



Proposed Changes to the Cost Assessment Model:

Other Essential Infrastructure, Admin. Needs, and Interim Solutions

Needs Analysis Unit
Division of Drinking Water

December 20, 2023
Remote participation only



Meeting Logistics

Mawj Khammas
Needs Analysis Unit
Division of Drinking Water



Water Board's Mission Statement

Preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.

Ways to Participate-

1. **Watch ONLY:** Visit video.calepa.ca.gov
2. **Email:** Submit a comment or ask a question that will be read aloud, send an email to: safer@waterboards.ca.gov
3. **Q&A:** Submit a question using the Q&A feature at the bottom of your Zoom Screen. You can UPVOTE any question you would like answered.
4. **Raise Hand:** Attendees will be given the opportunity to provide verbal comment or ask questions, if you're interested in this option, please raise your virtual hand when the time is right.

- Please wait for your name to be called.
- Public comments are 3 minutes each.

Agenda

- 1 COST ASSESSMENT & SUMMARY OF PROPOSED CHANGES
- 2 OVERVIEW OF ADDITIONAL MODELED LONG-TERM SOLUTIONS
- 3 OVERVIEW OF MODELED INTERIM SOLUTIONS
- 4 TOTAL COST MODIFIERS
- 5 PRELIMINARY RESULTS & NEXT STEPS



COST ASSESSMENT BACKGROUND

Audience Poll Question 1

Did you participate in any past webinars about Cost Assessment Model or Needs Assessment?

- Yes
- No

View recordings and materials here: <https://bit.ly/3SnTmD2>

Audience Poll Question 2

Have you read the White Paper: “Proposed Updates to the Drinking Water Cost Assessment Model: Other Essential Infrastructure, Admin Needs, and Interim Solutions”?

- Yes, I read the whole thing
- Yes, I skimmed it
- No, but I plan to
- No, I don't intend to read it

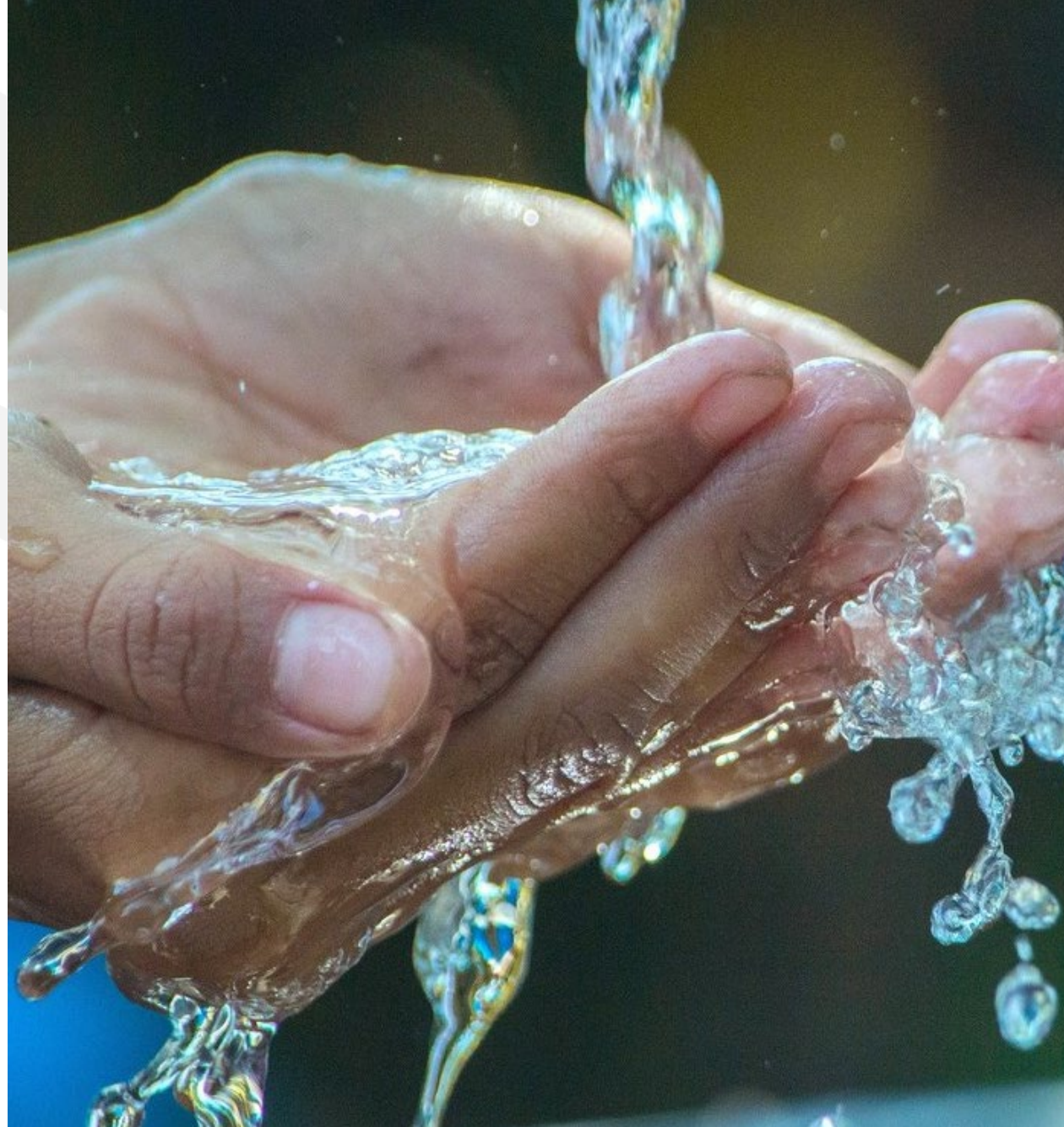
Access the white paper online:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/2023-cost-assessment-model-workshop-3-white-paper.pdf

Safe and Affordable Drinking Water Fund

Up to \$130 million per year through 2030.

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).



Needs Assessment Components




Failing Water System List

Community Water Systems & K-12 Schools



Risk Assessment

Small and Medium Community Water Systems; K-12 Schools; SSWS; & DWs



Cost Assessment

Failing & At-Risk Systems and Domestic Wells



Affordability Assessment

DAC/SDAC Community Water Systems

<https://bit.ly/SAFER-NA>

Purpose of the Cost Assessment



Failing & At-Risk Water
Systems & Domestic Wells

SB 200 directs the State Water Board to estimate “anticipated funding needs” related to the implementation of interim and/or emergency measures and longer-term solutions for Failing and At-Risk systems.

Results of the Cost Assessment are used to inform the prioritization of existing SAFER funding.

The Cost Assessment is NOT intended to inform local decisions.

Systems Included in the Cost Assessment

Failing



Public Water Systems

- Primary MCL Violation
- Secondary MCL Violation
- *E. coli* Violation
- Treatment Technique Violations
- Monitoring & Reporting Violations

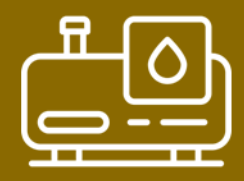
At-Risk



Public Water Systems

- Water Quality Risk
- Accessibility Risk
- Affordability Risk
- Technical, Managerial, Financial (TMF) Risk

At-Risk



State Small Systems

- Water Quality Risk
- Water Shortage Risk
- Socioeconomic Risk

At-Risk



Domestic Wells

- Water Quality Risk
- Water Shortage Risk
- Socioeconomic Risk

OVERVIEW OF PROPOSED CHANGES

Past Workshops on the Cost Assessment

The State Water Board has hosted workshops on the development and refinement of the Cost Assessment Model.

NEEDS ASSESSMENT COMPONENTS	2019	2020	2021	2022	2023
Risk Assessment: Public Water Systems	■	■	■	■	■
Risk Assessment: State Small Water Systems & Domestic Wells	■	■	■	■	■
Cost Assessment	1	3	3	2	4
Affordability Assessment		■	■	■	■

2021 and 2022 Cost Assessment

The screenshot shows the California Water Boards website. At the top is the navigation menu with icons for Board, Programs, Drinking Water, Water Quality, Water Rights, Notices, Water Boards, and Search. Below the navigation is a banner for "SAFER DRINKING WATER" with the tagline "SAFE AND AFFORDABLE FUNDING FOR EQUITY AND RESILIENCE". The main content area is titled "California Drinking Water Needs Assessment" and features a "Needs Assessment Core Components" graphic with four icons: Failing Water System List, Risk Assessment, Cost Assessment, and Affordability Assessment. Below this graphic is a paragraph of text explaining the SAFER program and a link to the 2023 Needs Assessment. On the right side of the website, there are sections for "Subscribe directly to the SAFER Drinking Water Email List", "News & Upcoming Events" (listing a public webinar on proposed updates to the cost assessment model), and "Dashboards" (including the SAFER Dashboard and Risk Assessment for State Small Water Systems and Domestic Wells Dashboard).

Access the **2021** report here:
<https://bit.ly/3mAz2yK>

Access the **2022** report here:
<https://bit.ly/3uJSUFH>

Learn more about the **Needs Assessment** here:
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/needs.html

Modeled Long-Term Solutions and Interim Solutions



Long-Term Solutions

Modeled sustainable solutions to address the challenges identified by the Failing criteria or Risk Assessment.



Interim Solutions

Modeled temporary solutions for DAC/SDAC systems to ensure access to safe drinking water while long-term solutions are being implemented.

The Cost Assessment Model assumes non-DAC communities can support the implementation of interim solutions.



Long-Term Solutions

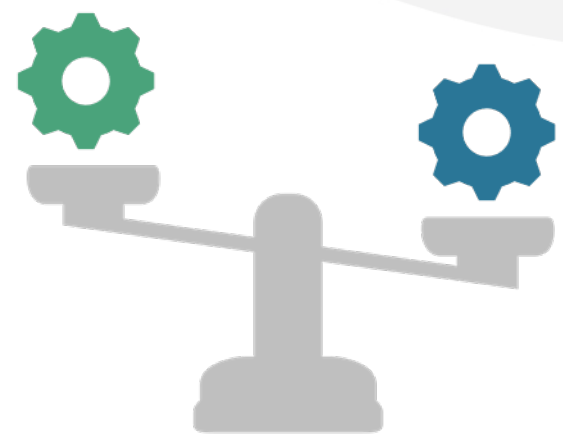
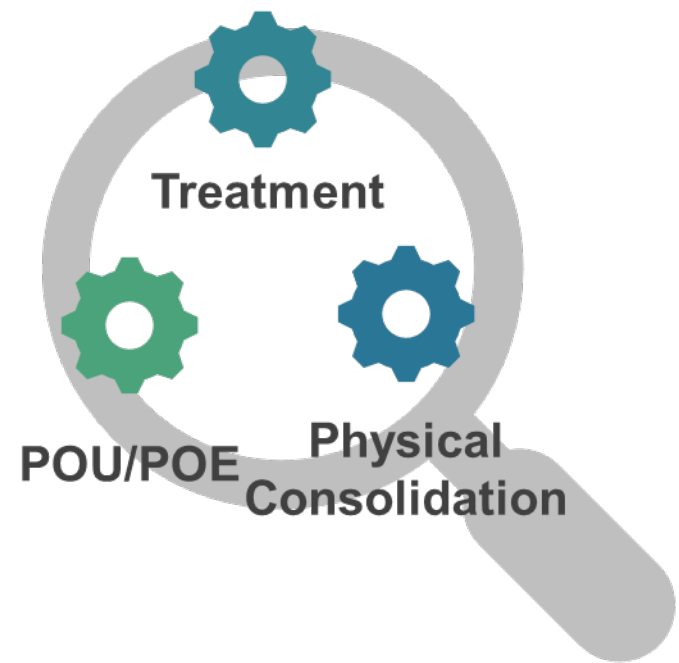
Model Long-Term Solutions for Failing public water systems, At-Risk public water systems, and high-risk SSWS & DWs

2021 Cost Assessment Modeled Long-Term Solution Selection Process

STEP 1: All possible modeled solutions identified, and cost estimates developed.

STEP 2: Conduct Sustainability & Resiliency Assessment of all modeled solutions and compare top 2 solutions.

STEP 3: Select best model solution using cost and Step 2 score.



Proposed Cost Assessment Modeled Long-Term Solution Selection Process for **Failing** Public Water Systems

The proposed new Cost Assessment Model would assess modeled solutions in priority order, using clear selection and viability criteria.

STEP 1: Determine if physical consolidation is viable.



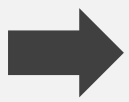
Physical Consolidation



STEP 2: If not, determine if centralized treatment is viable.



Treatment



STEP 3: If not, select decentralized treatment.



POU/POE



STEP 4: Add Other Infrastructure, Admin, TA, & Interim Needs.



Additional Needs

Proposed Cost Assessment Modeled Long-Term Solution Selection Process for **At-Risk** Public Water Systems

The proposed new Cost Assessment Model would assess modeled solutions in priority order, using clear selection and viability criteria.

STEP 1: Determine if physical consolidation is viable.



Physical Consolidation



STEP 2: Add Other Infrastructure, Admin, TA, & Interim Needs.



Additional Needs

Proposed Cost Assessment Modeled Long-Term Solution Selection Process for High **Water Quality** Risk **SSWS/DWs**

The proposed new Cost Assessment Model would assess modeled solutions in priority order, using clear selection and viability criteria.

STEP 1: Determine if physical consolidation is viable.



Physical Consolidation



STEP 2: If not, determine if decentralized treatment is viable.



POU/POE



STEP 3: If not, select Bottled Water.



Bottled Water

Proposed Cost Assessment Modeled Long-Term Solution Selection Process for High **Water Shortage** Risk **SSWS/DWs**

The proposed new Cost Assessment Model would assess modeled solutions in priority order, using clear selection and viability criteria.

STEP 1: Determine if physical consolidation is viable.



Physical Consolidation




STEP 2: If not, select construction of a new Well.



New Private Well

Cost Assessment Modeled Long-Term Solutions

Summary of when each long-term solution has been discussed:



Physical Consolidation

7.2023 WORKSHOP



Centralized Treatment



POU/POE

10.2023 WORKSHOP



Additional Needs



New Private Well



Bottled Water

TODAY'S WEBINAR

Workshop 1: Updates to the Modeled Physical Consolidation Process

The State Water Board hosted a webinar workshop on **July 14, 2023** to provide an overview of the proposed updates to the physical consolidation analysis in the Cost Assessment Model.

- **White Paper:**
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/20230714-final-cost-assessment-consolidation-white-paper.pdf
- **Webinar Presentation:**
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/20230714-final-cost-assessment-consolidation-workshop.pdf
- **Webinar Recording:** https://youtu.be/cfb_JMesbT8

Workshop 2: Updates to the Long-Term Treatment Analysis

The State Water Board hosted a webinar workshop on **October 5, 2023** to provide an overview of the proposed updates to the long-term treatment analysis in the Cost Assessment Model.

- **White Paper:**
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/modeled-treatment-draft-whitepaper.pdf
- **Webinar Presentation:**
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/cost-assessment-lt-treatment-workshop-10-05-2023.pdf
- **Webinar Recording:** <https://www.youtube.com/watch?v=Kb19drONYIQ&feature=youtu.be>



Interim Solutions

Model Interim Solutions for DAC/SDAC Failing public water systems and high-risk SSWS & DWs

Interim Solutions

Only for **DAC/SDAC Failing** public water systems and **high-risk SSWS and DWs**.



Audience Poll Question 3

Do you support the proposed modifications to the Cost Assessment Model?

- Yes, they sound good
- Maybe, I need to learn more
- No, I think this is headed in the wrong direction
- Neutral

Discussion Topic: Proposed Cost Assessment Model Modifications

Q1: Do you agree with the proposed changes for how the Cost Assessment Model assessed long-term and interim solutions?



OVERVIEW OF ADDITIONAL MODELED LONG-TERM SOLUTIONS

Additional Modeled Long-Term Solutions for Public Water Systems



Additional Long-Term Solutions

Other Essential Infrastructure

A white line-art icon on a dark blue square background showing a checklist with three items, each with a checkmark and a horizontal line to its right.

Technical Assistance

A white line-art icon on a dark blue square background showing two hands shaking, symbolizing agreement or assistance.

Administrator Assistance

A white line-art icon on a dark blue square background showing a person icon at the bottom, a gear at the top, and two warning triangles on the sides, all connected by dotted lines, representing administrative support and risk management.

Updating Underlying Cost Assumptions

State Water Board has made proposed updates to how the Model estimates **costs** for additional long-term needs.

Staff have conducted internal and external outreach:

- Reviewed 2021 Cost Assessment Model documentation.
- Consulted with vendors and consulting firms.
- Reviewed State Water Board funding projects.
- Reached out to water systems to collect/confirm cost data.
- Consulted with an internal workgroup of Division of Drinking Water engineers and Division of Financial Assistance staff.

See Appendix A in the white paper.

Other Essential Infrastructure (OEI) (1/2)

2021 Model assumed a *percentage* of all Failing and At-Risk public water systems needed OEI components. Updated Model will determine needs based on available water system information.

	Old Model	Recommended Update
Meters	Included (31%)	Included
Back-Up Power	Included (38%)	Included
Well Sounder	<i>Excluded</i>	<i>Included (SB 552 Requirement)</i>
Additional Storage	Included (36%)	Included
Land Acquisition for Additional Storage	Included (10%)	<i>Excluded*</i>
SCADA & Electrical Upgrades	Included (9%)	Incorporated into cost estimates for new wells, replacement wells, and storage tanks.
Replace Distribution System	Included (31%)	<i>Excluded*</i>

* Insufficient system-level information.

Other Essential Infrastructure (OEI) (2/2)

2021 Model assumed a *percentage* of all Failing and At-Risk public water systems needed OEI components. Updated Model will determine needs based on available water system information.

	Old Model	Recommended Update
Managerial Assistance	Included (80%)	Incorporated into Administrator Assistance estimate.
Add a Second Well	Included (80% with one well)	Included
Replacement Well	Included (26%)	Included
Land Acquisition for New Well	Included (5%)	<i>Excluded*</i>
Well Pump and Motor	Included for second well and replacement well estimates. (9%)	Included for second well and replacement well estimates.

* Insufficient system-level information.

Technical Assistance for Public Water Systems (1/2)

The State Water Board recommends incorporating technical assistance eligibility criteria that more closely aligns with State Water Board technical assistance program eligibilities:

Systems Assessed	Old Model	Recommended Update
Failing Systems	All	<ul style="list-style-type: none"> Systems with less than 3,300 service connections; and Disadvantage community status (DAC or SDAC)
At-Risk Systems	All	
High-Risk SSWS & DWs	<i>Excluded</i>	<i>Excluded</i>

Technical Assistance for Public Water Systems (2/2)

The State Water Board recommends updating the technical assistance cost and duration assumptions to better reflect trends from more than **50 recent technical assistance state-funded projects**:

Cost & Duration:	Old Model	Recommended Update
Failing Systems <i>Physical Consolidation</i>	\$300,000 for 5 years	
Failing Systems <i>No Physical Consolidation</i>	\$300,000 for 5 years	\$425,000 for 5 years
At-Risk Public Water Systems <i>Physical Consolidation</i>	\$60,000 for 5 years	
At-Risk Public Water Systems <i>No Physical Consolidation</i>	\$60,000 for 5 years	\$44,000 for 2 years

Administrator Assistance for Public Water Systems (1/2)

The State Water Board recommends incorporating Administrator Assistance eligibility criteria that more closely aligns with State Water Board’s recent Administrator Policy Handbook.

Systems Assessed	Old Model	Recommended Update
Failing Systems	N/A	<ul style="list-style-type: none"> • Systems with less than 500 service connections; and • Disadvantage community status (DAC or SDAC); and • “High” TMF Capacity Category risk score in the Risk Assessment.
At-Risk Systems	N/A	<ul style="list-style-type: none"> • Systems with less than 200 service connections; and • Disadvantage community status (DAC or SDAC); and • “High” TMF Capacity Category risk score in the Risk Assessment.
High-Risk SSWS & DWs	N/A	<i>Excluded</i>

Administrator Assistance for Public Water Systems (2/2)

Since 2021, the State Water Board has initiated eight Administrator projects with appointments and funding. The average Administrator project costs \$733,052 per system.

	Cost:	Old Model	Recommended Update
Failing Systems		N/A	\$733,000
At-Risk Public Water Systems		N/A	

Discussion Topic : Additional Long-Term Solutions

Q1: Do you agree with the proposed changes for how the Cost Assessment Model assessed needs for:

- Other Essential Infrastructure
- Technical Assistance
- Administrator Assistance

Additional Modeled Long-Term Solutions for High-Risk SSWS & Domestic Wells

Physical Consolidation



Decentralized Treatment



New Private Well



Bottled Water



7.2023 & 10.2023 WORKSHOPS

TODAY'S WEBINAR

New Private Well

Modeled as a long-term solution for SSWSs and domestic wells with high *Water Shortage* risk, where modeled physical consolidation is not viable.

	Old Model	Recommended Update
Well Drilling	N/A	\$65/ft. (\$32,500 for 500 ft.)
Electrical Component & Control Box	N/A	\$600
Well Pump & Motor	N/A	\$830 (DW) and \$1,120 (SSWS)
Water Sampling	N/A	\$400
Connection/Casing Pipe	N/A	\$2,150
Submersible Wire	N/A	\$5/ft. (\$2,500 for 500 ft.)
Pressurized Water Tank	N/A	\$400
Well Permitting	N/A	Included by County
Destroy Old Well	N/A	\$3,300
Additional Parts & Labor	N/A	\$3,500
TOTAL:	N/A	\$46,180 (DW) or \$46,470 (SSWS) + permitting fee

Long-Term Bottled Water

Modeled as a long-term solution for SSWSs and domestic wells with high *Water Quality* risk, where modeled physical consolidation and decentralized treatment is not viable.

Duration: 10 years

	Old Model	Recommended Update
Cost per Gallon	\$1.00 per gallon	\$1.25 per gallon
Volume per Connection	60 gallons per month	60 gallons per month
Delivery Fee per Connection (2x a month)	<i>Excluded</i>	\$22 per month
Hand Pump per Connection	<i>Excluded</i>	\$11

Discussion Topic : SSWS/DW Long-Term Solutions

Q1: Do you agree with the addition of a new private well for high *Water Shortage* risk state small water systems & domestic wells?

OVERVIEW OF MODELED INTERIM SOLUTIONS

Interim Solutions

- The State Water Board recognizes that it may take many months or years to implement long-term sustainable solutions.
- Cost Assessment Model includes an analysis of interim needs for disadvantage communities (DAC & SDAC).
- At-Risk public water systems are excluded.



Interim Solutions



Decentralized
Treatment



Bottled Water

Interim Decentralized Treatment

For systems:

- Failing or high-risk due to *Water Quality* challenges; and
- Either physical consolidation or centralized treatment is the modeled long-term solution; and
- Community is DAC/SDAC and less than 3,300 service connections.

Modeled Duration:	Old Model	Recommended Update
DAC Failing	6 years	3 years
DAC SSWSs	9 years	3 years
DAC DWs	9 years	2 years

Interim Bottled Water

For systems:

- Failing or high-risk due to *Water Quality* and/or *Water Shortage* challenges; and
- Where modeled interim decentralized treatment is not viable or applicable.
- Community is DAC/SDAC and less than 3,300 service connections.

Modeled Duration:	Old Model	Recommended Update
DAC Failing	6 years	3 years
DAC SSWSs	9 years	3 years
DAC DWs	9 years	2 years

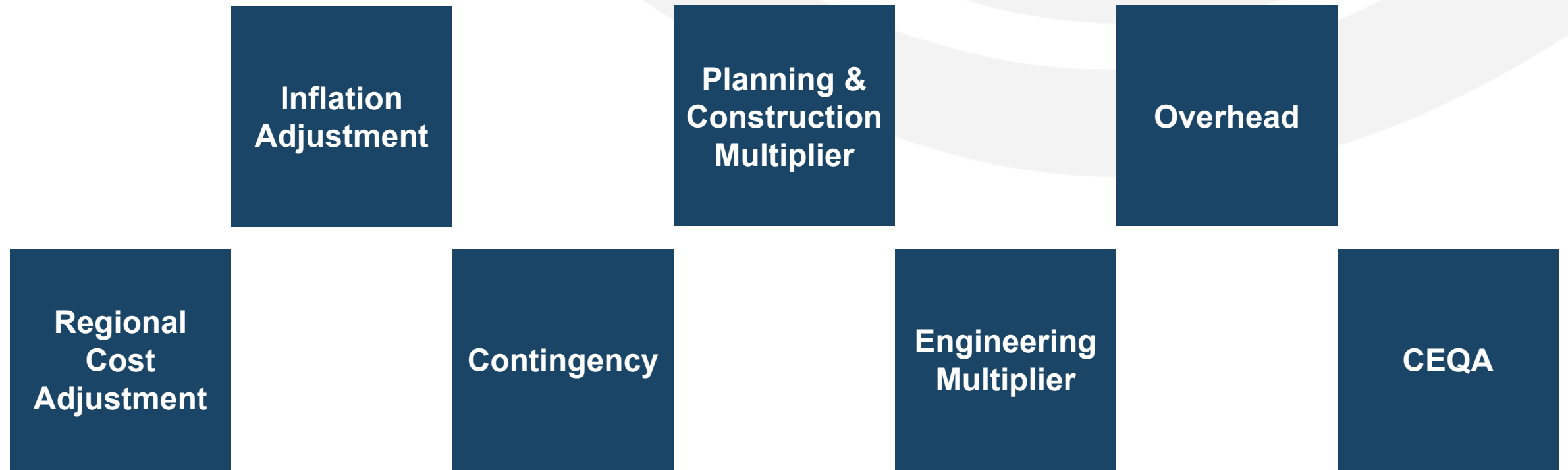
Discussion Topic : Modeled Interim Solutions

Q1: Do you agree with proposed changes to the modeled interim solutions?

TOTAL COST MODIFIERS

Total Estimated Cost Modifiers and Multipliers

The application of certain cost modifiers and multipliers is based on (1) the age of the component cost estimate data source(s); (2) the region where the capital investment will occur; (3) the nature of the capital investment; etc.



Application of Capital Cost Modifiers and Multipliers

Modeled Solution	Regional Cost Adjustment	Inflation Adjustment	Contingency	Planning & Construction	Engineering Multiplier	Overhead	CEQA
Physical Consolidation	✓	✓	✓	✓			✓
Centralized Treatment	✓	✓	✓	✓	✓	✓	
Decentralized Treatment	✓	✓	✓				
SSWS/DW Well	✓	✓	✓				
Bottled Water		✓					
Meters	✓	✓					
Back-up Electrical Supply	✓	✓					
Souder	✓	✓					
Additional Storage	✓	✓					✓
Public Water System Well	✓	✓					✓

Discussion Topic : Cost Assessment Modifiers

Q1: Do you agree with the list of applied multipliers and modifiers? Are there any that you think should be added or removed?



PRELIMINARY COST ASSESSMENT RESULTS

Preliminary Assessment: Systems Assessed

To allow for a comparison between the proposed updated Cost Assessment Model and the 2021 Cost Assessment Model, the State Water Board has conducted a preliminary assessment.

Failing List: January 1, 2023

At-Risk PWS List: 2023 Risk Assessment Results

High-Risk SSWS & DWs: 2023 Risk Assessment Results

The 2024 Drinking Water Needs Assessment will include a final Cost Assessment utilizing updated inventories of public water systems and domestic wells. The results of that analysis may differ from the preliminary results presented here.

Preliminary Assessment: Count of Modeled Long-Term Solutions (1/4)

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	381	165 (43%)	179 (47%)	20 (6%)	N/A	N/A	356 (93%)
At-Risk PWS	512	246 (48%)	N/A	N/A	N/A	N/A	471 (92%)
High-Risk SSWS	810	436 (54%)	N/A	293 (36%)	146 (18%)	7 (0.01%)	N/A
High-Risk Domestic Wells	154,353	76,913 (49%)	N/A	42,067 (27%)	55,458 (36%)	1,667 (0.01%)	N/A

2021 Results

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	305	61 (20%)	138 (45%)	106 (35%)	N/A	N/A	305 (100%)
At-Risk PWS	630	145 (23%)	N/A	N/A	N/A	N/A	630 (100%)
High-Risk SSWS	455	142 (31%)	N/A	303 (67%)	N/A	10 (2%)	N/A
High-Risk Domestic Wells	62,607	25,696 (41%)	N/A	36,911 (59%)	N/A	N/A	N/A

Preliminary Assessment: Count of Modeled Long-Term Solutions (2/4)

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	381	165 (43%)	179 (47%)	20 (6%)	N/A	N/A	356 (93%)
At-Risk PWS	512	246 (48%)	N/A	N/A	N/A	N/A	471 (92%)
High-Risk SSWS	810	436 (54%)	N/A	293 (36%)	146 (18%)	7 (0.01%)	N/A
High-Risk Domestic Wells	154,353	76,913 (49%)	N/A	42,067 (27%)	55,458 (36%)	1,667 (0.01%)	N/A

2021 Results

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	305	61 (20%)	138 (45%)	106 (35%)	N/A	N/A	305 (100%)
At-Risk PWS	630	145 (23%)	N/A	N/A	N/A	N/A	630 (100%)
High-Risk SSWS	455	142 (31%)	N/A	303 (67%)	N/A	10 (2%)	N/A
High-Risk Domestic Wells	62,607	25,696 (41%)	N/A	36,911 (59%)	N/A	N/A	N/A

Physical consolidation is selected for more systems

Preliminary Assessment: Count of Modeled Long-Term Solutions (3/4)

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	381	165 (43%)	179 (47%)	20 (6%)	N/A	N/A	356 (93%)
At-Risk PWS	512	246 (48%)	N/A	N/A	N/A	N/A	471 (92%)
High-Risk SSWS	810	436 (54%)	N/A	293 (36%)	146 (18%)	7 (0.01%)	N/A
High-Risk Domestic Wells	154,353	76,913 (49%)	N/A	42,067 (27%)	55,458 (36%)	1,667 (0.01%)	N/A

2021 Results

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	305	61 (20%)	138 (45%)	106 (35%)	N/A	N/A	305 (100%)
At-Risk PWS	630	145 (23%)	N/A	N/A	N/A	N/A	630 (100%)
High-Risk SSWS	455	142 (31%)	N/A	303 (67%)	N/A	10 (2%)	N/A
High-Risk Domestic Wells	62,607	25,696 (41%)	N/A	36,911 (59%)	N/A	N/A	N/A

More SSWSs and domestic wells in the analysis

Preliminary Assessment: Count of Modeled Long-Term Solutions (4/4)

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	381	165 (43%)	179 (47%)	20 (6%)	N/A	N/A	356 (93%)
At-Risk PWS	512	246 (48%)	N/A	N/A	N/A	N/A	471 (92%)
High-Risk SSWS	810	436 (54%)	N/A	293 (36%)	146 (18%)	7 (0.01%)	N/A
High-Risk Domestic Wells	154,353	76,913 (49%)	N/A	42,067 (27%)	55,458 (36%)	1,667 (0.01%)	N/A

2021 Results

System Type	Total Systems	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs
Failing PWS	305	61 (20%)	138 (45%)	106 (35%)	N/A	N/A	305 (100%)
At-Risk PWS	630	145 (23%)	N/A	N/A	N/A	N/A	630 (100%)
High-Risk SSWS	455	142 (31%)	N/A	303 (67%)	N/A	10 (2%)	N/A
High-Risk Domestic Wells	62,607	25,696 (41%)	N/A	36,911 (59%)	N/A	N/A	N/A

New Private Well Long-Term Solution

Preliminary Assessment: Cost Estimate of Modeled Long-Term Solutions (in Millions) (1/3)

System Type	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs	Estimated Total
Failing PWS	\$531	\$417	\$1.7	N/A	N/A	\$1,653	\$2,603
At-Risk PWS	\$895	N/A	N/A	N/A	N/A	\$2,256	\$3,151
High-Risk SSWS	\$337	N/A	\$20	\$8	\$0.72	N/A	\$366
High-Risk Domestic Wells	\$1,271	N/A	\$315	\$2,848	\$20	N/A	\$4,454
TOTAL:	\$3,034	\$417	\$337	\$2,856	\$21	\$3,909	\$10,574

2021 Results

System Type	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs	Estimated Total
Failing PWS	\$131	\$401	\$19	N/A	N/A	\$1,225	\$1,776
At-Risk PWS	\$293	N/A	N/A	N/A	N/A	\$1,345	\$1,638
High-Risk SSWS	\$35	N/A	\$19	N/A	N/A	N/A	\$53
High-Risk Domestic Wells	\$800	N/A	\$296	N/A	N/A	N/A	\$1,096
TOTAL:	\$1,259	\$401	\$334	N/A	N/A	\$2,570	\$4,563

Preliminary Assessment: Cost Estimate of Modeled Long-Term Solutions (in Millions) (2/3)

System Type	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs	Estimated Total
Failing PWS	\$531	\$417	\$1.7	N/A	N/A	\$1,653	\$2,603
At-Risk PWS	\$895	N/A	N/A	N/A	N/A	\$2,256	\$3,151
High-Risk SSWS	\$337	N/A	\$20	\$8	\$0.72	N/A	\$366
High-Risk Domestic Wells	\$1,271	N/A	\$315	\$2,848	\$20	N/A	\$4,454
TOTAL:	\$3,034	\$417	\$337	\$2,856	\$21	\$3,909	\$10,574

2021 Results

System Type	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs	Estimated Total
Failing PWS	\$131	\$401	\$19	N/A	N/A	\$1,225	\$1,776
At-Risk PWS	\$293	N/A	N/A	N/A	N/A	\$1,345	\$1,638
High-Risk SSWS	\$35	N/A	\$19	N/A	N/A	N/A	\$53
High-Risk Domestic Wells	\$800	N/A	\$296	N/A	N/A	N/A	\$1,096
TOTAL:	\$1,259	\$401	\$334	N/A	N/A	\$2,570	\$4,563

Preliminary Assessment: Cost Estimate of Modeled Long-Term Solutions (in Millions) (3/3)

System Type	Physical Consolidation	Centralized Treatment	Decentralized Treatment	New Private Well	Bottled Water	Add. Costs	Estimated Total
Failing PWS	\$531	\$417	\$1.7	N/A	N/A	\$1,653	\$2,603
At-Risk PWS	\$895	N/A	N/A	N/A	N/A	\$2,256	\$3,151
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TOTAL:	\$1,259	\$401	\$334	N/A	N/A	\$2,570	\$4,563

Preliminary Assessment: Count of Modeled **Interim** Solutions

System Type	Total Systems	Decentralized Treatment	Bottled Water	Total
Failing PWS	381	141 (37%)	38 (10%)	179 (47%)
At-Risk PWS	512	0	0	0
High-Risk SSWS	810	155 (19%)	128 (16%)	283 (35%)
High-Risk Domestic Wells	154,353	15,079 (10%)	38,233 (25%)	53,312 (35%)

2021 Results

System Type	Total Systems	Decentralized Treatment or Bottled Water
Failing PWS	343	222 (65%)
At-Risk PWS	630	0
High-Risk SSWS	611	130 (21%)
High-Risk Domestic Wells	77,569	20,443 (26%)

Preliminary Assessment: Cost Estimate of Modeled Interim Solutions (in Millions)

System Type	First Year		
	Decentralized Treatment	Bottled Water	Estimated Total
DAC Failing PWS	\$233	\$4	\$237
DAC High-Risk SSWS	\$7	\$1	\$8
DAC High-Risk Domestic Wells	\$71	\$46	\$117
TOTAL:	\$311	\$51	\$362

System Type	Full Duration		
	Decentralized Treatment	Bottled Water	Estimated Total
DAC Failing PWS	\$312	\$11	\$323
DAC High-Risk SSWS	\$10	\$4	\$14
DAC High-Risk Domestic Wells	\$85	\$92	\$177
TOTAL:	\$407	\$107	\$514

2021 Results

System Type	Bottled Water & Decentralized Treatment	
	First Year	Full Duration
DAC Failing PWS	\$172	\$845
DAC High-Risk SSWS	\$5	\$9
DAC High-Risk Domestic Wells	\$96	\$192
TOTAL:	\$273	\$1,050

Preliminary Assessment: Analysis

- Compared to the 2021 Cost Assessment results the total capital cost estimate for long-term solutions **increased \$6.01 billion (132%)** from \$4.56 billion to \$10.57 billion.
- Compared to the 2021 Cost Assessment results 23% more Failing public water systems, 25% more At-Risk public water systems, 23% more high-risk state small water systems, and 9% more high-risk domestic wells have physical consolidation modeled as their long-term.
- The estimated cost for constructing a new private well for high *Water Shortage* risk domestic wells and state small water systems is **\$2.86 billion**. This estimated cost represents **48% of the cost increase** between the updated Cost Assessment Model and the 2021 Cost Assessment results.

Discussion Topic: Preliminary Cost Assessment Results

Q1: Compared to the 2021 Cost Assessment results, how do the preliminary updated Cost Assessment results compare? Do these results align with your expectations?

NEXT STEPS

Feedback Requested

The State Water Board is seeking stakeholder feedback on the proposed updates to the Cost Assessment Model.

Access the white paper online:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/2023-cost-assessment-model-workshop-3-white-paper.pdf

Submit feedback to: SAFER@waterboards.ca.gov

Public Feedback due January 19, 2024

Discussion Topic: Open Discussion

General questions or feedback on the Cost Assessment Model.



Thank You

CALIFORNIA WATER BOARDS

SAFER PROGRAM