

Industrial Process Water Regulation

Presentation to the California Water Commission

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Acknowledgements

- Industrial Process Water Work Group
- Urban Stakeholder Committee
- DWR staff.
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 - Rich Mills, Water Resources Control Engineer.

Outline

- Statutory requirements
- Preparing the draft regulation
- Draft regulation contents
- Rule making process and calendar

Senate Bill 7 (SBX7-7 Statute of 2009)

Requirements

- Requires urban retail water suppliers to reduce per capita water use for the state to achieve a statewide reduction of 20% by 2020



SBX7-7 Requirements

- Urban water suppliers shall:
 - Estimate baseline gross water use
 - Reduce baseline per capita water use for the state to achieve 20% per capita reduction by 2020
 - Prepare and submit Urban Water Management Plan (UWMP) to DWR by July 2011

SBX 7-7 Requirements

- DWR shall, among others
 - Adopt Process Water Regulation
 - Review Urban Water Management Plans
 - Form Commercial, Industrial and Institutional (CII) Task Force for CII Water Conservation

The Statute

- DWR shall adopt the regulation in accordance with the following:
 - *Section 10608.24 (e)* “When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a **substantial percentage** of **industrial water** use in its service area, may exclude process water from the calculation of gross water use to avoid a **disproportionate burden** on another customer sector.”
 - *Section 10608.26(d) (1)* “Any ordinance or resolution adopted by the water supplier .. shall not require existing customers to undertake changes in product formulation, operations, or equipment that would reduce process water, but may provide technical and financial assistance to implement efficiency measures for process water”

Process Water Definition

water used by **industrial water users*** for producing a product or product content, or water used for research and development.

*-as Defined by North American Industry Classification System codes (31 to 33)



Preparing the Regulation

- To implement the industrial process water regulation, DWR attempted to address the following questions:
 - what is “substantial percentage” of industrial water use in a service area?
 - what constitutes a “disproportionate burden” on non-industrial sectors?

What is “substantial percentage”?

- DWR staff:
 - Consulted a statistician, Staff learned that there is no definition for “substantial percentage” in statistics.
 - Conducted literature search for the use of “substantial percentage” in published works.

Staff found out that different authors in various fields have used the phrase “substantial percentage” to refer to numbers ranging from 20% to 65%. Staff was, however, unable to find any scientific definition for the phrase.

What is “substantial ... to avoid burden”? (cont.)

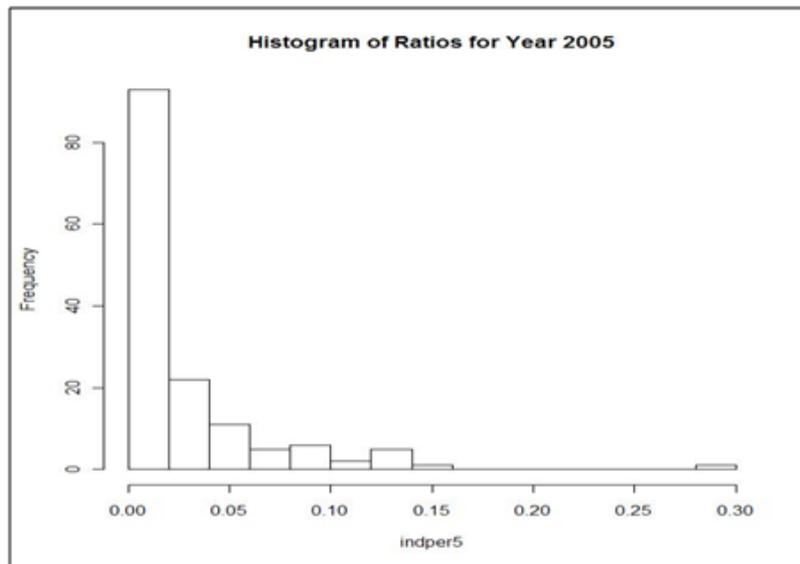
- Convened a Process Water Work Group and received stakeholder input.
 - Comments received from the work group stressed that “substantial percentage” of industrial water use to avoid burden **depends on local conditions including; prior conservation efforts and demand hardening, socio economic conditions of the customers, population distribution, characteristics of the industry, etc.**
 - DWR agreed with most of these comments and considered them in developing the criteria.
 - Suggestions by stakeholders for substantial percentage ranged from zero to 20 percent.
 - The statute considers local conditions and past water use efficiency efforts (*Section 10608 (h)*).

What is “substantial ... to avoid burden”? (cont.)

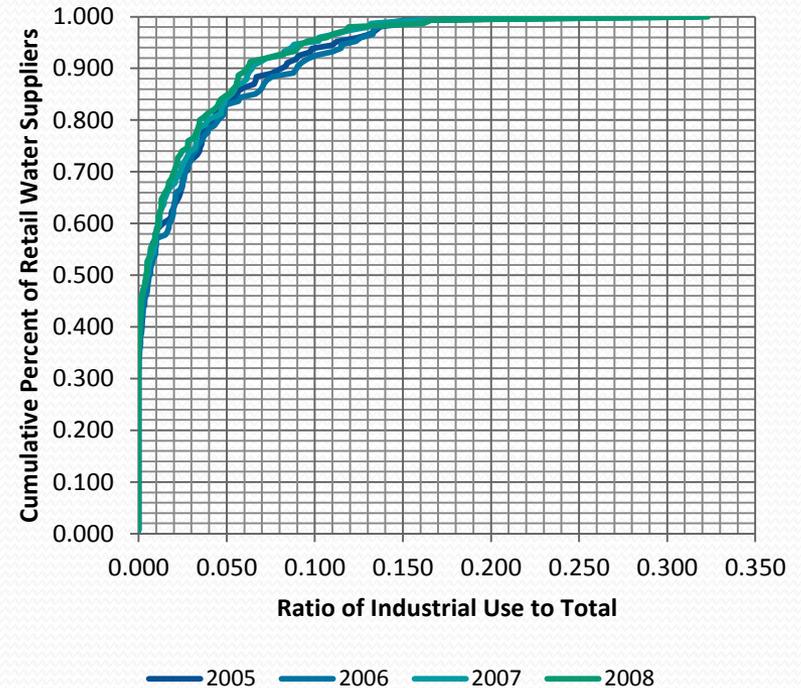
- Obtained and analyzed water use data from the California Urban Water Conservation Council (CUWCC).
 - The four year (2005-2008) water use data consisted of, among other things, population, total water use, and industrial water use.
 - It was assumed to be a random sample that represents water use patterns throughout the state.

Data Analysis – Ratios of Industrial to Gross Water Use (average = 2.6%).

Histogram



Probability Distribution



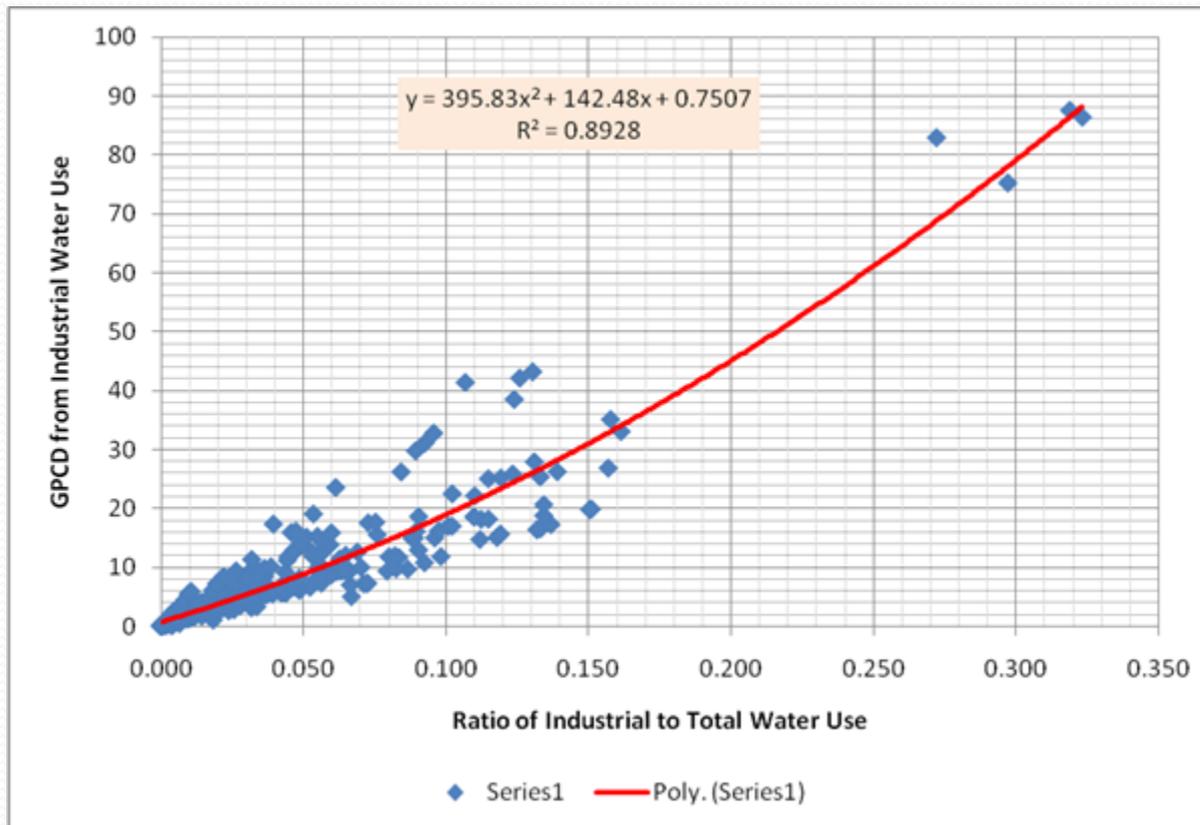
Data Analysis, Burden (cont.)

- To determine the substantial percentage, it was necessary to identify what the burden will be on the other sectors if industrial water is not excluded.
- From available data, it was determined that per capita industrial water use (gpcd of industrial water use) may be used as an indicator of a burden.

Data Analysis, Burden (cont.)

- Prior conservation/demand hardening
 - DWR, using the sample data, determined that per capita non-industrial water use can be used as indicator of conservation efforts and demand hardening.
- Socio economic conditions
 - Based on comments received from the work group, it was determined that disproportionate burden can occur if the customers are in a disadvantaged community.

Data Analysis (cont.)



Data Analysis (cont.)

- The chart in the previous slide demonstrated that there is a good correlation between per capita industrial water use and the percentage of industrial water use.

Data Analysis (cont.)

- Four criteria were developed based on percentages of industrial water use, per capita industrial water use, per capita non-industrial water use, and disadvantaged community – to determine substantial percentage of industrial water use that would avoid disproportionate burden on non-industrial sectors.
- Although most of the stakeholders agreed in principle to these criteria, a consensus could not be reached on thresholds for each of criterion.

Data Analysis (cont.)

- DWR conducted further data analysis that showed volumes and percentages of industrial water that may be deducted and total number and percentages of suppliers that may deduct under different scenarios.

Volume of Industrial Water Eligible for Exclusion of Process Water

Scenario	Volume (AF)	Percentage
Pct Industrial >10%	53,616	1.03
Pct Industrial >12%	27,865	0.54
Pct Industrial >15%	21,100	0.42
Pct Industrial >10% or gpcd-ind>12	78,978	1.54
Pct Industrial >10% or gpcd-ind >20	55,147	1.06
Pct Industrial >12% or gpcd-ind >15	62,534	1.20
Pct Industrial >12% or gpcd-ind >20	31,814	0.62
Pct Industrial >15% or gpcd-ind >20	29,641	0.57
Pct Industrial >15% or gpcd-ind >30	22,584	0.44

Suppliers Eligible to Exclude Process Water

Scenario	Number of Suppliers	Percentage of Suppliers
Pct Industrial >10%	9	5.97
Pct Industrial >12%	5	3.59
Pct Industrial >15%	2	1.53
Pct Industrial >10% or gpcd-ind>12	18	12.12
Pct Industrial >10% or gpcd-ind >20	10	6.83
Pct Industrial >12% or gpcd-ind >15	13	8.88
Pct Industrial >12% or gpcd-ind >20	8	5.29
Pct Industrial >15% or gpcd-ind >20	7	4.61
Pct Industrial >15% or gpcd-ind >30	4	2.56

Data Analysis (cont.)

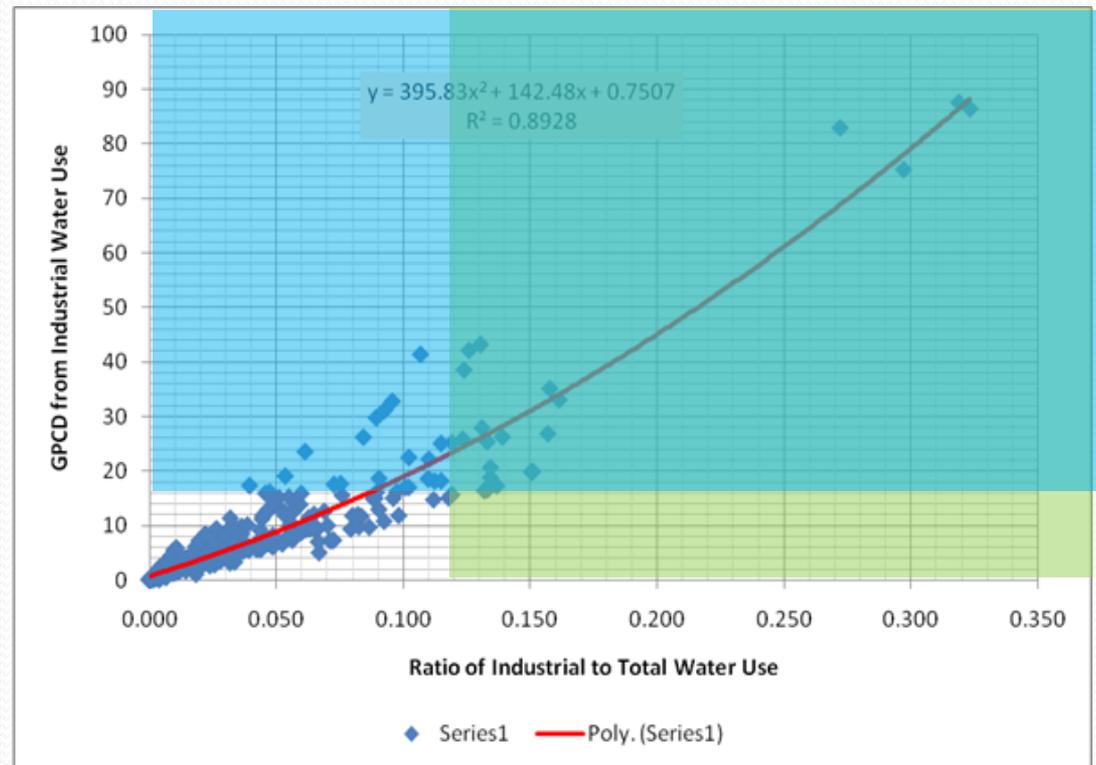
- These results showed that differences in percentages (of industrial water use and number of suppliers) between the different scenarios are small.
- Based on these analyses and inputs from the work group, DWR developed the draft criteria.
- The draft criteria was presented to the work group.

Exclusion Criteria

- When calculating its gross water use, an urban retail water supplier may deduct up to 100 percent of process water use if:
 - a) Total industrial water use is equal to or greater than 12 percent of gross water use, or
 - b) Total industrial water use is equal to or greater than 15 gallons per capita per day, or

Exclusions Based on (a) and (b)

- Suppliers with data points in the shaded area would be able to exclude process water from gross water.
- This amounts to approximately 9% of total water suppliers.



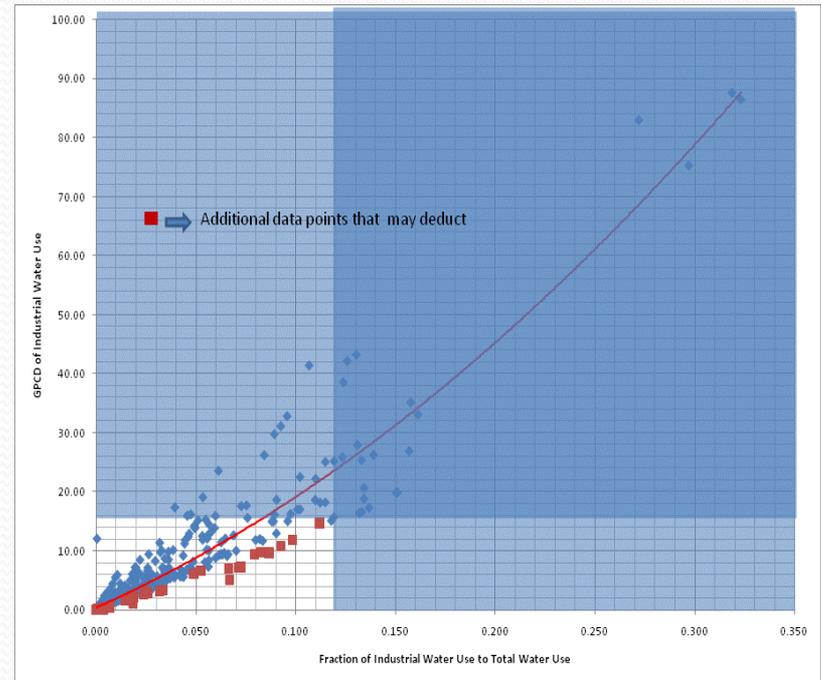
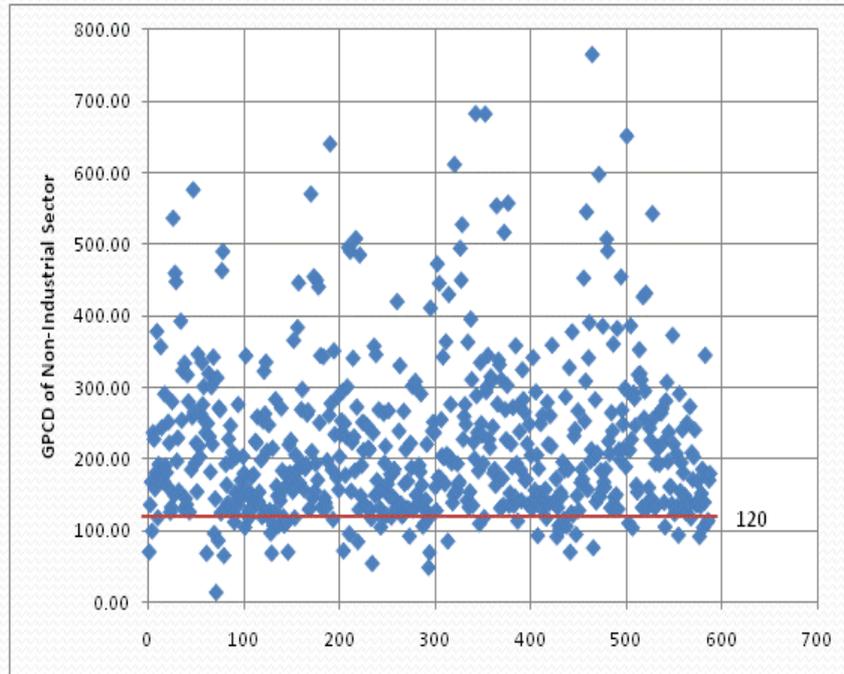
Exclusion Criteria (cont.)

- c) Non-industrial water use is equal to or less than 120 gallons per capita per day if the water supplier has self-certified the sufficiency of its water conservation program with the Department of Water Resources under the provisions of section 10631.5 of the Water Code, or
- d) The population within the suppliers' service area meets the criteria for a disadvantaged community.

Additional Exclusions (cont.)

- The 120 per capita non-industrial water use threshold proposed in (c) would enable 12 agencies (up to 8% percent) to deduct process water. This amounts to 4,760 af of industrial water.
- This brings the percentage of total water suppliers that may deduct process water from gross water use as a result of (a), (b), and (c) up to 17%.
- More suppliers may be able to deduct because of criteria (d).

Additional Exclusion - (c).



Examples

Supplier	Population	Gross Water Use, AF	Industrial Water Use, AF	% of Industrial to Total Water Use	gpcd of Industrial Water	gpcd of non-industrial water	Total gpcd
City of Hayward (criteria a)	146,000	20,608	2,820	14	17	109	126
EBMUD (Criteria b)	1,325,000	239,465	26,909	11	18	143	161
CA Water Service Company - East Los Angeles (criteria c)	151,000	20,322	1,997	10	12	108	120
Merced (criteria d)	74872	11,987	364	3	4	138	142

Draft Regulation Contents

- Applicability
- Definitions
- Criteria For Excluding Process Water from Gross Water Use
- Quantification and Verification of Process Water
- Requirements for Existing Customers and new Industries

Note: The regulation may be amended based on the CII task force recommendation.

Next Steps

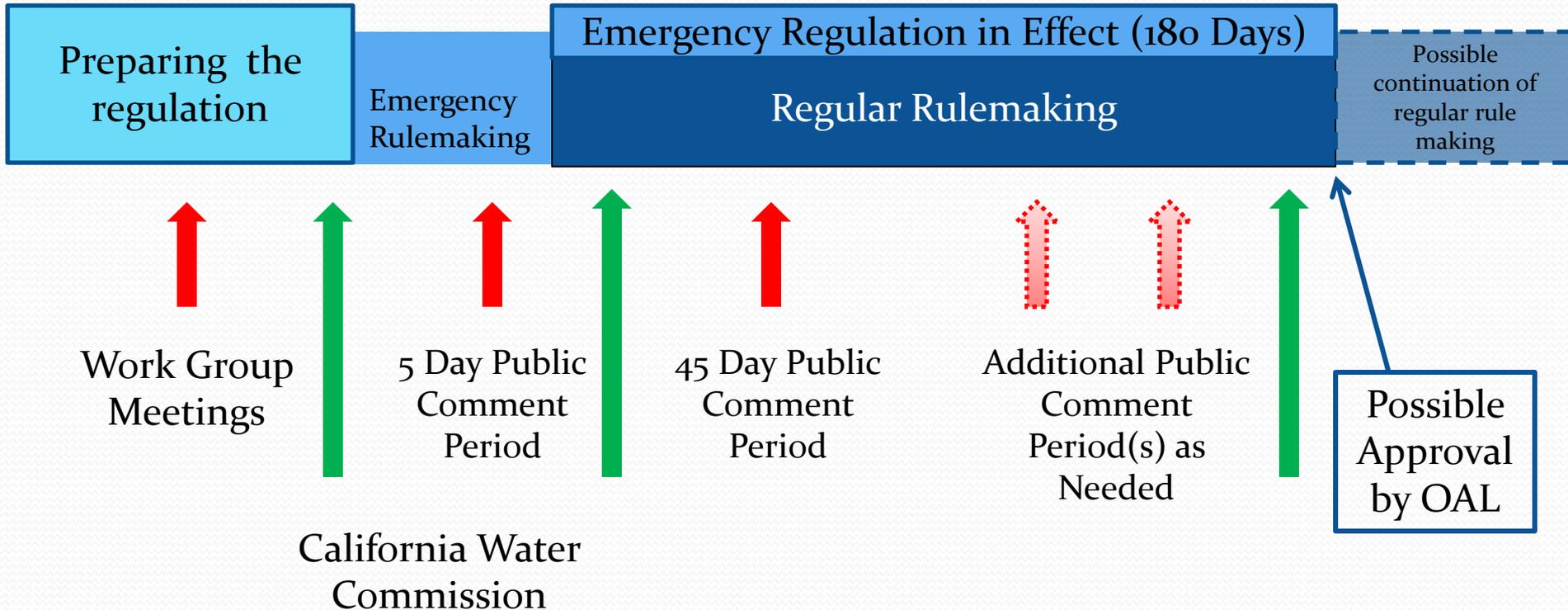
- If approved by CWC, submit to OAL in November
- If approved by OAL, Emergency Regulation in effect
- Begin Permanent Rulemaking process and complete within 180 days

Rulemaking Process and Timeline

Rule Making Timeline

Sept – Nov 2010

November 2010 – May 2011



Questions

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SBX7-7 Website

www.water.ca.gov/wateruseefficiency/sb7