Developing Guidance for Estimating Future Water Savings

SBx7-7 USC Meeting, May 27, 2015

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Why is DWR developing this guidance?

- SB 1420 and AB 2067 both proposed language that would allow an urban water purveyor to account for future water savings from factors not reflected in current customer use.
- Language was first suggested in the ITP's February 2014 *Report to the Legislature on Urban Water Management Plan Demand Management Measures Reporting and Requirements*
  - Recommendation #4: Voluntary reporting on projected water savings from…affecting an urban water supplier's service area

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WC Section 10631(e)(4)(A) details the new opportunity

- New language was included as part of several refinements to the Urban Water Management Planning Act as approved by the Governor in September 2014
- 10631(e)(4)(A): *If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*

The new language is supported with Paragraph (B) which states:

- *(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:*
- *(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.*
- *(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.*

As this is voluntary, DWR is only providing guidance, but…

- UWMPs are updated every 5 years, so a supplier's assumptions regarding future demands can continually be refined to reflect dynamic factors
- DWR encourages water suppliers to really understand current and future water demands to enable useful and practical planning
  - If not already, a supplier should move to a land-use basis instead of a population basis for projecting demand
  - More data is better

Focusing on land-use allows a supplier to better understand how demand may change because of factors

- Codes, standards, ordinances and plans generally apply by the type of use
- Conservation programs often target customers that fit within definable land-use categories
- Land use and transportation plans use categories
- In contrast, trying to represent changes to per-capita demand, or even the SWRCB's R-GPCD, does not let suppliers truly understand the impact of various factors

Suggest separating water use into different land-use sectors and also into “existing” and “future”

- The UWMP Act already requires – to the extent records are available – suppliers separate water use into the following sectors [§10631(e)(1)] :
  - Single-family residential
  - Multifamily
  - Commercial
  - Industrial
  - Institutional and governmental
  - Landscape

DWR suggests that, at a minimum, a water supplier further subdivide these between "existing" and "future"

- This allows codes, ordinances (etc.) to be applied differently to existing customers and future customers

SAMPLE – For Discussion Only

		No. of Units over 5-yr increments	Land-use Specific Demand Factors	Projected Demand over 5-yr increments
Land use type A	**Existing**	(stable or fewer)	(may decrease over time)	(Unique value for each class and over time)
	Future	(increasing)	(likely stable over time)	
Land use type B	**Existing**			
	Future			
Land use type C	**Existing**			
	Future			
			Total Demand	(sum of parts)

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For instance, let's look at a sample existing single family residential land-use sector

- A supplier serves10,000 existing single-family connections. Based upon available land-use data, this can be subdivided to reflect:
  - Lot size – lots range from 4,000 sf to 20,000 sf, with the total lots subdivided into reasonable categories. Smaller lots will likely have less outdoor use
  - Age of home – neighborhoods generally were built in the same periods, allowing some differentiation between those built before or after to certain plumbing codes or building standards
  - Typical use patterns (using actual customer meter data) will help separate indoor and outdoor demands

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Looking at the data, the supplier finds the following…

	# of lots	average year-built	average water use (af/du/yr)
4,000-6,000	1,175	2000	0.35
6,000-8,000 (A)	4,458	1970	0.65
6,000-8,000 (B)	3,930	2005	0.48
8,000 to 12,000	355	1995	0.60
very large lots	82	2010	1.10
total	10,000		

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The new SWRCB reporting is improving suppliers' understanding of their own data and customer use

- The same data can be further used to develop representative conditions for several sub-sectors of residential and commercial demands.
  - Using GIS tools (e.g. Google Earth Pro or more sophisticated software), water meter data can be matched with land use data to develop representative demand factors
  - General Plans and other land use planning documents can help define future increases in unit counts for each sub-sector

§10631(e)(4)(A) suggests adjusting future demands to reflect several factors

- By segregating customer use into as many sub-sectors as practical, a supplier can more discretely make adjustments to reflect codes, ordinances, and land and transportation plans
- Factors affect sub-sectors differently, for example:
  - Homes prior to 1992 will likely have more opportunity for indoor conservation than a house built in 2010
  - Homes built in 2020 will have a different outdoor and indoor unit demand than any existing home
- Planning - local conservation efforts can be tailored toward unique sub-sectors to realize more savings going forward

Looking at a detailed example…

	Units (number of DU/acre)					Demand Factor (acre-feet/year per unit)						Water Demand (acre-feet/year)				
	Now	2020	2025	2030	2035		Now	2020	2025	2030	2035	Now	2020	2025	2030	2035
Residential Density = 6,000-8,000 sf lots																
Existing (A)	4,458	4,458	4,458	4,458	4,458	Indoor	0.25	0.22	0.20	0.20	0.20	2,898	2,541	2,363	2,229	2,229
						Outdoor	0.40	0.35	0.33	0.30	0.30					
Existing (B)	3,930	3,930	3,930	3,930	3,930	Indoor	0.20	0.20	0.18	0.18	0.18	1,886	1,769	1,690	1,690	1,690
						Outdoor	0.28	0.25	0.25	0.25	0.25					
Future	--	2,184	3,786	5,387	7,000	Indoor	--	0.16	0.16	0.16	0.16	--	830	1,439	2,047	2,660
						Outdoor	--	0.22	0.22	0.22	0.22					
					Total DUs =	###					Total Demand =	4,784	5,139	5,491	5,966	6,579
Commercial - Big box shopping center																
Existing	40	40	40	40	40	All	2.00	1.8	1.60	1.60	1.60	80	72	64	64	64
Future	--	10	25	25	25	All	--	1.20	1.20	1.20	1.20	--	12	30	30	30
					Total acres =	65					Total Demand =	80	84	94	94	94
											Grand Total Demand =	4,864	5,223	5,585	6,060	6,673

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What to expect in the guidelines

- Applying the various factors is very specific to the existing circumstances of each purveyor based on the characteristics of existing customer demands and land uses, and the characteristics described in land and transportation planning documents
- They will provide examples of how to assess data and apply theoretical factors (e.g. illustrate how a cash-for-grass program would be reflected in the future outdoor demand factor for an existing residential subsector)
- They will define applicable state-wide codes or ordinances, and suggest other regional or local conditions that could be reflected
- They cannot provide specific reduction values

Questions and Discussion

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