

Appendix G

Utilities Resource Data

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Appendix G. Utilities Resource Data

	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2012 and Beyond</i>
Commercial >5,000 gross square feet (gsf)	LEED® Certified Rating ^a	LEED® Silver Rating	Same as for 2009	LEED® Gold Rating
Residential (4 units or less)	GreenPoint Rated: complete checklist	GreenPoint Rated: 25 points	GreenPoint Rated: 50 points	GreenPoint Rated: 75 points
Residential (5+ units less than 75 ft [23 m] tall)	GreenPoint Rated: complete checklist	GreenPoint Rated: 25 points	GreenPoint Rated: 50 points	GreenPoint Rated: 75 points
Residential (5+units greater than 75 ft [23m] tall)	LEED® Certified Rating OR GreenPoint Rated: 50 points	Same as for 2008	LEED® Certified Rating or GreenPoint Rated: 50 points.	Same as for 2010

Notes:

a. The Green Building Ordinance requirements are based on the LEED® for Commercial Interiors v. 2.0 standards from June 2005, LEED® for Core and Shell v. 2.0 standards from July 2006, LEED® for New Construction v. 2.0 standards from July 2007, and GreenPoint Rated v. 2007 standards from March 2007. References to LEED® standards are from the LEED® for New Construction v. 2.0. Equivalent standards may be used in place of the cited standards if the same performance objectives are met.

Source: Chapter 13 of San Francisco Building Code, Ordinance No. 180-08, added 4 September 2008.

<i>Water Supply Sources</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Current Water Supply Sources					
SFPUC Regional Water System (RWS) (Surface water: Tuolumne River, Alameda & Peninsula) ^a	81.0	81.0	81.0	81.0	81.0
Groundwater Sources					
Groundwater (In-City Irrigation Purposes)	2.5 ^b	0.5 ^c	0.5 ^c	0.5 ^c	0.5 ^c
Groundwater at Castlewood ^d	1.0 ^d	1.0 ^d	1.0 ^d	1.0 ^d	1.0 ^d
Groundwater: Treated for Potable – Previously used for In-City Irrigation purposes ^e	0.0	2.0	2.0	2.0	2.0
<i>Groundwater Subtotal</i>	<i>3.5</i>	<i>3.5</i>	<i>3.5</i>	<i>3.5</i>	<i>3.5</i>
<i>Current Water Supply Subtotal</i>	<i>84.5</i>	<i>84.5</i>	<i>84.5</i>	<i>84.5</i>	<i>84.5</i>
Water Supply Improvement Program (WSIP) Water Supply Sources					
Groundwater Development: Potable from San Francisco Ground Water Supply Project (SFGWSP) (Westside Groundwater Basin) ^f	0.0	2.0	2.0	2.0	2.0
Recycled Water Expansion Irrigation ^g	0.0	4.0	4.0	4.0	4.0
Supply Conservation Program	0.0	4.0	4.0	4.0	4.0
<i>WSIP Supply Subtotal</i>	<i>0.0</i>	<i>10.0</i>	<i>10.0</i>	<i>10.0</i>	<i>10.0</i>
Total Retail Supply (Current and WSIP Supplies)	84.5	94.5	94.5	94.5	94.5

Notes:

a. RWS surface water supplies are subject to reductions due to below-normal precipitation. This may affect dry-year supplies – model shows supply reduction occurs in year 2 of multiple-dry-year event (*Source:* SFPUC 2008 WSIP Phase Variant Supply limitation).

b. Groundwater serves irrigation to Golden Gate Park, SF Zoo, and Great Highway Median.

c. A groundwater reserve of 0.5 Million Gallons per Day (MGD) (1.9 million liters per day [ML/d]) for irrigation purposes would remain as part of SFPUC’s non-potable groundwater supply.

d. Castlewood current and projected use remains unchanged over 20-year planning horizon.

e. 2.0 MGD (7.6 ML/d) of groundwater treated and blended for potable water supply purposes.

f. 2.0 MGD (7.6 ML/d) of new groundwater developed as part of the new local supply target.

g. 2.0 MGD (7.6 ML/d) of recycled water used for irrigation at Golden Gate Park, SF Zoo, Great Highway Median, and 2.0 MGD for other non-potable purposes.

Source: PBS&J 2009c.

<i>Users, Facilities, and Entities</i>	<i>Projected Water Demand (MGD)</i>				
	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Residential Demand (Single and Multiple Family) ^a	44.70	43.80	43.20	42.90	42.90
New Residential Demand generated by Projects and Incremental Growth ^{b,d}	—	0.47	0.95	1.42	1.89
<i>Subtotal</i>	<i>44.70</i>	<i>44.27</i>	<i>44.15</i>	<i>44.32</i>	<i>44.79</i>
Non-Residential – Business/Industrial Demands ^{c,d}	30.21	30.52	30.83	31.14	31.73
<i>Subtotal</i>	<i>74.91</i>	<i>74.79</i>	<i>74.98ⁱ</i>	<i>75.46</i>	<i>76.52</i>
Unaccounted-for System Losses	7.30	7.30	7.30	7.30	7.30
<i>Subtotal</i>	<i>82.21</i>	<i>82.09</i>	<i>82.28</i>	<i>82.76</i>	<i>83.82</i>
Other Retail Demands ^e	4.90	4.90	4.90	4.90	4.90
Lawrence Livermore Laboratory; Groveland Community Services District ^f	1.20	1.20	1.20	1.20	1.20
City Irrigation Demand ^g	2.5	2.5	2.5	2.5	2.5
Castlewood Community Demand ^h	1.0	1.0	1.0	1.0	1.0
<i>Total Retail Demand</i>	<i>91.81</i>	<i>91.69</i>	<i>91.88ⁱ</i>	<i>92.36</i>	<i>93.42</i>
<i>Notes:</i>					
a. Residential Demands					
b. Multiple Family Demand calculated as 2030 Incremental Growth of 0.24 MGD (0.91 ML/d) + CP-HPS II 10,500 dwelling units (DUs) (1.04 MGD [3.94 ML/d]) + TI-YBI 8,000 DU (1.17 MGD [6.44 ML/d]) + Park Merced 8,900 total DU (0.94 MGD [3.56 ML/d]) = 3.40 MGD (12.9 ML/d). With existing demand of 1.51 MGD (5.72 ML/d) at all three sites, net demand is (3.40 – 1.51 MGD) (10.2 – 5.72 ML/d) = 1.89 MGD (7.15 ML/d).					
c. Agriculture, Mining, Construction, Manufacturing, Transportation, Wholesale & Retail Trade, F.I.R.E., Services, Government including Builders – Contractors and Docks – Shipping, per 2009 ABAG Employment Projections updated (July 2009) from SF Planning (July 2009). Employment water demands calculated as 42.42 gallons (160.6 liters) per employee per day.					
d. Non-residential (jobs/employment) demands at major project sites were assumed to be contained in the 2009 ABAG Employment projections. Growth in demand is incrementally increased to reflect the growth in jobs over the 20-year planning horizon. To avoid double-counting the water demand associated with the 2009 SF Planning Non-Residential Employment Projections and the non-residential demand calculated in the developer estimates at each of the project sites, the total water demand at each of the developments was adjusted to remove the non-residential demands. This study assumes all non-residential demand is accounted for in the 2009 SF Planning Non-Residential Employment Projections. Net change in water demand at the project sites and the adjusted change in water demand without non-residential demand.					
e. Department of the Navy, San Francisco International Airport, and other suburban/municipal accounts.					
f. Lawrence Livermore Laboratories (0.8 MGD [3.0 ML/d]); Groveland CSD (0.4 MGD [1.5 ML/d])					
g. City Irrigation at Golden Gate Park, Great Highway Median, and SF Zoo.					
h. Castlewood Community demand served by wells in the Pleasanton well field.					
i. Numbers are rounded according to standard rounding practices and may not add up due to hidden decimals; this table is consistent with Table 4-7 of the WSA.					
<i>Source: PBS&J 2009c.</i>					

Table G-4. Comparison of Projected Supply and Demand for Normal, Single Dry, and Multiple Dry Years (MGD)

<i>Retail Supply and Demand</i>		<i>Normal Year</i>	<i>Single Dry Year</i>	<i>Multiple Dry Year Event</i>		
				<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>
2010	Regional Water System Supply ^a	81.00	81.00	81.00	79.50	79.50
	Groundwater Supply ^b	3.50	3.50	3.50	3.50	3.50
	Total Retail Supply^c	84.50	84.50	84.50	83.00	83.00
	Total Retail Demand ^d	91.81	91.81	91.81	91.81	91.81
	Surplus/(Deficit) ^e	-7.31	-7.31	-7.31	-8.81	-8.81
2015	Regional Water System Supply ^a	81.00	81.00	81.00	79.50	79.50
	Groundwater ^f	3.50	3.50	3.50	3.50	3.50
	WSIP Supply Sources ^g	10.00	10.00	10.00	10.00	10.00
	Total City Supply^c	94.50	94.50	94.50	93.00	93.00
	Total Retail Demand ^d	91.69	91.69	91.69	91.69	91.69
	Surplus/(Deficit)	2.81	2.81	2.81	1.31	1.31
2020	Regional Water System Supply ^a	81.00	81.00	81.00	79.50	79.50
	Groundwater ^f	3.50	3.50	3.50	3.50	3.50
	WSIP Supply Sources ^g	10.00	10.00	10.00	10.00	10.00
	Total City Supply^c	94.50	94.50	94.50	93.00	93.00
	Total Retail Demand ^d	91.87	91.87	91.87	91.87	91.87
	Surplus/(Deficit)	2.63	2.63	2.63	1.13	1.13
2025	Regional Water System Supply ^a	81.00	81.00	81.00	79.50	79.50
	Groundwater ^f	3.50	3.50	3.50	3.50	3.50
	WSIP Supply Sources ^g	10.00	10.00	10.00	10.00	10.00
	Total City Supply^c	94.50	94.50	94.50	93.00	93.00
	Total Retail Demand ^d	92.36	92.36	92.36	92.36	92.36
	Surplus/(Deficit)	2.14	2.14	2.14	0.64	0.64
2030	Regional Water System Supply ^a	81.00	81.00	81.00	79.50	79.50
	Groundwater ^f	3.50	3.50	3.50	3.50	3.50
	WSIP Supply Sources ^g	10.00	10.00	10.00	10.00	10.00
	Total City Supply^c	94.50	94.50	94.50	93.00	93.00
	Total Retail Demand ^d	93.42	93.42	93.42	93.42	93.42
	Surplus/(Deficit)	1.08	1.08	1.08	-0.42 ^h	-0.42 ^h

Notes:

- RWS Supply SFPUC Water Supplies
- Groundwater Uses for In-City Irrigation and Castlewood.
- Total Retail Supply from SFPUC Water Supplies
- SFPUC Retail Demand
- The deficit shown in 2010 is the result of reducing the RWS supply to 81 MGD (307 ML/d) as per the Phased WSIP Variant, without full development of the additional 10 MGD (38 ML/d) of new supplies. 10 MGD (38 ML/d) of new sources would be developed and available for use in SF by 2015. However, SF Retail demand is currently lower than projected (Fiscal Year 2007/2008 use was 83.9 MGD [318 ML/d]). If SF Retail demands exceed the available supply of 84.5 MGD (320 ML/d) between 2010 and 2015, the Water Supply Agreement allows the SFPUC to purchase additional water from the RWS. If combined Retail and wholesale deliveries exceed 265 MGD (1,003 ML/d), the SFPUC Retail customers would be required to pay an Environmental Surcharge for deliveries over 81 MGD (307 ML/d) (Total RWS deliveries in Fiscal Year 2007/2008 were 256.7 MGD [972 ML./d]).
- Groundwater Supplies at Castlewood and In-City Irrigation.
- WSIP Supply Sources: Recycled Water (4.0 MGD [15 ML/d]); Groundwater Existing (2.0 MGD [7.6 ML/d]) and NWGWP (2.0 MGD [7.6 ML/d]), and WSIP Water Efficiency and Conservation (4.0 MGD [15 ML/d]).
- Deficit occurs in years 2 and 3 of multiple dry year event, SFPUC implements its Drought Year Water Shortage Contingency Plans – Regional Water Supply Reliability Planning and Water Supply Reliability Planning would be required to balance supply and demand under this projected shortfall.

Source: PBS&J 2009c.

Table G-5. Electricity Consumption in San Francisco, by Land Use (2007)

<i>Land Use</i>	<i>Total Consumption (million kilowatt hour [kWh])</i>	<i>Percent of Total Consumption</i>
Commercial	3,087.59	60%
Residential	1,454.81	28%
Industrial	76.60	1%
Construction	35.61	1%
Water Supply	302.85	6%
Other	197.39	4%
Total	5,154.85	100%

Source: CEC 2007c.

Table G-6. Natural Gas Consumption in San Francisco, by Land Use (2007)

<i>Land Use</i>	<i>Total Consumption (million British thermal units [Btu])</i>	<i>Percent of Total Consumption</i>
Residential	15,504,000	54%
Commercial	9,971,000	34%
Industrial	357,000	1%
Construction	182,000	1%
Water Supply	6,000	0%
Other	2,898,000	10%
Total	28,918,000	100%

Source: CEC 2007c; converted from therms to Btu (1 therm = 100,000 Btu).