



White Paper Discussion On:

Gap Analysis for Funding Solutions for Human Right to Water and At-Risk Drinking Water Systems

February 25, 2021

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Executive Summary

The State Water Resources Control Board (State Water Board) is developing a Cost Assessment methodology for estimating the cost of interim and long-term solutions for public water systems, tribal water systems,¹ state small water systems, and domestic wells that are failing or determined to be at-risk of failing. The scope of the Cost Assessment is to assess the overall need of the systems analyzed by the SAFER Program. The estimated costs and resulting gap analysis will be utilized to inform the broader demands of the SAFER Program as well as the annual funding needs for the Safe and Affordable Drinking Water Fund.

The primary focus of this white paper is to provide an overview of the proposed methodology for analyzing the gap between the modeled estimated costs or “funding needs” and the available funding sources for HR2W and At-Risk water systems and domestic wells. The gap analysis evaluates the funding gap in two ways: (1) across all State Water Board funding sources, and (2) specifically compared to the Safe and Affordable Drinking Water Fund. The Cost Assessment and gap analysis are designed to model overall state needs and are not intended to replace in-depth technical assessments or community outreach for individual water systems and domestic wells.

The results of the Cost Assessment, including the gap analysis, will be released in early Spring with the results of the full Needs Assessment. The State Water Board is hosting a webinar on March 25, 2021 to provide an overview of the preliminary results.

Estimating Funding Needs

The gap analysis methodology will refine the cost estimates produced by the Cost Assessment model. Estimated modeled costs for water systems that have a state funding agreement in place for a long-term solution will be removed from the total estimated need, even though these costs are retained for the Cost Assessment Model to reflect overall Statewide needs. Furthermore, the gap analysis methodology will estimate and remove costs that may be borne or shared by communities. The estimated funding need developed for the gap analysis will reflect an approximation of what the State Water Board may be able to fund with its current funding programs based on established eligibility criteria.

Estimating Funding Availability

Available funding is determined by analyzing existing State Water Board funding allocations. The availability will also identify opportunities where additional non-State Water Board state funding and federal funding programs may be accessed by water systems. Future iterations of the gap analysis will look at ways to leverage these non-State Water Board programs to expand the potential impact of the State Water Board's

¹ The State Water Board will be outreaching to Indian Health Services to collect data on estimates of needs to support tribal communities in California. Cost estimates for meeting needs for Tribal water systems will be developed by the State Water Board if this data is received. If tribal needs data is not available, the State Water Board will develop an approach to approximate potential needs and costs for these systems.

available programs.

Gap Analysis

The gap analysis will match estimated funding needs, broken down by modeled solution types (i.e. physical consolidation, treatment, etc.), to the identified potential funding sources based on eligibility criteria for each funding source. The gap analysis will also estimate how long it may take for existing State Water Board funding sources to meet the modeled funding needs for HR2W and At-Risk water systems using the funding priorities for the Safe and Affordability Drinking Water Fund.

Introduction

In 2016, the California State Water Resources Control Board (State Water Board) adopted a Human Right to Water Resolution making the Human Right to Water² (HR2W), as defined in Assembly Bill 685³, a primary consideration and priority across all of the state and regional boards' programs. The HR2W recognizes that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking and sanitary purposes."

In 2019, to advance the goals of the HR2W, California passed Senate Bill 200⁴ (SB 200), which enabled the State Water Board to establish the Safe and Affordable Funding for Equity and Resilience (SAFER) Program.⁵ SB 200 established a set of tools, funding sources, and regulatory authorities the State Water Board can harness through the SAFER Program to help struggling water systems sustainably and affordably provide safe drinking water to their customers.

Foremost among the tools created under SB 200 is the Safe and Affordable Drinking Water Fund (SADWF).⁶ The SADWF provides up to \$130 million per year through 2030 to enable the State Water Board to develop and implement sustainable solutions for underperforming drinking water systems. The annual Fund Expenditure Plan prioritizes projects for funding, documents past and planned expenditures, and is "based on data and analysis drawn from the drinking water **Needs Assessment**" (Health and Safety Code §116769).

² [Human Right to Water](https://www.waterboards.ca.gov/water_issues/programs/hr2w/)

https://www.waterboards.ca.gov/water_issues/programs/hr2w/

³ [Assembly Bill 685](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB685)

https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120AB685

⁴ [Senate Bill 200](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB200)

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB200

⁵ [SAFER Program](https://www.waterboards.ca.gov/safer/)

<https://www.waterboards.ca.gov/safer/>

⁶ [Safe and Affordable Drinking Water Fund](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/safer.html)

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/safer.html

SB 200 explicitly requires the annual Fund Expenditure Plan to include “an estimate of the funding needed for the next fiscal year based on the amount available in the fund, **anticipated funding needs**, other existing funding sources, and other relevant data and information” (Health and Safety Code §116769). The FY 2020-21 Fund Expenditure Plan does not include the Cost Assessment model or results from the efforts detailed in this white paper. The State Water Board intends to incorporate the results of this effort into the next iteration of the SADWF Expenditure Plan for FY 2021-22.

About the Needs Assessment

The State Water Board’s Needs Assessment consists of three core components: the Risk Assessment, Cost Assessment, and Affordability Assessment (Figure 1). The State Water Board’s Needs Analysis Unit in the Division of Drinking Water (DDW) is leading the implementation of the Needs Assessment in coordination with the Division of Water Quality (DWQ) and Division of Financial Assistance (DFA). The University of California, Los Angeles (UCLA) was contracted (agreement term: 09.01.2019 through 03.31.2021)⁷ to support the initial development of Needs Assessment methodologies for the Risk Assessment and Cost Assessment.

Risk Assessment: Identifying public water systems,⁸ tribal water systems,⁹ state small water systems,¹⁰ and regions where domestic wells¹¹ consistently fail or are

⁷ The contract with UCLA was written and scoped prior to passage of SB 200 and was originally designed to conduct a one-time Needs Assessment. Three State Water Board workshops hosted in early 2019 informed the original scope of the UCLA contract.

⁸ “Public Water System” means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A PWS includes any collection, pretreatment, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system; any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system; and any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption. (Health & Saf. Code, § 116275, subd. (h).)

⁹ “Tribal water systems” means federally recognized California Native American Tribes, and non-federally recognized Native American Tribes on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004. (Health & Saf. Code, § 116766, subd. (c)(1).) Drinking water systems for federally recognized tribes fall under the regulatory jurisdiction of the United States Environmental Protection Agency (USEPA), while non-federally recognized tribes are currently under the jurisdiction of the State Water Board.

¹⁰ “State small water system” means a system for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year. (Health & Saf. Code, § 116275, subd. (n).)

¹¹ “Domestic well” means a groundwater well used to supply water for the domestic needs of an individual residence or a water system that is not a public water system and that has no more than four service connections. (Health & Saf. Code, § 116681, subd. (g).)

at-risk of failing to provide adequate¹² safe drinking water.

Cost Assessment: Determining the costs related to the implementation of interim and/or emergency measures and longer-term solutions for systems in violation and At-Risk systems. Solutions may include, but are not limited to, water partnerships, physical and managerial consolidations, administrators, treatment facility additions or upgrades, distribution system repairs or replacement, and/or point of use/point of entry treatment. The cost assessment also includes the identification of available funding sources and the funding gaps that may exist to support interim and long-term solutions.

Affordability Assessment: Identifying community water systems that serve disadvantaged communities¹³ that must charge their customers fees that exceed the affordability threshold established by the State Water Board in order to provide adequate safe drinking water.

Figure 1: Needs Assessment Components



The State Water Board’s Needs Analysis Unit will be conducting the Needs Assessment annually to support the implementation of the SAFER Program. The results of the Needs Assessment will be used to prioritize public water systems, tribal water systems, state small water systems, and domestic wells for funding in the SADWF Fund Expenditure Plan; direct State Water Board technical assistance; and to develop strategies for implementing interim and long-term solutions.

¹² “Adequate supply” means sufficient water to meet residents’ health and safety needs at all times. (Health & Saf. Code, § 116681, subd. (a).)

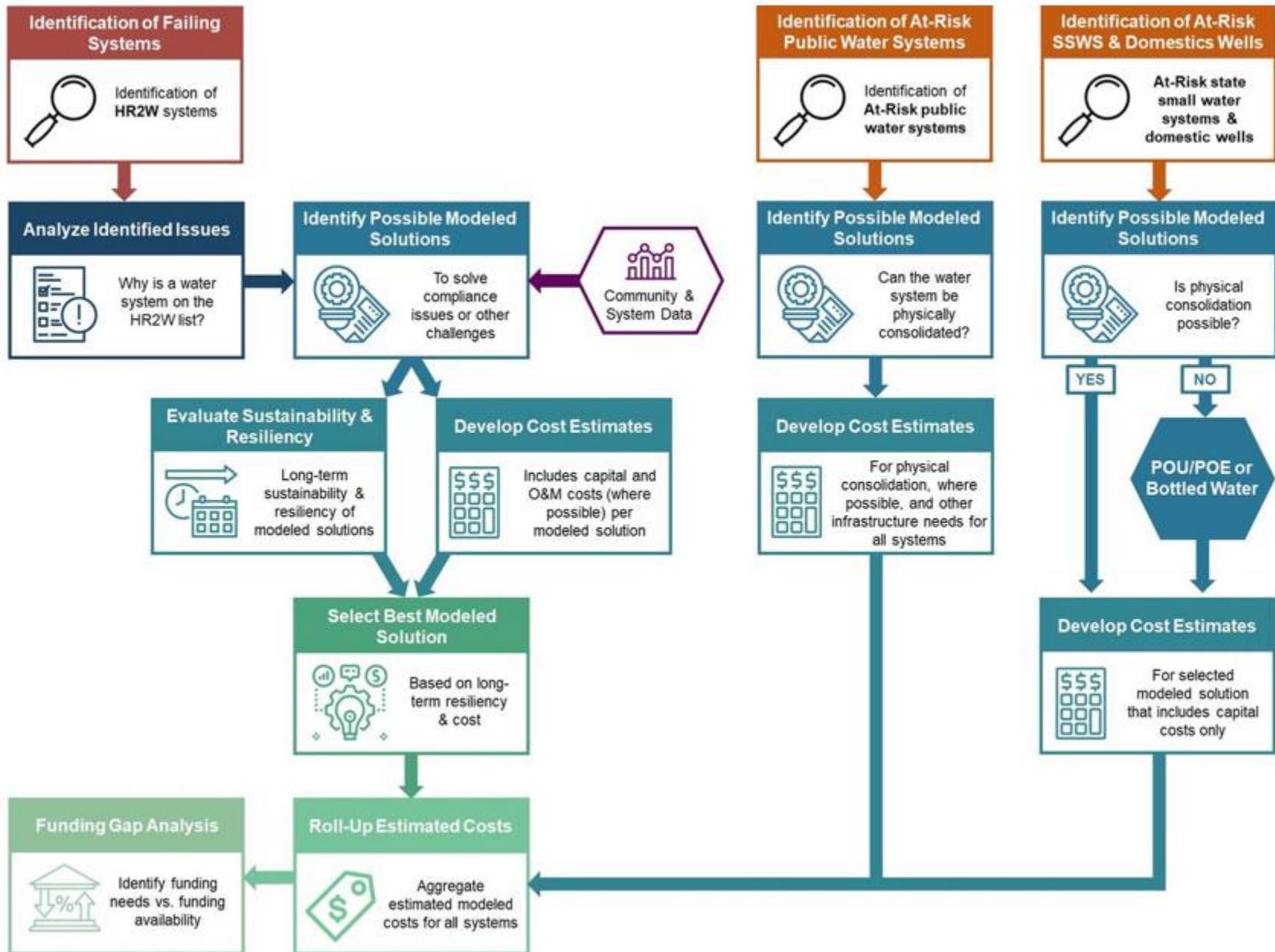
¹³ “Disadvantaged community” or “DAC” means the entire service area of a community water system, or a community therein, in which the median household income is less than 80 percent of the statewide annual median household income level. (Health & Saf. Code, § 116275, subd. (aa).) See separate definition of ‘GGRF Disadvantaged Community’.

Objectives of the Gap Analysis

The Cost Assessment Model is a process developed to determine the costs related to the implementation of interim and/or emergency measures and longer-term solutions for HR2W and At-Risk systems. The gap analysis is the final step within the Cost Assessment Model, as shown in Figure 2.

It is anticipated that SAFER Program funding, including the SADWF and other State Water Board funds, may not be sufficient to finance all modeled solutions identified by the Cost Assessment. Therefore, the Pacific Institute, a subcontractor to the UCLA contract, developed an approach to (1) estimate the funding needed for solutions for HR2W and At-Risk systems and (2) estimate the gap between the funding potentially available and the amount needed over one year and five year time periods into the future. These estimates will help the State Water Board inform future SADWF Fund Expenditure Plans and be used to communicate the SAFER Program's funding needs to decision makers and stakeholders. This statewide analysis is the final step of the Cost Assessment and is not intended to inform funding decisions nor local decisions for drinking water systems.

Figure 2: Cost Assessment Model Process



Gap Analysis Methodology

Overview

The gap analysis process will be composed of three main steps. The first step will focus on estimating the funding need for implementation of interim and long-term solutions for current HR2W and At-Risk systems, as modeled by the Costs Assessment. The second step will concentrate on identification of State Water Board funding sources and external funding sources. The third and final step will match the funding need with State Water Board funding sources based on source eligibility requirements to help determine which funding sources are most appropriate for the modeled solutions. DAC status and other system-level characteristics will be incorporated into the methodology to refine the analysis. Together these steps will provide a high-level understanding of how much it will cost and how long it may take to achieve the goals of the SAFER Program with existing funding sources.

Figure 3: Proposed Gap Analysis Methodology



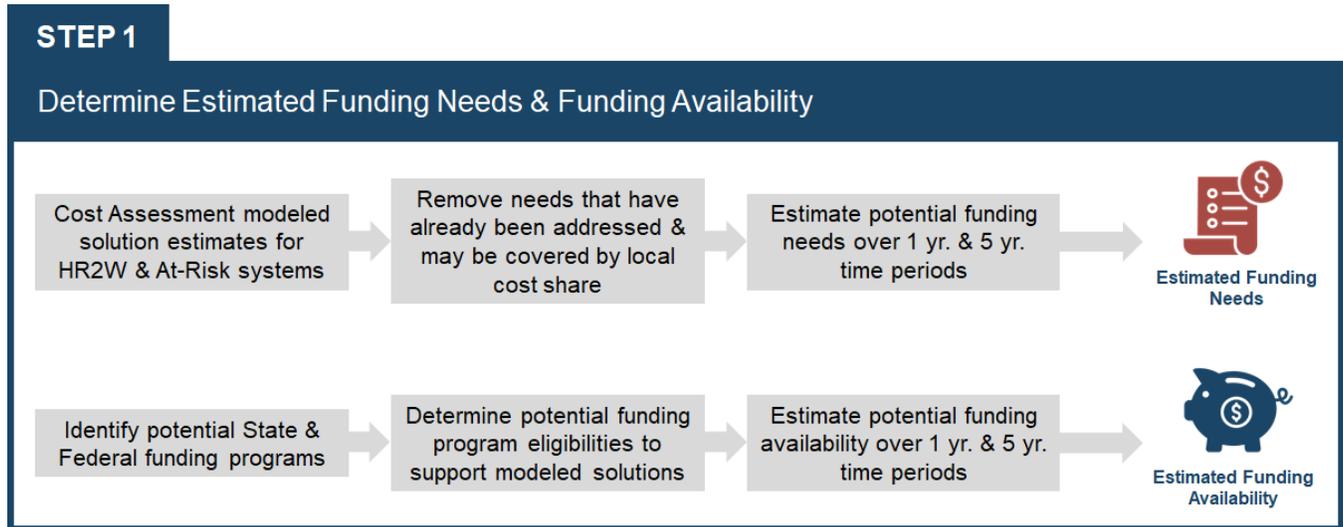
Step 1: Estimating Funding Needs and Funding Availability

The gap analysis methodology will refine the cost estimates produced by the Cost Assessment model. The analysis will estimate and exclude costs that may be borne or shared by communities. The estimated funding need developed for the gap analysis will reflect an approximation of what the State Water Board may be able to fund with its current funding programs based on established eligibility criteria. Furthermore, water systems that have a funding agreement in place with the State Water Board for a long-term solution will be removed from the modeled costs estimate.

Available funding will be determined by analyzing existing State Water Board funding programs. The focus of the gap analysis is on the gap that may exist after State Water Board funding sources are exhausted, however, the gap analysis will also highlight opportunities where additional non-State Water Board state funding and federal funding programs may be leveraged to expand the potential impact of the agency's available

funding programs in the future.

Figure 4: Step 1 of the Gap Analysis Methodology



Estimating Funding Needs

Cost Assessment Model Estimates

Earlier steps in the Cost Assessment Model will identify and estimate the capital, operations and maintenance (O&M), and 20-year Net Present Value (NPV) costs for long-term modeled solutions for 305 HR2W and approximately 620 At-Risk systems.¹⁴ The Cost Assessment Model will also generate cost estimates for At-Risk state small water systems (SSWS) and domestic wells. In addition, interim solution costs will be modeled for HR2W, At-Risk public water systems, state small water systems, and domestic wells. Potential modeled solutions are listed and described in Table 1.

Table 1: Modeled Potential Solutions for HR2W Public Water Systems (PWS), At-Risk PWS, At-Risk State Small Water Systems (SSWS), and At-Risk Domestic Wells¹⁵

Modeled Solution	Description	Modeled For
Physical Consolidation	The joining of infrastructure of two or more water systems that are geographically close.	HR2W, At-Risk PWS, At-Risk SSWS, At-Risk Domestic Wells
Treatment	Treatment solutions are used to address	HR2W

¹⁴ The information generated by this model will not be used to inform system or community-level decisions around solution selection, implementation, or funding allocations.

¹⁵ Details on how the gap analysis will differentiate between local cost share and State Water Board support is provided in Tables 2 and 3.

Modeled Solution	Description	Modeled For
	contaminants that exceed water quality standards. For a full list of treatment solutions considered, see “Long Term Solutions Cost Methodology for Public Water Systems and Domestic Wells, Version 2”. ¹⁶	
POU/POE	Point-of-use (POU) or point-of-entry (POE) treatment are used to address contaminants that exceed water quality standards, when other solutions are infeasible.	HR2W systems with less than 200 connections, At-Risk SSWS, At-Risk Domestic Wells where other options are not feasible
Other Infrastructure	A broad category that includes storage tanks, new well, well replacement, upgrade electrical, add backup power, replace distribution system, add meters, and land acquisition.	HR2W, At-Risk PWS
Operations & Maintenance (O&M)	Ongoing, day-to-day operations and maintenance of a water system.	HR2W
Interim Solutions	POU/POE and bottled water, including the O&M costs for maintaining a temporary installment of POU/POE systems.	HR2W
Technical Assistance	A broad category of support to assist water system operators and managers with planning, construction projects, financial management, and O&M tasks.	HR2W, At-Risk PWS

After all feasible modeled solutions are identified, the Sustainability and Resilience Assessment (step 4a in the Cost Assessment Model) will help to further refine the results of the Model by identifying the top two most sustainable and resilient modeled solutions for each HR2W system. The Cost Assessment Model will then apply a set of criteria to identify which of the two modeled potential solutions should be selected for the aggregated cost estimate. For details on the methods used for these steps in the Cost

¹⁶ [Long Term Solutions Cost Methodology for Public Water Systems and Domestic Wells](https://www.waterboards.ca.gov/safer/docs/draft_whitepaper_lt_solutions_cost_methd_pws_dom_wells.pdf)
https://www.waterboards.ca.gov/safer/docs/draft_whitepaper_lt_solutions_cost_methd_pws_dom_wells.pdf

Assessment Model please refer to the white paper, “Long Term Solutions Cost Methodology for Public Water Systems and Domestic Wells, Version 2”.¹⁷

Estimating Local Cost Share

To refine the estimated funding need, the gap analysis methodology will assume that a portion of the Cost Assessment for modeled solutions will be shared by communities and not fully borne by the State Water Board. The local cost share for the gap analysis will be based on these qualifications: disadvantaged (DAC) and severely disadvantaged (SDAC) status, water rates as % of MHI, water system size, and water system type. Once calculated, the percent local cost share will be separated from the estimated need for the purposes of the gap analysis.

The gap analysis will assume that all HR2W, At-Risk state small water systems and domestic well owners that are DAC and SDAC will receive grant funding from the State Water Board covering 100% of the modeled interim solution costs. The gap analysis will assume interim solution costs for HR2W non-DAC communities will not be covered by a State Water Board grant. The total amount of estimated need to be borne by water systems and communities as a local cost share will be detailed in the final Needs Assessment report.

The specific requirements that will be used for calculating local cost share obligations are generally adapted from the Drinking Water State Revolving Loan Fund (DWSRF) Intended Use Plan (IUP) from FY 2020-2021 in Appendix E.¹⁸ The specific percent of local cost share assumed for the gap analysis is presented in Table 2 (for grant/principal forgiveness) and Table 3 (for loans/repayable financing).

¹⁷ [Long Term Solutions Cost Methodology for Public Water Systems and Domestic Wells](https://www.waterboards.ca.gov/safer/docs/draft_whitepaper_lt_solutions_cost_methd_pws_dom_wells.pdf)
https://www.waterboards.ca.gov/safer/docs/draft_whitepaper_lt_solutions_cost_methd_pws_dom_wells.pdf

¹⁸ [Drinking Water State Revolving Fund Intended Use Plan](https://www.waterboards.ca.gov/drinking_water/services/funding/documents/dwsrf_iup_sfy2020_21_final.pdf)
https://www.waterboards.ca.gov/drinking_water/services/funding/documents/dwsrf_iup_sfy2020_21_final.pdf

Table 2: Criteria for Local Cost Share for Grant/Principal Forgiveness

Type of Community	Water Rate as % of MHI ¹⁹	Local Cost Share (%)	Maximum Amount Per Connection
A-C Category Projects²⁰			
Small DAC/SDAC, ²¹ Public K-12 Schools	N/A	0%	\$60,000
Small Non-DAC, Expanded Small DAC/SDAC ²²	N/A	25%	\$60,000
Large DAC, ²³ Non-DAC systems	N/A	Not eligible for grant/principal forgiveness	N/A
D-F Category Projects²⁴			
Small SDAC, Public K-12 Schools that serve a small DAC	N/A	10%	\$45,000
Small DAC	>=1.5%	25%	\$45,000
Expanded Small SDAC	>=1.5%	50%	\$45,000
Expanded Small DAC	>=1.5%	75%	\$45,000
Small DAC, Expanded Small DAC/SDAC	<1.5%	Not eligible for grant/principal forgiveness	NA
Large DAC, Non-DAC	NA	Not eligible for grant/principal forgiveness	NA

¹⁹ Where data is not available, modeled MHI data utilized on the Cost Assessment will be utilize.

²⁰ A-C Category Projects are generally defined as follows: A = Immediate Health Risk; B = Untreated or At-Risk Sources; C = Compliance or Shortage Problems. For complete definitions see the “Policy for Implementing the Drinking Water State Revolving Fund.

[Drinking Water State Revolving Fund Program](https://www.waterboards.ca.gov/drinking_water/services/funding/DWSRF_Policy.html)

https://www.waterboards.ca.gov/drinking_water/services/funding/DWSRF_Policy.html

²¹ “Small” refers to a community water system that serves no more than 3,300 service connections or a year-round population of no more than 10,000.

For all HR2W and At-Risk systems either the maximum eligible percentage of total modeled project cost or the maximum amount per connection, whichever is greater, will be used. Where there are exceptions to percentages listed in the IUP, the standard amount detailed in the IUP will be used for the gap analysis.

Table 3: Criteria for Local Cost Share for Loans/Repayable Financing

Type of Community	Interest Rate	Maximum Financing Term	Local Cost Share (%)
Small DAC, Small non-DAC, Expanded Small DAC/SDAC	0%	20 Years	100% of remaining portion, may be State Water Board loans
Large DAC, Non-DAC	2%	20 Years	100%, may be State Water Board loans ²⁵ or other private funding

Estimated need for modeled O&M costs for HR2W DAC and SDAC water systems will be incorporated into the total estimated need for purposes of the gap analysis. However, modeled O&M costs for HR2W non-DAC water systems will not be incorporated into the total estimated need for the gap analysis. O&M costs were not modeled for At-Risk systems nor domestic wells, and therefore also will not be incorporated.

Estimating Need for Grants vs. Loans

For Small DAC/SDAC communities, Expanded Small DAC/SDAC communities, and public K-12 schools that serve a small DAC, for the purposes of the gap analysis, the percentage of water system’s modeled solution costs will be covered as detailed in Table 2 based on eligibility requirements. For water systems that are not eligible for 100% coverage of their modeled solution cost, it will be assumed that the remaining costs will be covered by local cost share through a State Water Board loan with a 0% interest rate. The gap analysis will assume for all other water systems (i.e. DAC and non-DAC) that the modeled solution costs will be covered by local cost share through a loan (public or private) with a 20-year financing period at 2% interest.

²² “Expanded Small” refers to a community water system that serves no more than 6,600 service connections or a year-round population of no more than 20,000.

²³ 3,300 connections and/or more than 20,000 people

²⁴ D-F Category Projects are generally defined as follows: D = Inadequate Reliability; E = Secondary Risks; F = Other Projects. For complete definitions see the “Policy for Implementing the Drinking Water State Revolving Fund.”

²⁵ The [Drinking Water SRF Policy](#) states the financing term is the shorter of 30 years or useful life for public water systems not serving a DAC/SDAC and 40 years or useful life for public water systems serving a DAC/SDAC. For purposes of the Cost Assessment and gap analysis it is assumed that solutions have a 20 year useful life.

https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/dwsrf_policy/dwsrf_policy_final.pdf

Estimating Need Over Time

The funding need for the modeled solutions for HR2W and At-Risk systems will be estimated both for this current year (“1st Year”) and for five years into the future (“5th Year”). This will provide a short-term and longer-term understanding of the funding need over time.

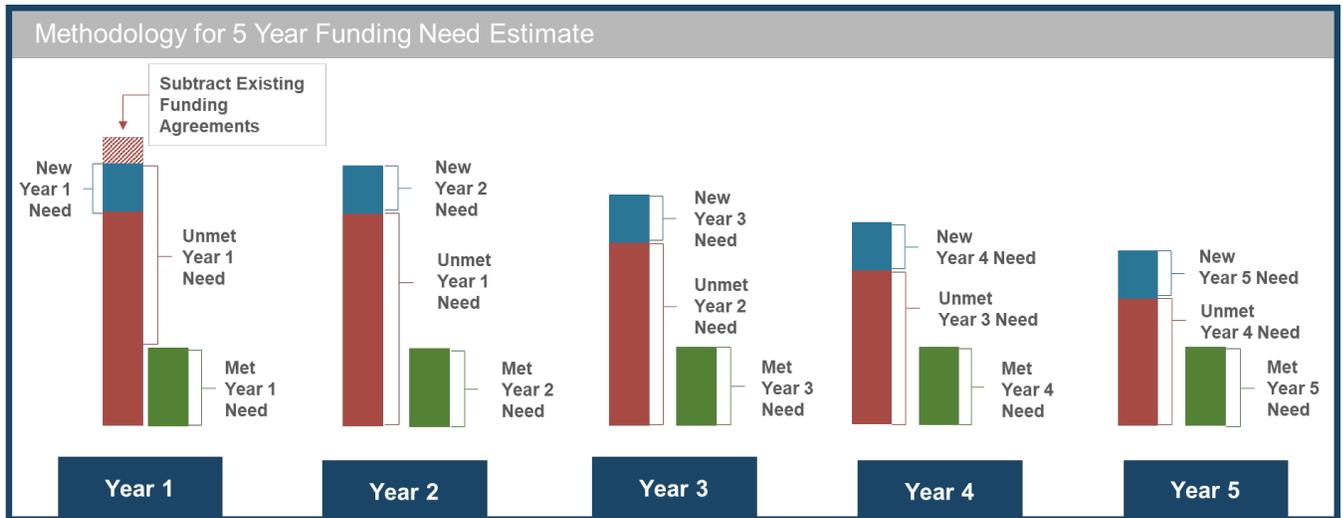
The State Water Board estimates that approximately 47 unique HR2W systems will be added to the list each year, starting with Year 1 (2021). The gap analysis will take the average HR2W cost per system estimated by the Cost Assessment model and attribute that cost to each of the 47 systems per year out to year 5. This estimate is based on historical HR2W list data from 2017-2019. No historical data exists for the number of systems and domestic wells added to the At-Risk list annually since this is the first year of the Risk Assessment. Therefore, the gap analysis will assume the same proportion (approximately 15%) of systems will be added to the At-Risk list as the HR2W list.

In addition to the anticipated increase in need annually over the next five years, any need from the previous year not funded, but eligible for funding, will be added to the next year’s need (Figure 5). This is explained in more detail in Step 3: Estimating the Annual Funding Gap, below.

Many of the water systems on the HR2W and At-Risk lists currently have funding agreements with the State Water Board. This information will be directly incorporated into the estimation of the 1st Year of need by reducing the need, for that year only, by the amount already allocated to these systems through these agreements.²⁶ Additionally, most drinking water projects are funded on a multi-year basis, but for the gap analysis it is assumed that all projects receive their full funding in the first year.

²⁶ Data on funding for HR2W systems and some At-Risk systems can be found on the [SAFER website](https://www.waterboards.ca.gov/safer/dw_systems_violations_tool.html): https://www.waterboards.ca.gov/safer/dw_systems_violations_tool.html

Figure 5: Estimating Need Over Time



Estimating Funding Availability

State Water Board Funds

While the SADWF is a unique fund that is wholly available to the SAFER Program, the State Water Board has additional funding programs that can be utilized to advance the SAFER Program’s objectives. This analysis will consider the SADWF along with other sources administered by the State Water Board’s Division of Financial Assistance (DFA) as one scenario and the SADWF as a standalone funding source as a separate scenario. Table 4 provides a complete list of all State Water Board funds that are available to help meet SAFER Program funding objectives.

Table 4: State Water Board Funding Programs

Fund	Fund Size (as of 2/9/2021)	Projected Future Annual Allocation or Final Disbursement Date by Fund Source	Eligible Applicants ²⁷	Eligible Projects ²⁸
Safe and Affordable Drinking Water Fund (SADWF)	\$152,505,586	Up to \$130 million per year through FY 2029-2030	Public agencies, nonprofits, public utilities, mutual water companies, CA Native American tribes, Administrators, GW sustainability agencies, and public utilities regulated by PUC (so long as the project will benefit customers and not investors), state small water systems and domestic well owners	Provision of interim replacement water, planning or design, Construction, Consolidation (physical or managerial), Administrator funding, O&M, Technical Assistance
Drinking Water State Revolving Fund (DWSRF)	\$119,840,349 for principal forgiveness	\$50,000,000 expected annual funding capacity for	Privately-owned and publicly-owned CWSs or nonprofit	Planning and design or construction of drinking water infrastructure,

²⁷ Summary information only. For full descriptions, please review fund expenditure plans.

²⁸ Summary information only. For full descriptions, please review fund expenditure plans.

Fund	Fund Size (as of 2/9/2021)	Projected Future Annual Allocation or Final Disbursement Date by Fund Source	Eligible Applicants ²⁷	Eligible Projects ²⁸
		grant/principal forgiveness, \$300,000,000 expected annual funding capacity for loan/repayable financing	non-CWSs, CWSs created by the project, Systems referred to in Section 1401(4)(B) of the SDWA for the purposes of point of entry or central treatment under Section 1401(4)(B)(i)(III)	including treatment systems, distribution systems, interconnections, consolidations, pipeline extensions, water sources, water meters, water storages
Small Community Drinking Water Funding Program	\$275,253,116	Final disbursement: June 2023 for Prop 1 and Prop 68 Groundwater funds, June 2024 for Prop 68 Drinking Water funds	Publicly-owned community water systems, Privately-owned community water systems, Community water systems created by the projects, non-profit or publicly owned non-community water systems, <10,000 pop served; MHI less than 80% statewide avg	Planning/design & construction of DW infrastructure: treatment systems; distribution systems; interconnections; consolidations; pipeline extensions; water sources; water meters; water storages

Fund	Fund Size (as of 2/9/2021)	Projected Future Annual Allocation or Final Disbursement Date by Fund Source	Eligible Applicants ²⁷	Eligible Projects ²⁸
Emergency Drinking Water/Cleanup & Abatement Account Programs – Urgent Drinking Water Need Projects	\$9,007,065	Final disbursement: June 2024 for AB 72 and AB 74 Funds	Public agencies, nonprofits, community water systems, tribal governments (on the CA Tribal Consultation List)	Provision of interim alternative water supplies, emergency improvements or repairs as necessary to provide an adequate supply of domestic water
Water Board Household & Small Water System Drought Assistance Program; CAA – DW Well Replacement Program	\$860,646	Final disbursement: June 2024 for SB 108 and AB 72 funds	Individual households (homeowners) that qualify as "disadvantaged", Small Water Systems (serving less than 15 connections)	New well construction, design costs of necessary infrastructure, permit and connection fees, well rehabilitation/repair (including extending wells to deeper aquifers), distribution/conveyance pipelines (up to point of entry of household), limited consolidation efforts (i.e. laterals, above-ground interties), all necessary appurtenances, etc.

Fund	Fund Size (as of 2/9/2021)	Projected Future Annual Allocation or Final Disbursement Date by Fund Source	Eligible Applicants ²⁷	Eligible Projects ²⁸
Water System Administrator Program²⁹	\$8,159,143	Final disbursement: June 2024 for AB 72 funds	An Administrator can be an individual or an entity with the necessary qualifications to carry out the responsibilities required for a specific designated water system.	Administrative, technical, operational, legal, or managerial services, or any combination of those services (limited-scope administrator), as well as full management and control of all aspects to a designated water system (full-scope Administrator).

²⁹ Currently, there is limited cost data to support the inclusion of the Administrator funding program into the gap analysis for the 2021 Needs Assessment. Future iterations will be able to assess the gap for Administrators when data becomes available.

Funding Availability Over Time

For the gap analysis, it is assumed that the SADWF will receive the maximum potential allocation of \$130 million per year through FY 2029-30 from the Greenhouse Gas Reduction Fund and that the DWSRF will have a \$350 million funding capacity each year (\$50,000,000 for grant/principal forgiveness and \$300,000,000 for loan/repayable financing). No other funding sources will be assumed to have additional allocations beyond the current available amounts for the gap analysis.

Non-State Water Board Funds

In addition to State Water Board funds, there are other loan and grant programs that may be leveraged to support the implementation of solutions for HR2W and At-Risk drinking water systems in California (Table 5). These funds will not be incorporated into the gap analysis at this time and are only presented here for informational purposes. Future iterations of the gap analysis will consider the availability of these funding sources as more information is developed on the typical breakdown allocated to drinking water projects in California.

In order to identify a list of potential non-State Water Board funds, the Pacific Institute project team conducted desktop research and outreach to state, federal, and private loan and grant programs designed to address drinking water system issues. Research and outreach sought to assess the likelihood that the funding source would remain active at least through 2022, the earliest year in which the SAFER Needs Assessment process will be positioned to consider leveraging outside funds. The research process also gathered key information regarding each fund, such as special application criteria, any matching requirements, and any information affecting the eligibility of small systems and systems in disadvantaged communities. Where available, historical award amounts to CA entities were collected from the most recent fiscal year for which funding allocation data is available. These data were used to provide a rough estimate of the aggregate, non-State Water Board funds leverage potential in the future.

Table 5: Additional Funding Resources

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
DWR Integrated Regional Water Management Implementation Grants, Round 2	California Department of Water Resources (DWR)	To be announced (\$181,000,000 expected)	Public agencies, non-profit organizations, public utilities, federally recognized Indian tribes, state Indian tribes listed on the Native American Heritage Commission's Tribal Consultation list, mutual water companies. (Note: list from Round 1 Grant Program Guidelines.)	Water reuse and recycling, water-use efficiency and water conservation, water storage, regional water conveyance facilities, watershed protection, stormwater management, conjunctive use, water desalination, water supply decision support tools, and water quality improvement for drinking water treatment and distribution and other purposes. (Note: list from Round 1 Grant Program Guidelines.)
Household Water Well System Loan Program	U.S. Department of Agriculture (USDA) Rural Development	FY20: \$0 FY19: \$225,000 (1 award) FY18: \$308,000 (1)	Homeowners with a household income under \$62,883 living in a rural area, town, or community with a population of fewer	Refurbishment, replacement, or construction of a household water well

³⁰ Summary information only. For full descriptions, please review fund expenditure plans.

³¹ Summary information only. For full descriptions, please review fund expenditure plans.

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
	Program, Rural Community Assistance Corporation (RCAC), Self-Help Enterprises (SHE)		than 50,000 people.	system.
Water & Waste Disposal Loan & Grant Program in California	USDA Rural Development Program	FY20: \$13.8 million (7) FY19: \$10.3m (10) FY18: \$24.6m (26)	State and local government entities, private nonprofits, federal tribes in rural areas with a population of less than 50,000 people, rural tribal lands, and colonias.	Acquisition, construction, or improvement of drinking water sourcing, treatment, storage, and distribution, in addition to other project eligibility such as waste disposal. Some funds for TA, training, and predevelopment planning.
Water & Waste Predevelopment Planning Grants	USDA Rural Development Program	FY20: \$0 FY19: \$139,820 (1) FY18: \$0	State and local government entities, private nonprofits, federal tribes in rural areas with a population of less than 10,000 people, rural tribal lands, and colonias. Median household income	Pre-planning and development of applications for USDA Rural Development Water loans and grants.

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
			(MHI) must be below poverty line or less than 80% of statewide non-metropolitan MHI.	
SEARCH - Special Evaluation Assistance for Rural Communities & Households (grant)	USDA Rural Development Program	FY20: \$90,000 (3) FY19: \$288,620 (5) FY18: \$56,000 (2)	State and local government entities, nonprofit organizations, federally recognized tribes in rural areas with population of 2500 or less with MHI below poverty line or less than 80% of statewide non-metropolitan MHI.	Constructing, enlarging, extending or improving rural water, sanitary sewage, solid waste disposal and stormwater facilities.
Emergency Community Water Assistance Grants	USDA Rural Development Program	FY20: \$390,154 (2) FY19: \$1.5m (2) FY18: \$1.1m (2)	State and local government entities, nonprofit organizations, federally recognized tribes in rural areas and towns with populations of 10,000 or less and with an MHI less than state's MHI for non-metro areas facing a qualified emergency.	Projects to address drought, flood, earthquake, tornado, hurricane, disease outbreak, chemical spill, or other qualified emergency. Federal disaster designation is not required.
Environmental infrastructure loans (USDA	Rural Community Assistance Corp	Typically 8-10 CA loans annually. FY20:	Rural areas with population of 50,000 or less or 10,000 or less for USDA long-term	Water and waste facility projects for small, rural communities.

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
bridge loans)	(RCAC)	approximately \$3.3m (10)	loans.	
Circuit Rider Program - Technical Assistance for Rural Water Systems	USDA, U.S. Environmental Protection Agency (EPA)	FY21: \$19m nationally. CA: \$0 over last 3 years.	Rural water, wastewater, and solid waste systems; nonprofit water systems, municipal water systems.	Day-to-day operational issues, financial issues, management issues, energy audits.
Community Facilities Direct Loan and Grant Program	USDA Rural Development Program	FY20: Grants \$4.4m (52) FY19: Grants \$887,800 (26) FY18: \$1.8m (29)	Systems serving fewer than 20,000 people, with a focus on systems serving fewer than 5,000 people.	Purchase, construct, and/or improve essential community facilities, purchase equipment and pay related project expenses.
306C Water and Waste Grants	USDA Rural Development Program	FY19: \$2m (2)	Federally recognized tribes, colonias designated before October 1, 1989, and rural areas and towns with populations of fewer than 10,000 people.	Basic drinking water and waste disposal systems, including storm drainage.
Assistance for Small and Disadvantaged Communities Drinking Water	U.S. EPA	FY19-20: \$3.8m to SRF	Public water systems, existing privately-owned and publicly owned community water systems, and non-profit non-	Investments necessary for public water systems to comply with the Safe Drinking Water Act (see Section 1459A of the

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants³⁰	Eligible Projects³¹
Grant			community water systems, including system utilizing POE or residential central treatment.	SDWA).
Water Infrastructure Finance and Innovation (loan)	U.S. EPA	FY20: \$1.7B (11)	Local, state, tribal, and federal government entities; partnerships and joint ventures; corporations and trusts; CWSRF and DWSRF programs. Total federal assistance may not exceed 80% of projects eligible costs. Minimum project costs of \$20m for communities of more than 25,000 people, \$5m for communities of 25,000 people or less.	CWSRF and DWSRF projects, enhanced energy efficiency at drinking water and wastewater facilities, desalination, aquifer recharge, alternative water supply, water recycling, drought prevention and reduction or mitigation, property acquisition if necessary. Planning and construction projects both eligible.
WaterSMART Water and Energy Efficiency Grants	U.S. Bureau of Reclamation (USBR)	FY19: \$9.5m (12)	State, tribe, irrigation district, water district, or other organization with water or power delivery authority.	50-50 cost share projects addressing water conservation and efficiency, hydropower, conflict risk, and water supply reliability.

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
Small-Scale Water Efficiency Projects (grant)	USBR	FY20: \$862,000 (14)	State, tribe, irrigation district, water district, or other organization with water or power delivery authority.	50-50 cost share projects addressing canal lining/piping, municipal metering, irrigation flow measurement, Supervisory Control and Data Acquisition and Automation (SCADA), irrigation measures, and other projects.
Native American Affairs (NAA) Technical Assistance Program (TAP)	USBR	FY20: \$200,000 (1)	Federally recognized Indian Tribes.	Projects concerning management, protection, or development of water and related resources.
Rural Water and Wastewater Lending	CoBank	Historically \$2.2B to 300 borrowers nationwide	Water cooperatives, water companies, and non-profit water systems.	Not specified.
Rural Water Loan Fund	National Rural Water Association	FY20: 15 loans nationally (average loan size \$67,000). No loans to CA in 2020, but 10 loans have been made to	Public entities including municipalities, counties, special purpose districts, Native American tribes, nonprofit corporations, and cooperatives serving rural	Pre-development (planning) costs for infrastructure projects; replacement equipment, system upgrades, maintenance and small

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
		CA since the program's inception.	areas or communities of 10,000 people or less.	capital projects; energy efficiency projects to lower costs and improve system sustainability; and disaster recovery or other emergency loans.
Public Works (grant)	Economic Development Administration (EDA), US Department of Commerce	FY18: \$17.8m (6)	District organizations; Indian tribes; states; county, or city, or other political subdivision of a state; institutions of higher education; public or private non-profits.	Competitive national fund to address EDA's investment priorities meeting economic distress criteria. Amount of EDA award may not exceed 50% of project costs.
Economic Adjustment Assistance (grant)	EDA	FY18: \$5.6m (6)	District organizations; Indian tribes; states; county, or city, or other political subdivision of a state; institutions of higher education; public or private non-profits.	Competitive national fund to finance construction, non-construction, technical assistance, and revolving loan fund projects.
Community Development Block Grant (CDBG) program	Housing and Urban Development (HUD), California	FY20: \$413m to water & sewer projects nationally FY19: \$413m to water & sewer	Non-entitlement jurisdictions (cities with a population under 50,000 and counties with a population under 200,000 in	Community development projects, including water and wastewater systems.

Fund	Source Agency	Fund size (Number of awards to CA entities)	Eligible Applicants ³⁰	Eligible Projects ³¹
	Department of Housing and Community Development	projects nationally FY18: \$395m to water & sewer projects nationally	unincorporated areas that do not participate in HUD CDBG entitlement program); non-federally recognized Native American communities; colonias.	

Litigation Funds and other Contaminant Mitigation Programs

It is recognized that treatment costs associated with certain contaminants— e.g. 1,2,3-trichloropropane (1,2,3 –TCP) — may be covered through damages awarded from legal settlements. Funding may also be made available from other mitigation programs for contaminants such as nitrate as part of the Central Valley Salinity Alternatives for Long-term Sustainability (CV-Salts) program. However, the extent of the availability of this type of funding tends to be site specific and is unknown at this time, particularly on an aggregated Statewide basis. Therefore, this version of the gap analysis assumes that no necessary costs are covered by litigation awards or other programs. However, it is recognized that any funding awarded through litigation should either reimburse costs that have already been met by the state and/or be utilized, to the extent possible, to expedite funding of solutions for other HR2W or At-Risk water systems where there may otherwise be insufficient funding.

Step 2: Mapping Funding Sources to Modeled Solutions

State Water Board funding sources each have specific eligibility requirements regarding applicant type and project type (Table 4, above). When estimating funding availability, this gap analysis will use these eligibility requirements to ensure the most appropriate funds are applied to specific categories of systems and solution types (Figure 6). Table 6 shows which funds will be considered for which types of systems and solutions types. In the estimation for the funding gap, if funds are “left over” after the specific category of systems’ or solutions’ needs have been addressed, the remainder will be applied to additional system and solution types, as allowed. This process will be applied to the first approach described below for the gap analysis to help match State Water Board fund sources to the solutions and systems identified in the Cost Assessment. For the second approach to the gap analysis, matching will not be necessary as it focuses solely on the SADWF.

Figure 6: Step 2 of the Gap Analysis Methodology



Table 6: State Water Board Funds Matched to HR2W and At-Risk Systems Modeled Solutions

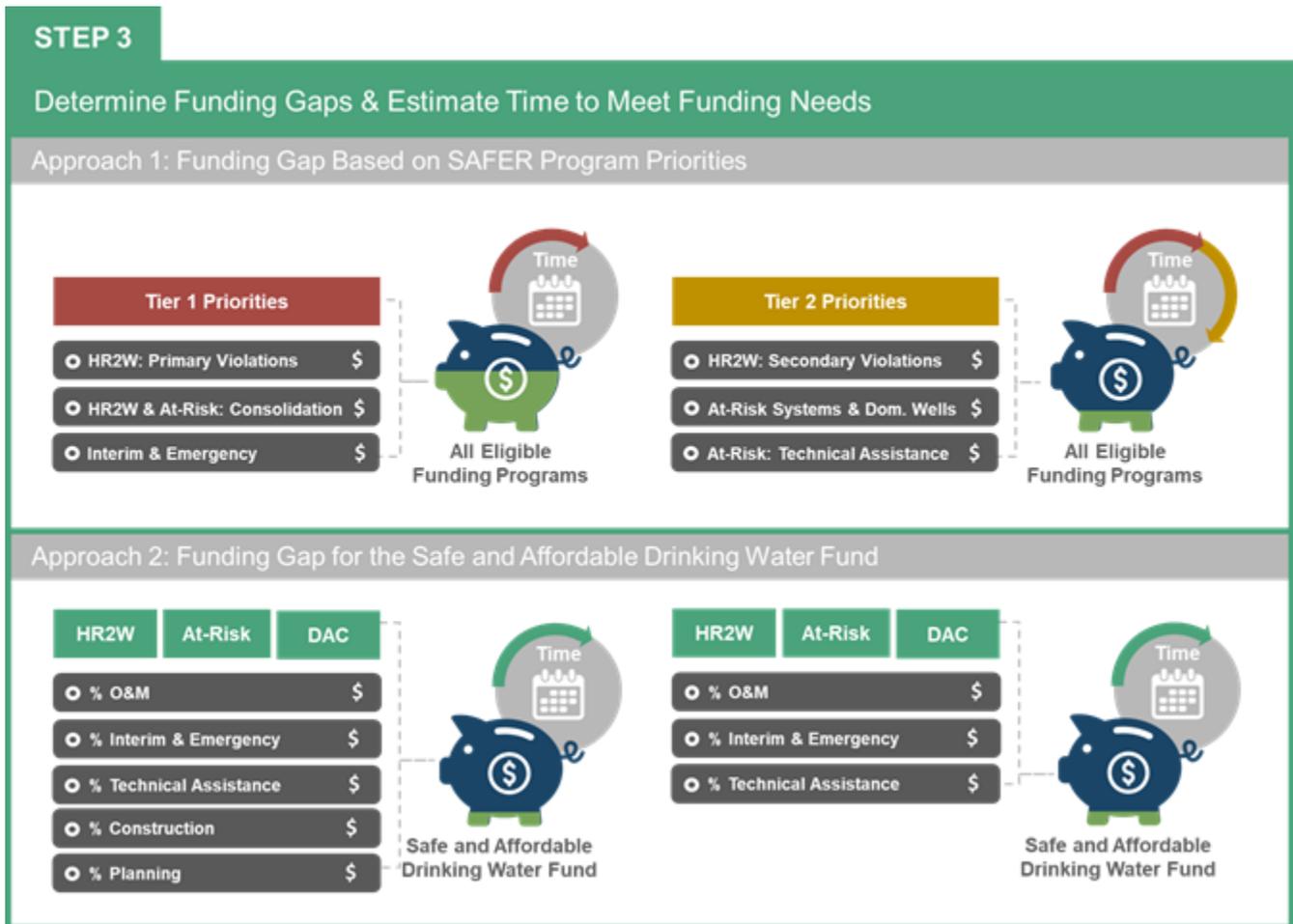
State Water Board Funds	System Types	Type of Community	Modeled Solution Types
Safe and Affordable Drinking Water Fund (SADWF)	PWS, Public K-12 School, SSWS, Domestic Wells	Any	O&M, Interim solutions, Technical Assistance
Drinking Water State Revolving Fund (DWSRF)	PWS, Public K-12 School	Any	Capital/Construction (i.e., Physical Consolidation, Treatment, Other Infrastructure), Technical Assistance
Small Community Drinking Water Funding Program	PWS, Public K-12 School	Small DAC/SDAC	Capital/Construction (i.e., Physical Consolidation, Treatment, Other Infrastructure), Technical Assistance
Emergency Drinking Water/Cleanup & Abatement Account Programs – Urgent Drinking Water Needs Projects	PWS, CWS, Public K-12 School	DAC	Interim solutions, emergency supplies and repairs
Water Board Household & Small Water System Drought Assistance Program; CAA – DW Well Replacement Program	SSWS, Domestic Wells	Small DAC/SDAC	Capital/Construction (i.e., Physical Consolidation, Treatment, Other Infrastructure), Technical Assistance
Water System Administrator Program	PWS	DAC/SDAC	N/A ³²

³² Currently, there is limited cost data to support the inclusion of the Administrator funding program into the gap analysis for the 2021 Needs Assessment. Future iterations will be able to assess the gap for Administrators when data becomes available.

Step 3: Estimating the Funding Gap

The funding gap will inform an estimate of the time it will take to meet the estimated need and how much need cannot be met based on existing funding sources. There will be two approaches taken to make these estimates (Figure 7). The first approach takes into account a tiered prioritization of project types, based on the priorities established in the SADWF FY 2020-21 FEP and applies them to all State Water Board funding programs relevant to the SAFER program. The second approach will specifically analyze the funding gap for the SADWF by applying the fund target expenditures by solution type as presented in the SADWF FY 2020-21 FEP.

Figure 7: Step 3 of the Gap Analysis Methodology



Approach 1: Tiered Prioritization Based on System and Modeled Solution Types

For the first approach to estimating the gap, the estimated need that has been matched to funding sources based on the modeled solutions will be applied to the funding available in all State Water Board funding programs relevant to the SAFER Program, over time, using a two-tier prioritization.

First Tier Prioritization

Tier 1 prioritization will be based on the SADWF FY 2020-21 Fund Expenditure Plan's "General Funding Approach and Prioritization" (p. 12).³³ The Fund Expenditure Plan specifies that the top priorities for expenditures from the SADWF for FY 2020-21 include:

- 1) addressing any emergency or urgent funding needs, where other emergency funds are not available, and a critical water shortage or outage could occur without support from the Fund;
- 2) addressing CWSs and school water systems out of compliance with primary drinking water standards, focusing on small DACs;³⁴
- 3) accelerating consolidations for systems out of compliance, At-Risk systems, as well as state smalls and domestic wells, focusing on small DACs; and
- 4) providing interim solutions, initiating planning efforts for long-term solutions, and funding capital projects for state smalls and domestic wells with source water above a primary MCL.

Second Tier Prioritization

Tier 1 prioritization will not cover certain systems, such as those on the HR2W list solely on the basis of secondary drinking water violations or monitoring and reporting violations. Therefore, a second set of prioritization criteria are needed for the gap analysis. Tier 2 will include:

- 1) HR2W systems not captured in Tier 1; and
- 2) all other At-Risk systems.

These priorities will be used in the gap analysis to prioritize all State Water Board funding resources, not solely the SADWF. Even so, it is not expected that there will be sufficient funding for all estimated need to be met. The difference between the estimated funding available and the estimated need for both systems meeting Tier 1 and Tier 2 criteria will account for the "gap" for each year it can be calculated.

Approach 2: SADWF Target Expenditures

The second gap analysis approach will assess the estimated funding need compared to the SADWF availability. The gap analysis will use the SADWF target expenditures, as outlined in the FY 2020-21 Fund Expenditure Plan, to allocate the estimated funding need on an annual basis, until all needs are met (assuming no other funding sources are

³³ [FY 2020-21 Fund Expenditure Plan](https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/docs/sadwfep_2020_07_07.pdf)

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/docs/sadwfep_2020_07_07.pdf

³⁴ 298 out of 305 systems on the HR2W list used in this analysis were out of compliance with a primary drinking water standard. The other seven systems, which were out of compliance for secondary drinking water standards, were prioritized as Tier 2 in this analysis.

available). The allocation amounts will be based on percentages in Table 7, which were derived from FY 2020-21 Fund Expenditure Plan’s targeted expenditures. This analysis will assume that the percentages do not change over time, however, for future Fund Expenditure Plans, all target expenditures will be reviewed and adjusted annually based on actual need, public input, and the SAFER Advisory Group recommendations.

Additionally, this analysis of the SADWF will help illustrate the gap in available funding for solution types that are uniquely eligible for the SADWF. To do this, the analysis will assume that public water systems’ construction and planning needs will be met by other State Water Board funding sources. The 34% allocated toward construction and planning for public water systems in Table 7 will be proportionally distributed among the other solution types.

Table 7: 2020-21 SADWF Target Expenditures as Percentages for the Gap Analysis Estimate

Water System Category	Interim Water Supplies and Emergencies	Technical Assistance	Planning	Direct O&M Support	Construction
HR2W Systems	8%	5%	2%	4%	15%
At-Risk PWS Systems	3%	14%	2%	4%	15%
State Small Systems & Domestic Wells	4%	4%	0%	0%	8%

Note that percentages in Table 7 do not add up to 100% as this table only includes solutions types modeled by the Cost Assessment, and therefore, administrator solutions and other program needs are not included in the gap analysis at this time. Furthermore, Table 7 does not include staff costs associated with implementing the SAFER Program, which are anticipated to increase over time.

Uncertainty in the Gap Analysis Estimates

This analysis will have an inherent amount of uncertainty that must be recognized when interpreting and applying the results. It is important to note that earlier steps in the Cost Assessment each contain different amounts of uncertainty, and because the gap analysis is applying the results from earlier steps, it will contain the cumulative uncertainty from all previous steps.

Uncertainty generated from the gap analysis comes from assumptions that were necessary in order to complete the analysis. The assumptions that contribute the most uncertainty in the gap analysis, not including estimates from the Cost Assessment, include:

- No change in the estimated funding need for HR2W and At-Risk systems.
- Full State Water Board fund commitment each year.
- Estimated funding availability over time.
- Estimated local cost share.
- Estimated DAC and SDAC status for water systems where data may be missing and/or change over time.

Future Gap Analyses will compare the outcomes from this first gap analysis to what actually occurs with the estimated need, funding availability, and application of the funds to solutions, and then modify these assumptions accordingly.

Next Steps

February 26, 2021 Public Webinar Workshop

The State Water Board will be hosting a public webinar workshop on February 26, 2021 to solicit stakeholder feedback and recommendations on the proposed methodology for the final step of the Cost Assessment, the gap analysis.

Registration for webinar workshop: SAFER Webinar: [Cost Assessment Model Preliminary Results and Gap Analysis](#):

https://waterboards.zoom.us/webinar/register/WN_AvtFGZ1VTSW9ZHwuXGkrbw

Materials for this workshop and past Cost Assessment workshops can be found on [State Water Board's Needs Assessment webpage](#):

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/needs

Determine Final Gap Analysis Methodology

The State Water Board, Pacific Institute, and UCLA will review and consider public feedback on the gap analysis methodology received from February 26, 2021 through March 12, 2021. Public feedback and recommendations should be submitted:

- In person during the February 26, 2021 webinar workshop; or
- By email: SAFER@waterboards.ca.gov

The Cost Assessment methodology will be finalized, and results of the full Needs Assessment will be completed in early Spring 2021. On March 25, 2021, the State Water Board will be hosting a webinar to provide an overview of the 2021 Needs Assessment results. This will include:

Risk Assessment results for public water systems identifies systems (with 3,300 or

less service connections) and K-12 schools that are at-risk of failing to provide adequate safe drinking water. The Risk Assessment for state small water systems and domestic wells identifies areas where systems and households may be accessing groundwater that does not meet primary drinking water standards (maximum contaminant level or MCL).

Cost Assessment results will estimate the costs related to the implementation of interim and longer-term solutions for systems on the HR2W list and At-Risk systems. The Cost Assessment also includes the identification of available funding sources and the funding gaps that may exist to support these solutions.

Affordability Assessment results will identify community water systems that serve disadvantaged communities that must charge their customers' fees that exceed the affordability threshold established by the State Water Board in order to provide adequate safe drinking water.

The results of the 2021 Needs Assessment will be utilized to inform the 2021-22 Fund Expenditure Plan for the Safe and Affordable Drinking Water Fund.

Registration for webinar workshop: SAFER Webinar: [Needs Assessment Results](#):
https://waterboards.zoom.us/webinar/register/WN_o8GRWtJSSJyaAX9u2x6a5Q

Materials for this workshop and past Needs Assessment workshops can be found on [State Water Board's Needs Assessment webpage](#):
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/needs