

Chapter 5. Huntington Beach

Mission and Brief Description

Huntington Beach is a municipality located along the coastline in Orange County, 35 miles southeast of Los Angeles and 90 miles northwest of San Diego. The city provides water through its utility department to a 28 square mile area with 204,831 people and more than 52,000 service connections (HB, 2011). Huntington Beach purchased the water system that served their area from the Southern California Water Company in 1964. Its utility is now responsible for maintaining and operating wells, reservoirs, imported water connections, distribution pipelines, fire hydrants and water meters, for performing water quality testing, and planning for future water use. Huntington Beach owns and operates two imported water transmission lines (OC-9 and OC-35). The utility also supplies water to Sunset Beach and 68 acres of unincorporated land.

Figure 5.1 City of Huntington Beach Service Area



Organizational Structure and Budget

The Utilities department is nested within the Public Works Department, headed by a Deputy City Administrator, who reports to the City Administrator. The City Administrator reports in turn to the City Council and the Mayor. The Utility division has five sections: Administration, Quality, Production, Distribution and Meters. Huntington Beach is also a member of the Municipal Water District of Orange County and the Orange County Water District. Water expenses are considered part of the 'Enterprise Fund' (Table 5.1). This fund is supported by user fees, such as the rates charged for water. These user fees cover the cost of operations, maintenance, and financing of capital assets (HB, 2010b). The amount that the Water Utility has spent on imported water has steadily increased from \$10,323,220 in FY 2006/2007 to a projected \$14,350,000 in FY 2010/2011 (HB 2010b).

Table 5.1: Summary of Enterprise Fund and Water Expenses from 2006 - 2011

	Total Actuals FY 2006/07	Total Actuals FY 2007/08	Total Actuals FY 2008/09	Adopted Budget FY 2009/10	Projected Actuals FY 2009/10	Proposed Budget FY 2010/11
Water	26,469,142	31,136,510	32,905,696	45,342,441	45,164,000	45,076,404
Water Master Plan	6,137,620	2,465,399	1,515,502	3,034,877	3,125,000	974,433
Sewer Service	5,765,341	7,121,698	7,358,551	7,450,764	10,731,000	9,663,769
Refuse Collection	10,488,559	10,533,441	10,551,808	10,829,493	10,559,000	10,860,597
Enterprise Fund Total	48,860,662	51,257,049	52,331,557	66,657,575	69,579,000	66,575,204

Source: HB 2010b, p.14

Rates

The water rates are set by the city council and are made up of two components; the meter charge which is billed every month and the charge for actual water usage. The monthly meter charge is billed at different levels depending on the size of the meter (Table 5.2). This represents a flat rate that does not change based on actual water usage. The charge for water usage is \$ 1.7579/hundred cubic feet (HCF) or 748 gallons of water (HB, 2012). As a result of this flat rate pricing system, water customers in Huntington Beach have little economic incentive to save water.

Table 5.2 Huntington Beach Rate Structure

Meter Size/Type	Daily Rate
3/4" or 5/8	\$.3694
1"	\$.7389
1-1/2"	\$1.1083
2"	\$1.8472
3"	\$4.0638
4" compound	\$6.2804
4" Fire Meter	\$12.1914
6" compound	\$12.1914
6" Fire Meter	\$24.7521
8" Fire Meter	\$43.2239
10" Fire Meter	\$67.6066

Source: HB, 2012

Infrastructure

The Huntington Beach Water Utility has nine operating wells (Table 5.3) that draw water from between 204 – 996 feet below ground. They produce between 350 gallons and 3,400 gallons of water per minute. The total capacity of the wells is 20,690 gallons per minute. The utility also has two city wells that are used only for irrigation. There are also four storage and distribution reservoirs that can hold up to 55 million gallons of water and four booster stations with a capacity of 58,690 gallons per minute.

Table 5.3 Active Wells in Huntington Beach

Well	Year Drilled	Well Depth (feet)	Capacity (gpm)	Normal Operation (gpm)
HB 1 ^(a)	1962	306	750	350
HB 3A	1994	716	2,500	1,750
HB 4	1967	804	500	450
HB 5	1969	820	3,000	3,000
HB 6	1973	810	3,000	2,500
HB 7	1975	891	3,400	3,400
HB 9	1981	996	3,000	1,500
HB 10	1981	960	3,400	2,700
HB 12	2006	800	3,000	_(b)
HB 13 ^(c)	2001	800	2,500	2,500
Total (gpm)			25,050	18,150

(a) To be separately evaluated for feasibility to be re-drilled with capacity increased to 750 gpm; schedule to be determined.

(b) HB 12 taken out of service due to water quality issues (high chloride). May be reinstated with production reduced to 500-750 gpm; schedule to be determined.

(c) Per 2005 Water Master Plan, permanent wellhead facilities will be constructed to replace existing temporary facilities; schedule to be determined.

Source: HB, 2011b p. 39

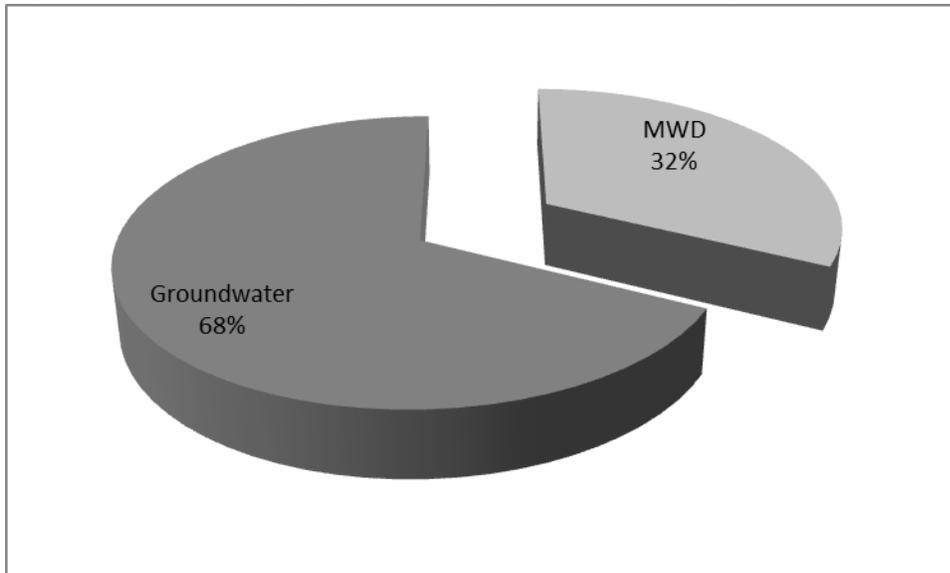
The city is also a member of the West Orange County Water Board, a joint powers agreement (JPA) between the cities of Huntington Beach, Garden Grove, Westminster and Seal Beach, that owns and operates two high capacity transmission lines for imported water with an aggregate capacity of 22,000 gpm. Through the JPA, the city owns 56.1% of the lines and its Public Works Department operates and maintains the infrastructure.

The City of Huntington Beach also operates 385 miles of sewer lines, which feed into the Orange County Sanitation District's (OCSD) system. The OCSD pumps the sewage to treatment plants which are located in the City of Fountain Valley (HB, 2011b).

Sources of Water

The City of Huntington Beach water has two main sources of water: groundwater, pumped from wells that tap into the Santa Ana groundwater basin, and water imported from northern California via the State Water Project and the Colorado River. The amount of water that Huntington Beach can pump from its wells is determined by the Orange County Water District, which sets an annual Basin Pumping Percentage for all its members. In recent years, that percentage has usually hovered around 66%, allowing Huntington Beach to satisfy two-thirds of its water needs with groundwater and requiring the city to import the remaining third (HB, 2011b). Imported water is acquired through the Metropolitan Water District of Orange County (MWD), a wholesaler water district, which purchases it from the Metropolitan Water District. In 2010 Huntington Beach used over 29,000 AF of water. Between 2006 and 2010, groundwater made up 68% of the total water supply and water imported from MWD made up the remaining 32% (HB, 2011b).

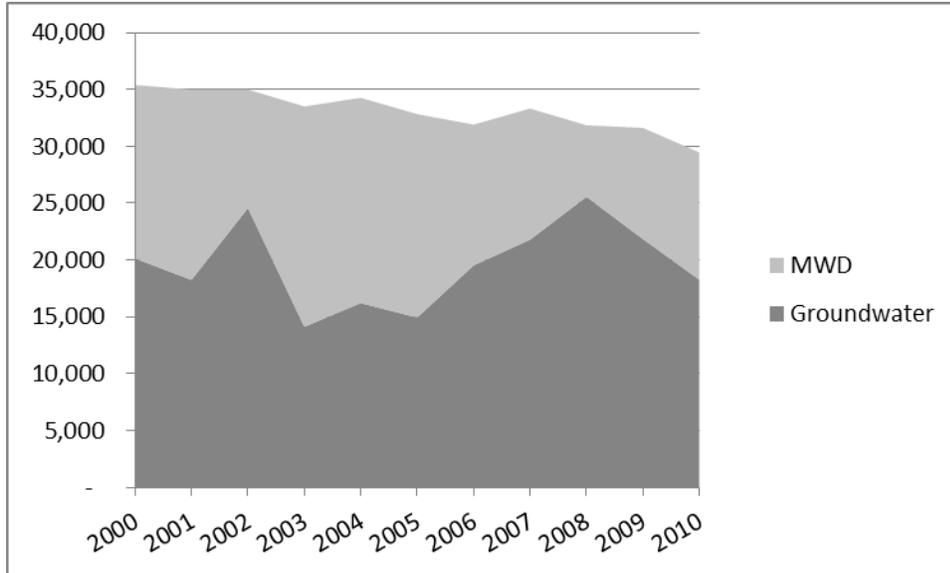
Figure 5.2: Water Supply for Huntington Beach (average 2006 - 2010)



Source: Data courtesy of MWD

The amount of groundwater used in recent years (Figure 5.3) has fluctuated significantly. This may reflect variations in weather which can affect the decision of the OCWD when it determines the Basin Pumping Percentage for its members.

Figure 5.3 Water Supply for Huntington Beach (AFY 2000 - 2010)



Source: Data courtesy of MWDOC

Water Rights

Huntington Beach has correlative rights over the Lower Santa Ana River Basin and its water extraction is regulated by the Orange County Water District. The District monitors the natural replenishment of the groundwater basin, controls the pumping activities of its users, manages replenishment water activities in various forms, such as spreading basins and injection wells and uses economic incentives to regulate groundwater usage. Every year OCWD establishes the allowable Basin Pumping Percentage (BPP), the percentage of each Producer’s total water supply that comes from groundwater pumped from the basin and is compatible with a sustainable groundwater level (between 62% and 78.6% in the last 5 years). The process that determines a sustainable level of pumping takes into account the natural recharge process, current groundwater levels and the availability of replenishment water from the Metropolitan Water District and other sources (see table 5.1 for a list of replenishment sources used by the OCWD).¹ The BPP is set uniformly for all producers.

The District’s activity is supported by property taxes and user fees. Users pay a Replenishment Assessment (RA) based on the amount of water they pump and a Basin Equity Assessment (BEA), that is due only if they pump more water than the established BPP. With this

¹ In-lieu Program, OCWD requests the City to limit pumping to defined volumes from specified wells. The City then takes replacement water through its import connections, which is purchased by OCWD from Metropolitan (through MWDOC).

system, no user is assigned fixed water right, but there is an economic incentive to pump within the established BPP.

Recharge water for the Lower Santa Ana River Groundwater Basin

The OCWD operations are based on an estimate that the Lower Santa Ana River Groundwater Basin stores approximately 66,000,000 AF of water at the full condition. The district is aware that “in spite of the large amount of water stored in the basin, there is a narrow operating range within which the Basin can safely operate [...] which is largely dictated by water quality issues and the need to prevent land subsidence” (OCWD, 2010).

Since on average the annual natural recharge is about 69,000 AFY and the annual water withdrawals are about 341,000 AFY (Table 5.4), water recharge operations are strategic to maintaining a viable groundwater supply for the City of Huntington Beach and for all the water agencies that pump water from the basin.

Table 5.4 Estimate of Water Recharge in the Lower Santa Ana River Groundwater Basin

INFLOW	AFY
Measured Recharge	
1. Forebay recharge facilities	235,000
2. Talbert Barrier injection	35,000
3. Alamitos Barrier injection, Orange County portion only	2,500
<i>Subtotal:</i>	<i>272,500</i>
Estimated Unmeasured Recharge (average precipitation)	
1. Inflow from La Habra basin	3,000
2. Recharge from foothills into Irvine subbasin	14,000
3. Areal recharge from rainfall/irrigation into Main basin	17,500
4. Recharge from foothills into Yorba Linda subbasin	6,000
5. Subsurface inflow at Imperial Highway beneath Santa Ana River	4,000
6. Santa Ana River recharge, Imperial Highway to Rubber Dam	4,000
7. Subsurface inflow from Santiago Canyon	10,000
8. Recharge along Peralta Hills	4,000
9. Recharge along Tustin Hills	6,000
10. Seawater inflow through coastal gaps	500
<i>Subtotal:</i>	<i>69,000</i>
TOTAL INFLOW:	341,500
OUTFLOW	
1. Groundwater Production	333,500
2. Subsurface Outflow	8,000
TOTAL OUTFLOW:	341,500

Source: OCWD, 2010

Most recharge depends on the Santa Ana River² and on the Santiago Creek³ base-flows and from their storm flows, which are diverted to recharge basin and percolated into the groundwater basin. Recharge basins also receive untreated imported water from the Colorado River and purified water from the Groundwater Replenishment System (GWRS).

The GWRS is a project by OCWD and Orange County Sanitation District that takes tertiary treated water and purifies it using microfiltration, reverse osmosis and ultraviolet light. The water resulting from the process exceeds all federal and state drinking water standards (HB, 2011b). The existing infrastructure can produce up to 72,000 AFY of purified water. Part of it is delivered to recharge basins to recharge the Lower Santa Ana Groundwater Basin and part is used in sea water intrusion barriers.

Some of these sources are more vulnerable than others to climate change. While purified water from the GWRS will not be reduced by climate related events, and Santa Ana River base-flow depending on wastewater plants' discharge is guaranteed by a State Water Resources Control Board order, the other water replenishment sources could be affected. Drought cycles will reduce base-flow in the Santiago Creek and will impinge on the availability of Colorado River water for recharge, and climate events will affect storm flows of both the Santa Ana River and the Santiago Creek.

Water Demand

Demand for water is usually driven by the climate, the land use patterns, the economic conditions and the population within the region. Huntington Beach is within the South Coast Air Basin and has a mild climate with some periods of hot weather, Santa Ana winds and winter storms. The average temperature is 62 degrees along the coast, with the coldest month being January and the hottest months being in July through August. The average annual humidity is 64.7% and there is 10-12 inches of rain per year, which falls mainly in November through April. The land is generally flat and varies between 5 ft below sea level and 120 feet above sea level (HB, 2005)

According to the UWMP (HB, 2011b) Between 2001 and 2010, the number of residents in the Huntington Beach service area has been growing at a gradually slower pace, with trends very similar to those of Orange County and at a slower rate than the rest of the state (Figure 5.4). However, new estimates of the California Department of Finance (DOF, 2011b), paint a different picture of the demographic growth in Huntington Beach and report that the rate of growth of the city has been much lower than the rate of growth of the rest of the County. By applying DOF's

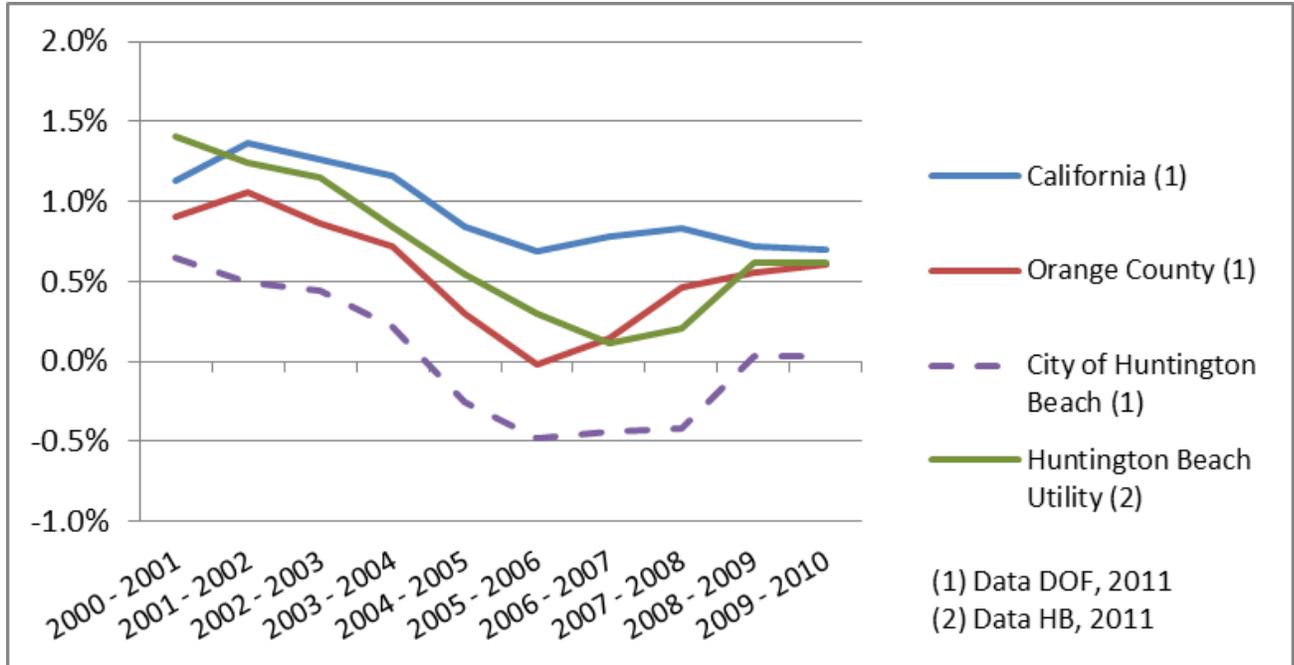
² According to a 1969 judgment Orange County Water District has water rights over 42,000 AFY of the Santa Ana River flow. Originally flows were about 50,000 AFY, but recently they have increased to 165,000 AFY. In December 2008, the State Water Resources Control Board (SWRCB) approved the issuance of a permit to OCWD to appropriate 362,000 AFY from the Santa Ana River. The SWRCB also agreed to hold an additional 143,000 AFY in abeyance for OCWD for possible future projects.

³ A permit from the SWRCB (permit 19325) allows OCWD to collect and store up to 33,560 AFY from Santiago Creek.

rates of demographic growth to the population in the service area, total residents served by the city of Huntington Beach Utility in 2010 should be 191,490 rather than 204, 831.

Given the fact that the city is almost completely built out, increase in population is expected to remain low for the predictable future (HB, 2011b). In fact, Huntington Beach has limited space available for further expansion; only 520 acres (3% of the total 17,231 acres) are considered vacant land. Of that vacant land, a quarter is zoned residential, a quarter is zoned industrial and nearly a fifth is zoned as open space parks (HB, 2005).

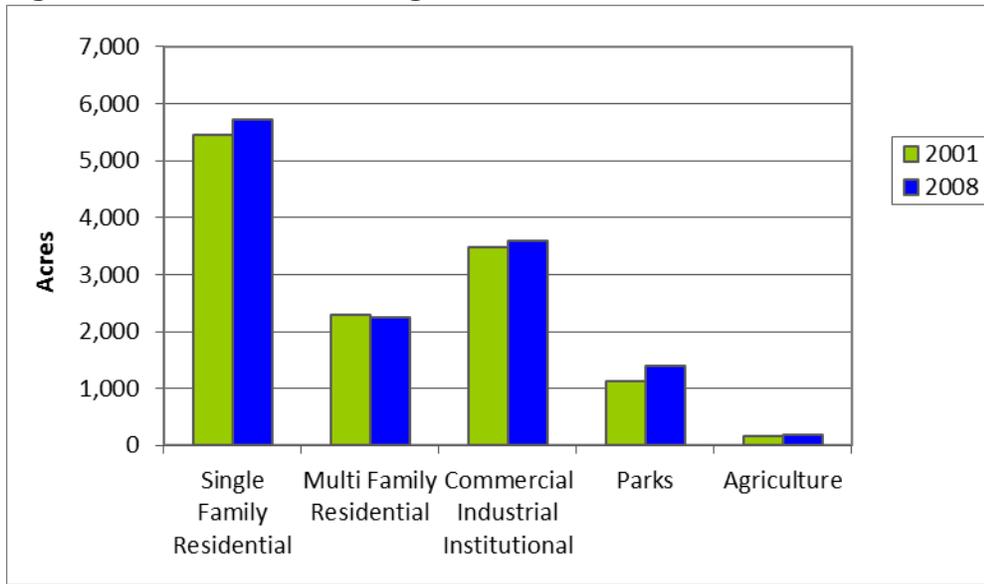
Figure 5.4 10-Year Population Growth Rates: Huntington Beach, County & State



Source: HB, 2011b and DOF, 2011

Residential development is the primary land use within Huntington Beach, covering 56% of the city (7,904 acres). In addition to the residential development, in 2008, there were 500 major industrial businesses that covered 26% of the city surface, with 56 parks and 8.5 miles of beaches (Figure 5.5).

Figure 5.5 Land Use in Huntington Beach



Source: SCAG, 2012

The Huntington Beach utilities department serves over 52,000 service connections, over 90% of which are single-family or multi-family (Table 5.5). Single family homes make up 84% of the accounts and made up nearly half of the demand for water in 2010. Multi-family accounts made up 8% of the accounts and 21% of the water used, commercial, industrial and institutional accounts made up 6% of the accounts and 15% of the water used and landscape and irrigation constitute 9.2% of the city’s demand.

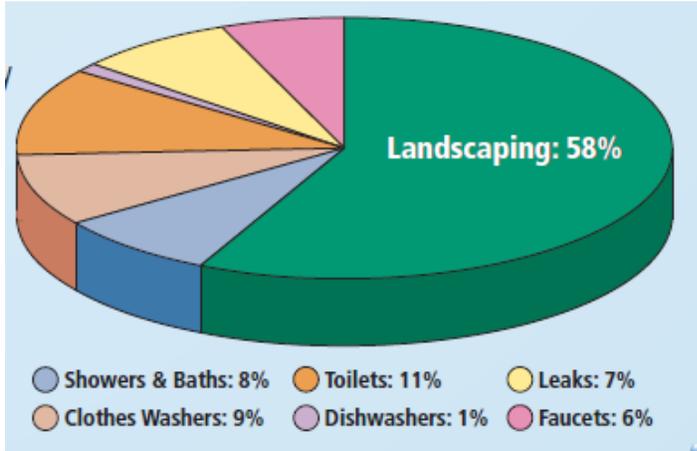
Table 5.5 Account and Water Use in 2010

Account Type	Metered # of Accounts	Percentage of accounts	Water Deliveries (AF)	Percentage used in AF	Water Used per Account Type (AF)
Single-family	44,147	84.3%	13,754	47.6%	0.312
Multi-family	4,119	7.9%	6,149	21.3%	1.493
Commercial	2,286	4.4%	3,582	12.4%	1.567
Industrial	306	0.6%	511	1.8%	1.670
Institutional	564	1.1%	155	0.5%	0.275
Dedicated Irrigation	934	1.8%	2,651	9.2%	2.838
Other	5	0%	466	1.8%	NA
Unaccounted			1,611	8.5%	
Total	52,356	100%	28,879	100%	0.552

Source: HB, 2011b

Of the water used for residential water use, over half (58%) is used for landscaping purposes (Figure 5.6).

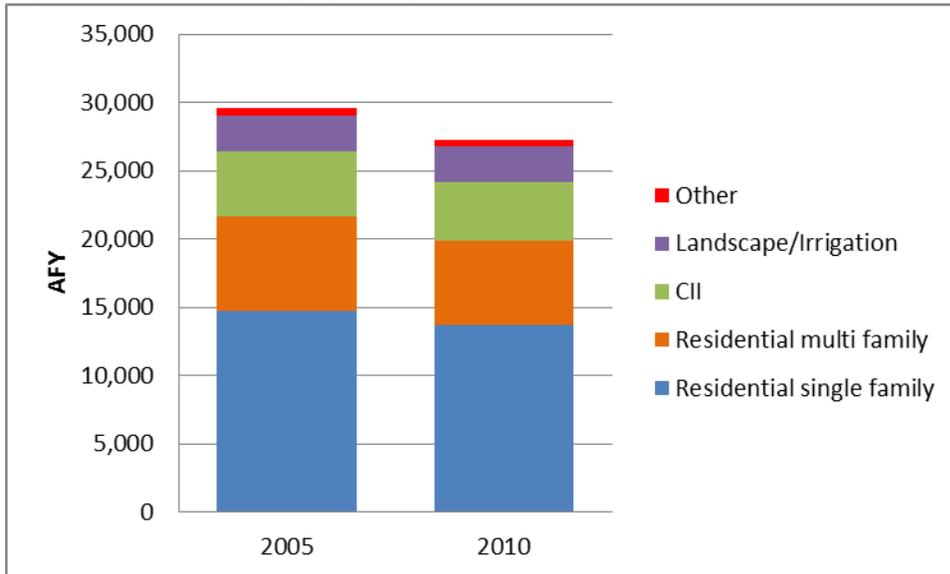
Figure 5.6 Residential Water Use



Source: HB 2010c, p. 3

Between 2005 and 2010, all categories of use reduced water consumption. However, as indicated in Figure 5.7, single family residential users reduced their demand less than multifamily, and the amount of water used for landscape and irrigation did not change.

Figure 5.7 Water usage per type of account

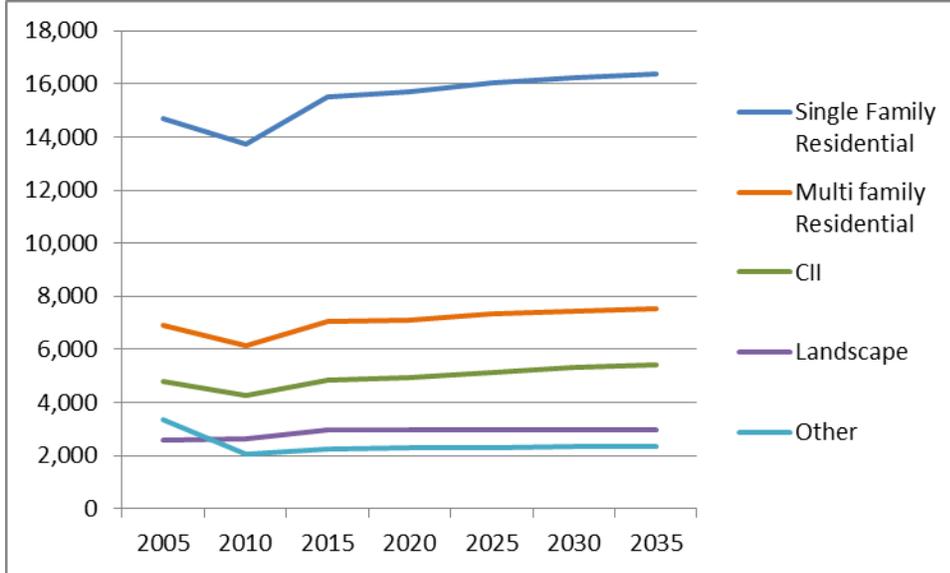


Source: HB, 2011b

Huntington Beach has also projected the growth in account connections and water usage through 2035 (Figure 5.8). The city expects to have 12% growth in the number of accounts from 2010 through 2035 and 20% growth in water usage over the same time period. The projections essentially assume that water consumption will rebound after the decline in 2009 and 2010 and will grow at rates between 0.2% and 0.8% every year from 2015 to 2035. CII water usage is expected to increase more rapidly than residential and landscape. According to these projections,

the City expects over 2,000 new single family residential units by 2035 and almost as many new multi-family units. This assumes a large portion of its undeveloped land to be developed as residential.

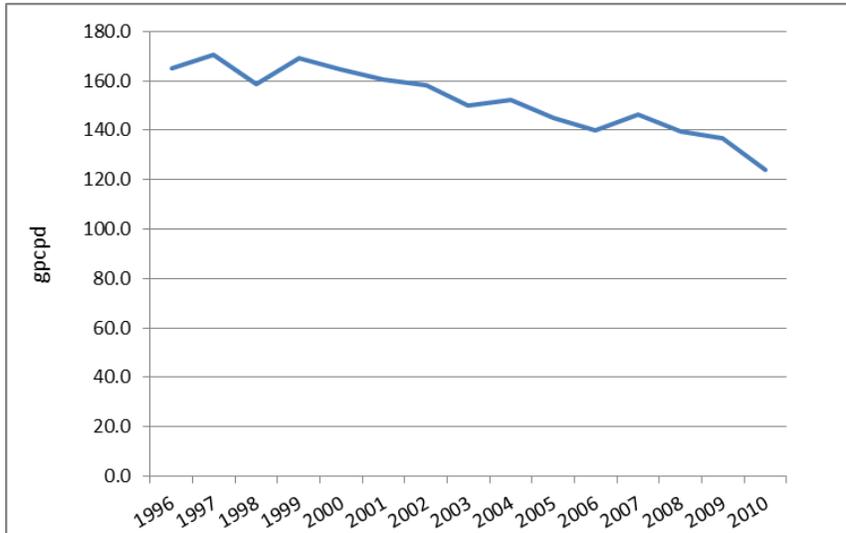
Figure 5.8 Past, Current and Projected Water Use by Account Type (AF)



Source: HB, 2011b, p. 6-1

Huntington Beach’s per capita water use has varied between 123 – 170 gallons per capita per day (gpcpd) from 1996 through 2010 (Figure 5.9). The peak year was 1996, but from that date per capita water usage has been constantly decreasing due to water conservation efforts, and in recent years, due to the economic recession and a particularly wet year in 2010.

Figure 5.9 Per Capita Municipal and Industrial Water Use: Huntington Beach



Source: HB, 2011b

A large part of the per capita water reduction is likely influenced by the fast rate of house tenure turnover. According to the American Community Survey, between 2000 and 2010, about 54% of the households in Huntington Beach moved. Although some units might have changed hands many times and renovation might not necessarily have taken place each time, the high turnover rate is likely associated with upgrades of appliances or plumbing to more water conserving ones, which would tend to decrease per capita water usage.

Table 5.6 Residential turnover in Huntington Beach (2010)

		Year householder moved into unit (2010)	a.v.	%
Occupied housing units (2010)	75,220			
		Moved in 2005 or later	22,670	30.1%
		Moved in 2000 to 2004	18,201	24.2%
		Moved in 1990 to 1999	16,685	22.2%
		Moved in 1980 to 1989	7,552	10.0%
		Moved in 1970 to 1979	6,903	9.2%
		Moved in 1969 or earlier	3,209	4.3%

Source: Census, 2011

Water Conservation

Huntington Beach has primarily participated in programs aimed at strengthening local water supplies and guaranteeing that they will be able to meet the projected demand. The City is using most of the tools available, such as ordinances, rebates and outreach, but has not yet opted for implementing water rates increases that could reduce water usage. On the other hand, the City is willing to support a desalination facility that would reduce dependency on imported water for the entire Orange County (by producing about 56,000 AFY). While the agency does not recycle any water directly, it does benefit from the recycling program run by OCWD.

CUWCC Participation

The City of Huntington Beach Water signed on to comply with the California Urban Water Conservation Council’s Best Management practices in 2000. Huntington Beach Water Utility makes a point of stating that new sources of water are expensive and encourages conservation as an inexpensive ‘source’ of new water (HB, 2011b).

Ordinances

In 2010, the City of Huntington Beach approved two ordinances to keep water consumption under control. Ordinance N. 3854, Water Efficient Landscape Requirements, establishes rules for all public and private landscaped areas larger than 2,500 feet, aimed at reducing water usage and minimizing runoff.

Ordinance N. 3849 “Water Management Program” establishes the conditions under which the City can declare water shortages and order water users to conserve water. The ordinance sets the actions users should take during different degrees of water shortage and dictates permanent rules to reduce water usage (such as setting the limits of watering times and of watering durations).

Rebates

Since the early 1990s, Huntington Beach has taken advantage of the rebate programs organized by MWDOC and funded by MWD. At that time, and until 2001, MWDOC (Huntington Beach’s imported water wholesaler) was organizing toilet distribution programs with the goal of supporting the replacement of old toilets with newer water conserving fixtures, but that program ended in 2011. The city also distributed low flow showerheads and faucet aerators. But a study conducted by MWDOC around 2005 ascertained that the local market was already saturated with these water-conserving devices.

Starting in 2001, MWD initiated a regional program that targeted CII customers. The program, still running in 2012, offers rebates on a wide range of fixtures. Under this program, MWD provides a basic rebate and local agencies or wholesalers can supplement the rebates with additional resources. The City of Huntington Beach has never added its own resources, but MWDOC has always supplemented the basic offer from MWD.

Starting in 2002, MWDOC signed an agreement with Southern California Edison to start a rebate program that supports the replacement of old washing machines with High Efficiency Washers (HEW) and by 2010, in Huntington Beach, about 5,350 washers have been replaced through this program. In 2004, MWDOC and MWD initiated programs more focused on outdoor water use, both for residential and non residential customers, such as the installation of weather based irrigation controllers (WBIC) and water saving sprinkler nozzles. On June 1st, 2008 MWD launched a regional program for residential customers very similar to the non-residential, which, as of 2012, is still being offered. MWD provides a basic rebate and local agencies supplement with additional resources. The rebates available in 2010 in Huntington Beach service area are summarized in Table 5.7.

Table 5.7 Residential rebates in Huntington Beach service area (2010)

Device	MWD Baseline	MWDOC rebate
High Efficiency Toilet (HET)	\$ 50	\$ 50
Washers	\$ 100	\$ 100
Weather based irrigation controllers (WBIC) <1 acre	\$ 50	\$ 60
Weather based irrigation controllers (WBIC) >1 acre	\$25 per station	\$50 per station
Rotating nozzles	\$ 4 each	\$ 9 each
Synthetic turf	\$ 0.60 per sq. ft.	Not offered
Turf removal	Not offered	\$ 1 per sq. ft.

Source: MWD, 2010

Table 5.8 Residential and commercial rebates received in Huntington Beach service area (1995 - 2010)

Year	HEW	Smart timers		Rotating nozzles	Commercial plumbing fixtures	Landscape certification program	HET	Synthetic turf (sqft)		ULF Toilets
		Res.	CII					CII	Res.	
1995-96										3963
1996-97										1779
1997-98										2600
1998-99										2522
1999-2000										2319
2000-01										3492
2001-02	114				5					3281
2002-03	486				191					2698
2003-04	857				73					3752
2004-05	738	5	2		185					1901
2005-06	680	21	9		82					367
2006-07	761	12	12	40	209		5			308
2007-08	750	7	1		48		66	15,192	591	143
2008-09	751	13	1		104		604	12,512		121
2009-2010	211	6	27		126	31	165	4,343	1,504	
Total	5,348	64	52	40	1,023	31	840	32,047	2,095	12,571

Source: MWDOC, 2010

Table 5.8 provides the total rebates obtained by Huntington Beach water customers by year and by type of device. Notice, for example, the recent rebates for landscape certification programs and for synthetic turf, and the declining use of rebates for ultra-low flush toilets.

MWDOC also offers some additional programs targeted to its customers, such as a turf removal program, which contributes \$1 per sq. ft. for the transformation of water intensive residential and commercial landscaped areas to more water-friendly ones; a water smart landscaping program which offers free water audits to residents and customers to assist them to achieve their water use efficiency objectives. The city also participates in a highly regarded K-6 school education program taught by the Discovery Science Center and organized in a joint effort with MWDOC.

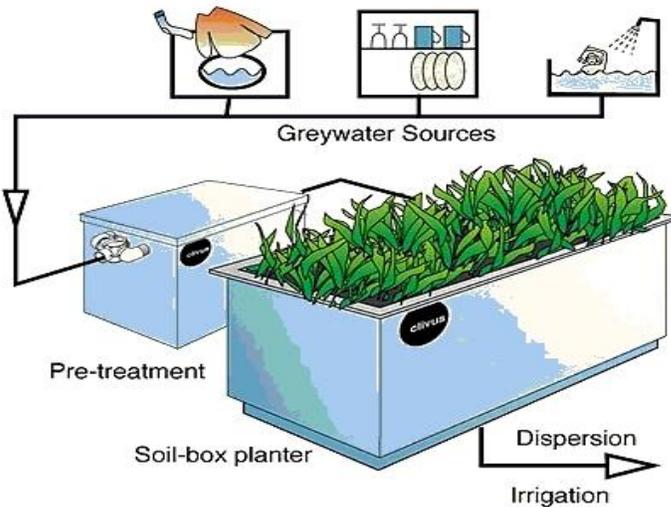
Huntington Beach has also significantly reduced the amount of water lost to leaks, which had reached nearly 10% in the mid-1990s. After completing a leak detection survey and reviewing 487 miles of pipes, the city identified 17 leaks and reduced the water loss from nearly 10% to 6.4% (HB UWMP, 2005). At the time, this represented a savings of 24.4 million gallons per year. (HB UWMP, 2005)

Grey water system and rain barrels

While Huntington Beach does not have its own independent recycling water program, it does benefit from the OCWD's use of recycled water to replenish groundwater reservoirs.

Huntington Beach does encourage the use of grey-water, water previously used by dishwashers, laundry machines, showers & bathtubs, for irrigation. While these individual grey-water systems (Figure 9) are subject to Huntington Beach and California-wide plumbing codes, Huntington Beach did recently change the building codes so that grey-water systems can now be installed without the need for a special building permit.

Figure 5.10 Grey-water system



Source: Huntington Beach Website, “Graywater”, 2010

The City also offers a limited number of rebates on water barrels used to collect rain water for landscaping (City of Huntington Beach, 2012).

20 x 2020 Conservation Target

The city is committed to reduce its water usage from a baseline that it calculated based on the ten year period from 1996 to 2005 of **159** gpcd to a 2020 target of **137** gpcd (HB, 2011b, p. 5-1). The baseline was estimated by averaging per capita water consumption between 1994 and 2005, but per capita water usage has been less than 159 gpcd since 2001. Given the City’s decline in water use per capita over the past ten years, and its participation in the regional conservation programs, the City should have little problem meeting the 2020 target it set for itself.

Desalination

A seawater desalination facility being developed by Poseidon, a private company, has been proposed for construction in Huntington Beach. The facility will include a seawater intake system, a pretreatment step, a desalination step using reverse osmosis, a post treatment step and on- and off-site booster pump stations and water transmission pipelines in Huntington Beach and Costa Mesa. Once the desalination facility is operational, it would have a capacity of 50 million gallons a day.

Cost-effectiveness of water conservation

Since the active conservation measures available to water customers in Huntington Beach are provided by the MWDOC and MWD directly, we did not conduct a separate cost-efficiency analysis of conservation measures for the City.

Water - Energy Issues

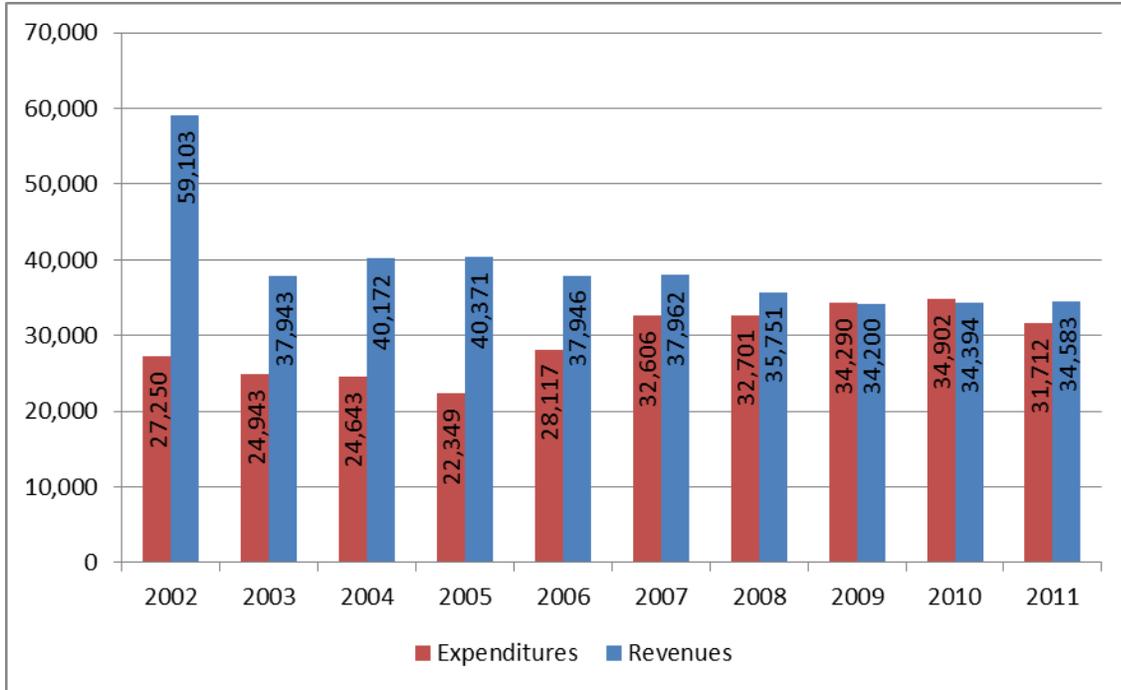
While roughly two-thirds of the demand of Huntington Beach is satisfied by groundwater, the remaining third of demand has to be met by more energy –intensive imported water (HB, 2011). Although the project did not conduct a specific study of the energy intensity and GHG emissions of Huntington Beach’s water supply sources, the findings from our water-energy analysis are relevant and discussed in Chapter 8.

Fiscal Health

This section provides information on the fiscal health of Huntington Beach, which must balance the financial needs of its day to day service requirements with its long term financial obligations. Changes in its annual revenues and expenditures are measures of its short-term fiscal health. Changes in its total net assets, yearly water sales, and number of employees are measures of its long-term fiscal health.

As illustrated in Figure 5.11, Huntington Beach had consistently higher water revenues than expenditures until 2008. In 2009 and 2010, expenditures were slightly higher than revenues, but in 2011, expenditures fell back below revenues.

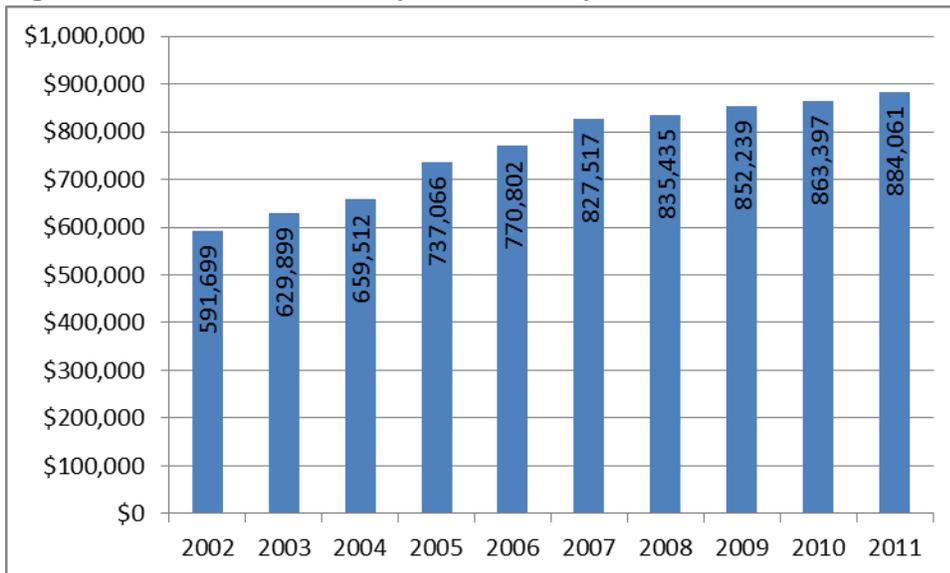
Figure 5.11: Total Expenditures and Revenues (In Thousands)



Source: HB. 2011a, pgs. 129, 130, 131

As displayed in Figure 5.12, Huntington Beach’s net assets grew each year from 2002 to 2011. Net assets grew from approximately \$600 million in 2002 to almost \$900 million in 2011. The city’s consistent growth in total net assets is an indication of strong fiscal health.

Figure 5.12 Total Net Assets (In Thousands)

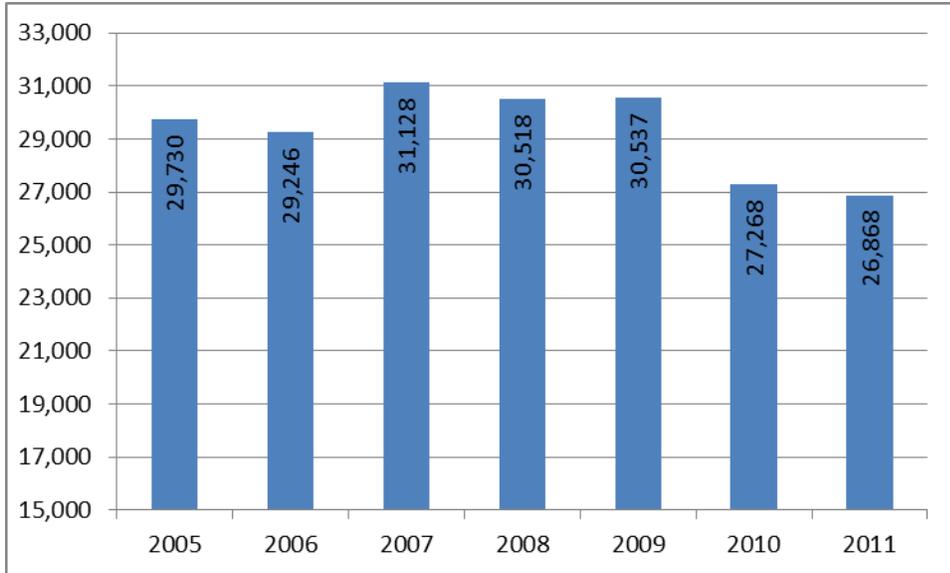


Source: City of Huntington Beach 2011 Comprehensive Annual Financial Report, pgs. 129, 130

Huntington Beach’s water sales have fallen since 2005 (Figure 5.13). Water sales peaked in 2007 at over 31,000 acre feet and fell to a low of under 27,000 acre feet in 2011. Because

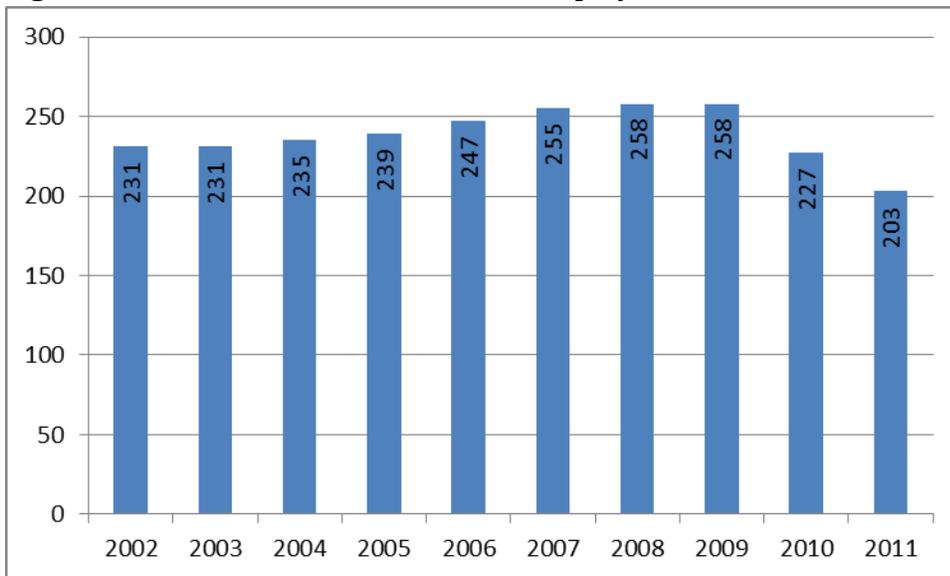
water sales are the city's only source of revenue for water operations, declining water sales is a fiscal threat to its utility department.

Figure 5.13 Water Sales (Acre Feet)



Source: HB 2011a, pg. 143

Figure 5.14 Number of Water Division Employees



Source: HB, 2011a, pg. 142

As a result, Huntington Beach has experienced increases and declines in the total number of water division employees since 2002, with a net decrease from 2002-2011 of 12%. A decline in the number of water division employees is correlated with efforts to lower expenditures through decreased personnel expenditures.

Huntington Beach has strong, positive credit ratings. Huntington Beach's credit rating from Standard and Poor's is AA/Stable, meaning it has a "Very strong capacity to meet financial commitments" (S&P, 2011). Further, its credit rating from Moody's is Aa3 (Moody's, 2011); this is Moody's second highest ratings tier, indicating Huntington Beach's debts are judged to be of high quality and subject to very low credit risk".

Climate Change

In its 2011 UWMP, the City of Huntington Beach identified that their water supply is vulnerable to climate change, but it is not clear what the city can do or intends to do. Huntington Beach, as a retailer utility, benefits from regional agencies' efforts to increase water supply sources for the region. The City owns and operates some groundwater pumping and distribution infrastructure, but it has not needed to invest in capital facilities to increase its own water sources, such as facilities to recycle water. Instead, the City benefited from OCWD's initiative in recycling. OCWD developed and operates the region's recycling water facilities. Huntington Beach's water supply could also be augmented in the future by desalinated water from the Poseidon private desalination plant being developed within the City. MWD is likely to subsidize desalinated water purchase costs for cities and special districts in the county. Another water supply initiative, large-scale storm water capture is likely precluded as an option for the City due to the City's largely built out condition. This leaves conservation as the primary means through which the City can reduce consumption, imported water, and manage increasing prices in the future.

The Water Utility through its Urban Water Master Plan has projected the water supply and demand under 'normal conditions', single year dry spells and multiple year dry spells and has concluded that, thanks to MWD's constant supply of imported water, the city will not be compelled to adopt extraordinary measures at least until 2035.

The city's projections, however, send a mixed message regarding water conservation and suggest that the city has not thoroughly examined its possible actions, should climate change affect water supply. Huntington Beach's future water projections, in fact, do not take into account how water conservation plays an important role in MWD's estimate of water supply, and how water demand management could reduce water demand growth in the future. Future water supply estimated by the City's UWMP, in fact, assumes MWD's supply estimates which are based on the ratio between imported water and demand. But MWD demand estimates assume not only 20 x 2020 per capita water savings, but additional water conservation efforts through rates and building codes (and other not well identified strategies) that are worth 3 times the water conserved through 20 x 2020 targets. Thus, Huntington Beach's imported water supply assumptions fail to take into account the more aggressive conservation efforts that MWD requires from their client cities and special districts in order for MWD to meet future supply needs.

In addition, in Huntington Beach's own water demand estimates presented in its UWMP, the need for additional savings is not mentioned, and the 20 x 2020 targets are met in a "normal

year”, while in the single dry year scenario, as well as in the three dry years spell scenario, in its demand projections, per capita water consumption in 2020 will exceed 20 x 2020 targets by respectively 12% and 13% (HB UWMP 2011, Table 5.2.4, pp. 5-5).

The challenge for Huntington Beach is to acknowledge the influence of water conservation both in its supply and demand management strategies and develop a more realistic plan to meet water shortages in the future.

Given the flexibility in setting the baseline and the 20 x 2020 targets allowed by the State, the City of Huntington Beach has chosen a very high baseline and is confident that there will be no problem in meeting its targets. However, the city has not produced a structured plan, nor an estimate of resources and actions needed to reduce water usage. It primarily relies on the willingness of its citizens to change their habits assisted by the existing regional programs offered by MWDOC and MWD. This situation also highlights how the institutional complexity of regional water management in Southern California can result in suboptimal planning and decision-making by local agencies.

Findings

Declining Population Growth. The City of Huntington Beach, through its Utilities Department, provides water services about 204,000 residents in a 28 square mile area that includes Sunset Beach and a portion of unincorporated Orange County. Since 2001, its rate of growth has been in decline, and, according to California DOF data, its rate of growth was negative between 2004 and 2009.

Largest Land Use is Single Family Residential, but City Close to Build Out. Land use in the department’s service area is largely single family residential (42%). Commercial, industrial and institutional (CII) activities cover 26% of the service area and multifamily residences 17%. Between 2001 and 2008, CII and single residential areas have grown, while multi family declined. But the City has limited space for further expansion.

Water Demand Dropped during Past Decade, Ground Water Major Source of Supply determined by OCWD on Yearly Basis, Rest Imported Water. Between year 2000 and 2010, average water demand ranged between 29,500 (2010) and 35,400 (2000) AFY and water supply came mainly from water local groundwater (68%) and to a lesser part (32%) from water imported through the Municipal Water District of Orange County (MWDOC), a wholesaler member agency of Metropolitan Water District (MWD). Huntington Beach owns correlative right over the Lower Santa Ana River Groundwater Basin and is a member of Orange County Water District (OCWD). OCWD establishes the yearly Basin Production Percentage its member agencies are allowed to extract from the basin without incurring replenishment costs.

Water Demand Primarily Residential. The agency's water demand comes mainly from residential customers. The majority of the water demand comes from single family homes (about 48% of total water usage), and a sizable portion from multifamily accounts (21%). CII accounts use 15% and landscape dedicated accounts about 9%.

Per Capita Consumption at Record Low at End of Decade. Per capita water consumption in 2010 was 124 gallons per day, the lowest recorded in over a decade. Between 1996 and 2008 per capita water usage ranged between 170 and 124 gpcd. Since 1999 per capita water usage has been constantly declining. The recent economic downturn and an exceptionally wet year led to a drastic reduction in usage throughout all the utility accounts in 2010.

Participates in Conservation Rebate Programs from Regional Agencies. Active water conservation measures have been implemented in Huntington Beach since the late 1990s. The city has participated in all the water conservation rebates for residential and non residential customers put forward by MWDOC and MWD, but has never added resources to regional programs. Its customers have been awarded 6% of the rebates awarded to customers in Orange County between 1995 and 2010, while using 5% of the total imported water. Huntington Beach has also launched small in-house programs (such as discounted water barrels) and approved a landscape ordinance, a water management ordinance and an ordinance that allows the reuse of grey-water systems for lawn irrigation.

Flat Rate Water Pricing. Water rates do not encourage water conservation. Apart from a service rate that varies according to meter size, water is priced at a flat rate, \$1.75 per hundred cubic foot.

Can Meet Conservation Target but Lacks Strong Plans for Conservation. Huntington Beach has consistently reduced its per capita water consumption in the last 10 years thanks to rebate programs and intense home tenancy turnover. Thanks to the flexibility of SBX 7-7, it is not likely to have trouble meeting its 20 x 2020 goals. However, the City's Plans do not recognize how water conservation strategies play a role in imported water availability in the future.

Strong Credit Rating but Need Not Invest in Capital Projects to Increase Its Own Source Supply, Leaving Conservation as Primary Means to Manage Future Demand. Huntington Beach benefits from regional agencies' efforts to increase water supply sources for the region. The City owns and operates some groundwater pumping and distribution infrastructure, but OCWD is the agency that owns and operates the region's recycling water facilities, which benefit the City through increased groundwater availability. Huntington Beach's water supply could also be augmented in the future by desalinated water from the Poseidon private desalination plant being developed within the City. Another water supply initiative, large-scale storm water capture is likely precluded as an option for the City due to its largely built out conditions. This leaves conservation as the primary means through which the City can reduce consumption and manage increasing prices in the future.

City Lacks Realistic Plans for Addressing Potential Climate Change Impacts on Groundwater and Imported Water Sources. The city’s UWMP fails to mention the need for additional savings beyond the 20 x2020 target, and the targets are met in a “normal year”, while in the single dry year scenario, as well as in the three dry years spell scenario, per capita water consumption in 2020 will exceed 20 x 2020 targets by respectively 12% and 13%. In addition, instead of plans to reduce dependence on imported water sources, the city projects that it will increase its reliance on imported water from the current rate of 32% to 38%.

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Appendix A: Summary of Best Management Practices Data from California Urban Water Conservation Council Data, 1999 – 2008

	Huntington Beach
BMP 2	
Number of low-flow showerheads distributed (SF)	237
Number of low-flow showerheads distributed (MF)	0
Number of toilet-displacement devices distributed (SF)	62
Number of toilet-displacement devices distributed (MF)	0
Number of toilet flappers distributed (SF)	57
Number of toilet flappers distributed (MF)	0
Number of faucet aerators distributed(SF)	643
Number of faucet aerators distributed (MF)	0
BMP 5	
Number of Landscape Surveys Offered:	10
Number of Landscape Surveys Completed	10
Rebates to improve landscape water use efficiency - Budgets	43,000
Rebates to improve landscape water use efficiencys - Number Awarded to Customers	50
Rebates to improve landscape water use efficiencys - Number Awarded to Customers - Total Amount award	5,510
Grants - Budgets	
Grants - Number awarded to Customers	
Grants - Total Amount Award	
BMP 6	
1999 - 2004	
HEW Number of rebates awarded.	1,457
Budgeted Expenditures	2,200
Actual Expenditures	2,200
2005 - 2008	
HEW Water Factor Greater than 8.5 but not exceeding 9.5	
HEW num of fin Incentives issued	206
Total Value of Financial Incentives from Retail Water Agency	

Total Value of Financial Incentives from Wholesaler / Grands	
Total Value of Financial Incentives from Energy Utilities	
HEW TOTAL	
HEW Water Factor Greater than 6 but not exceeding 8.5	
HEW num of fin Incentives issued	329
Total Value of Financial Incentives from Retail Water Agency	
Total Value of Financial Incentives from Wholesaler / Grands	
Total Value of Financial Incentives from Energy Utilities	
HEW TOTAL	
HEW Water Factorless than 6	
HEW num of fin Incentives issued	2,394
Total Value of Financial Incentives from Retail Water Agency	-
Total Value of Financial Incentives from Wholesaler / Grands	151,100
Total Value of Financial Incentives from Energy Utilities	-
HEW TOTAL	151,100
BMP 7	
<i>1999 - 2004</i>	
Budgeted Expenditures for information	40,000
Actual Expenditures for information	17,842
<i>2005 - 2008</i>	
Actual Expenditures for information	
BMP 8	
<i>1999 - 2004</i>	
Actual Expenditures for education initiatives	
<i>2005 - 2008</i>	
Actual Expenditures for education initiatives	
BMP 9	
Ultra Low Flush Toilets - # Devices	108
Dual Flush Toilets - # Devices	-
High Efficiency Toilets - # Devices	30

High Efficiency Urinals - # Devices	-
Non-Water Urinals - # Devices	42
Commercial Clothes Washers - # Devices	-
Cooling Tower Controllers - # Devices	-
Food Steamers - # Devices	-
Ice Machines - # Devices	-
Pre-Rinse Spray Valves - # Devices	98
Steam Sterilizer Retrofits - # Devices	-
UX-ray Film Processors - # Devices	-
TOTAL System Calculated Savings:	17
Annual Site Savings	2
Annual Non Site Savings	14
TOTAL CII Program Performance Target Savings:	22
Budgeted Expenditures this year	-
Actual Expenditures	\$22,176.00
Rebates - Budgets	
Rebates for CII Customers - No. Awarded to Customers	340
Rebates for CII Customers - Totals \$ amount awarded	\$46,810.00
Grants - Budgets	
Grants - No. Awarded to Customers	
Grants - Totals \$ amount awarded	
BMP 11	
1999 - 2004	
Residential Total Revenue from Volumetric Rates	\$ 47,180,633
Residential Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ 47,845,872
Commercial Total Revenue from Volumetric Rates	\$9,961,351
Commercial Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$5,806,052
Industrial Total Revenue from Volumetric Rates	\$ -
Industrial Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ -
Institutional Total Revenue from Volumetric Rates	\$1,208,258
Institutional Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$1,560,972

Irrigation Total Revenue from Volumetric Rates	\$4,937,461
Irrigation Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$1,682,141
Other Total Revenue from Volumetric Rates	\$95,909
Other Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ -
Budgeted Expenditures this year	\$ -
Actual Expenditures this year	\$ -
2006 - 2008	
SF Total Revenue form Volumetric Rates	\$ 19,102,702
SF Total Revenue from Customer Meter/Service (fixed) charges	\$ 14,350,005
MF Total Revenue form Volumetric Rates	\$8,401,064
MF Total Revenue from Customer Meter/Service (fixed) charges	\$ 10,359,274
Commercial Total Revenue from Volumetric Rates	\$5,337,326
Commercial Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$3,756,362
Industrial Total Revenue from Volumetric Rates	\$1,102,266
Industrial Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ 534,136
Institutional Total Revenue from Volumetric Rates	\$ 345,232
Institutional Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ 192,451
Potable for irrigation Total Revenue form Volumetric Rates	\$4,029,388
Potable for irrigation Total Revenue from Customer Meter/Service (fixed) charges	\$1,490,338
Recycled Total Revenue form Volumetric Rates	\$ -
Recycled Total Revenue from Customer Meter/Service (fixed) charges	\$ -
Raw Total Revenue form Volumetric Rates	\$ -

Raw Total Revenue from Customer Meter/Service (fixed) charges	\$ -
Other Total Revenue from Volumetric Rates	\$ -
Other Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	\$ -
BMP 12	
Number of conservation staff (FTEs), including Conservation Coordinator.	1
Staffing Expenditures (In-house Only)	\$11,863
BMP Program Implementation Expenditures	\$12,500
BMP 14	
UTLF Rebate SF account	6,195
UTLF Rebate MF account	2,886
UTLF Direct Install SF account	-
UTLF Direct Install MF account	-
UTLF CBO Distribution SF account	-
UTLF CBO Distribution MF account	-
UTLF Other SF account	6,841
UTLF Other MF account	2,370
HET Rebate SF account	49
HET Rebate MF account	11
Dual Flush Rebate SF account	14
Dual Flush Rebate MF account	
Is a toilet retrofit on resale ordinance in effect for your service area?	No

