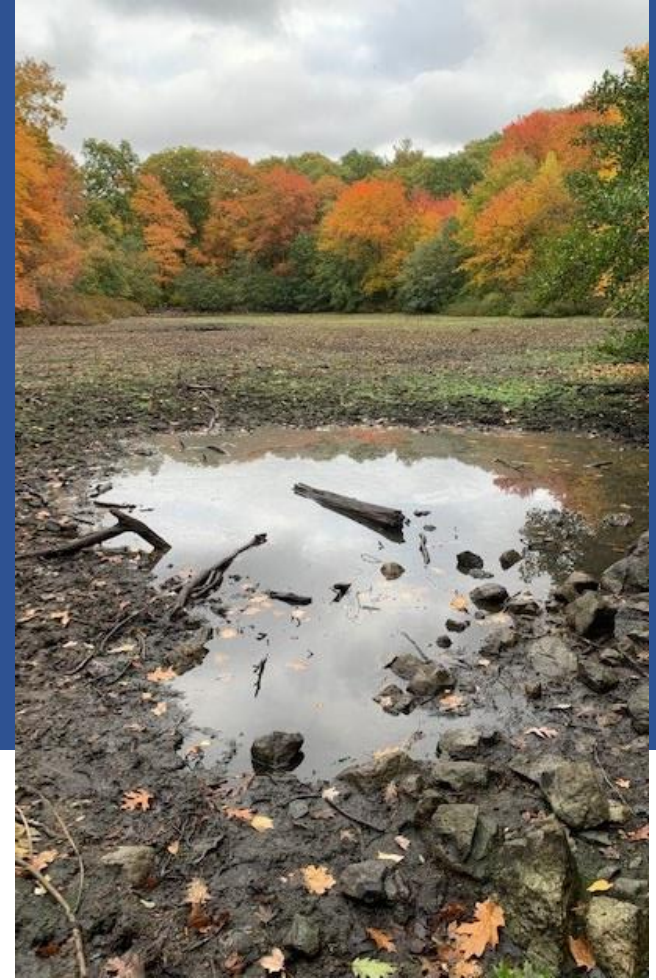


Massachusetts

Draft Local Public Water Supply Drought Management Plan Guidance



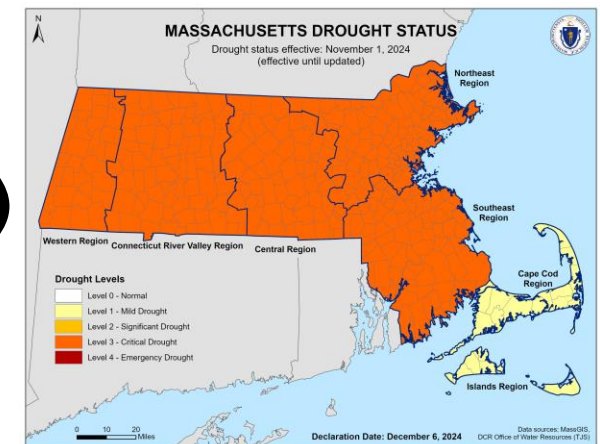
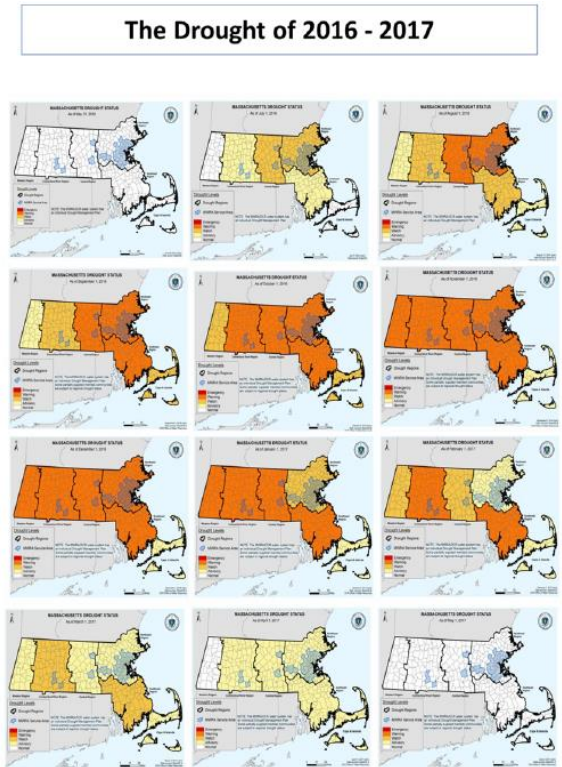
Massachusetts Water Resources Commission

January 9, 2025



Guidance Development

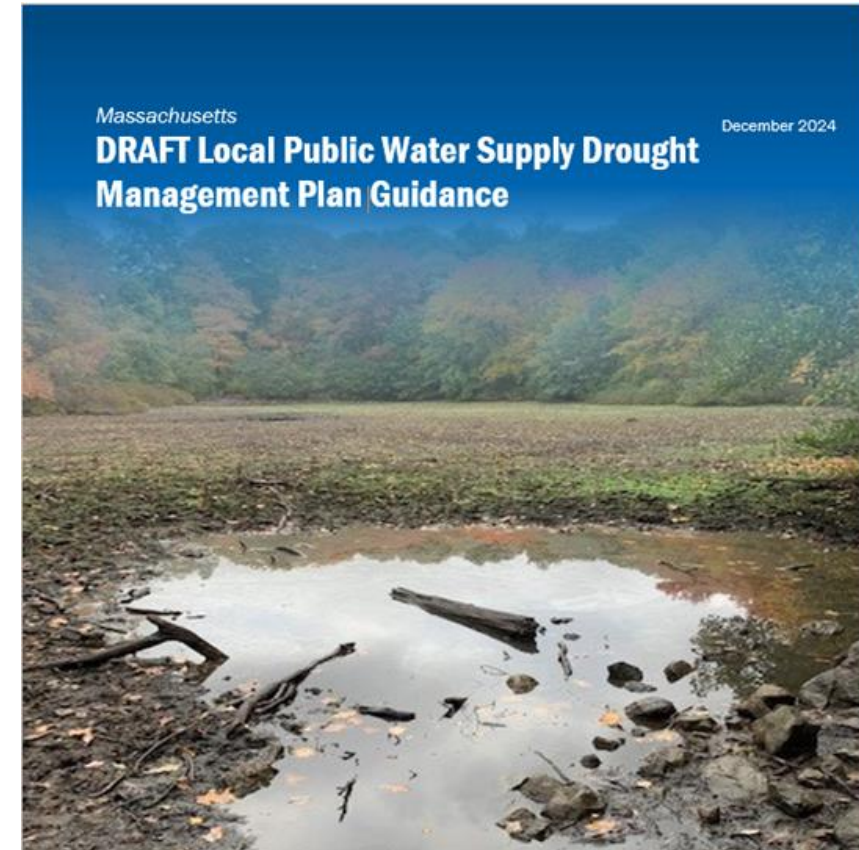
- 2017-2018 Working Group after 2016 Drought
- 2019 Update of MA DMP
- 2022-2023 Grant, Scope, RFP, CEI hired
- 2023-2024 Contract with CEI : Framework, Testing, Document
- 2022-2024 Steering Committee (Thank you members!)
- June 2024 Workshop Sessions (Thank you MWWA!)



November 2024

Guidance Introduction

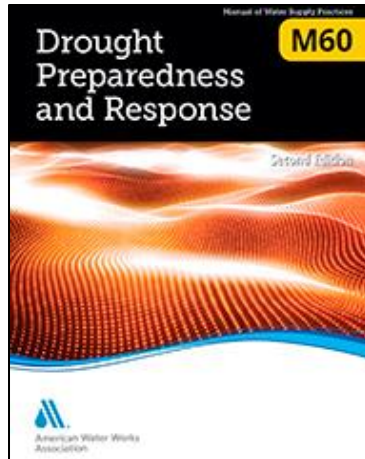
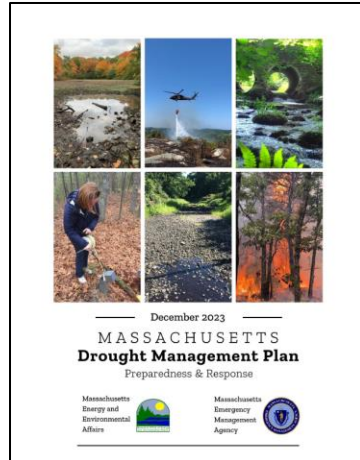
- ❓ Why was this document developed?
- ❓ What is the purpose of this document?
- ❓ Who is the target audience?
- ❓ How should this document be used?



Guidance Overview



Based on



1

Form Drought Planning Team

2

Forecast Supply in Relation to Demand

3

Assess Methods for Balancing Supply and Demand

4

Establish Triggers and Action Levels

5

Develop Staged Response

6

Adopt Plan

7

Implement Plan

1 Form Drought Planning Team

Objective: Form a drought planning team to execute the actions involved in developing, adopting, and implementing a local DMP.



- 1 Form Drought Planning Team
- 2 Forecast Supply in Relation to Demand
- 3 Assess Methods for Balancing Supply and Demand
- 4 Establish Triggers and Action Levels
- 5 Develop Staged Response
- 6 Adopt Plan
- 7 Implement Plan

Summary of Steps:

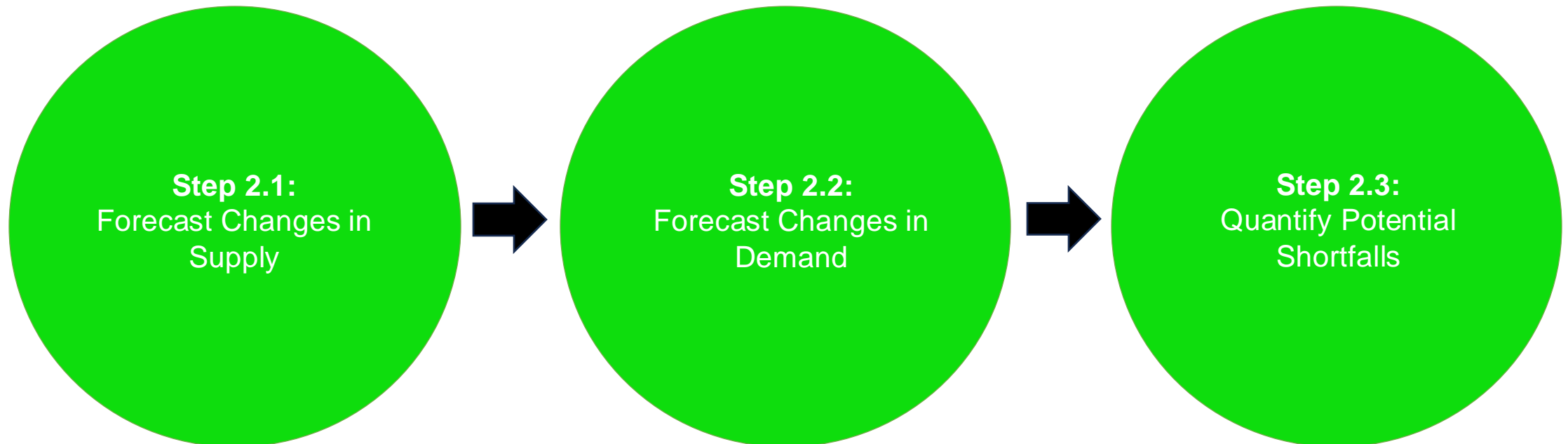


2 Forecast Supply in Relation to Demand

Objective: Develop a reasonable estimate of potential water supply shortfalls based on a range of supply and demand scenarios, including multi-year droughts.

- 
- 1 Form Drought Planning Team
 - 2 Forecast Supply in Relation to Demand
 - 3 Assess Methods for Balancing Supply and Demand
 - 4 Establish Triggers and Action Levels
 - 5 Develop Staged Response
 - 6 Adopt Plan
 - 7 Implement Plan

Summary of Steps:

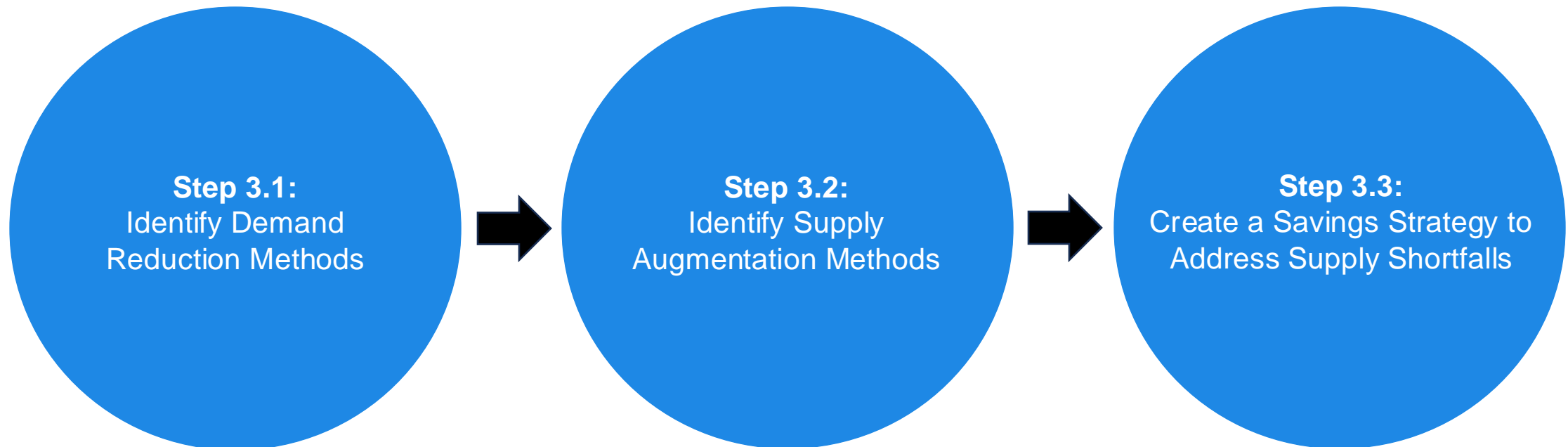


3 Assess Methods for Balancing Supply and Demand

Objective: Evaluate methods via demand reduction and supply augmentation to address potential water supply shortfall scenarios from **Step 2**.

- 
- 1 Form Drought Planning Team
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 - 3 Assess Methods for Balancing Supply and Demand
 - 4 Establish Triggers and Action Levels
 - 5 Develop Staged Response
 - 6 Adopt Plan
 - 7 Implement Plan

Summary of Steps:

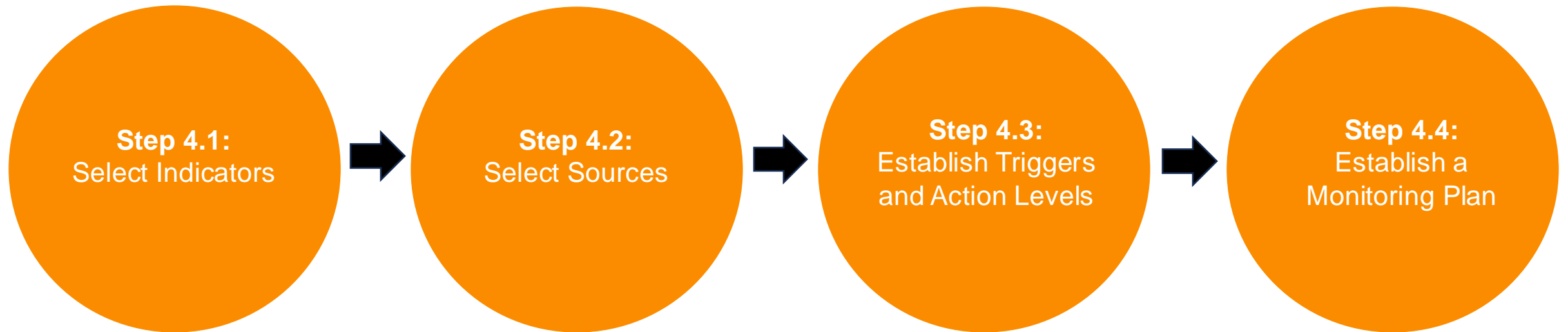


4 Establish Triggers and Action Levels

Objective: Establish indicators, triggers, and associated action levels to signal dry conditions and take meaningful action against potential supply shortfalls.

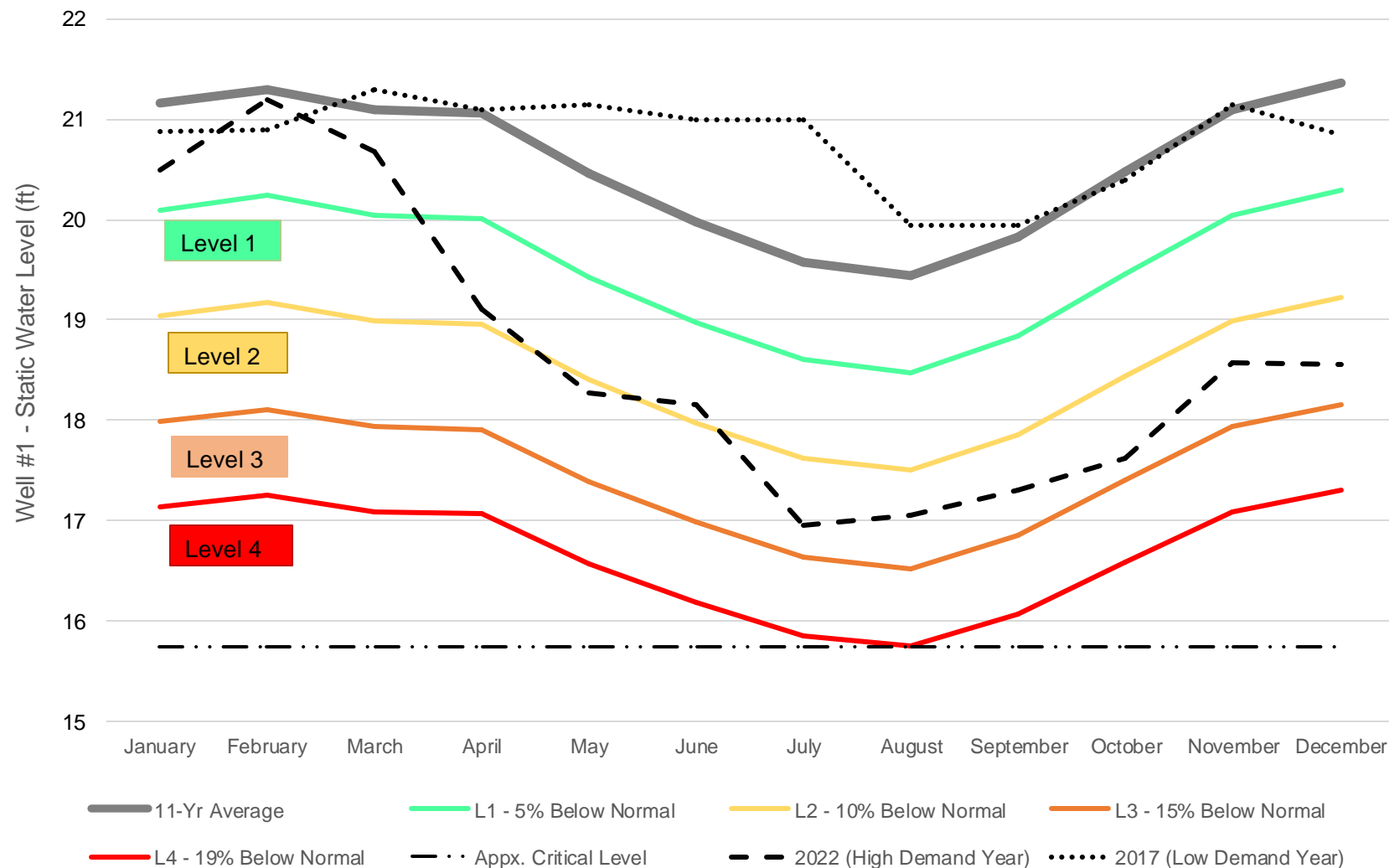
- 1 Form Drought Planning Team
- 2 Forecast Supply in Relation to Demand
- 3 Assess Methods for Balancing Supply and Demand
- ➔ 4 Establish Triggers and Action Levels
- 5 Develop Staged Response
- 6 Adopt Plan
- 7 Implement Plan

Summary of Steps:



4 Establish Triggers and Action Levels

Outcome: Established Triggers and Action Levels

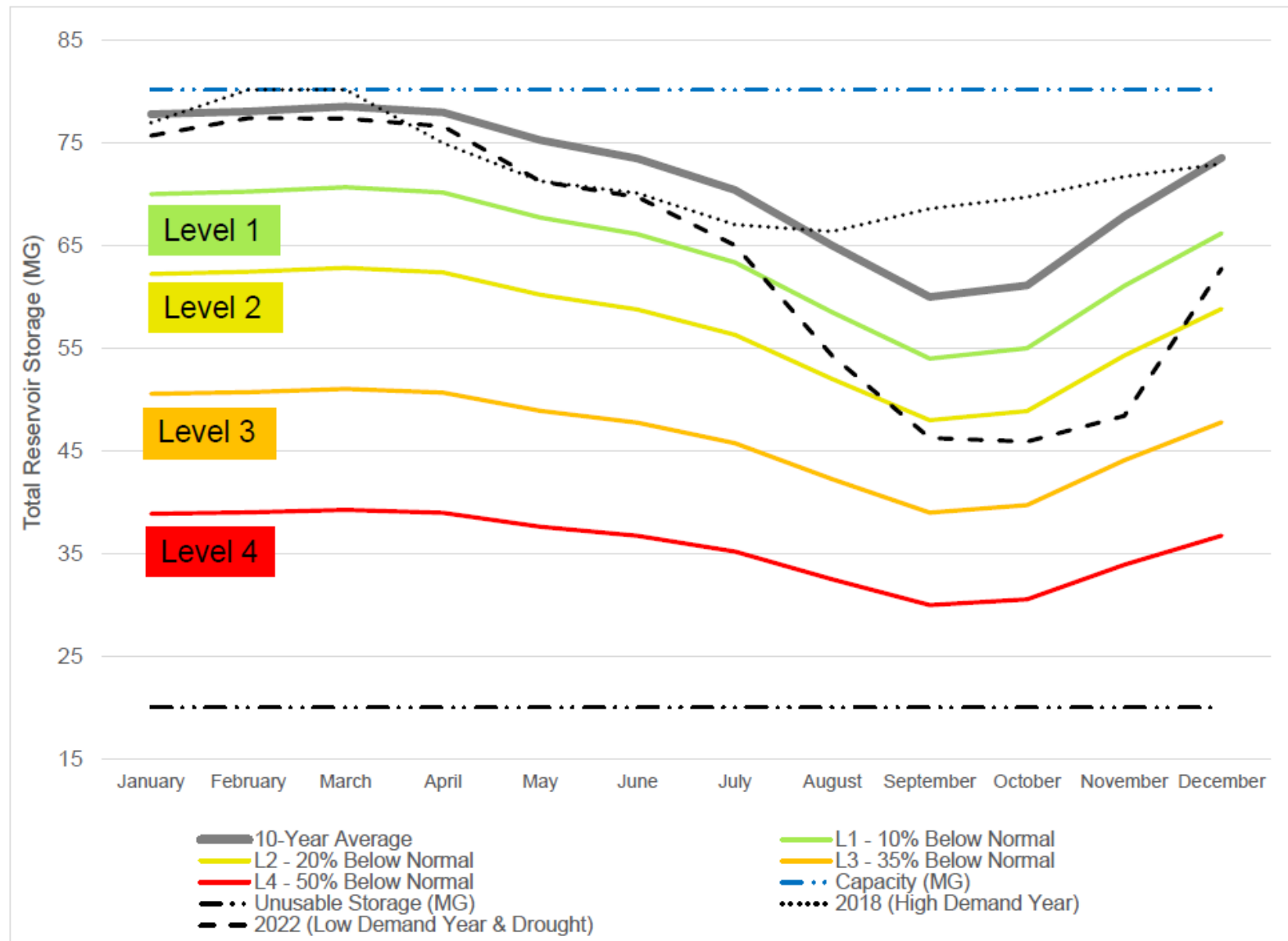


Action Level	Description
Level 0	Normal
Level 1	Mild
Level 2	Significant
Level 3	Critical
Level 4	Emergency

Example Trigger Plot (Water Level % Deviation- Groundwater)

4 Establish Triggers and Action Levels

Outcome: Established Triggers and Action Levels



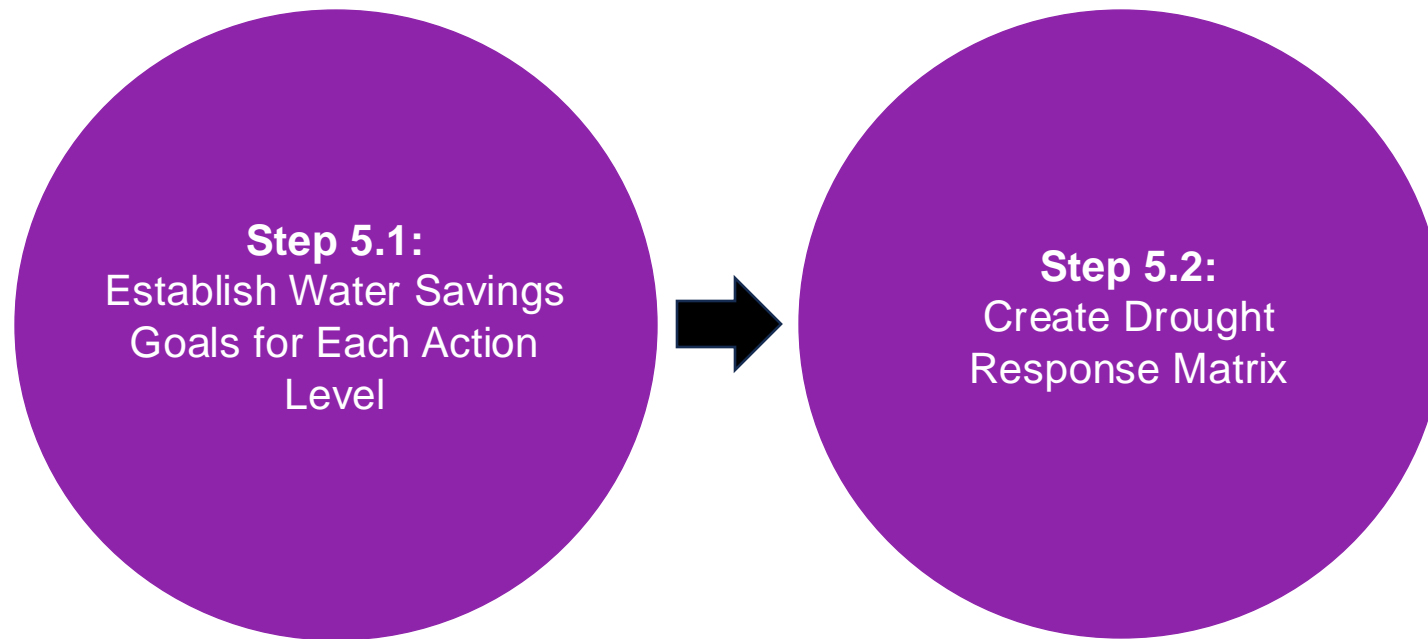
Action Level	Description
Level 0	Normal
Level 1	Mild
Level 2	Significant
Level 3	Critical
Level 4	Emergency

5 Develop Staged Response

Objective: Identify actions needed to meet water savings goals and address potential supply shortfalls.

- 1 Form Drought Planning Team
- 2 Forecast Supply in Relation to Demand
- 3 Assess Methods for Balancing Supply and Demand
- 4 Establish Triggers and Action Levels
- ➔ 5 Develop Staged Response
- 6 Adopt Plan
- 7 Implement Plan

Summary of Steps:



5 Develop Staged Response

Outcome: Drought Response Matrix

Example Drought Response Matrix¹

		Level 1: Mild	Level 2: Significant	Level 3: Critical	Level 4: Emergency
Trigger(s) (Well #1):		5 to 10% of feet below normal for that time of year	10 to 15% of feet below normal for that time of year	15 to 19% of feet below normal for that time of year	>19% of feet below normal for that time of year
Coordination	Drought Management Team	Convene monthly meeting	Biweekly or weekly meetings	Weekly or daily meetings	Daily meetings
Fiscal Management		--	Enact drought surcharge.	Enact drought surcharge.	Enact drought surcharge.
Action Category	Actions	Level 1 Actions	Level 2 Actions	Level 3 Actions	Level 4 Actions
Demand Management	Nonessential Outdoor Watering	Encourage voluntary reduction in outdoor water use	Allow watering between 7pm and 7am only on even/odd days	Allow watering no more than once per week or on designated days	Prohibit all outdoor water use
	Public Information Campaigns	Update website with latest information on water supply status and restrictions	Weekly social media posts on water conservation	Press events and weekly or daily social media updates	Daily communication using all tools
	Water Use Rationing	--	Determine appropriate allocations and excess use charges for each utility customer to meet emergency reduction target	Prepare utility customer expectations for potential allocation assignments and excess use charges to meet emergency reduction target	Implement allocation assignments and excess use charges to each utility customer to meet reduction target in addition to other demand management methods
Supply Augmentation	Backup and Emergency Supplies	Review/ test backup supplies	Prepare for activation of backup supplies	Possible activation of backup supplies	Activate backup supplies
Savings Goals:		10% of demand for that time of year	20% of demand for that time of year	30% of demand for that time of year	40% of demand for that time of year

1. Example matrix adapted from 2023 MA DMP.

6 Adopt Drought Management Plan

Objective: Adopt the local drought management plan.

Summary of Steps:



- 1 Form Drought Planning Team
- 2 Forecast Supply in Relation to Demand
- 3 Assess Methods for Balancing Supply and Demand
- 4 Establish Triggers and Action Levels
- 5 Develop Staged Response
- ➔ 6 Adopt Plan
- 7 Implement Plan

Step 6.1:
Engage the Community



Step 6.2:
Prepare a Revenue
Management Program

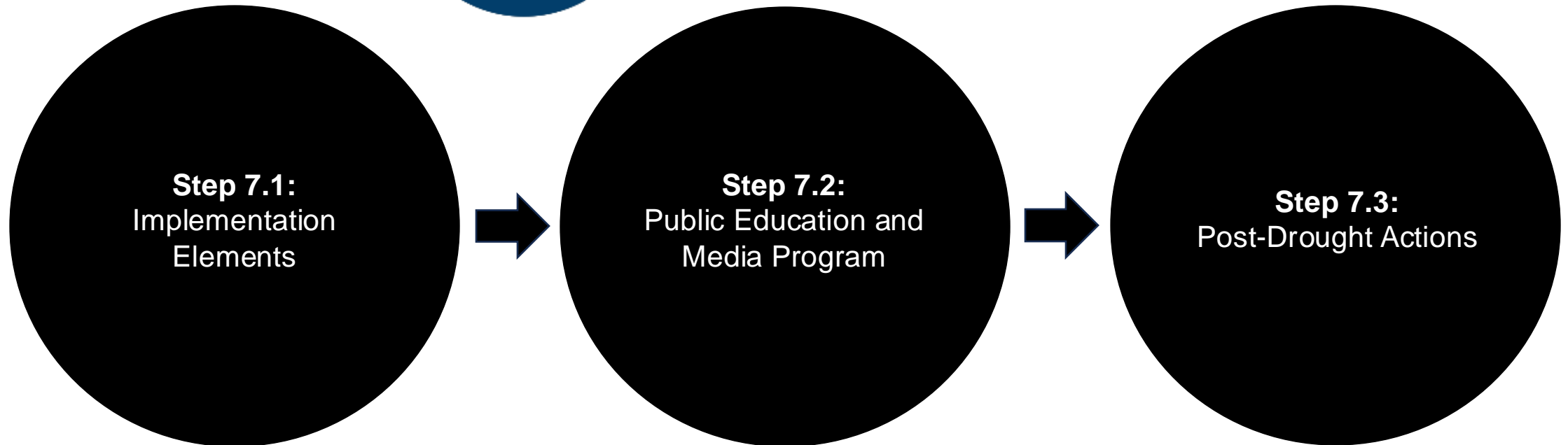


Step 6.3:
Review and Finalize Plan

7 Implement Drought Management Plan

Objective: Implement the local drought management plan.

Summary of Steps:



- 1 Form Drought Planning Team
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Additional Guidance Resources

- **Electronic Appendix A.** PWS-Specific Example Drought Management Planning Spreadsheet Workbooks (groundwater, surface water, combination)
- **Appendix B.** Additional Tools and Resources for Drought Planning (includes free resources)
- **Appendix C.** How to Perform a Bathymetric Survey- best practices for survey & curve development, RFP language



Next Steps

- January 2025 - WRC vote on "Working Draft"
- Winter 2025 - Publish Working Draft and continue to receive feedback from communities as they develop their plans
- Continue to refine working draft document, as needed
- Develop a checklist of elements for WRC staff review of a local DMP



Questions/Comments

