URBAN STAKEHOLDER COMMITTEE

CALIFORNIA DEPARTMENT OF WATER RESOURCES

April 25, 2013
Metropolitan Water District
Los Angeles, California

NEW MEMBERS

Lisa Koehn	City of Clovis
Danny Motelyski	Hunter/Industries/Irrigation Association
Linda Yager	Placer Co. WA

RETURNING MEMBERS WITH NEW AFFILIATIONS

Ronnie Cohen	California Water Foundation
William Granger	City of Sacramento
John Kingsbury	Mountain Co. Water Resources Assc.
Dan Muelrath	Valley of the Moon WD

- Agenda Review — Dave Ceppos
- CII Task Force/
  Ag WUE Update — Manucher Alemi
- Future Meetings
  - September 12, 2013 ACWA Sacramento, CA
  - November (Southern California)

CRITERIA FOR COMPLIANCE YEAR ADJUSTMENT

California Water Code Section: 10608.24

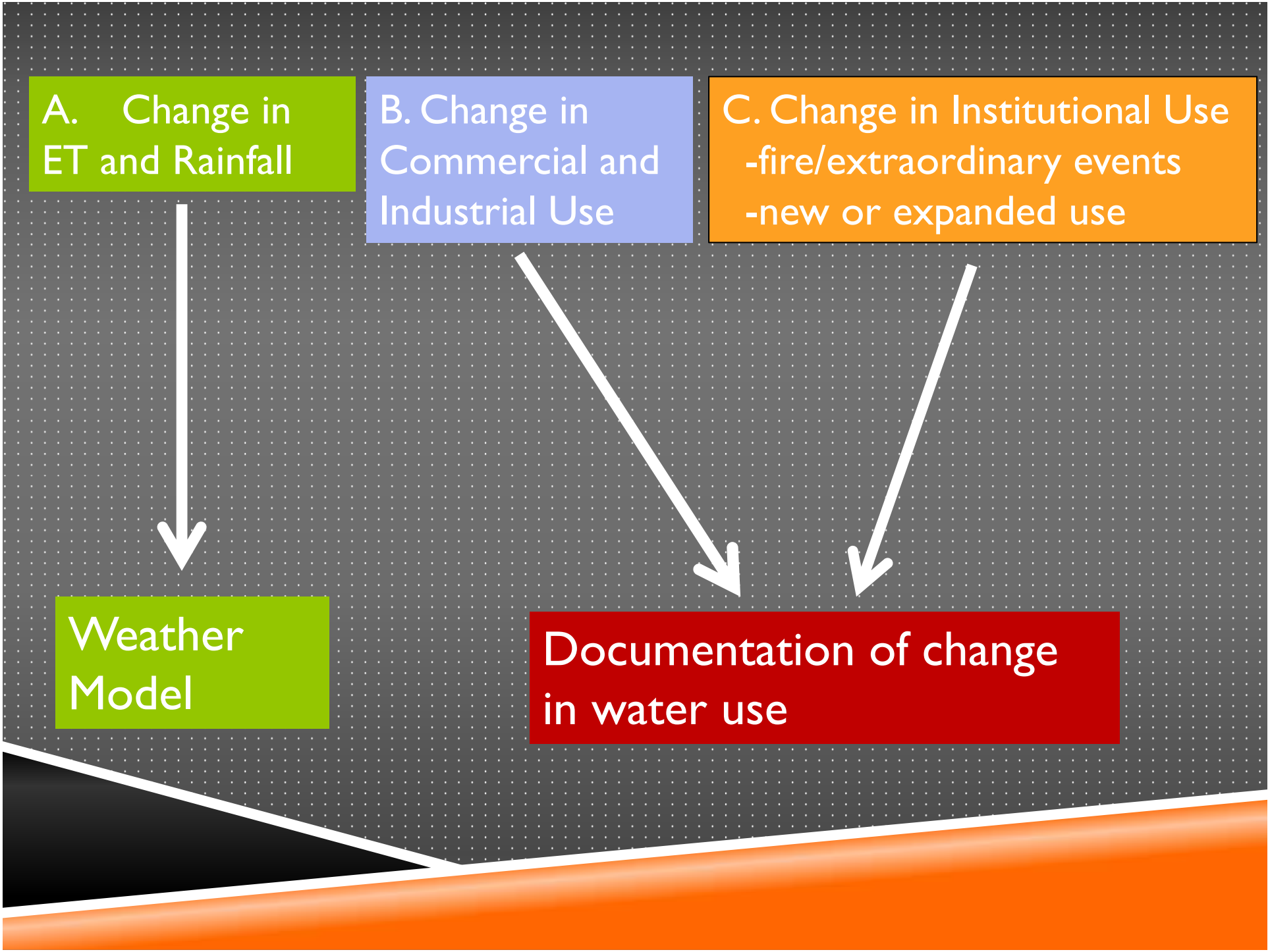
d (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

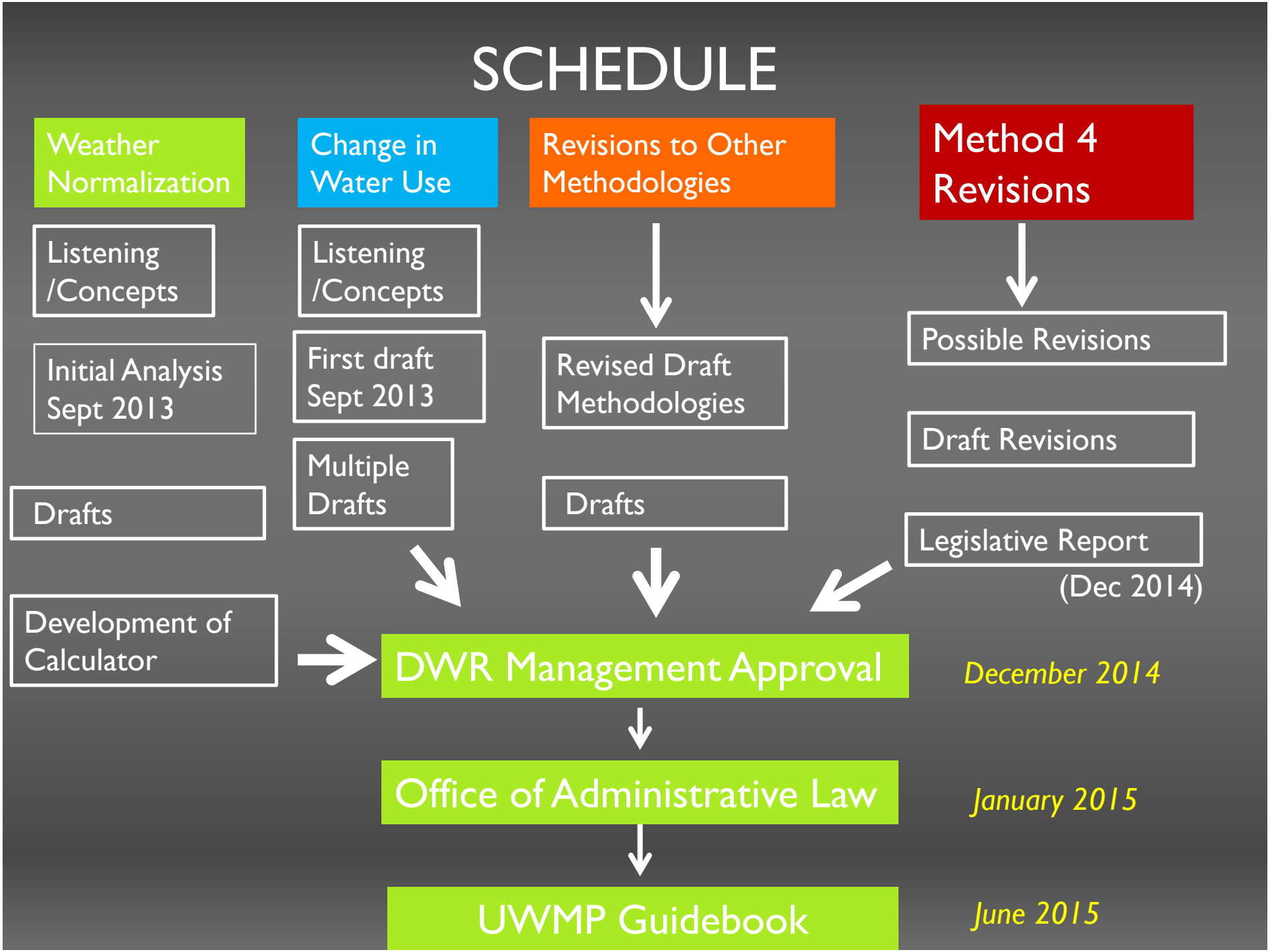
(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.


A. Change in ET and Rainfall
B. Change in Commercial and Industrial Use
C. Change in Institutional Use
-fire/extraordinary events
-new or expanded use
Weather Model
Documentation of change in water use

SCHEDULE


Weather Normalization
Listening /Concepts
Initial Analysis Sept 2013
Drafts
Development of Calculator
Change in Water Use
Listening /Concepts
First draft Sept 2013
Multiple Drafts
Revisions to Other Methodologies
Revised Draft Methodologies
Drafts
Method 4 Revisions
Possible Revisions
Draft Revisions
Legislative Report
(Dec 2014)
DWR Management Approval
December 2014
Office of Administrative Law
January 2015
UWMP Guidebook
June 2015

WEATHER NORMALIZATION:
DIFFERENCES IN ET AND RAINFALL BETWEEN COMPLIANCE AND BASELINE YEARS

DWR is considering the CUWCC Model

- Are there other weather models, DWR should consider?

SUMMARY OF CUWCC MODEL

Model: is an equation, or a system of equations, whose purpose is to describe the behavior of a real-world phenomenon

Simplified Version of the CUWCC Model:

Monthly Production = Population + Seasonal Indicators + δ × Rainfall Adjusted ETo

2 KEY TERMS

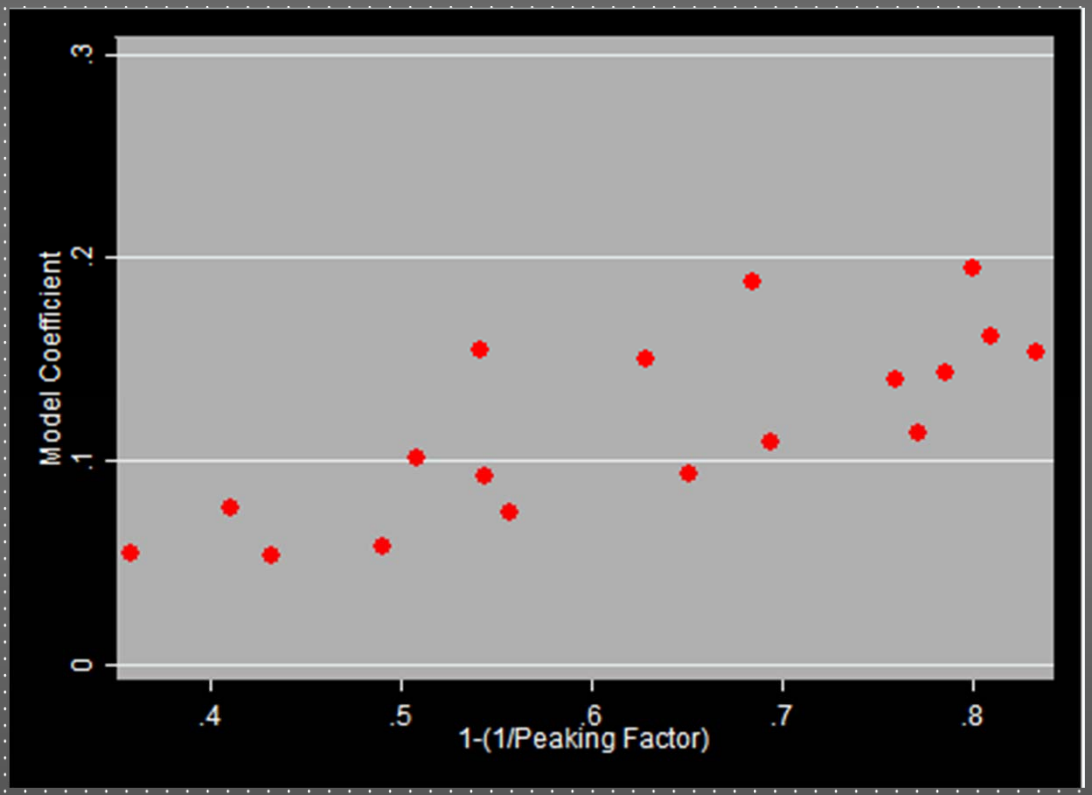
$$\text{Peaking Factor} = \frac{\text{Highest Summer Month}}{\text{Lowest Winter Month}}$$

Range with 18 suppliers was 1.6 to 6

δ = **the percent impact on demand of 1" change in rainfall adjusted reference ETo**

CALCULATED δ BASED ON DATA FROM18 SUPPLIERS

CORRELATION BETWEEN PEAKING FACTOR AND δ



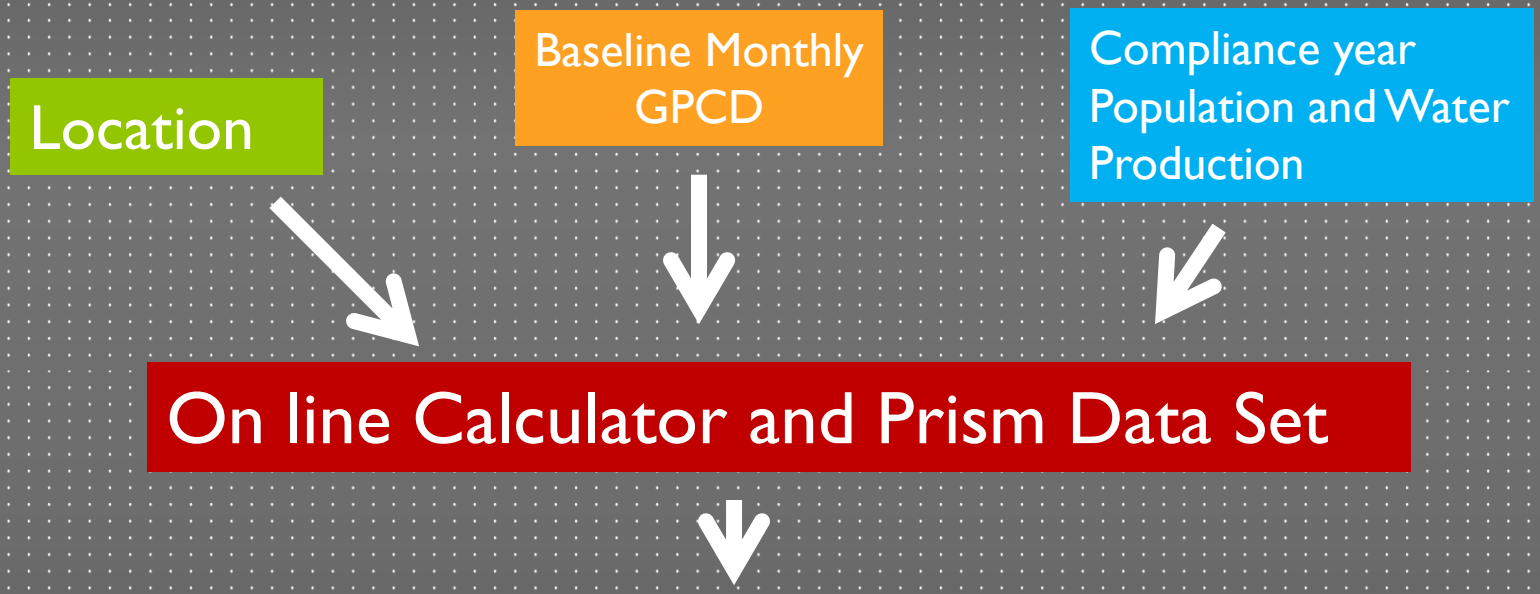
EXAMPLE CALCULATIONS

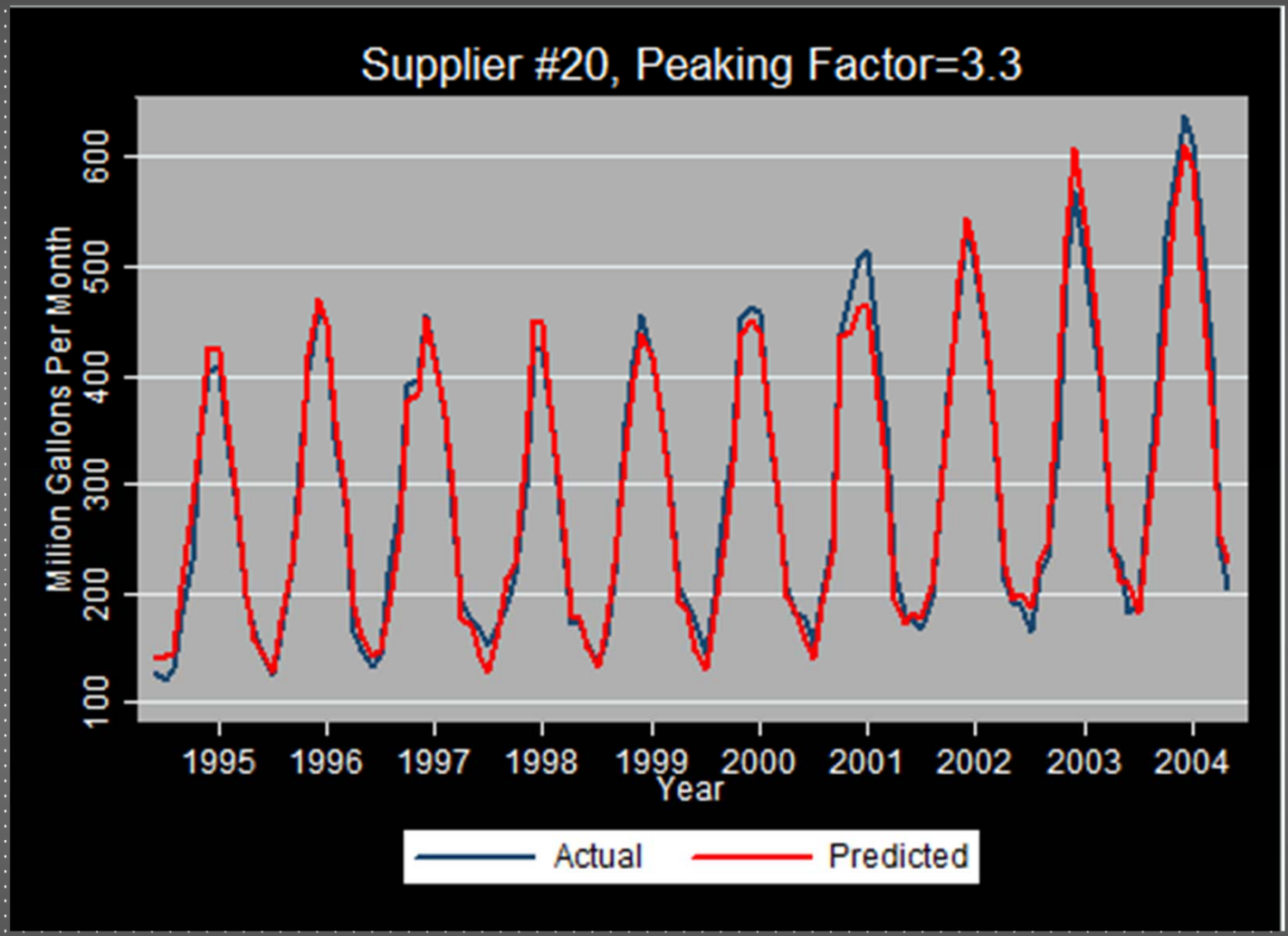
month	A year rainfall adjusted reference Eto	Baseline rainfall adjusted reference Eto	Chang in rainfall adjusted reference Eto	Baseline PF	Transf. PF	model coeff.	weather impact Factor	Actual year production	Normalized year production
1	1.332	0.967	0.365	2.19	0.543	0.102	1.021	1170	1146
4	2.398	3.790	-1.392	2.19	0.543	0.213	0.851	1063	1249
8	6.577	6.376	0.201	2.19	0.543	0.117	1.013	2097	2070

Weather Deviation Impact Factor = EXP(change in ET0) x (trans. PF) x (model coeff)

Normalized Production = (Actual Production/Weather Impact Factor

SIMPLIFIED CALCULATIONS:




Supplier #20, Peaking Factor=3.3
Million Gallons Per Month
100
200
300
400
500
600
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year
Actual
Predicted

ADDITIONAL ANALYSIS AND TESTING

What kinds of analysis should DWR run to test the model?

1.) Larger sample size?

2.) Split baseline years and test years in the middle

3.) Testing of agencies not used to develop the model

WORK GOING FORWARD

1. Additional analysis over the summer
2. Formation of a weather normalization subcommittee

TRACKING 20X2020

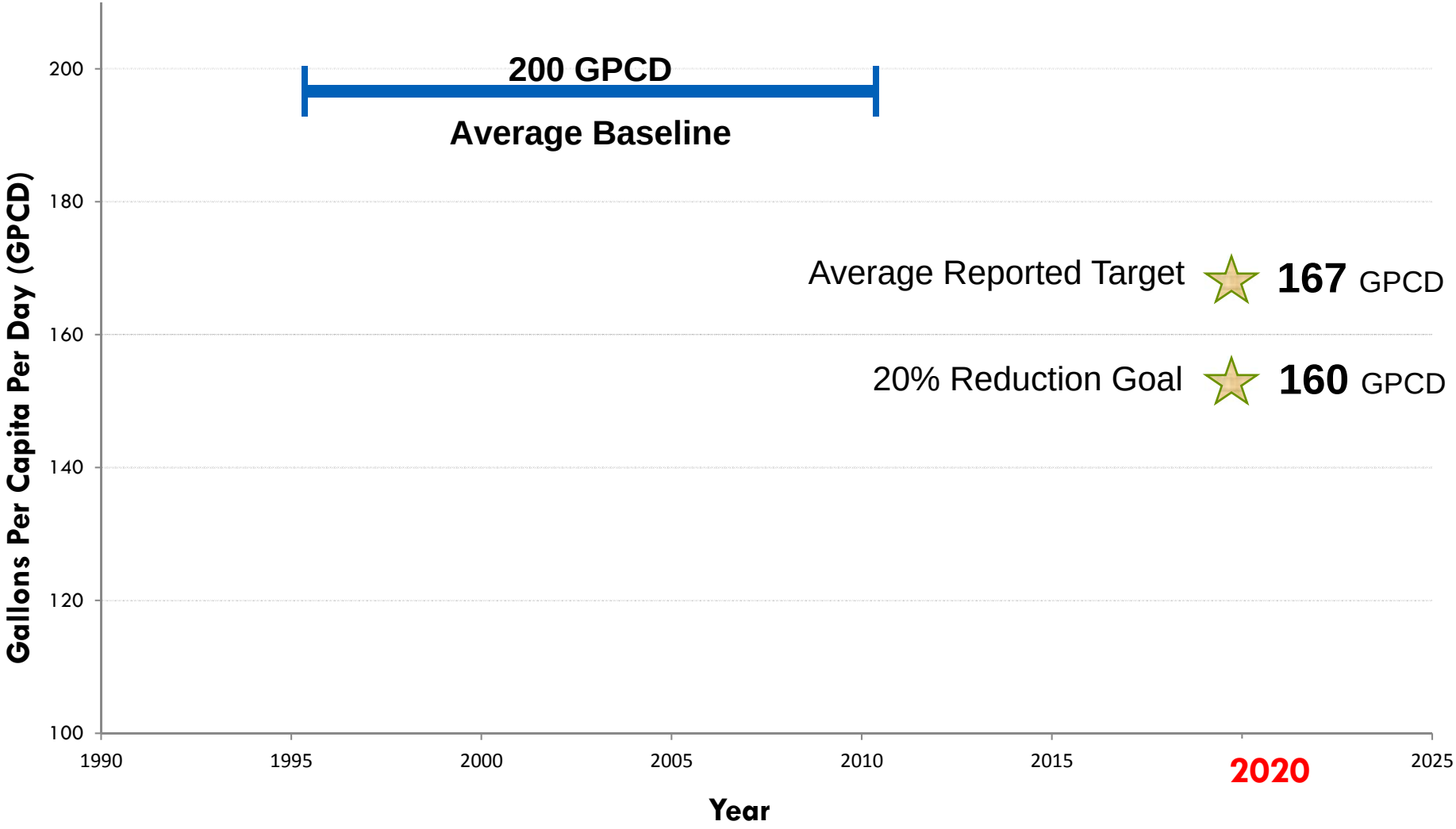
1. Revised Statewide Average Baseline Calculation
2. Further discussion of reporting progress towards 20x2020
    1. Calculation of statewide average reported target
    2. Estimation of annual statewide GPCD
3. 10608.50

EXAMPLE OF POPULATION WEIGHTING

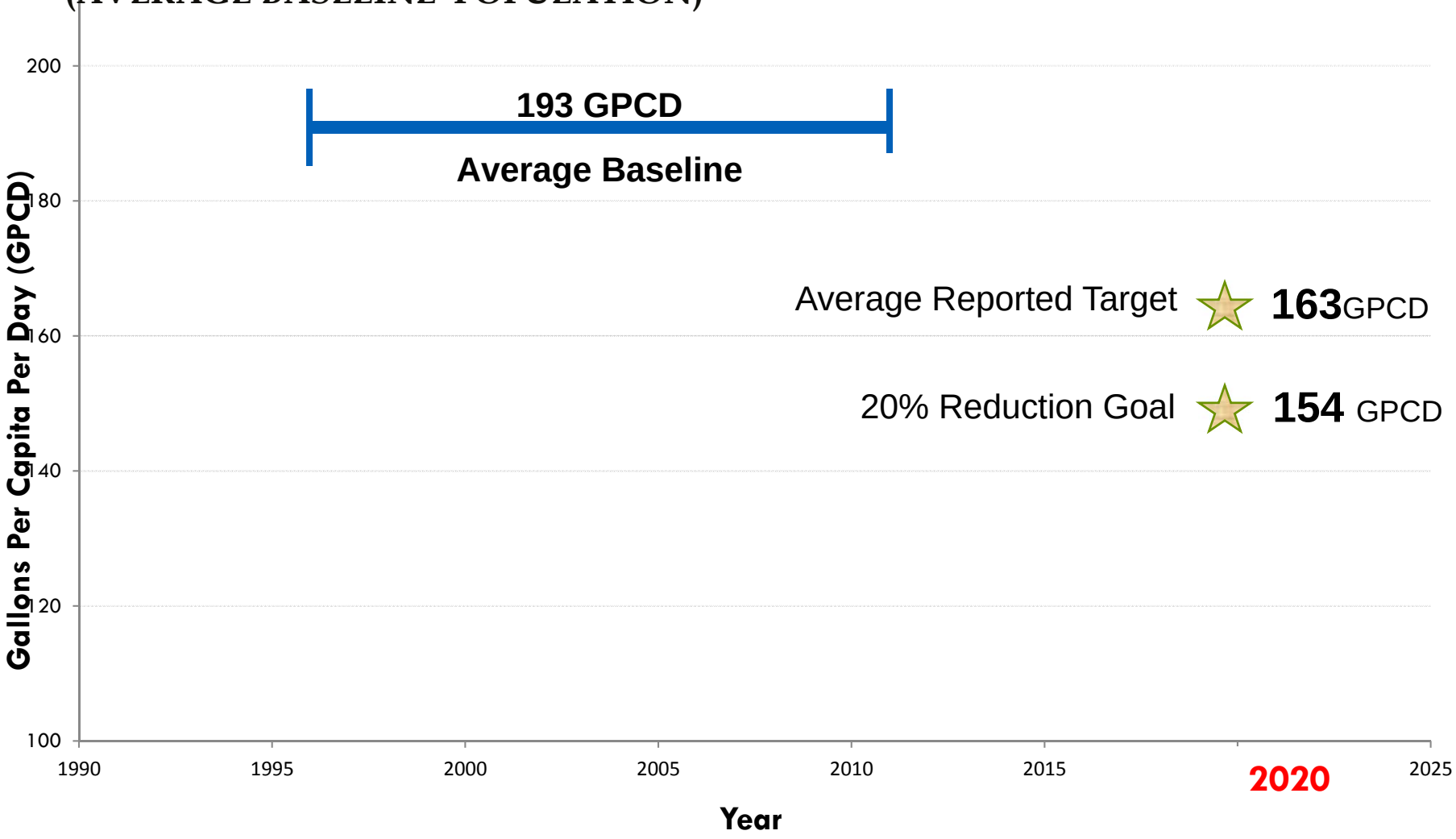
	Population	GPCD	Pop. X GPCD
City A	4,042,085	143	578018155.0
City B	63,050	243	15321150.0
City C	44,579	127	5661533.0
City D	47,350	175	8286250.0
Sum	4,197,064		607287088.0
		172	144.7

$$\text{Population Weighted Average} = \frac{(GPCD_1 \times Pop_1) + (GPCD_2 \times Pop_2) + \ldots (GPCD_n \times Pop_n)}{(Pop1 + Pop\ 2 + \ldots..Popn)}$$

STATEWIDE AVERAGE
BASELINE AND TARGETS (2010 POPULATION)



STATEWIDE AVERAGE
BASELINE AND TARGETS
(AVERAGE BASELINE POPULATION)



ESTIMATION OF STATEWIDE ANNUAL GPCD

Goal is to estimate statewide average GPCD on an annual basis.

-Have started to contact large water suppliers to see if they are tracking GPCD and if they would provide the data

-Every supplier contacted so far is tracking GPCD and will provide the data. Most have a 3-4 month time lag

-Large water supplier data represents over 12 million people. Will develop sampling plan to estimate GPCD for remaining 24 million, possibly by hydrologic region

-hope to present 2010, 2011 and 2012 statewide GPCD at September USC meeting

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10608.50

(a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

METHOD 4

DWR has decided on a two track approach

1. Survey water suppliers on potential changes and revisions to method 4
2. Will conduct landscape area measurement analysis as a separate project not connected to method 4

19 WATER SUPPLIERS WHO SELECTED METHOD 4

Alameda County Water District
Burlingame City of
California-American Water Company Los Angeles District
California-American Water Company Monterey District
California-American Water Ventura District
Carlsbad Municipal Water District
East Valley Water District
Indian Wells Valley Water District
La Verne City of
Mission Springs Water District
Mountain View City of
Nipomo Community Services District
Pico Water District
Pismo Beach City of
Placer County Water Agency
San Bernardino City of
Ventura County Waterworks District No 1
West Valley Water District
Western Municipal Water District of Riverside

LANDSCAPE ANALYSIS

DWR presented a sampling methodology used to develop a estimate of landscape area for the City of Lodi at the January USC meeting.

Plan to conduct a pilot remote sensing analysis and compare results with the earlier analysis

After reviewing the results and method comparisons from Lodi will consider expanding the analysis to other cities.

DEMAND MANAGEMENT MEASURES TOPICS

DWR will convene the Independent Technical Panel on Demand Management Measures next month.

Panel charged with providing information and recommendations to DWR and the Legislature on new demand management measures, technologies and approaches.

Panel's work will result in a report to the Legislature

Panel's first task will be to select technical DMM topics to consider and evaluate.

-limited time, goal is to submit the Legislative Report by December, 2014

- DWR sent out a DMM topic request to it's urban water use efficiency distribution list.

-DWR asking the USC to provide DMM topic suggestions

DMM TOPIC REQUEST KEY POINTS

-ITP is independent. DWR will provide topic suggestions from the water use efficiency community and the USC as data points for the ITP. The ITP is not obligated to act of the suggestions.

- Topics should be technical in nature.
- ITP may request that the USC provide input and comment on information and recommendations
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POTENTIAL TOPIC CATEGORIES

1. Indoor Residential
2. Landscape
3. Utility- rate structures
   -water loss
4. Education- public
   - School
5. CII
6. Other/New

SEPTEMBER USC MEETING

- First draft of Criteria for Economic Analysis Methodology
- Analysis of weather normalization model
- Estimates of 2010, 2011 and 2012 statewide average GPCD
- Results from Method 4 Poll
- Possible consideration of revisions to other methodologies
  - Suppliers with la high % of vacation homes
  - Method 2 landscape area calculation