPs are found. However, at some of these sites the PRP refuses to pay, cannot pay, or cannot be identified. In these cases, the State and Federal government provide funding and oversee remediation of these sites.

When a site is contaminated, it poses a public health and environmental risk. Cleaning up sites is challenging, and sometimes hazardous. It is often not possible, cost-effective, or health protective to remove all hazardous materials from a site. It is common to refer to "cleanup" activities at sites, but the term "remediation" is more appropriate. Remedies are designed to reduce and manage – not eliminate – risks. Remedies may include removal of materials, treatment in the soil or groundwater to reduce the volume or toxicity of hazardous material, engineered caps and containment approaches, and long-term operation and maintenance (O&M). The decision as to the appropriate remedy is site-specific and must comply with state and federal law. At the most heavily contaminated sites, sometimes the most health protective and cost-effective approach is to leave materials in place and engineer permanent containment around them.

Funding for orphan site remediation comes from the Toxic Substance Control Account (TSCA), which is funded by a tax on nearly all businesses across the state. Each year the Governor's Budget allocates funding from TSCA to the Site Remediation Account (SRA), which DTSC then uses for orphan site remediation. DTSC designates State orphan sites which then become eligible for orphan site funding. SRA funding pays for orphan site remediation as well as ongoing O&M to ensure the remedy remains protective. Federal fund lead sites are sites designated by the federal government on the National Priorities List (NPL).

NPL sites are among the most heavily contaminated and difficult to remediate. When no viable PRPs can pay for work at these sites, the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorizes the investigation of the site to be paid for with federal funds and for response actions to be paid for with a mix of federal and state funds. In partnership with USEPA, DTSC acts on behalf of the State of California to identify, list, and remediate sites listed on the NPL.

Under CERCLA, for NPL orphan sites, the State of California provides assurances that it will pay 10% of the cost for remedial action, if the site is listed and federal funds are used. The State must also cover the cost of operating and maintaining the remedy after it is built[4]. Because the State provides assurance it will meet its obligations at NPL sites, SRA funds are allocated to the NPL sites first, then to state orphan sites. Overall, the state greatly benefits from this program. Since 2000, DTSC has spent over $50 million on NPL 10% match and O&M obligations, while USEPA has spent nearly $499 million investigating and cleaning up contaminated sites in California.

At NPL orphan sites, USEPA funds each phase of the cleanup process through contracts. DTSC coordinates with USEPA and reviews documents during each phase to ensure the state has input on the selected remedy. Once USEPA selects a remedy in a Record of Decision (ROD), USEPA and DTSC enter into a State Superfund Contract which obligates the state to 10% of the total cost of the remedial action construction and provides the state's assurance for the O&M costs. The State Superfund Contract utilizes the estimated costs documented in the ROD. As construction is completed and the remedy is in operation, USEPA invoices DTSC for the state's 10% obligation to fund construction of the remedy.

A remedy is operational and functional either one year after remedy construction is complete, or when it is determined, concurrently by the USEPA and the state, to be functioning properly and performing as designed, whichever is earlier[5]. Once a site remedy becomes "operational and functional," depending on the type of remedy implemented, USEPA either initiates the O&M transfer right away or after a ten-year Long Term Response Action period. USEPA and the state enter into a Site Transfer Agreement to transfer the O&M activities and funding responsibilities to the state. Once a project is fully transitioned to the state, DTSC uses SRA funds to implement the O&M plan using state remediation contractors. O&M costs are based on known scopes of work and are generally predictable from year to year.

[4] 42 United States Codes (U.S.C), §9604(c) and 40 Code of Federal Regulations (CFR) §300.510
[5] 40 CFR §300.435(f)(2)

DTSC also has the authority to use SRA funds to:

- Conduct a response action when a PRP is non-compliant with an order;
- Conduct a removal or remedial action when there may be an imminent and substantial danger to the public health or the environment; or
- Verify a suspected hazardous substance release and conduct a PRP search, i.e., discovery.

This report provides DTSC's cost estimates for SRA funding needs for fiscal years (FYs) 2024/25, 2025/26, and 2026/27.

ORPHAN SITES AND PRIORITIZATION

Orphan sites are located throughout California, including urban, rural, and suburban communities. They cover a wide range of hazardous substance contamination caused by operations, such as industrial manufacturing, dry cleaning, metal plating, wood treating, pesticide manufacturing and storage, and mining. This contamination may harm public health and the environment by contaminating the local water supplies, soil, air, or wildlife habitat. Action must be taken to protect the communities where these sites are located. Many orphan sites are in areas identified by CalEnviroScreen as disadvantaged communities. These areas include communities in Bakersfield, Bell Gardens, Commerce, El Monte, Los Angeles, and Oakland. Figures 1 through 3 illustrate the location of NPL and state orphan sites throughout the state.

DTSC prioritizes sites for funding based on the highest risk and/or threat as priority 1A. At NPL orphan sites where the state has provided assurances of meeting its obligations, a priority 1B is assigned to ensure sites with operating remedies are continuously operated. Sites with actual threats to human health or the environment are designated as Priority 2 and sites with potential threats are designated as Priority 3. This year, DTSC updated the prioritization scheme to delineate within the Priority 2 tier to give preference to sites in disadvantaged communities (Priority 2A).

Prioritization is only used if funding is not sufficient to cover needs at each site during the fiscal year.

- Priority 1A – Immediate and acute threat to human health or the environment, requiring a "time critical" response.
- Priority 1B – State commitments to federal Superfund sites. These are high risk sites prioritized for remediation at the federal level. The federal government pays for 90% of the remedial action costs, while the state pays for 10% of the remedial action and ongoing O&M of the remedy necessary to prevent exposure to human or environmental receptors.
- Priority 2A – Actual human exposure or resource impacts under current conditions located in a disadvantaged community.
- Priority 2B – Actual human exposure or resource impacts under current conditions not located in a disadvantaged community.
- Priority 3 – Potential exposure under current conditions.

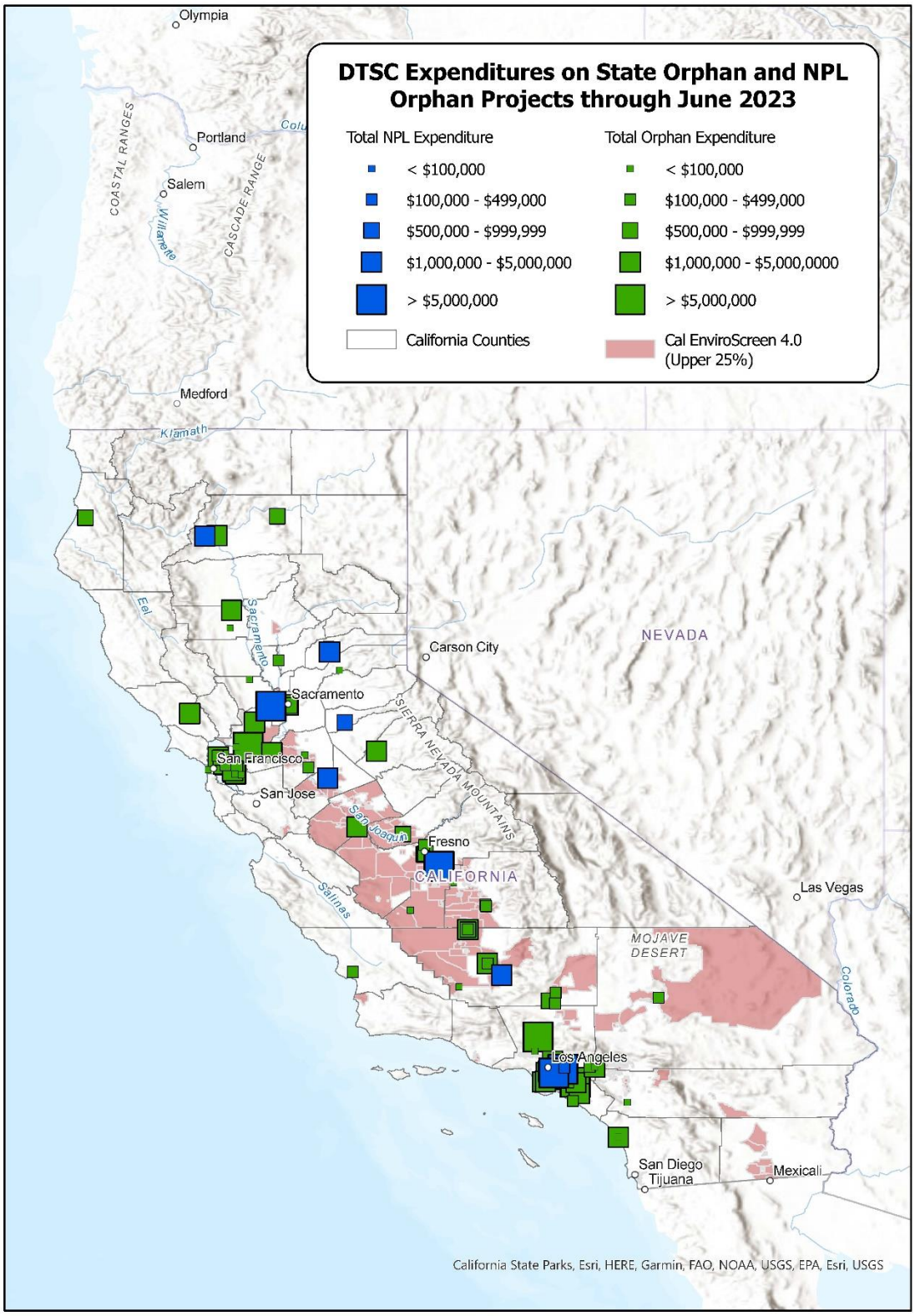

Figure 1. DTSC Expenditures on State Orphan and NPL Projects

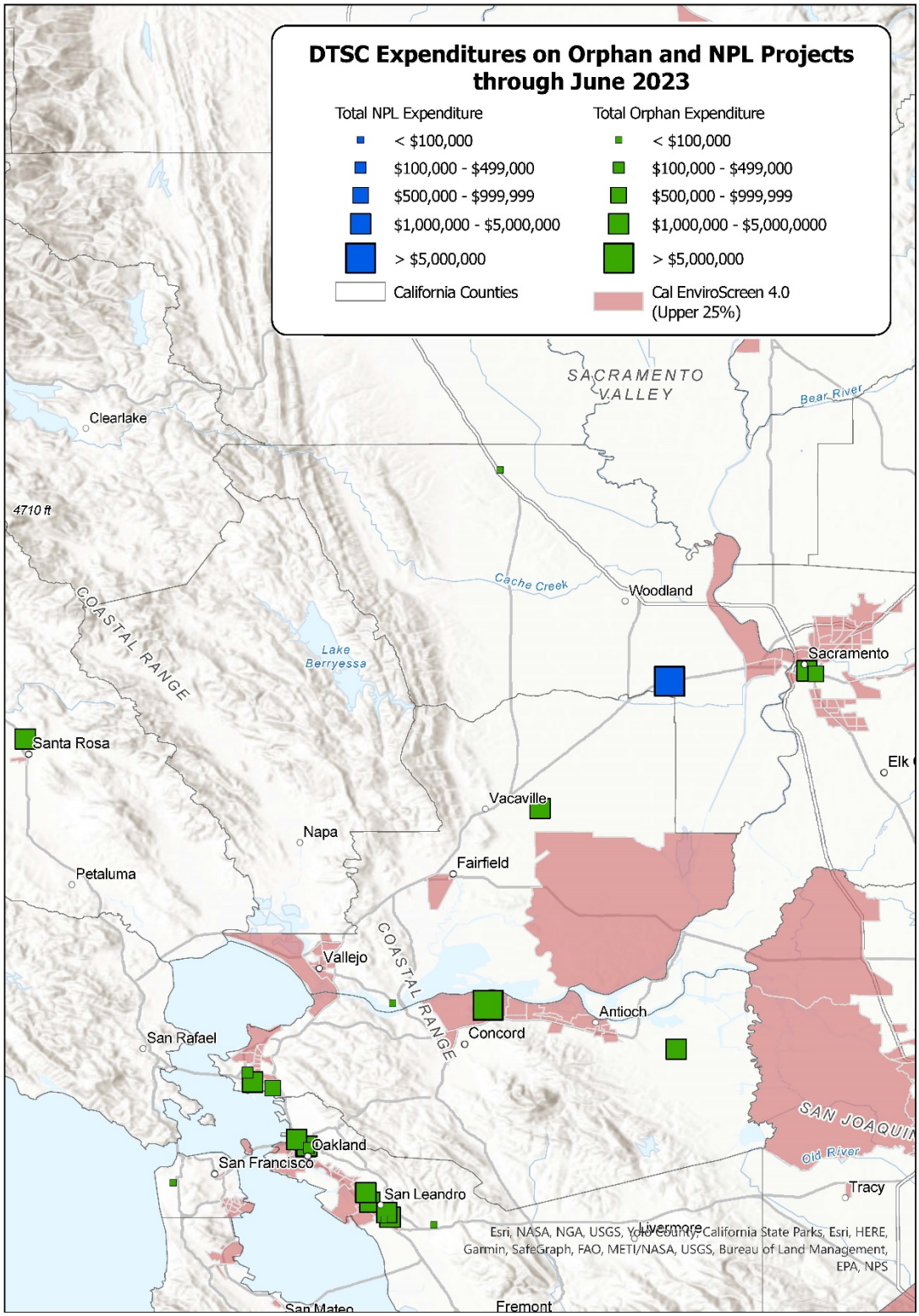

Figure 2. Bay Area State Orphan and NPL Projects

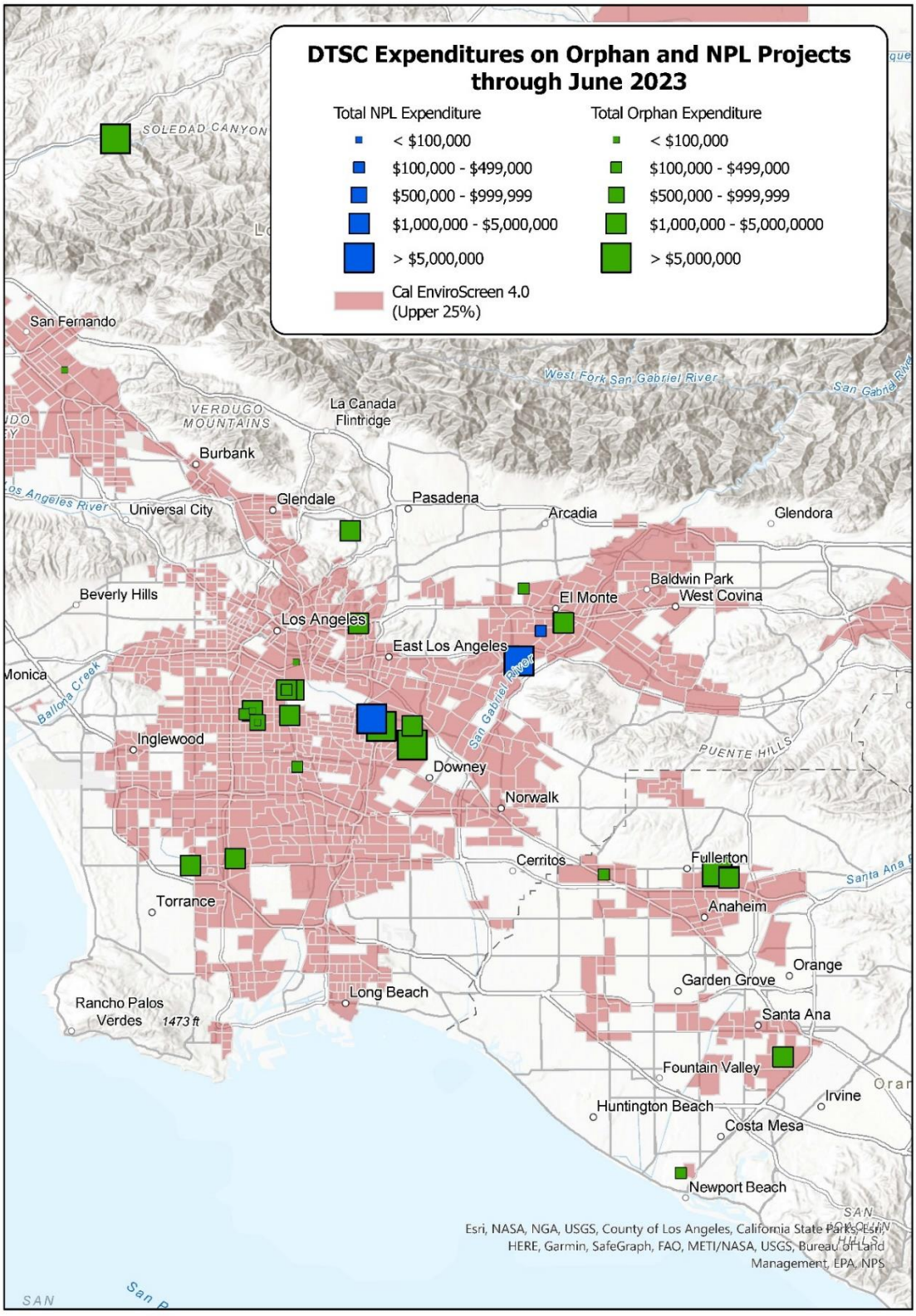

Figure 3. Los Angeles Area NPL and State Orphan Sites

ORPHAN SITE MANAGEMENT: PROGRESS AND SUCCESSES

Each year DTSC uses SRA funds to address immediate threats or continue to investigate state orphan sites on DTSC's inventory, track remedies left in place and to meet its cost share at NPL sites. Notable successes in the last year are summarized in the subsequent sections.

State Orphan Successes

In FY 2022/23, DTSC completed nine orders and agreements, 70 site characterization workplans and technical reports, five remedy selection documents, two remedy implementation completion reports, and 111 O&M reports. Due to the work done in FY 2022/23, two operable units from two sites will not have to be funded by the SRA because responsible parties (RPs) have been identified to pay for the cleanup. These activities and successes were made possible by SRA funding.

Remedies Constructed

During the operation of Singer Friden, a former machine company in San Leandro, hazardous substances were released into the environment contaminating the soil and groundwater with volatile organic compounds (VOCs), including trichloroethene (TCE). The site was converted into a residential community in the 1970s. In October 2022, DTSC conducted a site-wide indoor air sampling event at the site and detected TCE at a level that exceeded the safe levels. To address this issue, SRA funds were used to design and install a sub-slab depressurization system (SSDS) to prevent soil gas from intruding into the indoor air. The SSDS effectively lowered the indoor air concentrations of TCE below the residential air screening level and thus prevented further exposure to this harmful substance.

The Delano PCE Plume in Downtown Delano, a disadvantaged community, was discovered in 2010 when tetrachloroethylene (PCE) was observed during monitoring for a nearby cleanup site. Three current or former dry cleaners are likely sources for the Plume. After several years of investigations and characterization, DTSC is operating the second of two soil vapor extraction (SVE) units to remove PCE from the soil of the downtown Delano area. All three RPs have been assessed under an Ability to Pay analysis and were found to have insufficient resources to address the environmental impacts. DTSC placed liens on the three properties for all past costs.

Responsible Parties Identified

The Former Nees One Hour Martinizing site was part of the North Fresno PCE Plume study area under SRA funding until DTSC successfully identified a RP and issued an

order based on past orphan funded investigations. The RP has been cooperating and the Remedial Investigation workplan has been approved.

Paul's Dry Cleaners was part of the San Luis Obispo PCE Plume study until DTSC successfully identified a RP as part of past investigations and issued an order. The RP has been cooperating and has an approved Remedial Investigation Workplan in place for execution this fiscal year. This investigation has allowed DTSC to use orphan funding to better characterize the PCE plume area elsewhere in San Luis Obispo.

Heritage Dry Cleaners site in Sonora was funded under the SRA until DTSC successfully identified an RP and issued an Imminent and Substantial Endangerment Determination and Order and Remedial Action Order. The RP is cooperating with DTSC to characterize the site.

The AAD Distribution & Dry Cleaning site in Vernon was funded under the SRA until DTSC successfully identified an RP and reached a settlement agreement.

The Porterville Manufactured Gas Plant (MGP) site was funded under the SRA until DTSC successfully identified an RP and is working with them to enter into consent agreement.

The Cameo site in Commerce was funded under the SRA until DTSC entered into a prospective purchaser agreement with a company planning to redevelop the Site for energy storage.

Statewide Service Contracts

In addition to conducting cleanups at state Orphan sites, DTSC utilizes SRA funds to support a broad array of cleanup functions following cleanup. Statewide service contracts account for less than 5% of the total SRA funds and supported the monitoring of 18 land use covenants (LUCs) in the last fiscal year.

For additional cost details on FY 2024/25 and subsequent fiscal years refer to Appendix G.

Federal NPL Successes

In November 2021, the federal Bipartisan Infrastructure Law (BIL) was passed and allocated a one-time $3.5 billion for cleaning up longstanding pollution at NPL sites. The BIL funds can only be used for "shovel ready" projects and waives the 10% remedial action cost share for sites using the one-time $3.5 billion funding nationwide. Once the BIL funds are exhausted, the states will resume absorbing the 10% cost share. Based on discussions with USEPA, we expect three additional sites to receive BIL funding. These sites include Sulphur Bank Mercury Mine, Lava Cap Mine, and Southern Avenue Industrial Area.

Based on current expenditure rates, USEPA anticipates the availability of BIL funds will be exhausted by 2025. The BIL funding has already funded three sites in California:

USEPA received $13 million in funding from the BIL for a Non-Time Critical Removal Action (NTCRA) at the Argonaut Mine Site in Jackson, California. The site was used to deposit mine tailings from the Argonaut Gold Mine which operated from the late 1800s until the 1940s. The primary contaminant of concern (COC) is arsenic. The purpose of the NTCRA is to complete a removal action that include the excavation of contaminated soils and mine tailings for consolidation in an onsite repository, the construction of stormwater diversion channels around the repository and the lower tailings areas to reduce surface water contamination, and the decontamination of mining process structures. These activities are designed to among other goals: reduce exposure risk of mine wastes to nearby residents, to protect nearby surface water, and to minimize air emissions of arsenic from mine wastes. This NTCRA started in January 2022 and is planned to be completed by July 2024.

Another site that received BIL funding is the Brown and Bryant site in Arvin, California. The Brown and Bryant, Inc. Arvin Facility is a former fertilizer and pesticide formulation site and the primary COCs are solvents including chloroform and other halogenated VOCs. The remedy for the soil contamination was documented in a 1993 ROD and has been implemented and transferred to DTSC for O&M. Currently, USEPA is actively working on enhancing the groundwater remedy which is currently protecting exposure to the contaminated groundwater.

Modesto Groundwater Contamination site received approximately $2 million of BIL funding to support cleanup activities including installing horizontal SVE wells to capture more contaminants, replacing the SVE system blower to increase the contaminant removal rate, adding new real-time gas sensors and automated control meters, and installing a supervisory control system. These additional system enhancements are planned for completion in 2024 and will ensure the remedy continues to protect indoor air exposure at nearby commercial and residential parcels.

SITE MANAGEMENT OBJECTIVES

In 2021, the State Legislature passed, and the Governor signed SB 158, which increased and stabilized DTSC funding sources, increased transparency and oversight of DTSC programs, and provided additional funding to accelerate remediation at contaminated sites. With new funding and additional funding stability, DTSC is taking a fresh look at orphan site management and establishing new programmatic objectives to integrate equity, increase efficiency, build climate resilience, leverage technology, and measure effectiveness. Each commitment is described below.

Integrate Equity – Many contaminated sites are in low-income communities that are cumulatively impacted by many different types of pollution sources. By expending additional resources in disadvantaged communities, DTSC can reduce the cumulative pollution burden experienced by those communities. DTSC took several actions this year to address equity and disadvantaged communities in orphan site management. To address the disproportionate burden of environmental contamination, DTSC is focusing on accelerating cleanups at orphan sites in these communities using three approaches.

First, DTSC modified the Priority 2 tier into two new subgroups—2A and 2B. The Priority 2A tier will capture Priority 2 sites in disadvantaged communities with CalEnviroScreen scores greater than 75%, and the Priority 2B tier will capture the Priority 2 sites in all other areas. This will ensure that if future funding limitations impact the ability to fund all sites, Priority 2 sites in disadvantaged communities will be funded over others.

Second, DTSC is reducing its orphan site inventory by expediting remediation at the following four orphan sites without a long-term remedy in place.

The California and Elm Groundwater Plume was discovered in southern Fresno when PCE and trichloroethylene (TCE) were detected in groundwater. DTSC contractors are currently conducting a soil gas and indoor air investigation to assess the distribution of contamination and impacts to the public. Additional investigation of regional soil gas and groundwater and remedy development will occur following receipt of the results of the current investigation.

The Liquid Chemical/Mineral King site located in Hanford was contaminated when waste sludges were impounded in disposal ponds. The surface impoundments and soils contain high levels of heavy metals contamination, including zinc, cadmium, copper, and lead. The six surface impoundments have not been cleaned up. In addition, cadmium has been detected in the groundwater at levels exceeding drinking water standards.

At Prime Dry Cleaners in Gardena, various VOCs including PCE, benzene, toluene, ethylbenzene and xylene (BTEX) and methyl tert-butyl ether (MTBE) have been detected at the site. DTSC will concurrently collect additional site information while actively working to find a viable PRP for the site.

The Hytone Cleaners site in El Monte historically consisted of an agricultural parcel prior to being developed into a dry-cleaning business. This history led to the contamination of soil and groundwater with multiple VOCs including TCE and MTBE. The current remediation at this site consists of operating a SVE system and groundwater monitoring.

DTSC will increase the funding at these four orphan sites to speed up the remedial process and reduce the existing environmental burden in these disadvantaged communities. The additional estimated funding required to expedite these sites is: $2.8 million for California and Elm Groundwater Plume, $2.2 million for Liquid Chemical/Mineral King, $1 million for Prime Dry Cleaners and $1.1 million for Hytone Cleaners.

Third, starting in FY 2024/25, and every year thereafter, DTSC will dedicate 10% of its SRA resources to remediating orphan sites within disadvantaged communities. DTSC expects to reduce the number of existing contaminated sites in disadvantaged communities by 60%, by the year 2030.

Increase efficiency – Historically, DTSC has fully expended each year's appropriation to first pay for federal orphan sites commitments, and then for state orphan sites as funding allowed. Given the inventory of state and federal orphan sites, each state orphan site had been typically allocated minimal annual funding. This approach has led to long periods between investigations and remedy construction and slow implementation of cleanup activities. These extended cleanup timelines not only increase the potential for contamination to spread, increasing future costs and impacts to communities, but also increased construction and administrative costs.

For the four sites described above, DTSC initiated a pilot program to plan over a longer time horizon. This will result in a more efficient approach by moving those sites to remedy more quickly and reducing the staff resources needed to manage them. DTSC manages orphan sites by contracting with consultants who perform work under DTSC direction at each site. Because funding is provided annually, staff must develop and implement contracts each year – which can be a resource-intensive process. By awarding three-year contracts instead of single-year contracts, fewer staff resources will be spent on contract development, and instead be focused on site management and remediation.

DTSC evaluated the average time to implement a remedy from when the site was first designated as orphan status as 20.5 years. Going forward, DTSC is setting a goal for every orphan site to be remediated within 10 years of discovery. Establishing a goal to complete remediation within 10 years of the orphan site discovery and measuring the time to remedy selection for each site will help increase accountability and move sites through the orphan site funding program more efficiently.

The ten-year goal is aspirational and may take a long time to achieve. Two-thirds of the orphan sites that do not have a remedy in place have been in DTSC's inventory for more than ten years already. Nonetheless, we can track progress at each site, with a focus toward moving to remedy as quickly as possible.

Build climate resilience – Climate change can impact orphan sites through things like sea level rise, wildfires, droughts, and floods. Each site is different, and a changing climate will have different types of impacts depending on the nature of the site.

Coastal sites, such as Harbour Way South in Richmond, are subject to potential impacts from sea level rise. If hazardous materials are left on-site as part of a remedy, the materials at the site must be kept dry, because water can mobilize contamination. Rising sea levels can inundate sites, and can also increase water tables underground, which can bring water into contact with soil contamination. As groundwater level aquifers rise, they may also become more saline. Changing water chemistry can impact how contamination dissolves into water and moves in the water column. As a result, these impacts must be managed.

Sea level rise is not the only source of increased water impacts at orphan sites. Climate change is making rainfall patterns more volatile, and 2022 saw high rainfall rates that resulted in water pooling at several sites. Because water needs to be managed on sites where materials are capped in place, the impacts of high rainfall events need to be considered in site drainage plans.

Conversely many sites throughout California can be impacted by drought. During droughts, groundwater tables may drop, reducing the effectiveness of groundwater monitoring wells, and potentially drawing contamination deeper into soils as the groundwater recedes. Drought can impact site management and soil and water column contamination assessment. For example, in Orland, the groundwater plume is moving deeper due to drought conditions. This is prompting the need for deeper injections and the installation of additional monitoring wells at the Orland Cleaners site. As plumes continue to travel deeper below ground, they put drinking water sources at greater risk for contamination.

As temperatures rise, forests dry-out and become more prone to wildfires. Some orphan sites are former mine sites from the 19th century gold rush, located in areas at risk of wildfire. Former mine sites such as Davis Mill/Hoge Mine in Nevada City are at greater risk for wildfire damage year after year as climate change leads to drier, hotter conditions. Wildfire damage can mobilize on-site contaminants, lead to increased flooding, and destroy treatment systems.

Going forward, DTSC will build a path to resilience at each orphan site to ensure site remediation remedies will remain effective despite climate change. This work will start in the coming year.

Leverage Technology – In any given year, contaminated soils represent 25% to 50% of all manifested waste in California.[6] Reducing the amount of waste from contaminated sites is an important objective in managing hazardous wastes in California. To reduce wastes, new technologies will have to be developed and used to separate contamination from soils either at a site, or at a treatment facility prior to waste disposal. Some technologies, like bioremediation and soil vapor extraction, are already used routinely, but additional cost-effective technologies are needed to reduce contaminated soils as a waste stream. DTSC is beginning to coordinate this work through the implementation of the Hazardous Waste Management Plan. One potential approach could be to use orphan sites for the testing, development, and commercialization of new technologies.

Measure Effectiveness – When a site is remediated, pollution on-site is removed or managed. Remediating contaminated sites provides health and environmental benefits in the communities in which these sites are located. Remediating contaminated sites and revitalizing brownfield sites also creates long-term socioeconomic benefits within and in neighboring communities. A USEPA study concluded that cleaning up brownfield properties increased residential property values between 5% and 15% within 1.3 miles of the sites[7]. DTSC is developing new metrics for tracking the reduction of risks at each site to better manage, prioritize, and communicate the benefits of the orphan site program. This work will be conducted over the coming year.

[6] Section 2: Generation of Hazardous Waste (ca.gov)
[7] Haninger, K., L. Ma, and C. Timmins. 2017. The Value of Brownfield Remediation. Journal of the Association of Environmental and Resource Economists 4(1): 197-241.).

FUNDING NEEDS AND PROJECTIONS

Table 1 shows all orphan sites in California. The table is sorted by priority and shows the year the site was discovered, the years of key deliverables, the year the remedy was constructed, if applicable, and projected costs by fiscal year. For large or complex sites, the site is divided into multiple operable units (OU). The OUs are remediated either concurrently or sequentially depending on funding availability. For state orphan sites, DTSC incurs costs at each phase of the remediation process. The following are keys phases in the remediation process:

- Discovery and Enforcement (D&E)– During this phase staff conduct records search and historical reviews to identify PRPs, and conduct sampling to identify the contamination source. If a PRP is identified, cost recovery may be pursued, and an order issued on the site. In that case, the site is removed from the orphan list.
- Interim Measure (IM)–- An IM can be conducted during any phase to address conditions that may create an immediate danger at a site which may require a time-critical response action.
- Site Characterization (Preliminary Assessment (PA)/ Site Investigation (SI) and/or Remedial Investigation (RI)) – During the investigation/characterization phase staff collect soil samples, soil borings, soil vapor samples, and groundwater samples to determine the list of contaminants, the extent of the threat or risk, and to gather data to support remedy selection. Site characterization may entail multiple investigations over the course of years, with each investigation dependent upon the results of the previous one. During this phase, the type and extent of contamination is determined and the risk to human health and/or the environment is assessed. The cleanup goals and feasible remedies are then identified and documented in a Feasibility Study and/or final remedy decision document, whichever is appropriate.
- Feasibility Study (FS) – The feasibility study is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions.

- Remedial Action Plan (RAP)/ Remedial Action Workplan (RAW)/Record of Decision (ROD) – These documents present the final remedy decisions and recommendations for a site. They include a summary of the RI/FS and the key components of the conceptual plan for site remediation. These documents describe the remedial alternatives considered, and encourage the public to submit comments and participate in the remedy selection process. They also must clearly set out specific remedial action objectives, cleanup levels, and timeframes for completion of remedial actions. These documents describe the recommended remedial action.
- Remedy Construction (RC) – In this phase, the selected remedy is being implemented. The Remedial Design and Remedial Construction documents the selected specific design and implementation of the selected remedy.
- Operation and Maintenance (O&M) – If the site is not remediated to unrestricted or residential levels, then additional maintenance of the site will be required in perpetuity.

Table 1. Orphan Sites by Priority and Remediation Status, with Projected Costs by Fiscal Year.

				Remediation Phase									Forecast		
Priority	**Site Name** (Sites in Bold are Prioritized)	**City/County**	**CES > 75%**	**D&E**	**IM**	**PA/ SI**	**NPL Listed**	**RI**	**FS**	**RAP/ RAW/ ROD**	**RC**	**O&M**	**2024/25 (K)**	**2025/26 (K)**	**2026/27 (K)**
1-A	6421 S Broadway Street	Los Angeles	Yes	2019	2023 & 2024	n/a	n/a	Ongoing	2025	2026	2026	2025	$ -	$ 890	$ 540
1-A	Alumin-Art Plating Co., Inc.	Ontario	Yes	1996	2016	n/a	n/a	2020	2021	2021	2023	2025	$ -	$ 130	$ 640
1-A	Cal Tech Metals	Oakland	Yes	1999	2008 & 2013	2002	n/a	2022	Ongoing	TBD	TBD	TBD	$ 350	$ 250	$250
1-A	Dove Cleaners	Los Angeles	No	2023	TBD	TBD	n/a	TBD	TBD	TBD	TBD	TBD	$ 500	$ 430	$ 360
1-A	DWA Plume (San Leandro Plume)	San Leandro	Yes	1987	-	-	n/a	Ongoing	Ongoing		2027		$ -	$ -	$ -
1-A	Former National Cleaners	Delano	Yes	2011	2015	2015	n/a	2017	2017	2021	2022	2023	$ -	$ -	$ -
1-A	**Hytone Cleaners**	El Monte	Yes	1987	2015	2000	n/a	2014	2016	2018	2020	2026	$ 350	$ 800	$ 800
1-A	La Habra Norge Village Cleaners	La Habra	No	2017	n/a	2023	n/a	2022	2024	2024	2025	2027	$ 370	$ 200	$ 200
1-A	Lane Metal Finishers	Oakland	Yes	1997		2006	n/a	2008		2018	2019	2019	$ -	$ 200	$ 200
1-A	Modern Cleaners	Red Bluff	No	2009	n/a	2009	n/a	Ongoing	Ongoing	2025	2026	2026	$ 300	$ 300	$ 300
1-A	Momin Lodge	Fullerton	No	2008	2018	n/a	n/a	2020	2022	2023	2024	2025	$ -	$ 1,200	$ 1,200
1-A	Oasis Cleaners	Delano	Yes	2011	2015	2015	n/a	2017	2017	2021	2022	2023	$ -	$ -	$ -
1-A	**Prime Dry Cleaners**	Gardena	Yes	2021	n/a	n/a	n/a	2022	2023	2024	2025	2027	$ 454	$ 360	$ 360
1-A	Singer Friden	San Leandro	No	1988		1988	n/a	1995	1995	1996	2025	2025	$ 400	$ 400	$ 400
1-B	AAD Distribution & Dry Cleaning, Inc.	Vernon	Yes	1994	1996	n/a	n/a	2003	2007	2018	2020	2020	$ 0[8]	$ 0[9]	$0[10]
1-B	Central Valley Fertilizer Co., Inc.	Dos Palos	Yes	1976	-	1988	n/a	2004	2005	2012	2014	2014	$ 65	$ -	$ -
1-B	Charles Caine Company, Inc.	Los Angeles	No	1997	2010	n/a	n/a	2004	2012	2013	2015	2025	$ 120	$ 120	$ 120
1-B	Chemical & Pigment Company	Bay Point	Yes	2002	-	-	n/a	2007	2010	2010	2013	2013	$ 150	$ 150	$ 50
1-B	Cook Battery (Oakley Battery)	Oakley	No	1980	-	1987	n/a	1988	1989	1995	1996	1996	$ 75	$ -	$ -
1-B	Engineering Plating Corp.	Santa Ana	Yes	1996	2016	n/a	n/a	2017	2017	2020	2023	2025	$ -	$ 150	$ 150

[8] A request for $7,000 was made for FY 2024/25. However, an internal audit revealed that a settlement was executed in 2021. As such, the request for SRA funds for this site is rescinded until all settlement funds are exhausted.

[9] A request for $20,000 was made for FY 2025/26. However, an internal audit revealed that a settlement was executed in 2021. As such, the request for SRA funds for this site is rescinded until all settlement funds are exhausted.

[10] A request for $7,000 was made for FY 2026/27. However, an internal audit revealed that a settlement was executed in 2021. As such, the request for SRA funds for this site is rescinded until all settlement funds are exhausted.

				Remediation Phase									Forecast		
Priority	**Site Name** (Sites in Bold are Prioritized)	**City/County**	**CES > 75%**	**D&E**	**IM**	**PA/ SI**	**NPL Listed**	**RI**	**FS**	**RAP/ RAW/ ROD**	**RC**	**O&M**	**2024/25 (K)**	**2025/26 (K)**	**2026/27 (K)**
1-B	Green's Cleaners	South Gate	Yes	2015	2018	2018	n/a	2022	2024	2024	2023	2025	$ -	$ 180	$ 340
1-B	Harbour Way South	Richmond	No	1980	1992	1980	n/a	1981	1982	1992	1992	2026	$ 500	$ 350	$ 150
1-B	Hard Chrome Products	Los Angeles	Yes	1982	2008	1995	n/a	2004	2007	2007	2012	2027	$ 550	$ 160	$ 1,690
1-B	J&S Chrome Plating	Bell Gardens	Yes	1980	2010	1987	n/a	2005	2005	2009	2011	2026	$ 1,050	$ 540	$ 180
1-B	K & D Salvage	Bakersfield	Yes	1990	n/a	1990	n/a	2001	2001	2003	2004	2004	$ 100	$ -	$ -
1-B	McNamara and Peepe Lumber Mill	Arcata	No	1989	n/a	-	n/a	1990	1990; 2023	1994	1997		$ -	$ 150	$ 150
1-B	Mobile Smelting	Mojave	Yes	1988	n/a	n/a	n/a	2008	2010	2013	2014	2018	$ 50	$ 50	$ 25
1-B	Orland Cleaners	Orland	No	1988	n/a	1991	n/a	2004	2004	2008	2010	2011	$ 250	$ 100	$ 100
1-B	Southland Oil	Commerce	Yes	1984	n/a	n/a	n/a	1993	1993	1996	2001	2027	$ 520	$ 770	$ 420
1-B	Spence Property	Los Angeles	No	2005	2007	n/a	n/a	2010	n/a	2008	2011	2024	$7	$ 7	$ -
1-B	Tri-City Plating, Incorporated	Oceanside	No	1982	2013	1987	n/a	2013	n/a	2014	2018	2025	$ 40	$ 7	$ 7
1-B	Wickes Forest Industries	Elmira	No	1982	n/a	1987	n/a	n/a	n/a	1983	1994	1996	$ -	$ 200	$ 100
1-B	Alark Hard Chrome	Riverside	Yes	1983	-	-	1996	Ongoing	Ongoing	TBD	TBD	TBD			
1-B	AMCO Chemical	Oakland	Yes	1988	-	2012	2003	2014	2009		2028	2030	$ -	$ -	$ -
1-B	**Argonaut Mine**	Jackson	No	1987	-	2015	2016	Ongoing	2027	2027	2030	2035	$ 10	$ 10	$ 12
1-B	Blue Ledge Mine	Siskiyou County	No	1981	-	2004	2011	Ongoing	Ongoing	TBD	TBD	TBD	$ -	$ -	$ -
1-B	Brown & Bryant, Inc., Arvin Facility OU-1	Arvin	Yes	1982	-	1987	1989	1993	1993	1993	1999	1999	$ 75[11]	$ 75	$ -
1-B	**Brown & Bryant, Inc., Arvin Facility OU-2**	Arvin	Yes	1982	-	1987	1989	2007	2007	2007	2026	2027	$ 40	$ 320	$ 850
1-B	Frontier Fertilizer	Davis	No	1983	-	1994	1994	2001	2006	2006	2006	2017	$ 1,750	$ 150	$ 1,600
1-B	Halaco Engineering	Oxnard	Yes	1983	n/a	2006	2007	2015	2024	2025	2023	2026	$ -	$ 5,000	$ -
1-B	Iron Mountain Mine - OU1	Redding	No	1983	-	1987	1983	1985	1985	1986	1991	1992	$ -	$ -	$ -
1-B	Iron Mountain Mine - OU2	Redding	No	1983	-	1987	1983	n/a	n/a	1992	1994	1995	$ -	$ -	$ -
1-B	Iron Mountain Mine - OU3	Redding	No	1983	-	1987	1983	1993	1993	1993	1994	2001	$ -	$ -	$ -
1-B	Iron Mountain Mine - OU4	Redding	No	1983	-	1987	1983	n/a	n/a	1997	2004	2005	$ -	$ -	$ -
1-B	Iron Mountain Mine - OU5	Redding	No	1983	-	1987	1983	2004	2004	2004	2012	2013	$ 60	$ 65	$ 65
1-B	Iron Mountain Mine - OU6	Redding	No	1997	-	1987	1983	Ongoing	Ongoing	TBD	2023		$ -	$ -	$ -
1-B	Jervis Webb	South Gate	Yes	1993	2024	1994	2012	2019	2023	2023	2024		$ -	$ 3,100	$ -
1-B	Klau/Buena Vista Mine - OU1	Paso Robles	No	1994	Ongoing	2001	2007	2012	Ongoing	TBD	2029		$ -	$ -	$ -
1-B	Klau/Buena Vista Mine - OU2	Paso Robles	No	1994	-	2001	2007	2012	Ongoing	TBD	2029		$ -	$ -	$ -

[11] OU -1 is not BIL funded. SRA 10% cost share funds will be required.

				Remediation Phase									Forecast		
Priority	**Site Name** (Sites in Bold are Prioritized)	**City/County**	**CES > 75%**	**D&E**	**IM**	**PA/ SI**	**NPL Listed**	**RI**	**FS**	**RAP/ RAW/ ROD**	**RC**	**O&M**	**2024/25 (K)**	**2025/26 (K)**	**2026/27 (K)**
1-B	Klau/Buena Vista Mine - OU3	Paso Robles	No	1994	-	2001	2007	Ongoing	Ongoing	TBD	2029		$ -	$ -	$ -
1-B	Lava Cap Mine - OU1	Nevada City	No	1978	1997	1995	1999	2002	2004	2004	2025	2011	$ 2,000	$ 450	$ -
1-B	Lava Cap Mine - OU2	Nevada City	No	1978	1997	1995	1999	2008	2008	2008	2013	2014	$ -	$ -	$ -
1-B	Lava Cap Mine - OU3	Nevada City	No	1978	1997	1995	1999	2008	Ongoing		2035	n/a	$ -	$ -	$ -
1-B	Lava Cap Mine - OU4	Nevada City	No	1978	1997	1995	1999	2002	2004	2004	2005	n/a	$ -	$ -	$ -
1-B	McCormick and Baxter Creosoting Co. - OU1	Stockton	Yes	1977	-	1984	1992	Ongoing	Ongoing		2027		$ -	$ -	$ -
1-B	McCormick and Baxter Creosoting Co. - OU2	Stockton	Yes	1977	1997	1984	1992	1999	1999	1999	2011	2015	$ -	$ -	$ -
1-B	McCormick and Baxter Creosoting Co. - OU3	Stockton	Yes	1977	n/a	1984	1992	1999	1999	2005	2006	2015	$ -	$ -	$ -
1-B	Modesto Groundwater Contamination	Modesto	Yes	1980	1997	1987	1989	1991	1997	2021	2023	2024	$ 808	$ 808	$ 808
1-B	Palos Verdes Shelf	Palos Verdes	No	1969	-	-	1990	2000	Ongoing		TBD		$ -	$ -	$ -
1-B	Pemaco Chemical Corporation	Maywood	Yes	1991	n/a	n/a	1999	2002	2004	2005	2008	2027	$ 600	$ 600	$ 600
1-B	San Gabriel Area 3	El Monte	No	1979	-	1995	1984	1995	1995		2024		$ -	$ -	$ -
1-B	Selma Pressure Treating Company	Selma	Yes	1981	1997 & 2005	1981	1983	1987	1987	1988	2013	2009	$ 350	$ 300	$ 300
1-B	South Bay Asbestos Area	San Jose	No	1983	-		1985	1988	1988		1997	2004	$ -	$ -	$ -
1-B	South El Monte OU – San Gabriel	South El Monte	Yes	1979	-	1995	1984	1995	1999	2000	2024		$ 2,000	$ 2,000	$ 2,000
1-B	Southern Avenue Industrial Area (SAIA)	South Gate	Yes	2002	2024	2006	2012	2019	2023	2023	2024		$ -	$ 2,800	$ -
1-B	Sulphur Bank Mercury Mine - OU1	Clearlake	No	1950	1992	1987	1990	2002	2021	2023	2025	2026	$ -	$ 2,000	$ 2,950
1-B	Sulphur Bank Mercury Mine - OU2	Clearlake	No	1950	1992	1987	1990	Ongoing	Ongoing		2023		$ -	$ -	$ -
1-B	Sulphur Bank Mercury Mine - OU4	Clearlake	No	1950	1992	1987	1990	Ongoing	Ongoing		2023		$ -	$ -	$ -
1-B	Whittier Narrows OU – San Gabriel	South El Monte	Yes	1950	-	1995	1984	1992	1992	1998	2002		$ 1,750	$ 1,750	$ 1,750
2-A	**California and Elm Groundwater Plume**	Fresno	Yes	2021	n/a	2023	n/a	Ongoing			2028		$ 250	$ 250	$ 350

				Remediation Phase									Forecast		
Priority	**Site Name** (Sites in Bold are Prioritized)	**City/County**	**CES > 75%**	**D&E**	**IM**	**PA/ SI**	**NPL Listed**	**RI**	**FS**	**RAP/ RAW/ ROD**	**RC**	**O&M**	**2024/25 (K)**	**2025/26 (K)**	**2026/27 (K)**
2-A	Cameo												$0[12]	$0[13]	$0[14]
2-A	**Liquid Chemical / Mineral King**	Hanford	Yes	1986	-	-	n/a	Ongoing			2023		$ 200	$ 200	$ 200
2-B	Delano PCE Plume (SVE)	Delano	Yes	2011	2015	2015	n/a	2017	2017	2021	2023	2023	$ -	$ 500	$ 500
2-B	Delano PCE Plume (GW)	Delano	Yes	2011	-	2015	n/a	2017	2017	2021	2024	2025	$ -	$ -	$ -
2-B	Last Mile Auto Dismantlers	Upper Lake	No	2017	-	2023	n/a	Ongoing			2023		$ 130	$ 130	$ 130
2-B	Madera PCE Groundwater Plume	Madera	Yes	2009	ongoing	2012	n/a	2016	2017	2023	2024	2025	$ 350	$ 350	$ 350
2-B	North Fresno PCE Plume	Fresno	Yes	2011	-	2023	n/a	Ongoing			2026	2026	$ -	$ 125	$ 100
2-B	Oakland Metals Study	Oakland	No	2018	-		n/a	Ongoing			2023		$ 250	$ 250	$ 250
2-B	Sacramento Plating	Sacramento	No	1980		1988			2007				$100	$200	$200
2-B	San Luis Obispo PCE Plume	San Luis Obispo	No	2010	-	2015	n/a	Ongoing			2025	2025	$ -	$ 350	$ 250
2-B	Sierra Launderers & Cleaners	Sonora	No	2002	2016	2016	n/a	On-going	Ongoing	2024	2025	2027	$ 292	$ 300	$ 306
2-B	Talley Brothers, Inc.	Huntington Park	Yes	1990	n/a	2008	n/a	2016	2016	2024	2025	2025	$ 100	$ 350	$ 150
2-B	Visalia Dry Cleaner Investigation	Visalia	Yes	2005		2014	n/a	2020	2024	2024	2025	2026	$ -	$ 250	$ 350
3	Custom Chrome and Bumper	Yuba City	Yes	1985	1990	1987	n/a	Ongoing			2023		$ -	$ -	$ -
3	Davis Mill/Hoge Mine	Nevada City	No	2007		2007	n/a				2023		$100	$ 15	$ 15
3	Electro Forming Co. – Richmond	Richmond	Yes	1993		1993	n/a	Ongoing			2027		$ 200	$ 300	$ 150
3	Golden State Blvd & East Ave	Fresno	Yes	2023	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	$250	$200	$225
3	Harris Dry Cleaners	Oakland	Yes	1993		2000	n/a	Ongoing	2025	2026	2027		$ -	$ -	$ -
3	Nipomo Waste Oil Dump	San Luis Obispo	No	1997	2002	1997					2002	-	$100		
3	Porterville PCE Plume	Porterville	Yes	2010		2016	n/a	Ongoing			2024	2026	$ -	$ 250	$ 250
3	The Police Credit Union	San Francisco	No	2019									$100	$120	$126
												Total Site Specific	$18,066	$31,662	$23,569
												Non-Site-Specific Discovery and Enforcement Activities	$2,000	$2,000	$2,000
												Sate Service Contracts	$193	$193	$193

[12] A request for $250,000 was made for FY 2024/25. However, a prospective buyer is assuming responsibility for site cleanup. As such, the request for SRA funds for this site is rescinded.

[13] A request for $150,000 was made for FY 2025/26. However, a prospective buyer is assuming responsibility for site cleanup. As such, the request for SRA funds for this site is rescinded.

[14] A request for $150,000 was made for FY 2026/27. However, a prospective buyer is assuming responsibility for site cleanup. As such, the request for SRA funds for this site is rescinded.

				Remediation Phase									Forecast		
Priority	**Site Name** (Sites in Bold are Prioritized)	**City/County**	**CES > 75%**	**D&E**	**IM**	**PA/ SI**	**NPL Listed**	**RI**	**FS**	**RAP/ RAW/ ROD**	**RC**	**O&M**	**2024/25 (K)**	**2025/26 (K)**	**2026/27 (K)**
												TOTAL	**$20,259**	**$33,855**	**$25,762**

Figure 4 shows the relative impacts over time to the SRA budget from the NPL match, NPL O&M costs, and State Orphan Sites.

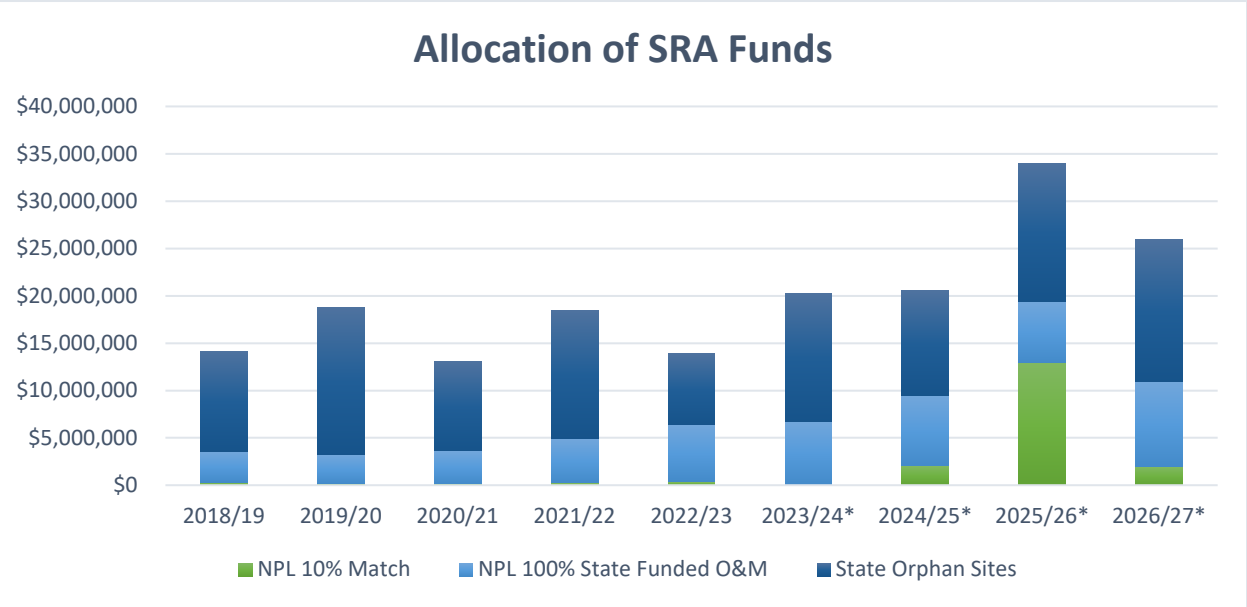

Figure 4. Allocation of SRA funds

Future Cost Estimates

Based on existing needs for ongoing investigations and O&M, the SRA funds required for FY 2024/25 is estimated at $20.4 million. That is a 50% increase in SRA expenditure over FY 2023/24. In addition, the combined increase in remedial activities at four NPL BIL funded sites, eight NPL orphan sites, and 22 state orphan sites expected to move into O&M by FY 2025/26, the SRA funds needed will increase an additional 66%.

The combined total direct remediation cost at NPL orphan sites and state orphan sites for FY 2024/25 is estimated at $20.5 million. The estimated costs for FY 2025/26 and FY 2026/27 are $34.0 million and $25.9 million, respectively. This increase is driven mainly by costs at NPL orphan sites transitioning back to mostly DTSC funding.

Table 2, below, Total Estimated Site Remediation Costs, provides the cost estimates for the next three years.

Table 2
Total Estimated Direct Site Remediation Costs (millions)

	FY 2024/25	FY 2025/26	FY 2026/27
National Priorities List Obligation	$ 9.4	$ 19.4	$ 10.9
State Orphan	$ 11.1	$ 14.6	$ 15.0
Total Estimate	$ 20.5	$ 34.0	$ 25.9

State Costs

State Orphan sites are prioritized for funding based on the greatest potential to cause harm to humans and the environment. In addition to the estimated $11 million for state orphan sites, DTSC has encumbered $7 million over the next three years to advance investigation and remedy selection at four state orphan sites located in disadvantaged communities (as described in the Site Management Objectives section). The increased spending on these four sites will allow DTSC to save on construction and administrative costs and to expedite cleanup.

Any CVCI funding cuts will require DTSC to shift the 21 CVCI-funded state orphan sites back to SRA funding. Some of these 21 sites initially required an estimated annual SRA appropriation of approximately $4.0 million for long-term O&M of the implemented remedy, which is already accounted for in the future SRA cost estimate tables. In addition, as DTSC conducts discovery and enforcement at new sites that were investigated through CVCI, these additional sites will likely require SRA funding to complete the characterization, remediation, and potential O&M activities if DTSC cannot identify financially viable PRPs.

Approximately $191,300 will be used for statewide service contracts. Appendices A-G show the estimated costs for FY 2024/25 by priority.

Federal NPL Costs

The state incurs costs once NPL sites reach the construction phase. The cost estimate increase at NPL orphan sites between FY 2024/25 through FY 2026/27 as shown in Table 2 is due to the estimated increase in remedy action and upcoming O&M costs. DTSC projects a total cost estimate of $9.4 million for NPL orphan sites in FY 2024/25. That is, $2 million for the 10% NPL cost share and $7.4 million for the O&M.

In particular, FY 2025/26 will see a roughly $10 million increase in the 10% remedial action match at NPL sites if BIL funds are not used. Currently, USEPA is using BIL funds at the Brown and Bryant, Inc., Arvin Facility for its ongoing OU-2 remedial action and at the Modesto Groundwater Contamination site for the SVE remedy construction. The 10% state cost share is being waived, resulting in a reduction of $350,000 cost savings of SRA funds.

In addition to the Brown and Bryant and Modesto Groundwater Contamination sites, in FY 2024/25, the USEPA projects that one additional NPL site, Lava Cap Mine, will incur remedial action costs. In FY 2025/26, the USEPA is proposing remedial action at the following four additional NPL sites: Halaco Engineering, Jervis B. Webb Co., Southern Avenue Industrial Area, and Sulphur Bank Mercury Mine. As a result, the 10% match for NPL sites is estimated to jump from $2 million in FY 2024/25 to $12.9 million in FY 2025/26 (Appendix C). These remedial action phase projects present a significant impact to the SRA allocation if BIL funds are not used. The State Superfund Contract must specify that if BIL funds are exhausted, then the State will resume absorbing the 10% cost share.

The Lava Cap Mine, Southern Avenue Industrial Area, and Sulphur Bank Mercury Mine sites will likely receive BIL funding in the first year of construction, based on USEPA's presentation to its priority panel. If this BIL funding occurs, an estimated $6.8 million total cost savings of SRA funds will be observed ($2.0 million in FY2024/25 and $4.8 million in FY2025/26). Argonaut Mine may also receive additional BIL funding for a NTCRA in the residential area; under CERCLA, the State has no cost share obligation for removal actions. USEPA's priority panel decision will be published in Spring 2024. If appropriate, DTSC will adjust its SRA fund requests accordingly.

The BIL also reinstated the excise taxes on chemicals and hazardous imported substances and will have higher rates for a newly expanded group of taxable substances. This essentially "re-starts" the tax that funded Superfund historically. BIL excise taxes are expected to generate $14.5 billion over 10 years or $1.5 billion annually. These additional funds will fund construction at sites not reaching the construction phase in time to use the one-time $3.5 billion and 10% waiver.

Appendices C and D detail the state's NPL obligations. Details of the individual NPL sites where USEPA has forecasted state-match costs for remedy construction and operation are included in Appendix C. The forecast indicates one site will incur state 10% match costs in FY 2024/25.

Appendix D details the NPL sites where the state will incur O&M costs and identifies nine sites incurring these costs in FY 2024/25. The NPL orphan sites not listed in Appendices C and D, but included on Table 1, are not forecasted to have state 10% match or the state funded costs in the next three years as they go through the investigation process.

NEXT STEPS

Orphan site funding is an important part of DTSC's efforts to address the long history of contamination caused by industry in California. Meeting this mandate requires continuous improvement through administrative and construction efficiencies, public engagement, addressing emerging threats caused by our changing climate, and focusing efforts in disadvantaged communities.

DTSC must also explore innovative in-situ remediation technologies to reduce its environmental footprint resulting from the excavation, transport, and disposal of contaminated soils and must also reduce long-term O&M costs.

In meeting its mandate, DTSC anticipates a continued increase in SRA needs to fund NPL and state orphan sites that move from remedy selection and construction to state O&M. In addition, DTSC's commitment to mitigate and address impacts in disadvantaged communities will also increase the long-term use of SRA funds.

Although additional costs will be incurred, the outcomes will be highly beneficial. More sites will have been cleaned up and risks to human health and the environment will be controlled and mitigated. The environment will have been restored. Investing in this program aligns with the Governor's priorities, is mission critical to DTSC and is at the core of being a public health centered agency.

APPENDICES

Appendix A
Priority 1-A State Orphan Funded Activities FYs 2024/25–2026/27

Sites listed in *italics* have been identified for expedited response action using funding appropriated through SB 158. The sites prioritized will be advanced to remedy selection and construction. Once the remedy is constructed, the Operation and Maintenance will be funded through SRA Funds.

PROJECTS	CITY	CES SCORE >75%	FY 2024/25	FY 2025/26	FY 2026/27
6421 S. Broadway Street	Los Angeles	yes	$0	$890,000	$540,000
Alumin-Art Plating	Ontario	yes	$0	$130,000	$640,000
Cal Tech Metals	Oakland	yes	$350,000	$250,000	$250,000
Dove Cleaners	Los Angeles	no	$500,000	$430,000	$360,000
DWA Plume (AKA San Leandro Plume)	San Leandro	yes	$0	$0	$0
Former National Cleaners	Delano	yes	$0	$0	$0
Greens Cleaners	South Gate	Yes	$0	$180,000	$340,000
Hytone Cleaners	El Monte	yes	$350,000	$800,000	$800,000
La Habra Norge	La Habra	no	$370,000	$200,000	$200,000
Lane Metal Finishers	Oakland	yes	$0	$200,000	$200,000
Modern Cleaners	Red Bluff	no	$300,000	$300,000	$300,000
Momin Lodge	Torrance	no	$0	$1,200,000	$1,200,000
Oasis Cleaners	Delano	yes	$0	$0	$0
Prime Dry Cleaners	Gardena	yes	$454,000	$360,000	$360,000
Singer Friden	San Leandro	no	$400,000	$400,000	$400,000
Priority 1A Projects Subtotal			$2,724,000	$5,160,000	$5,250,000

Appendix B
Priority 1-B Operation & Maintenance Costs at State Orphan Sites
FYs 2024/25–2026/27

Sites listed in *italics* have been identified for expedited response action using funding appropriated through SB 158. The sites prioritized will be advanced to remedy selection and construction.

PROJECTS	CITY	CES SCORE >75%	FY 2024/25	FY 2025/26	FY 2026/27
AAD Distribution & Dry Cleaning Inc.	Vernon	yes	$0	$0	$0
Central Valley Fertilizer Co., Inc.	Dos Palos	yes	$65,000	$0	$0
Charles Caine Company, Inc.	Los Angeles	no	$120,000	$120,000	$120,000
Chemical and Pigment Company	Bay Point	yes	$150,000	$150,000	$50,000
Cook Battery (Oakley Battery)	Oakley	no	$75,000	$0	$0
Engineering Plating Corp.	Santa Ana	yes	$0	$150,000	$150,000
Green's Cleaners	South Gate	yes	$0	$180,000	$340,000
Harbour Way South	Richmond	yes	$500,000	$350,000	$150,000
Hard Chrome Products	Los Angeles	yes	$550,000	$160,000	$1,690,000
J&S Chrome Plating	Bell Gardens	yes	$1,050,000	$540,000	$180,000
K&D Salvage	Bakersfield	yes	$100,000	$0	$0
McNamara and Peepe Lumber Mill	Arcata	no	$0	$150,000	$150,000
Mobile Smelting	Mojave	no	$50,000	$50,000	$25,000
Orland Cleaners	Orland	no	$250,000	$100,000	$100,000
Southland Oil	Commerce	yes	$520,000	$770,000	$420,000
Spence Property	Los Angeles	yes	$7,000	$7,000	$0
Tri-City Plating, Incorporated	Oceanside	no	$40,000	$7,000	$7,000
Wickes Forest Industries	Elmira	no	$0	$200,000	$100,000
	Priority 1B Projects Subtotal		$3,484,000	$2,954,000	$3,489,000

Appendix C
Priority 1-B 10% Obligation at NPL Orphan Sites FYs 2024/25–2026/27

Per Title 40, Section 300.510 of the Code of Federal Regulations, a fund-financed remedial action undertaken by USEPA pursuant to CERCLA Section 104(a) cannot proceed unless a state provides its required cost assurance. The cost assurance must be provided prior to the initiation of remedial action pursuant to a State Superfund Contract for USEPA-lead remedial action or pursuant to a cooperative agreement for a state-lead remedial action.

As such, USEPA and DTSC coordinate the scheduled work and agree on the estimated costs for NPL sites as listed below.

PROJECTS	CITY/COUNTY	CES SCORE >75%	FY 2024/25	FY 2025/26	FY 2026/27
AMCO Chemical	Oakland	yes	$0	$0	$0
Blue Ledge Mine	Siskiyou County	no	$0	$0	$0
Brown & Bryant, Inc., Arvin Facility*	Arvin	yes	$0	$0	$0
Halaco Engineering	Oxnard	yes	$0	$5,000,000	$0
Jervis B. Webb Co.	South Gate	yes	$0	$3,100,000	$0
Klau/Buena Vista Mine	Paso Robles	no	$0	$0	$0
Lava Cap MineΔ	Nevada City	no	$2,000,000	$0	$0
McCormick and Baxter Creosoting Co.	Stockton	yes	$0	$0	$0
Modesto Groundwater Contamination*	Modesto	yes	$0	$0	$0
South El Monte OU - San Gabriel	South El Monte	yes	$0	$0	$0
Southern Avenue Industrial AreaΔ	South Gate	yes	$0	$2,800,000	$0
Sulphur Bank Mercury MineΔ	Clearlake	no	$0	$2,000,000	$2,000,000
Total NPL 10% Match for Remedial Action Estimate			$2,000,000	$12,900,000	$2,000,000

*BIL-funded.

ΔBIL-funding decision pending for first year of remedy construction.

Appendix D
Priority 1-B Operation & Maintenance Costs at NPL Orphan Sites
FYs 2024/25–2026/27

PROJECTS	CITY/COUNTY	CES SCORE >75%	FY 2024/25	FY 2025/26	FY 2026/27
AMCO Chemical	Oakland	yes	$0	$0	$0
Argonaut Mine	Jackson	no	$10,000	$10,000	$12,000
Brown & Bryant, Inc., Arvin Facility	Arvin	yes	$40,000	$320,000	$850,000
Frontier Fertilizer	Davis	no	$1,750,000	$150,000	$1,600,000
Iron Mountain Mine	Redding	no	$60,000	$65,000	$65,000
Klau/Buena Vista Mine	Paso Robles	no	$0	$0	$0
Lava Cap Mine	Nevada City	no	$0	$450,000	$0
Modesto Groundwater Contamination	Modesto	yes	$808,000	$808,000	$808,000
Pemaco Chemical Corporation	Maywood	yes	$600,000	$600,000	$600,000
Selma Pressure Treating	Selma	yes	$350,000	$300,000	$300,000
South El Monte OU - San Gabriel	South El Monte	yes	$2,000,000	$2,000,000	$2,000,000
Sulphur Bank Mercury Mine	Clearlake	no	$0	$0	$950,000
Whittier Narrows OU - San Gabriel	South El Monte	yes	$1,750,000	$1,750,000	$1,750,000
Total NPL State Funded O&M Estimate			$7,368,000	$6,453,000	$8,935,000

Priority	FY 2024/25	FY 2025/26	FY 2026/27
Priority 1B 10% NPL Obligation for Remedial Action	$2,000,000	$12,900,000	$2,000,000
Priority 1B NPL State-Funded O&M	$7,368,000	$6,453,000	$8,935,000
Total NPL Orphan Obligation Estimate	$9,368,000	$19,353,000	$10,935,000

Appendix E
Priority 2 State Orphan Funded Activities FYs 2024/25–2026/27

Sites listed in *italics* have been identified for expedited response action using funding appropriated through SB 158. The sites prioritized will be advanced to remedy selection and construction. Once the remedy is constructed, operation and maintenance will be funded through SRA funds.

PROJECTS	CITY	CES SCORE >75%	Priority 2A/2B	FY 2024/25	FY 2025/26	FY 2026/27
California & Elm Groundwater	Fresno	yes	2A	$250,000	$250,000	$350,000
Cameo	Commerce	yes	2A	$0	$0	$0
Delano PCE Plume	Delano	yes	2A	$0	$500,000	$500,000
Last Mile Auto Dismantlers	Upper Lake	no	2B	$130,000	$130,000	$130,000
Madera PCE Groundwater Plume	Madera	yes	2A	$350,000	$350,000	$350,000
North Fresno PCE Plume	Fresno	yes	2A	$0	$125,000	$100,000
Sacramento Plating	Sacramento	No	2B	$100,000	$200,000	$200,000
San Gabriel Source Identification	El Monte	yes	2A	$0	$0	$0
San Luis Obispo PCE Plume	San Luis Obispo	yes	2A	$0	$350,000	$250,000
Sierra Launderers & Cleaners	Sonora	no	2B	$292,000	$300,000	$306,000
Orphan Enforcement Investigation	Statewide	yes	2A	$2,000,000	$2,000,000	$2,000,000
Talley Brothers, Inc.	Huntington Park	yes	2A	$100,000	$350,000	$150,000
Visalia Dry Cleaner Investigation	Visalia	yes	2A	$0	$250,000	$350,000
			Priority 2 Projects Subtotal	$3,472,000	$4,955,000	$4,836,000

Appendix F
Priority 3 State Orphan Funded Activities FYs 2024/25–2026/27

Sites listed in *italics* have been identified for expedited response action using funding appropriated through SB 158. The sites prioritized will be advanced to remedy selection and construction. Once the remedy is constructed, operation and maintenance will be funded through SRA funds.

PROJECTS	CITY	CES SCORE >75%	FY 2024/25	FY 2025/26	FY 2026/27
Custom Chrome and Bumper	Yuba City	yes	$0	$0	$0
Davis Mill / Hoge Mine	Nevada City	no	$100,000	$15,000	$15,000
Electro Forming Co. - Richmond	Richmond	yes	$200,000	$300,000	$150,000
Golden State Boulevard & East Avenue	Fresno	yes	$250,000	$200,000	$225,000
Harris Dry Cleaners	Oakland	yes	$0	$0	$0
Liquid Chemical / Mineral King	Hanford	yes	$200,000	$200,000	$200,000
Nipomo Waste Oil Dump	Nipomo	no	$100,000	$0	$0
Porterville PCE Plume	Porterville	yes	$0	$250,000	$250,000
Priority 3 Projects Subtotal			$1,200,000	$1,335,000	$1,216,000

Appendix G
Statewide Orphan Funded Contracts FYs 2024/25–2026/27

Contracts	Scope of Work	FY 2024/25	FY 2025/26	FY 2026/27
LUC Monitoring (Terradex)	Monitoring	$170,000	$170,000	$170,000
Statutory Lien Hearing - Court Reporter	Statutory Compliance	$4,100	$4,100	$4,100
Underground Service Alert	Call Before You Dig	$1,200	$2,400	$2,400
West Publishing Corp. (CLEAR)	PRP Search	$16,000	$16,000	$16,000
No Priority – Contracts Subtotal		$191,300	$192,500	$192,500

Priority	FY 2024/25	FY 2025/26	FY 2026/27
Priority 1A State Orphan Projects	$2,724,000	$5,160,000	$5,250,000
Priority 1B State Orphan Projects	$3,484,000	$2,954,000	$3,489,000
Priority 2 State Orphan Projects	$3,472,000	$4,955,000	$4,836,000
Priority 3 State Orphan Projects	$1,200,000	$1,335,000	$1,216,000
Statewide Service Contracts	$191,300	$192,500	$192,500
Total State Orphan Estimate	$11,071,300	$14,596,500	$14,983,500

Appendix H
SRA Funds Expended on NPL Sites

This table lists DTSC's expenditures for response actions and operation and maintenance at NPL sites FYs 2020/21 – 2022/23.

Projects	City	FY 2020/21	FY 2021/22	FY 2022/23[9]
Argonaut Mine	Jackson	$1,666	$2,680	$244,864
Brown and Bryant, Inc., Arvin Facility	Arvin	$228,147	$183,724	$129,823
Frontier Fertilizer	Davis	$857,631	$747,137	$837,297
Iron Mountain Mine	Redding	$33,559	$38,591	$10,231
Lava Cap Mine	Nevada City	$23,223	$106,365	$75,948
Modesto Groundwater Contamination	Modesto	$330,435	$249,320	$387,936
Pemaco Chemical Corporation	Maywood	$904,586	$1,123,470	$446,147
Selma Pressure Treating Company	Selma	$380,199	$407,235	$248,938
Whittier Narrows OU – San Gabriel	South El Monte	$862,188	$1,414,554	$1,332,197

Funds Expended on NPL Sites	FY 2020/21	FY 2021/22	FY 2022/23
State Funds Expended on NPL Sites	$3,621,634	$4,273,076	$3,713,381
USEPA Funds Expended on NPL Sites[15]	$ 7,554,266	$ 5,499,571	$534,711

[15] FYs 2020/21, 2021/22, and 2022/23 totals reported by USEPA as of October 6, 2023.

Appendix I
SRA Funds Expended on State Orphan Sites

This table lists DTSC's expenditures for response actions at state orphan sites FYs 2020/21 – 2022/23.

Sites listed in *italics* have been identified for expedited response action using funding appropriated through SB 158 (Statutes of 2021). The sites prioritized will be advanced to remedy selection and construction. Once the remedy is constructed, the Operation and Maintenance will be funded through SRA Funds.

Project	City	FY 2020/21	FY 2021/22	FY 2022/23[8]
6421 South Broadway	Oakland	$0	$0	$105,679
AAD Distribution & Dry Cleaning, Inc.	Vernon	$31,138	$0	$0
Alco Pacific, Inc.	Carson	$0	$0	$0
Alumin-Art Plating	Ontario	$554,607	$1,131,871	$62,605
Cal Tech Metal Finishers	Oakland	$0	$74,007	$22,910
CAMEO	Commerce	$101,098	$89,453	$33,711
Central Valley Fertilizer	Dos Palos	$5,074	$2,286	$0
Charles Caine Company, Inc.	Los Angeles	$662,773	$552,129	$582,326
Chemical & Pigment Company	Bay Point	$9,005	$11,593	$14,352
Contract (Administrative Services)	Statewide	$182,898	$191,809	$192,484
Cook Battery (Oakley Battery)	Oakley	$10,862	$9,101	$29,761
Custom Chrome & Bumper, Yuba City	Yuba City	$5,273	$22,705	$18,169
Delano PCE Plume	Delano	$95,357	$211,441	$182,190
Delta Plating	Stockton	$28,158	$0	$0
Dunnigan Groundwater	Dunnigan	$14,201	$0	$0
DWA Plume (AKA San Leandro Plume)	San Leandro	$3,299	$99,265	$0
Electro Forming Co. - Richmond	Richmond	$95	$0	$0
Engineering Plating Corp.	Santa Ana	$750,959	$639,870	$347,909
Former National Cleaners	Delano	$11,806	$376,480	$19,129
Harbour Way South	Richmond	$0	$0	$47,279
Hard Chrome Engineering	Oakland	$123,297	$24,080	$9,813
Hard Chrome Products	Los Angeles	$118,061	$162,923	$59,153
Harris Dry Cleaners	Oakland	$14,662	$0	$0
Heritage Dry Cleaners	Sonora	$0	$0	$5,094
Hytone Cleaners	El Monte	$472,389	$449,107	$510,122

Project	City	FY 2020/21	FY 2021/22	FY 2022/23[8]
J&S Chrome Plating	Bell Gardens	$169,648	$293,494	$185,564
K & D Salvage	Bakersfield	$217	$0	$8,426
La Habra Norge Village Cleaners	La Habra	$0	$0	$229,865
Lane Metal Finishers	Oakland	$312,823	$155,594	$111,237
Last Mile Auto Dismantlers	Upper Lake	$0	$20,982	$10,460
Liquid Chemical	Hanford	$0	$0	$24,395
Lubrication Company of America	Canyon Country	$89,312	$0	$0
Madera PCE Groundwater Plume	Madera	$55,238	$116,784	$37,985
McNamara and Peepe Lumber Mill	Arcata	$5,916	$135,839	$108,245
Mobile Smelting	Mojave	$0	$173,184	$0
Momin Lodge	Torrance	$518,875	$540,661	$582,032
North Fresno PCE Plume	Fresno	$3,182	$1,335	$88,374
Oasis Cleaners	Delano	$12,374	$517,172	$6,855
Oceanside Site Discovery	Oceanside	$80,318	$0	$0
Ontario Site Discovery	Ontario	$0	$20,520	$18,813
Orange County Metal Processing	Fullerton	$195,064	$84,015	$0
Orland Cleaners	Orland	$0	$30,769	$100,969
PCA Metal Finishing, Inc.	Fullerton	$200,667	$79,256	$0
Peter Pan Cleaners	Santa Rosa	$0	$2,471	$0
Porterville MGP	Porterville	$31,250	$6,290	$13,083
Porterville PCE Plume	Porterville	$0	$22,905	$34,933
San Luis Obispo PCE Plume	San Luis Obispo	$20,278	$45,417	$28,830
Sierra Launderers & Cleaners	Sonora	$26,373	$49,688	$61,224
Singer Friden	San Leandro	$151,011	$131,429	$565,337
South Fresno PCE Groundwater Plume	Fresno	$69,550	$75,534	$0
Southland Oil	Commerce	$0	$29,279	$1,131
Spence Property	Los Angeles	$28,571	$170,254	$49,307
Talley Brothers Inc.	Huntington Park	$85,518	$77,100	$64,647
The Police Credit Union	San Francisco	$0	$24,863	$32,108
Tri-City Plating, Incorporated	Oceanside	$28,411	$25,312	$142,567
Valley Plating Company	Shasta Lake	$0	$39,995	$0
Vernon Perchlorate Discovery	Los Angeles	$0	$0	$5,052
Visalia Dry Cleaner Investigation	Visalia	$68,160	$91,533	$58,359

Project	City	FY 2020/21	FY 2021/22	FY 2022/23[8]
Wickes Forest Industries	Elmira	$0	$52,959	$43,028
Willows Glenn County Airport	Willows	$0	$0	$0
State Orphan Funded Sites Subtotal		$5,347,768	$7,062,753	$4,855,512

SRA Funds Expended by FY*	FY 2020/21	FY 2021/22	FY 2022/23
SRA Funded NPL Sites	$3,621,634	$4,273,077	$3,713,380
SRA Funded State Orphan Sites	$5,579,502	$7,062,753	$4,855,512
Total SRA Funds Expended FYs 2020/21 – 2022/23	$9,201,136	$11,335,829	$8,568,892

*Expenditure figures are reported by fiscal year, not enactment year