

---

# DRAFT: Discussion Paper 1, Initial Understanding, Approach and Recommendations for Improved Water Shortage Contingency Planning

---

*[Note: This paper is still a work in progress and represents DWR and SWRCB staff's initial understanding of the EO's directives #8 and #10, outlines its draft approach, and sets forth the framework for developing recommended standards for improving urban and rural community drought planning and readiness. The materials presented in this draft discussion paper are based upon preliminary understanding of provisions in the Executive Order B-37-16, and are not considered to be DWR's official position. DWR invites comment and input on the draft materials and identified questions as presented in this paper.]*

Executive Order B-37-16 (hereafter "EO"), issued by Governor Brown on May 9, 2016, includes directives to strengthen the drought resilience of water suppliers and rural communities through improved requirements for water shortage planning and development of statewide standards to allow quick response to the on-going and any future droughts. Specifically, the EO directs the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) to consult with urban suppliers, local governments, environmental groups, and other partners to update requirements for water shortage planning. DWR and the SWRCB are also coordinating with the other State agencies as part of a collective effort to implement the many directives of the EO.

This discussion paper provides the staff's understanding of two of the EO directives, outlines its approach to addressing these directives, and sets forth the framework for developing recommendations.

## 1.0 EO B-37-16 Directives for Strengthening Local Drought Resilience

The EO had many specific actions directing the SWRCB and DWR (collectively, the "Agencies") to implement an array of measures to help make water conservation a California way of life. This paper focuses on the subset of directives to DWR targeting measures to strengthen local drought resilience. Specifically, the EO included:

*EO #8: The Department shall strengthen requirements for urban Water Shortage Contingency Plans, which urban water agencies are required to maintain. These updated requirements shall include adequate actions to respond to droughts lasting at least five years, as well as more frequent and severe periods of drought. While remaining customized according to local conditions, the updated requirements shall also create common statewide standards so that these plans can be quickly utilized during this and any future droughts.*

*EO #9: The Department shall consult with urban water suppliers, local governments, environmental groups, and other partners to update requirements for Water Shortage*

*Contingency Plans. The updated draft requirements shall be publicly released by January 10, 2017.*

*EO #10: For areas not covered by a Water Shortage Contingency Plan, the Department shall work with counties to facilitate improved drought planning for small water suppliers and rural communities.*

## 2.0 DWR Staff's Understanding of EO Directives

To enable DWR to proceed with developing recommendations to effectively strengthen local drought resilience, DWR staff studied the directives to highlight and understand specific sentences and the possible intent of wording. The resulting understanding and fundamental objective of each directive is described in the following subsections.

### 2.1 EO #8: Strengthen Requirements for Water Shortage Contingency Plans

The opening statement of EO#8 indicates that urban water agencies are required to maintain Water Shortage Contingency Plans (WSCP). However, current statutes only direct a defined group of urban purveyors to provide a water shortage contingency "analysis" as a component of Urban Water Management Plans (UWMPs) updated every five years – but not an actual WSCP. Specifically, the California Water Code (CWC), as part of the Urban Water Management Planning Act (UMWPA), states:

*CWC Section 10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier.*

This code section is only applicable to an "urban water supplier," defined as a "supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually" (CWC §10617). According to DWR, there are approximately 440 urban water suppliers in the State who are subject to this statute.

While CWC §10632 only requires documenting the analysis, the section does require suppliers include several elements in the analysis, such as (a) stages of action to be undertaken in response to water supply shortages, (b) an estimate of minimum water available during the next three years, and (c) a draft water shortage contingency resolution or ordinance.

DWR's UWMP guidance document<sup>1</sup> helps water suppliers navigate the UWMPA statutes, suggesting narratives and considerations, and providing some tables for documenting the analysis. But, the guidance notably admits the complexities in shortage contingency planning and does not put forth minimum statewide standards beyond those specified already in CWC §10632. However, this list of required elements will be considered by DWR staff during development of the EO#8 standards.

In many instances, urban water suppliers document the shortage contingency analysis in an official WSCP, and include the WSCP as part of its UWMP submittal to DWR. But, as

---

<sup>1</sup> 2015 Urban Water Management Plan: Guidebook for Urban Water Suppliers, CA Dept. of Water Resources, January 2016 ([http://www.water.ca.gov/urbanwatermanagement/docs/2015/UWMP\\_Guidebook\\_Mar\\_2016\\_FINAL.pdf](http://www.water.ca.gov/urbanwatermanagement/docs/2015/UWMP_Guidebook_Mar_2016_FINAL.pdf))

summarized later in this subsection, WSCPs are varied in their form, approach and functionality, in part due to lacking statewide standards.

Building upon the requirements of CWC §10632, DWR staff also considered the provisions of CWC §10631(c) and CWC §10635(a) – additional provisions of the UMWPA that directly relate to how an urban water supplier evaluates and represents water supply shortage circumstances. These sections state:

*CWC §10631. (c)(1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year. (B) A single-dry water year. (C) Multiple-dry water years.*

*(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.*

*CWC §10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years.*

Water supplier-specific UWMPs completed every 5 years are intended to help suppliers assess projected supply and demand conditions, which should facilitate identifying and implementing appropriate long-term actions as well as establishing “contingency actions” should actual near-term supply or demand conditions fall outside the established projections.<sup>2</sup>

However, these statutory requirements, especially CWC §10635(a), generally result in an urban supplier only looking at specific snapshots in time, which may misrepresent the risk of more frequent water supply shortage conditions due to droughts lasting at least five years or more frequent and severe periods of drought. For instance, Table 7-3 (shown below) presents the information an urban supplier must submit to DWR as part of its 2015 UWMP reporting.<sup>3</sup>

	2020	2025	2030	2035	2040 (Opt)
Supply totals					
Demand totals					
Difference	0	0	0	0	0

NOTES:

<sup>2</sup> “Contingency actions” are generally defined as provisions implemented upon an unforeseen event or circumstance, such as an emergency outage or system failure, or supply or demand conditions that are outside of the supply and demand variances generally anticipated as part of longer term planning analysis contemplated in the UWMP.

<sup>3</sup> Table 7-3 is presented in the *2015 Urban Water Management Plans: Guidebook for Urban Water Suppliers*, DWR, January 2016, p. 7-10.

While any one of the 5-year increments may show a surplus or shortage between supply and demand, the analysis behind the values often does not evaluate the potential frequency of shortage or the likely variance in supply conditions year-after-year, especially severe shortages that may compound from a prolonged drought.

The statutory requirement to address multiple dry years potentially provides a framework for this frequency analysis, but urban suppliers generally only characterize supplies based upon a historic three-year record rather than any predictive representation of potential variance in supplies as may occur in the upcoming 20+ year period.

Ideally, the urban supplier should evaluate an annual sequence of plausible water supply and demand conditions to understand its potential risk to shortage frequency and severity – a finding that cannot be interpreted through the 5-year incremental snapshots of supply and demand comparisons.

### **2.1.1 Lessons from DWR Listening Sessions**

The three public listening sessions hosted by DWR in early June 2016 provided an opportunity for DWR staff to garner feedback and input from stakeholders affected by the EO. From these sessions, DWR staff synthesized the following key considerations for strengthening local drought resilience:

- Provide flexibility in local contingency planning
- WSCPs should include a portfolio of measures from which suppliers can implement, depending on the supplier's unique situation
- Drought resilience should incorporate both supply diversification and demand management approaches
- Statewide standards must consider that local drought management necessitates a comprehensive approach that balances customer demands, water supplier finances, supply management and risk tolerance, which can vary by supplier and over time.

DWR staff's main take-away from this synthesis of feedback is that any regulations or statewide standards should focus on setting forth appropriate methodologies and identified necessary WSCP elements, but not dictate specific response strategies or risk tolerance thresholds.

However, DWR staff also recognizes that any regulations or standards must set forth a mechanism to hold urban purveyors accountable for the fiduciary responsibility to its customers to provide reliable water supplies for most predictable circumstances.

### **2.1.2 Summary of Findings from WSCP Reviews**

An additional source of information to help DWR staff consider frameworks to address the objective of EO#8 are actual WSCPs submitted by water suppliers.

WSCPs from a sampling of water suppliers associated with 2010 and 2015 UWMPs were reviewed. To ensure the samples recognized the diversity of water purveyors, the sample set has at least one purveyor from every hydrological region of the state, includes large and small purveyors, and is representative of the different types of water sources used by purveyors. In total, 11 purveyors were selected that had WSCP's from the 2010 and 2015 UWMPs. Both 2010 and updated 2015 WSCPs were reviewed for the sample group.

Several key findings are noted based upon review of differences between each supplier's two plans, as well as differences among water suppliers. The key findings are:

- It is critical for Purveyors to identify a specific set of criteria related to the purveyor's water supplies to inform when specific stages of the WSCP should be enacted. The triggering criteria should reflect the purveyors unique water supply makeup ensuring that actions are taken at the appropriate time. For instance, a trigger could relate to supply conditions such as water storage levels, carry-over flexibility, precipitation and runoff projections, trends in groundwater levels, etc.
- Based on the samples, a range should be used in the demand reduction targets (e.g. "save up to X%" rather than just "save X%"). By providing a range for each stage, these purveyors are better situated to comply with possible future State mandates that may set targets that do not match specifically defined percentages (e.g. during 2015, the SWRCB required purveyors to save percentages such as 28% or 32%, thus a range of targeted demand reduction would help purveyors adapt than if they had strict targets such as 20% or 30%).
- Several purveyors did not include a specific quantitative method for measuring demand reductions in their 2010 plans. However, by 2015, all of the sampled purveyors had included a method to track reductions.
- Separation of customer types can be a tool for purveyors to navigate the political and customer relation issues that can arise when implementing demand reduction measures.
- Plans can distinguish between short-term shortages and long-term shortages. This design presents another tool for purveyors to enact the most effective actions for the actual shortage circumstances. However, for some purveyors, the potential of entering several short water shortage stages throughout a single year, could be difficult due to frequent customer communication and the potential for customer confusion.
- Plans should include purveyor-specific demand reduction actions in addition to customer demand reduction actions.

## **2.2 EO #10: Facilitate Improved Drought Planning for Small Suppliers and Rural Communities**

[to be added]

## **3.0 Draft Framework and Recommendations**

[additional discussion to be added that will present draft framework and resulting recommendations to be included in the January 2017 report]