ONTARIO MUNICIPAL UTILITIES COMPANY

Recycled Water

Desalter Water

Ground Water

Imported Water

2010 Urban Water Management Plan

June 2011

City of Ontario

AKM

Final

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SECTION 1

PLAN PREPARATION

1-1 COORDINATION

Requirement

#45. Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (10620(d)(2)).

The City of Ontario (City) is a member of the Water Facilities Authority (WFA), Chino Basin Desalter Authority (CDA), Inland Empire Utilities Agency (IEUA), and Chino Basin Watermaster (CBWM). The City is also indirectly related to Metropolitan Water District (MWD) through its association with WFA and IEUA. Neighboring water retail agencies include the Cities of Chino and Upland, Monte Vista Water District (MVWD), Fontana Water Company (FWC), Jurupa Community Services District (JCSD), San Antonio Water Company (SAWC), and Cucamonga Valley Water District (CVWD). Copies of the 2010 Urban Water Management Plan Report (UWMP) are sent to all appropriate agencies. Table 1-1 summarizes the City's efforts to coordinate with the mentioned agencies.

Table 1-1 (DWR Table 1)
Coordination with appropriate agencies

Coordinating Agencies[1,2]	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
Water Facilities Authority (WFA)				X	X		
Chino Basin Desalter Authority (CDA)				X	X		
Inland Empire Utilities Agency (IEUA)				X	X		
Metropolitan Water District (MWD)				X	X		
Chino Basin Watermaster (CBWM)				X	X		
City of Chino					X		
City of Upland					X		
Monte Vista Water District (MVWD)					X		
Fontana Water Company (FWC)					X		
Jurupa Community Services District (JCSD)					X		
San Antonio Water Company (SAWC)					X		
Cucamonga Valley Water District (CVWD)				X	X		
County of San Bernardino					X		
General public			X				
Other							

[1] *Indicate the specific name of the agency with which coordination or outreach occurred.*

[2] *Check at least one box in each row.*

Requirement

#6. Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision (10621(b)).

The City does not supply water to other cities or any unincorporated County of San Bernardino (San Bernardino) or the neighboring County of Riverside (Riverside) territories. However, a sixty-day notice to inform the public and any other agencies of the opportunity to provide comments and feedback regarding the draft 2010 Urban Water Management Plan (UWMP) was released on April 8, 2011. A copy of the notice is included in Appendix A.

Requirement

#54. The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan (10635(b)).

The City does not supply water to other cities or any other unincorporated San Bernardino or Riverside County territories. This requirement, therefore, does not apply.

Requirement

#55. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan (10642).

Special interest groups and other organizations are not involved in the preparation of the 2010 UWMP. However, the general public is invited to attend the hearing prior to submission of the 2010 UWMP to DWR. They are encouraged to share their comments and make suggestions regarding the report. It is deemed the most efficient way to gather comments and suggestions from the water customers. The 2010 UWMP will be available for public review at the City's web site www.ci.ontario.ca.us starting June 7, 2011.

Requirement

#56. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code.

The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area (10642).

As mentioned in the public notice, dated April 8, 2011, the completed draft UWMP is made available for public review beginning June 7, 2011. The document is published on the City website at www.ci.ontario.ca.us.

A public hearing, in which the public is welcomed to share their comments and suggestions regarding the draft UWMP report, is scheduled on June 21, 2011 at 6 pm at the Ontario City Hall Council Chambers. More information is provided on the attached Public Notice included in Appendix A.

1-2 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

Requirement

#7. The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640) (10621(c)).

This requirement will apply, and be complied with, if amendments or "significant changes" need to be made before UWMP is deemed "complete" by DWR.

Requirement

#57. After the hearing, the plan shall be adopted as prepared or as modified after the hearing (10642).

The 2010 UWMP was adopted by the City Council on June 21, 2011, immediately following the public hearing.

Requirement

#58. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan (10643).

The 2005 UWMP was implemented by submitting to CUWCC bi-annual reports updated to show the City's progress on implementing of Best Management Practices, through expansion of the recycled water system; expanding desalter water capacity through CDA, and increasing its groundwater supplies by constructing new wells and treatment facilities. The City has also been actively promoting water conservation in the community through various rebates, school programs, conservation pricing, and water waste prohibition ordinances.

A similar approach will be used to implement the 2010 UWMP.

Requirement

#59. An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption (10644(a)).

Following the submittal of this UWMP to DWR on July 21, 2011, the City will forward copies of the 2010 UWMP to California State Library and the County of San Bernardino.

Requirement

#60. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours. (10645).

Adopted copies of the 2010 UWMP will be available for public review on the City web site www.ci.ontario.ca.us beginning August 19, 2011. A notice was posted to inform the public regarding the availability of the 2010 UWMP.

SECTION 2

SYSTEM DESCRIPTION

2.1 SERVICE AREA PHYSICAL DESCRIPTION

Requirement

#8. Describe the service area of the supplier (10631(a)).

The City of Ontario (City) is located 35 miles east of downtown Los Angeles and is bordered by the Cities of Chino and Montclair on the west; the Cities of Upland and Rancho Cucamonga on the north; the City of Fontana and Riverside County on the east; and Riverside County, and the City of Chino on the south. The predominant land uses are residential, commercial, industrial and agricultural, in addition to the Ontario International Airport. Figure 2-1 shows the location of the study area.

The City is divided into two distinct areas: Old Model Colony (OMC) and New Model Colony (NMC). OMC mostly consists of residential, commercial, and industrial developments, including the Ontario Airport. Annexed in 1999, the presently agricultural NMC is planned to be developed into residential, commercial, industrial and public uses. The combined 2010 service population for both OMC and NMC is 168,766. The projected population in 2035 is 352,500. Two small areas in the north central and northeastern sections of the City are served by the Cucamonga Valley Water District (CVWD) and are excluded from this study. Recent historical data show that the City produces an average of 29,315 AFY of potable water in the last ten (10) years and purchases about 11,304 AFY from Water Facilities Authority (WFA) and 5,195 AFY from Chino Basin Desalter Authority (CDA). There are currently 34,224 meters throughout the City.

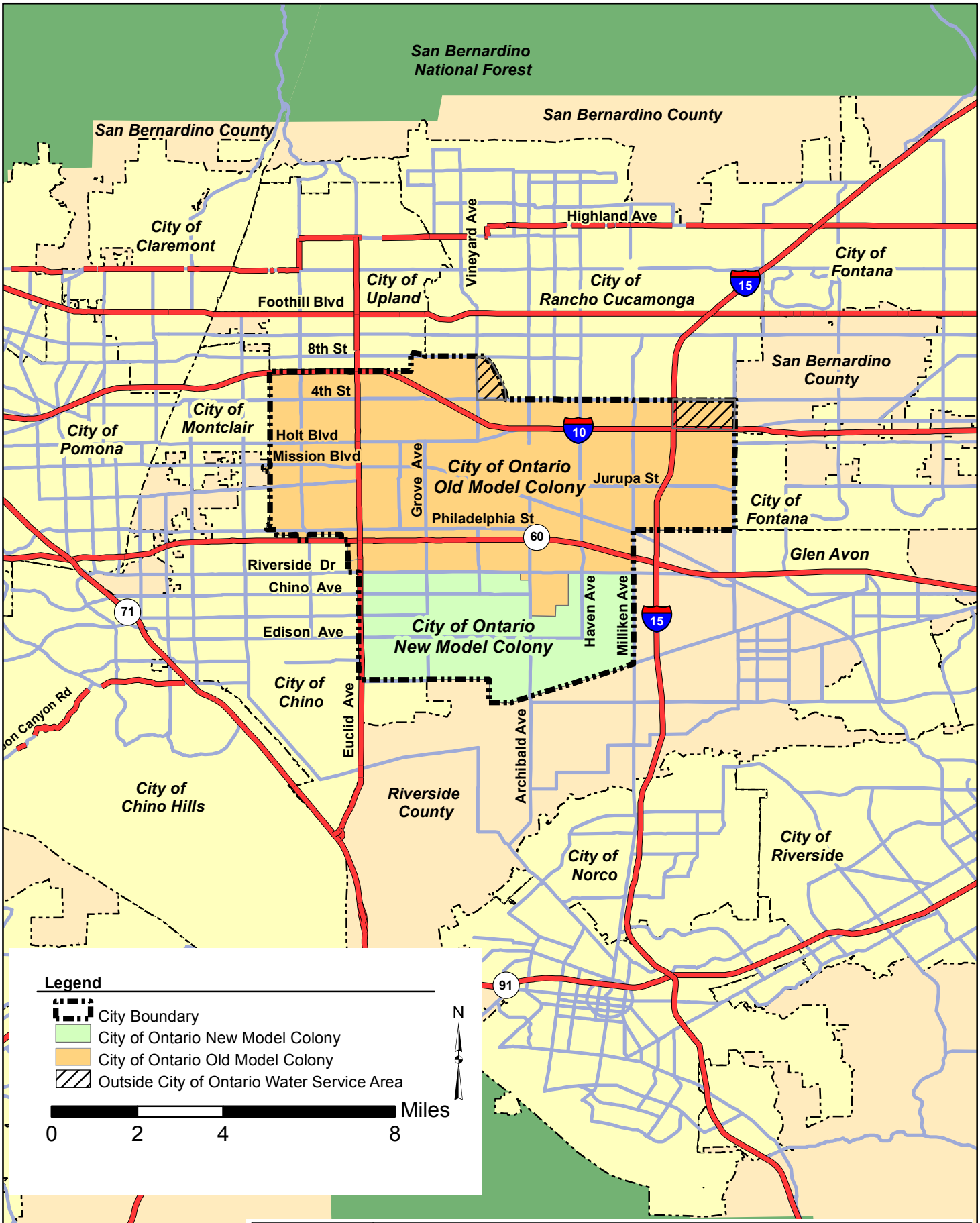
Topography and Geology

The City is located in the San Bernardino Plain, which is an expanse of sand, gravel and boulders. Dominating the valley are Mt. San Antonio, Cucamonga Peak, and Ontario Peak. Cucamonga Peak is visibly flat on top which represents sections of the original valley floor. Loose dirt and gravel flows swiftly from the slopes of these young mountains with the sometimes torrential rains.

The valley and plain has taken more than 10 million years to form. Geologists place the beginning of the area's geologic history between 12 and 28 million years ago, the same time the San Andreas Fault is believed to have been formed. The San Gabriel Mountains are part of the east-west trending transverse ranges, which run across the north-south grain of California. The San Gabriel Mountains are intersected 25 miles east of Ontario at the Cajon Pass by the San Andreas Fault.

These mountains were partially formed by geologic activity along this fault. Visible to the south of Ontario is a portion of the peninsular range consisting of the Santa Ana Mountains, the base of which is carved by the Santa Ana River. Several blocks of the Peninsular Range are separated by faults generally attributed to the San Andreas Fault system. Small rolling hills make up the north and west portions of the valley (Chino Hills, Diamond Bar, and the Covina Hills).

The Transverse and Peninsular Ranges meet in the San Gorgonio Pass area, 50 miles east of the City. Mount San Gorgonio is the tallest peak in Southern California and is frequently visible from the City.



CITY OF ONTARIO
URBAN WATER MANAGEMENT PLAN

PROJECT NO: 1001057.00

DATE: June 2011

Regional Location Map

Figure 2-1

Elevations

The topography of the region generally slopes in a southwesterly direction from 1170 to 630 feet above mean sea level (amsl).

Soils

Native soils, shown on Figure 2-2, consist of the following

Class I Soils

- Chino Silt Loam
- Grangeville Fine Sandy Loam
- Hanford Sandy Loam

Class II Soils

- Delhi Fine Sand
- Hanford Coarse Sandy Loam
- Hilmar Loamy Fine Sand

Class III Soils

- Tujunga Loamy Sand

Class IV Soils

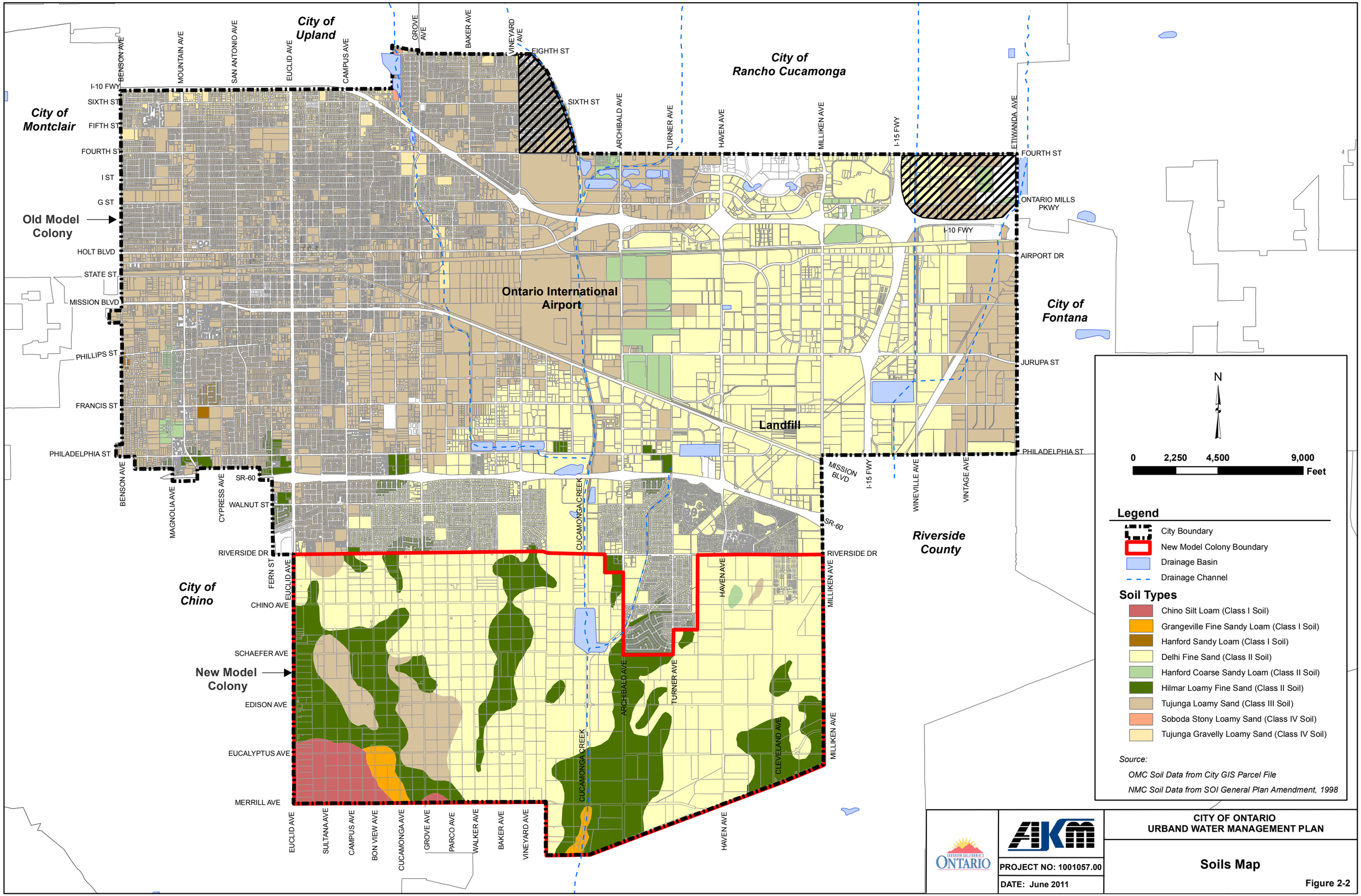
- Soboda Stony Loamy Sand
- Tujunga Gravelly Loamy Sand

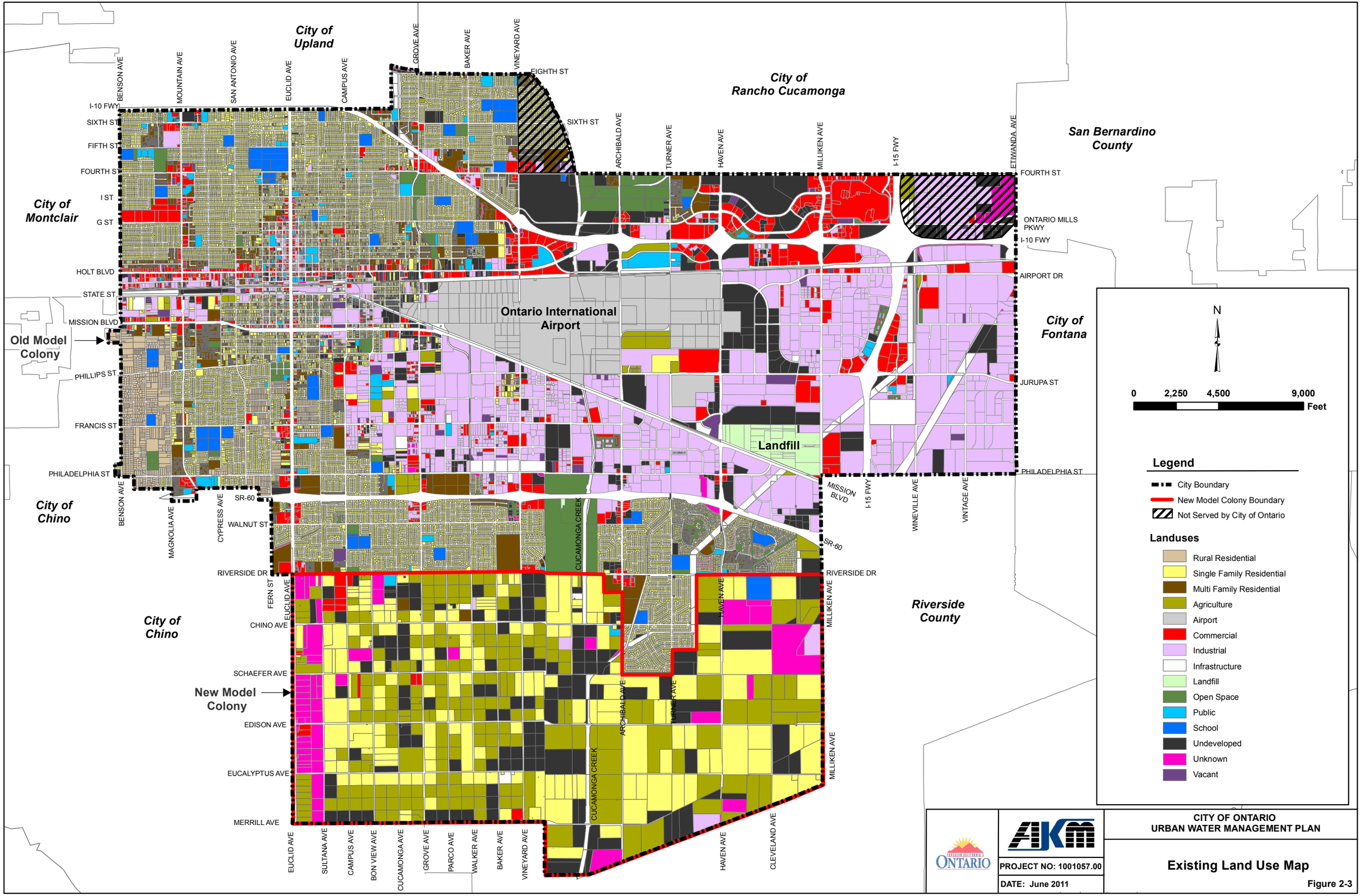
Due to the presence of predominantly dairy industries over a long period of time, prime agricultural soils, high in salts and nitrates, cover approximately 2,999 acres or 36 percent of the total area in the NMC (SOI General Plan Amendment, 1998). Organic materials (manure and feed) are reportedly present in thickness of up to six feet.

The NMC is located within the Chino Groundwater Basin, which has been found to maintain a relatively shallow water table. The SOI General Plan Amendment reported findings of groundwater elevations ranging from 530 to 590 feet in 1991. Water depths observed in 1991 were about 100 feet (SOI General Plan Amendment).

Existing Land Use

The City is a well planned urban community with a balance of residential, commercial, and industrial land uses. Within the service area, the primary land use in the City is residential (8,762 Ac or 28.0%). Industrial use also makes up a significant portion of the total existing land use (4,671 Ac or 14.9%). Approximately 3,290 acres or 10.5 percent of the total is currently undeveloped. Table 2-1 provides a summary of the existing land uses. Figure 2-3 shows the existing land uses within the City.


City of Upland
City of Rancho Cucamonga
City of Montclair
City of Fontana
Riverside County
City of Chino
Old Model Colony
New Model Colony
Ontario International Airport
Landfill
BENSON AVE
MOUNTAIN AVE
SAN ANTONIO AVE
EUCLID AVE
CAMPUS AVE
GROVE AVE
BAKER AVE
VINEYARD AVE
EIGHTH ST
SIXTH ST
ARCHIBALD AVE
TURNER AVE
HAVEN AVE
MILLIKEN AVE
I-15 FWY
ETIWANDA AVE
FOURTH ST
ONTARIO MILLS PKWY
I-10 FWY
AIRPORT DR
JURUPA ST
PHILADELPHIA ST
I-10 FWY
SIXTH ST
FIFTH ST
FOURTH ST
I ST
G ST
HOLT BLVD
STATE ST
MISSION BLVD
PHILLIPS ST
FRANCIS ST
PHILADELPHIA ST
SR-60
WALNUT ST
RIVERSIDE DR
CHINO AVE
SCHAEFER AVE
EDISON AVE
EUCALYPTUS AVE
MERRILL AVE
MAGNOLIA AVE
CYPRESS AVE
FERN ST
CUCAMONGA CREEK
MISSION BLVD
WINEVILLE AVE
VINTAGE AVE
CLEVELAND AVE
SULTANA AVE
BON VIEW AVE
PARCO AVE
WALKER AVE
N
0 2,250 4,500 9,000 Feet
Legend
City Boundary
New Model Colony Boundary
Drainage Basin
Drainage Channel
Soil Types
Chino Silt Loam (Class I Soil)
Grangeville Fine Sandy Loam (Class I Soil)
Hanford Sandy Loam (Class I Soil)
Delhi Fine Sand (Class II Soil)
Hanford Coarse Sandy Loam (Class II Soil)
Hilmar Loamy Fine Sand (Class II Soil)
Tujunga Loamy Sand (Class III Soil)
Soboda Stony Loamy Sand (Class IV Soil)
Tujunga Gravelly Loamy Sand (Class IV Soil)
Source:
OMC Soil Data from City GIS Parcel File
NMC Soil Data from SOI General Plan Amendment, 1998
ONTARIO
AKM
PROJECT NO: 1001057.00
DATE: June 2011
CITY OF ONTARIO
URBAND WATER MANAGEMENT PLAN
Soils Map
Figure 2-2



ONTARIO

AKM

PROJECT NO: 1001057.00

DATE: June 2011

CITY OF ONTARIO
URBAN WATER MANAGEMENT PLAN

Existing Land Use Map

Figure 2-3

Table 2-1
Existing Land Uses

Landuse Description		Service Area				Outside Service Area		Total City			
		OMC (Ac)	NMC (Ac)	Total (Ac)	% of Total	OMC (Ac)	% of Total	OMC (Ac)	NMC (Ac)	Total (Ac)	% of Total
RR	Rural Residential	566		566	1.8			566		566	1.8
SFR	Single Family Residential	4,489	2,585	7,074	22.6	115	115.0	4,604	2,585	7,189	22.5
MFR	Multiple Family Residential	1,099	23	1,122	3.6	44	44.0	1,143	23	1,166	3.6
	Total Residential	**6,154**	**2,608**	**8,762**	**28.0**	**159**		**6,313**	**2,608**	**8,921**	**27.9**
COM	Commercial	1,745	76	1,821	5.8	14	14.0	1,759	76	1,835	5.7
IND	Industrial	4,606	65	4,671	14.9	227	227.0	4,833	65	4,898	15.3
OPEN	Open Space	725	9	734	2.3			725	9	734	2.3
PUBLIC	Public	326	15	341	1.1			326	15	341	1.1
SCHL	Schools	419	38	457	1.5			419	38	457	1.4
ARPT	Airport	1,500		1,500	4.8			1,500		1,500	4.7
LF	Landfill	209		209	0.7			209		209	0.7
AGR	Agriculture	206	2,733	2,939	9.4	20	20.0	226	2,733	2,959	9.3
INF	Infrastructure	869	85	954	3.0	35	35.0	904	85	989	3.1
ROW	Right-of-Ways	4,362	372	4,734	15.1			4,362	372	4,734	14.8
UND	Undeveloped	1,767	1,523	3,290	10.5	79	79.0	1,846	1,523	3,369	10.5
UNK	Unknown	77	658	735	2.3	70	70.0	147	658	805	2.5
VAC	Vacant Buildings	198		198	0.6	9	9.0	207		207	0.6
	Total	**23,163**	**8,182**	**31,345**	**100.0**	**613**	**613**	**23,776**	**8,182**	**31,958**	**100.0**

Ultimate Land Use

The ultimate land uses are based upon the City's latest general plan document entitled The Ontario Plan (2010). Table 2-2 provides a summary of the ultimate land uses and Figure 2-4 shows the locations of these land uses. The residential area increases to 10,915 acres (34.2 percent of total). The employment area, including business parks and industrial uses, is expected to cover about 8,103 acres (25.4 percent of total).

Residential Land Uses

The Ontario Plan defines five residential land use categories: Rural, Low Density, Low-Medium Density, Medium Density, and High Density. The densities for each of the residential land use categories are provided in Table 2-2.

Retail / Service

Four retail / service uses are defined: Neighborhood Commercial, General Commercial, Office Commercial, and Hospitality. The intensities (floor area ratios) for each commercial use are shown in Table 2-2.

Employment

The Ontario Plan has two employment uses: Business Park and Industrial. The intensities for each employment type commercial use are shown in Table 2-2.

Table 2-2
Ultimate Study Area Land Uses

Land Use Category	Acres[2]	% of Total Area	Density (du/ac)[3]	Intensity (FAR)[3]	Units	Population[4]	Square Feet (Non-Office)	Square Feet (Office)	Total Square Feet	Jobs[5] (Non-Office)	Jobs[5] (Office)	Total Jobs[5]
Residential												
Rural Res	453	1.4	2.0		906	3,621						
LDR (OMC)	4,308	13.5	4.0		17,232	68,876						
LDR (NMC)	3,158	9.9	4.5		14,211	56,801						
LMDR (OMC)	295	0.9	8.5		2,508	10,026						
LMDR (NMC)	505	1.6	8.5		4,295	17,167						
MDR (OMC)	896	2.8	18.0		16,124	61,551						
MDR (NMC)	1,059	3.3	22.0		23,294	77,964						
HDR	241	0.8	35.0		8,421	28,185						
Subtotal	***10,915***	***34.2***			***86,991***	***324,192***						
Mixed Use												
Downtown	109	0.3	35.0		2,279	4,557	756,202	756,202	1,512,403	543	2,163	2,706
Euclid & Francis	10	0.0	30.0		156	312	181,210	0	181,210	419	0	419
Holt	55	0.2	30.0		412	824	478,289	1,195,722	1,674,011	343	3,420	3,763
Meredith	246	0.8	40.0		2,957	5,914	2,146,637	5,366,592	7,513,229	1,541	15,348	16,890
Hospitality	76	0.2	60.0		457	914	1,493,672	1,493,672	2,987,345	1,072	4,272	5,344
Ontario Festival (MxU in 14)	37	0.1	20.0		368	736	112,211	240,451	352,662	81	688	768
Guasti	83	0.3	30.0		500	1,001	1,089,871	1,271,516	2,361,388	783	3,637	4,419
Ontario Center (E. of Haven)	345	1.1	40.0		4,139	8,278	1,502,384	7,511,922	9,014,306	1,079	21,484	22,563
Mills	240	0.7	40.0		479	958	3,912,233	1,564,893	5,477,126	2,809	4,476	7,285
NMC south	316	1.0	35.0		3,315	6,630	962,632	5,775,795	6,738,427	691	16,519	17,210
NMC east	264	0.8	25.0		1,978	3,956	1,378,413	1,206,111	2,584,524	990	3,449	4,439
SR60 & Hamner	41	0.1	0.0		0	0	349,112	313,305	662,417	251	896	1,147
Subtotal	***1,822***	***5.7***			***17,039***	***34,078***	***14,362,865***	***26,696,182***	***41,059,046***	***10,601***	***76,351***	***86,952***
Retail/Service												
NC	277	0.9		0.30			2,896,914	724,229	3,621,143	6,692	2,071	8,763
GC	552	1.7		0.30			6,488,654	720,962	7,209,616	4,659	2,062	6,721
OC	526	1.6		0.75			5,151,406	12,019,946	17,171,352	3,699	34,377	38,076
HOS	145	0.5		1.00			5,049,475	1,262,369	6,311,844	3,626	3,610	7,236
Subtotal	***1,499***	***4.7***					***19,586,449***	***14,727,505***	***34,313,954***	***18,675***	***42,121***	***60,796***
Employment												
BP	1,357	4.2		0.40			11,821,313	11,821,313	23,642,626	7,684	33,809	41,493
IND	6,747	21.1		0.55			145,469,382	16,163,265	161,632,647	94,555	46,227	140,782
Subtotal	***8,103***	***25.4***					***157,290,695***	***27,984,578***	***185,275,273***	***102,239***	***80,036***	***182,275***
Other												
OS-NR	1,243	3.9										
OS-R	991	3.1										
OS-W	59	0.2										
PF	99	0.3										
PS	627	2.0										
ARPT	1,422	4.5										
Rail	247	0.8										
LF	137	0.4										
ROW	4,794	15.0										
Subtotal	***9,619***	***30.1***										
Total	***31,958***	***100.0***			***104,030***	***358,270***	***191,240,009***	***69,408,264***	***260,648,273***	***131,515***	***198,508***	***330,023***

Notes

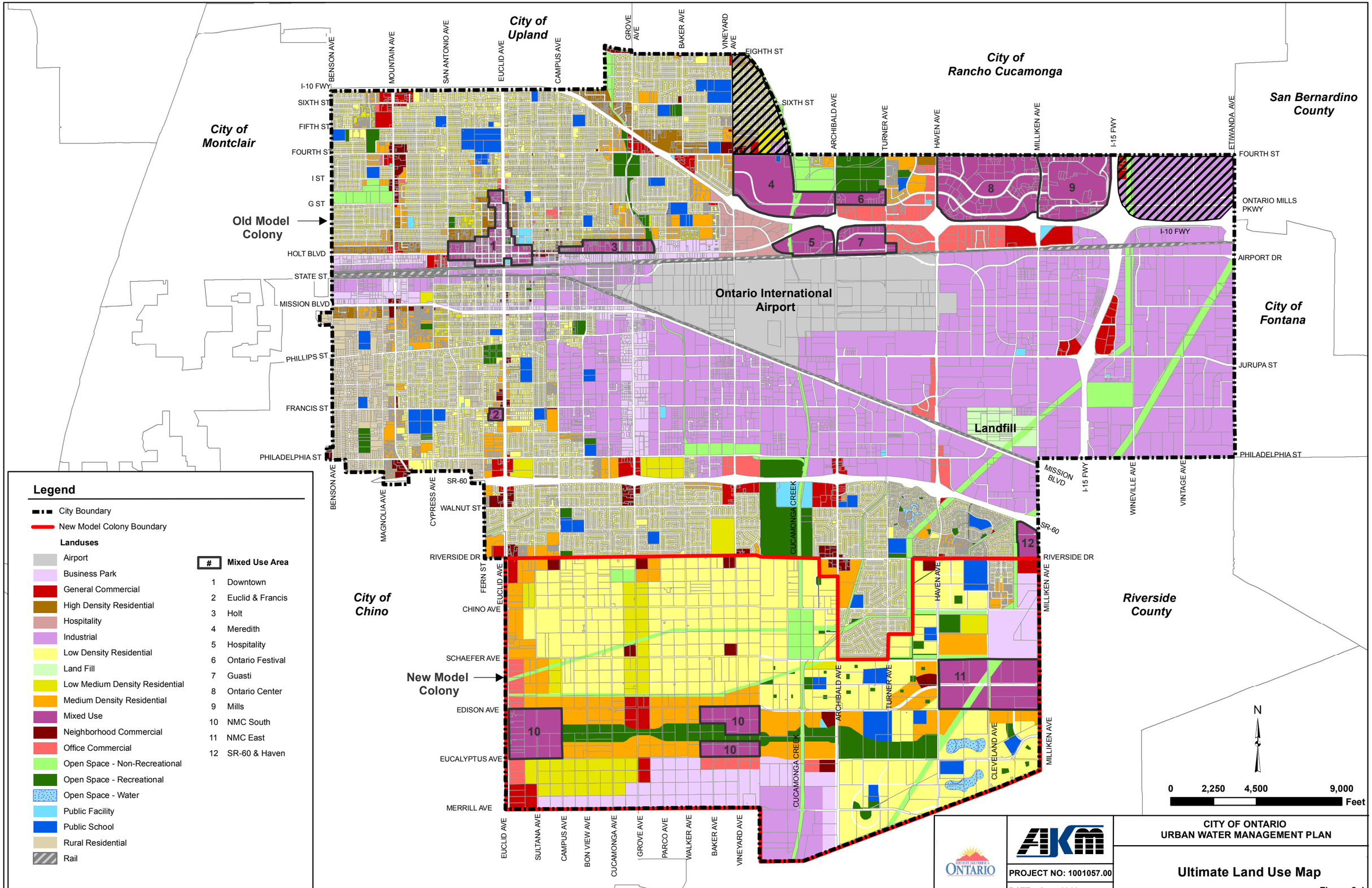
[1] Historically, citywide buildout levels do not achieve the maximum allowable density/ intensity on every parcel and are, on average, lower than allowed by the General Plan. Accordingly, the buildout estimates in this General Plan do not assume buildout at the maximum density or intensity and instead are adjusted downward to account for variations in buildout intensity. Buildout assumptions are as agreed upon on 2-4-08.

[2] Acres are given as adjusted gross acreages, which do not include the right-of-way for roadways, flood control facilities, or railroads.

[3] Density/ Intensity includes both residential density, expressed as units per acre, and non-residential intensity, expressed as floor area ratio (FAR), which is the amount of building square feet in relation to the size of the lot.

[4] Estimates of population by residential designation are based on a persons-per-household factor that varies by housing type. 3.347 pph for MF, 3.278 pph for sfa, and 3.997 pph for sfd.

[5] The factors used to generate the number of employees are 2.310 e/ 1000 sf of community commercial; .718 e/ 1000 sf of regional commercial; .650 e/ 1000 sf of industrial; and 2.86 e/ 1000 sf of office.


City of Upland
City of Rancho Cucamonga
City of Montclair
San Bernardino County
City of Fontana
Riverside County
City of Chino
Old Model Colony
New Model Colony
Ontario International Airport
Landfill
BENSON AVE
MOUNTAIN AVE
SAN ANTONIO AVE
EUCLID AVE
CAMPUS AVE
GROVE AVE
BAKER AVE
VINEYARD AVE
EIGHTH ST
SIXTH ST
ARCHIBALD AVE
TURNER AVE
HAVEN AVE
MILLIKEN AVE
I-15 FWY
ETIWANDA AVE
I-10 FWY
FOURTH ST
ONTARIO MILLS PKWY
AIRPORT DR
JURUPA ST
PHILADELPHIA ST
MISSION BLVD
WINEVILLE AVE
VINTAGE AVE
SR-60
RIVERSIDE DR
CUCAMONGA CREEK
CLEVELAND AVE
FIFTH ST
I ST
G ST
HOLT BLVD
STATE ST
PHILLIPS ST
FRANCIS ST
WALNUT ST
MAGNOLIA AVE
CYPRESS AVE
FERN ST
CHINO AVE
SCHAEFER AVE
EDISON AVE
EUCALYPTUS AVE
MERRILL AVE
SULTANA AVE
BON VIEW AVE
CUCAMONGA AVE
PARCO AVE
WALKER AVE
1
2
3
4
5
6
7
8
9
10
11
12
Legend
City Boundary
New Model Colony Boundary
Landuses
Airport
Business Park
General Commercial
High Density Residential
Hospitality
Industrial
Low Density Residential
Land Fill
Low Medium Density Residential
Medium Density Residential
Mixed Use
Neighborhood Commercial
Office Commercial
Open Space - Non-Recreational
Open Space - Recreational
Open Space - Water
Public Facility
Public School
Rural Residential
Rail
Mixed Use Area
1 Downtown
2 Euclid & Francis
3 Holt
4 Meredith
5 Hospitality
6 Ontario Festival
7 Guasti
8 Ontario Center
9 Mills
10 NMC South
11 NMC East
12 SR-60 & Haven
N
0 2,250 4,500 9,000 Feet
ONTARIO
AKM
PROJECT NO: 1001057.00
DATE: June 2011
CITY OF ONTARIO
URBAN WATER MANAGEMENT PLAN
Ultimate Land Use Map
Figure 2-4

Open Space

Open Space land use designations include Non-Recreational Open Space, Recreational Open Space and Water Open Space (i.e. lakes, ponds, etc).

Public

Public land use designations include Public Facility and Public School.

Other

Other land use designations include the Ontario International Airport, Landfill, Railroad and Roadway

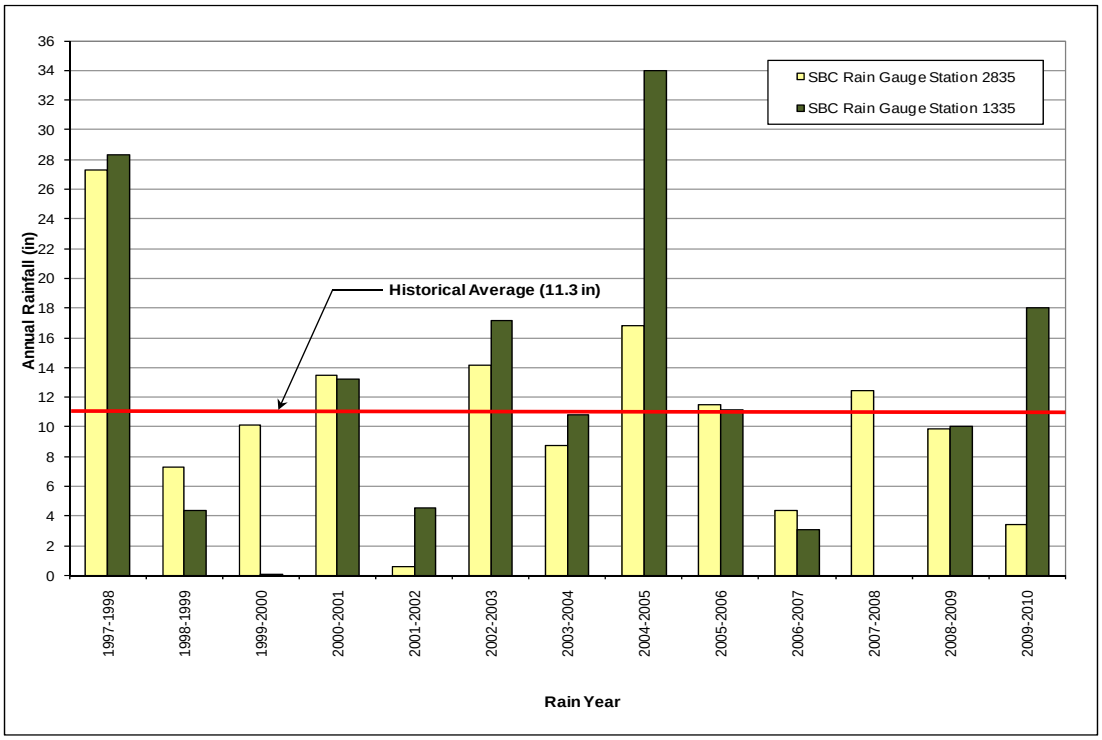
Requirement

#9. (Describe the service area) climate (10631(a)).

Climate

The climate in the area is typical of Southern California with generally mild temperatures, virtually no days below freezing, and approximately 312 days of sunshine per year. The average median temperature is approximately 83°F. The historical average annual rainfall in the City is about 11.3 inches, as recorded by the San Bernardino County Rain Gauge Stations 2835 and 1335. The maximum rainfall recorded at the two stations is 27.82 inches (average of the two stations) in 1997-1998, and the minimum is 2.58 inches in 2001-2002. Most of the rainfall occurs between October and April. Annual rainfall between 1997 and 2010 is shown on Figure 2-5.

Figure 2-5
Annual Rainfall 1997-2010



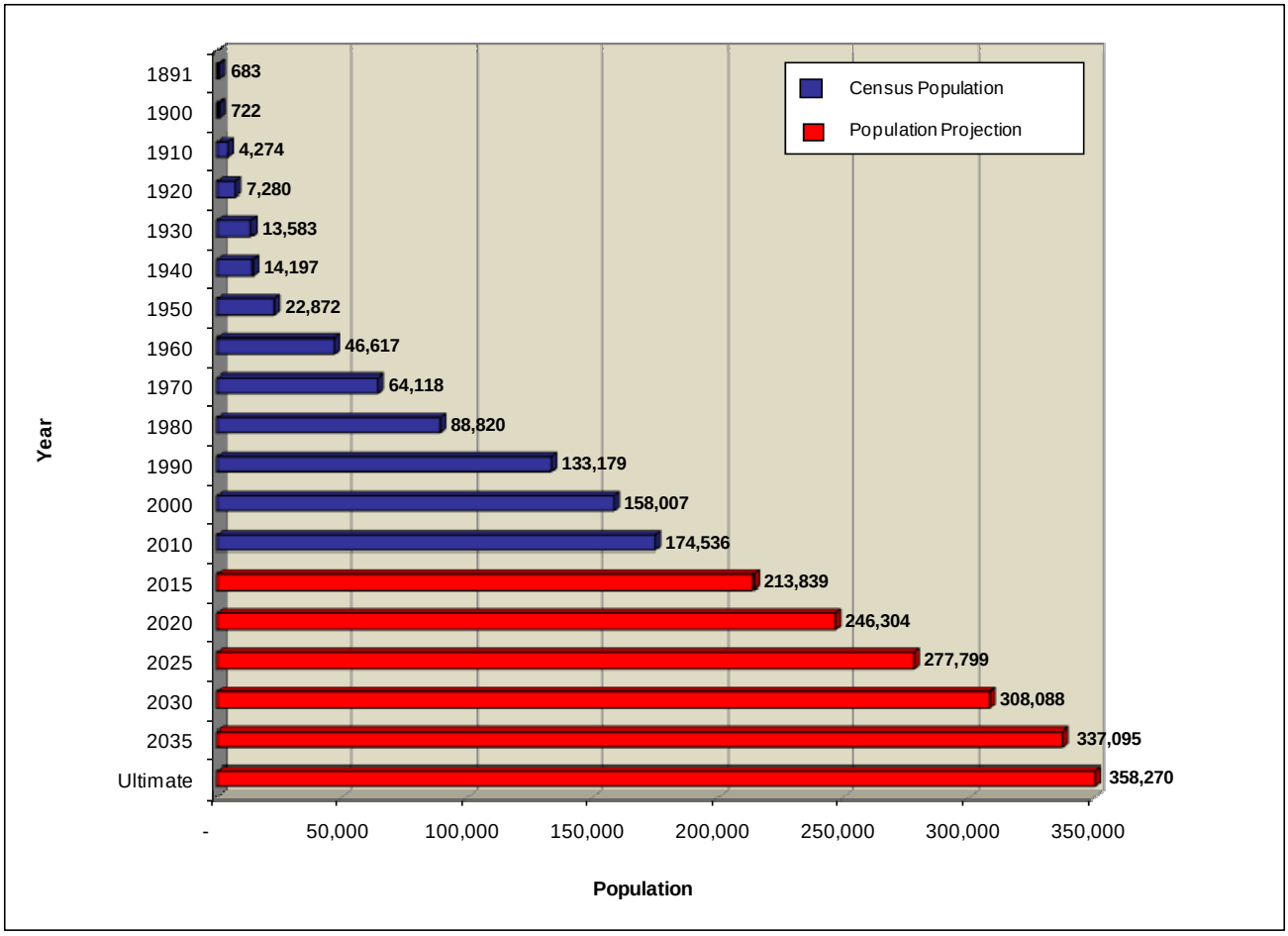
2.2 SERVICE AREA POPULATION

Requirement

#10. (Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . . (10631(a)).

Since its incorporation in 1890, the City has grown from a population of 683 to approximately 174,536 in 2010 (Ref: California Department of Finance). The City's total population in 2005 was 170,069 according to State Department of Finance estimates. The expected ultimate population in 2035 is estimated at 358,270, which will occur through infill, densification in OMC, and development of NMC (Ref: SCAG Adopted 2008 Regional Transportation Plan Growth Forecast). Population history and future projections are shown in Figure 2-6.

Figure 2-6
Historical and Projected Population



Reference: Historical population data from California State Department of Finance.
Population projections from SCAG Adopted 2008 Regional Transportation Plan Growth Forecast

While the service area mostly coincides with the City boundary, two small areas in the north central and north eastern sections of the City are served by Cucamonga Valley Water District (CVWD). They account for approximately 3% of the City's total population. Since 2007, CVWD's customers in the City remain unchanged

at 5,770 (Ref: CVWD). The study area is limited to those communities receiving water service from the City of Ontario, with a population of 352,500.

Requirement

#11. . . . (population projections) shall be in five-year increments to 20 years or as far as data is available (10631(a)).

The City's total population, service area population, and CVWD customers within the City limits are listed in Table 2-3 (DWR Table 2).

Table 2-3 (DWR Table 2)
Population – current and projected

	2010	2015	2020	2025	2030	2035 - optional	Data source[2]
Total Population	174,536	213,839	246,304	277,799	308,088	358,270	SCAG 2008
Cucamonga Valley Water District	5,770	5,770	5,770	5,770	5,770	5,770	CVWD
Service area population[1]	168,766	208,069	240,534	272,029	302,318	352,500	

[1] Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).
[2] Provide the source of the population data provided.

The large increase in population in the years following 2010 can be attributed to the expansion of NMC, which was annexed in 1999. It is currently comprised of mostly agricultural land but is planned to be developed into residential, commercial, industrial, and public uses.

Requirement

#12. Describe . . . other demographic factors affecting the supplier's water management planning (10631(a)).

In 2000, the City had approximately 45,182 housing units and a 3.67 vacancy rate, resulting in 3.6 persons per household. In comparison, the total number of housing units stands at approximately 47,795 with a 3.7 vacancy rate in 2010. Consequently, the population per household can be estimated to be 3.8 (Ref: California Department of Finance). The City aims to have a full range of housing types and community services that meet the special housing needs for all its residents, regardless of income level, age or other status.

Customer Base

The City is planned to have the following characteristics:

- A highly diverse economic base that capitalize on early regional centers, strategic corridor locations and international markets as the impetus for the extensive financial and technical centers that now exist.
- Extensively revitalized sectors of the Old Model Colony and mature mixed use centers in key opportunity areas.
- Sustained economic viability and leadership in the region that reflects a highly trained and diverse workforce and that confirms Ontario as an investment destination of choice.
- A world-class airport that is a focal point and magnet for dynamic, multi-faceted metropolitan commercial, cultural and tourist centers serving the economic interests of Ontario and the Southern California region: in effect, a world-renowned "aerotropolis"

- Prudent public ownership and timely disposition of strategic properties where public ownership can be demonstrated to reinforce market forces in achieving the City's economic development and revitalization goals.
- Mature and highly productive industrial areas that set the standards in the region for efficient land use, environmental management and workforce employment opportunities
- Development quality that is broadly recognized as distinctive and not exclusively tied to the general suburban character typical of much of Southern California
- A system of vibrant retail centers responsive to market demands
- A reputation for being good for business to work with while still satisfying broader community interests
- A demonstrated ability to attract housing in pursuit of City's acknowledged responsibility to balance housing with the job growth that drives quality of life in Ontario
- One of the most comprehensive and diverse housing stocks in the region that offers broad choices for its diverse workforce and their families, ranging from entry level housing to executive level development; from semi-rural to highly urban
- Distinctive and well maintained neighborhoods that offer exceptional variety in lifestyles, with convenient access to schools, recreation and cultural facilities, places of worship, places of employment and shopping
- A contemporary arrangement of villages that facilitates identification with the total Ontario community (New Model Colony) – a key to enabling Ontario to achieve the unity it desires
- Diverse and highly successful villages that benefit from preservation, enhancement and selective intensification (Old Model Colony)

Housing and Disadvantaged Communities

Many families in the City have special housing needs. They are the severely low income earners, single-parent and female-headed families, large families, seniors, people with disabilities, and homeless persons.

Extremely low income earners account for 4,730 households in the City. Most of them are renters since homeownership is essentially infeasible. Out of the 1,828 planned very low income units for 2006 to 2014, 914 units are designated for extremely low income families. Significant financial subsidies are necessary to assist extremely low income earners in acquiring affordable housing. The City's efforts in providing this assistance are concentrated on rental housing vouchers.

Large families, defined as households with five or more members, account for 12,468 of all households in the City. Approximately 7,075 of them are homeowners, and 5,392 are renters. In addition, the City is home to about 5,783 single-parent families (4,000 of which are female-headed), whose median income is $29,000 ($21,000 for female-headed). Large families are typically more prone to overpayment since they require bigger houses. Those who live in cheaper, smaller apartments experience overcrowding and substandard living conditions. To solve the housing problem among large families and single-parent households, the City offers 1,760 low cost units at mobile home parks, 831 deed restricted apartments, and 800 units in 12 publicly assisted multi-family housing projects. More than 300 units as part of the Ontario Town Square project are also being built.

Seniors fall into the special housing needs category due to their low income, higher health care costs, and disabilities. The 2000 Census determined that 12% of Ontario residents were 65 years and older. This percentage is expected to increase up to 50% in the coming years due the aging baby boomers. It is estimated that 48% of the 3,795 senior homeowners and 82% of the 1,497 senior renters are low income. Senior Housing (i.e. reserved housing projects and mobile home parks for those 55 and older), assisted living facilities, convalescent homes (i.e. nursing homes), and care facilities in select residential neighborhoods are readily available as housing options for the City's aging population. There are currently 624 senior apartments, 450 units at senior mobile home parks, and 374 residential care facilities. Another 300 units at senior projects are proposed.

Many people with disabilities who reside in the City require specialized housing in order to live independent or semi-independent lives. This type of housing needs to be affordable, accessible, have adequate resources for more specialized care, and offer supportive services that allow for a full life. Currently, there are 739 housing units for persons with disabilities.

Lastly, there are some 531 homeless persons living in Ontario, as identified by the 2007 San Bernardino County Homeless Census. Programs that are currently in place to aid the homeless include emergency shelters, transitional housing, and permanent supportive housing.

The Housing Element of the 2010 Ontario Plan addresses the need for adequate housing for the aforementioned groups.

SECTION 3

SYSTEM DEMANDS

3.1 WATER DEMANDS

Requirement

#25. Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; (I) Agricultural (10631(e)(1) and (2)).

3.1.1 Historical Water Demands

Water consumption within the City of Ontario (City) service area averaged 42,271 AFY between 2000 and 2009. Water production and purchase averaged 43,173 AFY during the same period. The discrepancy is partly due to the differences in the accuracies of the few large meters which measure purchases and production, and the thousands of small customer meters which measure sales. Unaccounted for water can also be due to unmeasured uses such as water main flushing and other maintenance related tasks. The remainder may be due to leaks from the system. The average water loss within the last 10 years is about 2.4%, which is well within the industry standards. Table 3-1 shows the water consumption versus production and purchase for the period between 2000 and 2009, as well as the regional water consumption per capita for the IEUA service area, as provided in Table 2-3 of IEUA 2010 Urban Water Management Plan.

Table 3-1
Water Consumption Versus Water Production/Purchase
Water Deliveries – Actual, 2005

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	26,270	16,421	0	0	16,421
Multi-family	2,227	6,147	0	0	6,147
Commercial	3,507	8,369	0	0	8,369
Industrial	372	2,402	0	0	2,402
Institutional/governmental		1,178	0	0	1,178
Landscape	1,133	6,813	0	0	6,813
Agriculture			0	0	0
Other		378	0	0	378
Total	33,509	41,709	0	0	41,709

Units (circle one): acre-feet per year million gallons per year cubic feet per year

The City of Ontario's per capita water consumption was lower than the regional per capita consumption in nine of the ten years, and averaged approximately 7 percent lower than the regional average over the same ten year period. A significant drop in water demand and production/purchase has taken place since 2007. This is partly due to the due to the economic downturn, and partly to the City's rigorous implementation of the demand management measures.

Table 3-2 (DWR Table 3) illustrates the water deliveries in 2005 by land use category. The total delivery estimated in the 2005 UWMP was 39,428 AFY, which is 6.6% lower than the actual delivery (41,709 AFY). Table 3-3 (DWR Table 4) shows the water deliveries for Fiscal Year 2010, which totaled 37,132 AFY. The actual delivery is 10,959 AFY lower than the delivery estimated by the 2005 UWMP (48,091 AFY). This is mostly due to the slowdown in housing construction. The land use planning which formed the basis for the 2005 UWMP included 34,903 single family and 2,812 multi-family accounts, compared to 29,473 single family and 2,069 multi-family accounts that existed in 2010.

Table 3-2 (DWR Table 3)
Water deliveries — actual, 2005

	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	28,932	16,421	0	0	16,421
Multi-family	2,244	6,147	0	0	6,147
Commercial	3,095	8,369	0	0	8,369
Industrial	327	2,402	0	0	2,402
Institutional/governmental	320	1,178	0	0	1,178
Landscape	1,246	6,813	0	0	6,813
Agriculture			0	0	0
Other	161	378	0	0	378
Total	36,325	41,709	0	0	41,709

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 3-3 (DWR Table 4)
Water deliveries — actual, 2010

	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	29,473	13,253	0	0	13,253
Multi-family	2,069	5,425	0	0	5,425
Commercial	3,285	6,692	0	0	6,692
Industrial	278	2,044	0	0	2,044
Institutional/governmental			0	0	0
Landscape	1,245	7,170	0	0	7,170
Agriculture			0	0	0
Other	308	819	0	0	819
Total	36,658	35,403	0	0	35,403

Units (circle one): acre-feet per year million gallons per year cubic feet per year

3.1.2 Projected Potable Water Demands

The projected potable water demands were determined based upon the existing demands, the land use planning adopted by the City (The Ontario Plan), and the unit demand factors developed for future development. Demands were calculated for the Old Model Colony and New Model Colony as described in this section.

The existing demands in the Old Model Colony are developed from actual water meter records by customer type. In estimating the residential water demands, a portion of the consumption for the irrigation meters (15% of the total irrigation consumption) is estimated to serve multi-family residential development common areas, and was added to the residential water meter consumption records. Based upon the existing total residential consumption and existing population, a residential per capita consumption of 133 gallons was determined, including unaccounted for water.

Future residential water demand in the Old Model Colony was determined by adding the future development area demands to the existing demands. Future development consisted of vacant areas to be developed, and re-development areas.

In estimating the deliveries for the future planning periods, future development is assumed to take place at a constant rate, where the same number of customers is added for each land use category. The total number of future customers is estimated by the ratio of the existing delivery to the existing number of customers for commercial, industrial, institutional and landscape categories.

Tables 3-4 through 3-6 (DWR Tables 5, 6, and 7) show the projected water deliveries for 2015; 2020; 2025, 2030, and 2035, based upon current land use projections.

Table 3-4 (DWR Table 5)
Water deliveries — projected, 2015

	2015				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	31,109	14,625	0	0	14,625
Multi-family	14,606	8,512	0	0	8,512
Commercial	2,628	6,930	0	0	6,930
Industrial	400	2,808	0	0	2,808
Institutional/governmental	0	900	0	0	900
Landscape	1,360	7,475	0	0	7,475
Agriculture	0	0	0	0	0
Other	0	655	0	0	655
Total	50,104	41,906	0	0	41,906

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 3-5 (DWR Table 6)
Water deliveries — projected, 2020

	2020				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	32,746	15,996	0	0	15,996
Multi-family	27,143	11,599	0	0	11,599
Commercial	1,971	7,169	0	0	7,169
Industrial	523	3,573	0	0	3,573
Institutional/governmental	0	1,801	0	0	1,801
Landscape	1,475	7,780	0	0	7,780
Agriculture	0	0	0	0	0
Other	0	492	0	0	492
Total	63,858	48,408	0	0	48,408

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Table 3-6 (DWR Table 7) Water deliveries — projected 2025, 2030, and 2035						
	2025		2030		2035 - optional	
	metered		metered		metered	
Water use sectors	# of accounts	Volume	# of accounts	Volume	# of accounts	Volume
Single family	34,382	17,368	36,019	18,739	37,655	20,111
Multi-family	39,679	14,685	52,216	17,772	64,753	20,859
Commercial	1,314	7,407	1,314	7,645	0	7,884
Industrial	645	4,337	645	5,101	890	5,866
Institutional/governmental	0	2,701	0	3,601	0	4,501
Landscape	1,591	8,085	1,591	8,390	1,821	8,695
Agriculture	0	0	0	0	0	0
Other		328		164		
Total	77,612	54,911	91,785	61,413	105,120	67,916
Units (circle one): acre-feet per year million gallons per year cubic feet per year						

Water Sales to Other Agencies

The City of Ontario currently does not sell water to other agencies, and there are no plans to sell water to other agencies in the future. Table 3-7 (DWR Table 9) lists the City's sales to other water agencies.

Table 3-7 (DWR Table 9) Sales to other water agencies							
Water distributed	2005	2010	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	0	0	0	0	0	0	0
Units (circle one): acre-feet per year million gallons per year cubic feet per year							

3.1.3 Additional Water Uses and Losses

Additional water uses and losses consist of saline water barrier demand, groundwater recharge, conjunctive use, raw water, recycled water, and system losses (unaccounted for water).

The City of Ontario does not currently have any saline water barrier demand nor will it have it in the future.

Groundwater recharge in the Chino Groundwater Basin is a regional effort. It is accomplished by the Chino Basin Watermaster, Chino Basin Water Conservation District, and IEUA, in cooperation with the San Bernardino County Flood Control District. The implementation program (Chino Basin Facilities Improvement Program) includes construction of facilities to divert imported water, storm water, and recycled water to 18 recharge sites at San Bernardino County Flood Control District retarding basins and flood control channels. Because of these efforts, the City of Ontario does not have a groundwater recharge program of its own.

The City does not have any additional water uses such as conjunctive use or raw water projects.

It does have a well planned recycled water supply program, which will increase existing delivery from 1,547 AFY to 18,385 AFY at ultimate development of the service area. Additionally, the City's Recycled Water Master Plan includes 5,230 AFY of potential conversions in the Old Model Colony area, which could bring the total recycled water service up to 23,615 AFY. However, the actual planning is currently based on providing 18,385 AFY by year 2035.

Some of the system losses are due to inaccuracies of the nearly 35,000 smaller customer meters compared to the few larger supply and production meters which are maintained and calibrated more frequently than the smaller customer meters; water main flushing and other maintenance purposes; and system leaks. This is

also referred to as "unaccounted for water", which has varied from 1.2% to 4.6% between 2001 and 2010, with an average of 2.4%. The current Water Master Plan was prepared based on 5% unaccounted for water, which is also used in this UWMP for consistency.

Table 3-8 (DWR Table 10) illustrates the additional water uses and losses between 2005 and 2035.

Table 3-8 (DWR Table 10)
Additional water uses and losses

Water use[1]	2005	2010	2015	2020	2025	2030	2035 -opt
Saline barriers	0	0	0	0	0	0	0
Groundwater recharge	0	0	0	0	0	0	0
Conjunctive use	0	0	0	0	0	0	0
Raw water	0	0	0	0	0	0	0
Recycled water	1,829	1,976	4,173	7,726	11,279	14,832	18,385
System losses (included in Demands)	3,154	0	0	0	0	0	0
Total	4,983	1,976	4,173	7,726	11,279	14,832	18,385

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Any water accounted for in Tables 3 through 7 are not included in this table.

3.1.5 Total Water Use

The total water use from 2005 and projections up to 2035 are presented in Table 3-9 (DWR Table 11).

Table 3-9 (DWR Table 11)
Total water use

Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from DWR Tables 3 to 7)	41,709	35,403	41,906	48,408	54,911	61,413	67,916
Sales to other water agencies (from DWR Table 9)	0	0	0	0	0	0	0
Additional water uses and losses (from DWR Table 10)	4,983	1,976	4,173	7,726	11,279	14,832	18,385
Total	46,692	37,379	46,079	56,134	66,190	76,245	86,301

Units (circle one): acre-feet per year million gallons per year cubic feet per year

3.1.6 Low-income Projected Water Demands

Requirement

#34. The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier (10631.1(a)).

The Housing Element of the 2010 Ontario Plan identifies 17,812 (38% of all households) households that are considered low income, of which 10,644 are renters and 7,168 are homeowners. This includes disadvantaged communities, such as large and single-parent families, seniors, and people with disabilities. For estimation purposes, renters are assumed to be living in multi-family residential units, such as apartments and mobile homes, and homeowners in single family homes. In the future, it is assumed that the proportion of low income households will be the same as in 2010. Table 3-10 (DWR Table 8) shows the estimated water demands for the low-income segment of the City's service area.

Table 3-10 (DWR Table 8)
Low-income projected water demands

Low Income Water Demands[1]	2015	2020	2025	2030	2035 - opt
Single-family residential	4,376	5,656	6,935	8,215	9,495
Multi-family residential	2,623	4,104	5,586	7,067	8,549
Total	6,999	9,760	12,521	15,282	18,043

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Provide demands either as directly estimated values or as a percent of demand.

3.2 Baselines and Targets

Requirement

#1. An urban retail water supplier shall include in its urban water management plan . . . due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data (10608.20(e)).

As shown in Table 3-11 (DWR Table 13), the City's 2008 recycled water use only amounted to 6.3% of its total water deliveries for that year. Therefore, a 10-year base period, in compliance with Section 10608.20 of SBX7-7, is used to calculate the City's baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use. The selected years are from 1995 to 2004. For the 5-year base period, to satisfy the requirements of Section 10608.22 of SBX7-7, the years from 2003 to 2007 are used.

Table 3-11 (DWR Table 13)
Base period ranges

Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	42,072	*see below*
	2008 total volume of delivered recycled water	2,637	*see below*
	2008 recycled water as a percent of total deliveries	6.3	percent
	Number of years in base period[1]	10	years
	Year beginning base period range	1995	
	Year ending base period range[2]	2004	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2003	
	Year ending base period range[3]	2007	

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

[3] The ending year must be between December 31, 2007 and December 31, 2010.

Population data used in the baseline calculations is gathered from the California Department of Finance, and reduced by the population of the City area served by the Cucamonga Valley Water District (CVWD). Table 2-3 presents the City's service population. Service population for the base years (1995 to 2004) are tabulated in Table 3-12 (DWR Table 14).

Table 3-12 (DWR Table 14)
Base daily per capita water use — 10- to 15-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1995	138,976	32	232
Year 2	1996	140,276	36	258
Year 3	1997	142,064	38	267
Year 4	1998	144,688	35	240
Year 5	1999	147,005	35	235
Year 6	2000	152,524	38	252
Year 7	2001	153,951	39	251
Year 8	2002	157,752	40	256
Year 9	2003	160,641	38	238
Year 10	2004	162,528	40	246
			Base Daily Per Capita Water Use[1]	248

[1] Add the values in the column and divid by the number of rows.

Also shown in Table 3-12 is the gross water use from 1995 to 2004, reported by the City to the DWR annually. By averaging the individual annual daily per capita water use, which is calculated for each of the years in the 10-year base period, the 20x2020 baseline daily per capita water use is determined to be 248 gallons per day per capita (gpcd).

Utilizing Method 1, as discussed in *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, in which a flat rate of 20% reduction is calculated from the baseline, the 2020 urban water use target is determined to be 198 gpcd. Using the same method, the interim target for 2015 is determined to be 223 gpcd. The baselines and targets are individually developed by the City.

The City's progress in attaining its goal to reduce its average per capita water use is illustrated in Table 3-13 (DWR Table 15), which calculates the baseline daily per capita water use for the selected 5-year base period. The average per capita water use dropped from 248 gpcd to 235 gpcd. This indicates a great potential for the City to meet its 2020 urban water use target since it is now well underway in decreasing its per capita water use.

Table 3-13 (DWR Table 15)
Base daily per capita water use — 5-year range

Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	160,641	38	238
Year 2	2004	162,528	40	246
Year 3	2005	164,308	37	223
Year 4	2006	164,763	38	231
Year 5	2007	166,058	40	240
			Base Daily Per Capita Water Use[1]	235

[1] *Add the values in the column and divide by the number of rows.*

Wholesale Agency Water Demand Projections

Requirement

#33. Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c) (10631(k)).

Historically, the City purchased an average of 11,297 AFY from WFA and 5,221 AFY from CDA. Construction of new and replacement wells and the expansion of the recycled water system have made the City less dependent on imported water. Table 3-14 tabulates historical purchase records from 2000 to 2010.

Table 3-14
Imported / Wholesale Water Supply

Year	WFA Supply		CDA Supply		DYY Supply	
	(AFY)	(mgd)	(AFY)	(mgd)	(AFY)	(mgd)
2000	9,258	8.3	-	-	-	-
2001	8,907	8.0	-	-	-	-
2002	9,325	8.3	-	-	-	-
2003	13,207	11.8	-	-	-	-
2004	15,143	13.5	-	-	-	-
2005	13,406	12.0	-	-	-	-
2006	12,256	10.9	2,852	2.5	-	-
2007	12,826	11.5	5,352	4.8	-	-
2008	8,747	7.8	7,528	6.7	1,899	1.7
2009	3,494	3.1	5,047	4.5	2,000	1.8
2010	11,865	10.6	5,327	4.8	1,053	0.9
Average	**11,297**	**10.1**	**5,221**	**4.7**	**1,651**	**1.5**

2000-2008 data from City's General Production Reports
2009 data from Ontario System Operations file
DYY and 2010 data from City Staff

The historical average demonstrates that the City's needs for imported water are far less than the combined 36,533 AFY that they will be eligible to import. The City's ownership of 31.4% of Agua de Lejos Water Treatment Plant, from which the water supplied by WFA is treated, can provide the City up to 28,000 AFY in the future. However, the City does not plan on taking more than 20,000 AFY from WFA. Completion of the Chino II expansion project will boost the City's water entitlements from CDA to a total of 8,533 AFY. Table 3-15 (DWR Table 12) presents demand projections provided to CDA and WFA.

Table 3-15 (DWR Table 12)
Retail agency demand projections provided to wholesale suppliers

Wholesaler	Contracted Volume[3]	2010	2015	2020	2025	2030	2035 -opt
Water Facilities Authority (WFA)		3,494	13,000	15,633	16,747	17,831	20,000
Chino Basin Desalter Authority (CDA)		5,000	8,533	8,533	8,533	8,533	8,533

Water Use Reduction Plan

Requirement

#2. Urban wholesale water suppliers shall include in the urban water management plans . . . an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part (10608.36).

As part of its commitment to conserve water, the City implements various water programs and ratifies ordinances that obligate its customers to reduce water consumption. As a member of the California Urban Water Conservation Council (CUWCC) and a signatory of the Memorandum of Understanding (MOU), the City has adopted the 14 Best Management Practices (BMPs) that help promote not only the importance of water conservation but also the economical benefits that come with it. Section 6 further elaborates on the 14 BMPs.

In the past five years, the City has implemented a variety of programs aimed at reducing water consumption. One element of these is to educate the customers about the importance of water supply as a limited resource

and its conservation. Programs, such as the PSA Contest, Project WET, EduGrant, Garden in Every School, “Splash into Reading” Program, “Cadillac Desert” film presentation, National Theatre for Children, and the creation of the Water Education/Water Awareness Committee website, focus on the involvement of teachers and educators to include a variety of water topics in classroom activities to benefit K-12 students.

The City also has executed an assortment of indoor rebate programs for HET/ULF toilets, HECW, waterless urinals, water brooms, pre-rinse nozzles, conductivity controllers, rotating nozzles and WBIC. The purpose of these rebates is to encourage home improvements that will ultimately make water conservation simpler and easier for homeowners. Additionally, rebates are offered to commercial, industrial and institutional establishments through the Save Water, Save-A-Buck program, which is co-sponsored by MWD.

Conservation of outdoor water uses are also promoted through the Water-Wise Turf Removal Incentive and Synthetic Turf Rebate. These programs are designed to limit the use of potable water for lawns and landscaping. Landscape water audits, landscaping classes, and demonstration gardens at LA County Fair are also available to residents.

To further water conservation efforts, the Water Conservation Plan of the City’s Municipal Code (Title 6, Chapter 8A), Ordinance 2907, was adopted on June 16, 2009.

Voluntary conservation is encouraged to limit the amount of water used to the amount absolutely necessary for health, business, and irrigation. The following elements of conservation apply at all times on a voluntary basis:

- Avoid hose washing of sidewalks, walkways, driveways, parking areas or other paved surfaces, except as required for sanitary purposes.
- Wash motor vehicles, trailers, boats and other types of mobile equipment using a hand held bucket or a hose equipped with a positive shutoff nozzle for quick rinses, or at the immediate premises of a commercial car wash or with recycled wastewater for approved uses.
- Avoid using water to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a recycling system.
- Encourage restaurants, hotels, cafés, cafeterias or other public places where food is sold, served or offered for sale, to serve drinking water only to those customers expressly requesting water.
- Promptly repair all leaks from indoor and outdoor plumbing fixtures.
- Avoid watering lawn, landscape or other turf area more often than every other day and during the hours between 6:00 a.m. and 6:00 p.m.
- Avoid causing or allowing the water to run off landscape areas into adjoining streets, sidewalks or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering.

More information on water conservation and water use efficiency is accessible to the public on the City’s website, as well as links to IEUA, where most of the outdoor and indoor rebates are offered.

As the City continues to educate the community about water use efficiency and conservation, and expands its recycled water system, water use will decline in the future by at least 5 percent and fulfill the 20% reduction as required by SBx7-7.

SECTION 4

SYSTEM SUPPLIES

4.1 INTRODUCTION

Requirement

#13. Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a) (10631(b)).

This section describes the existing and future water sources available to the City of Ontario (City), their limitations, water quality, and exchange opportunities. It is based upon the water supply plan included in the Water Master Plan Update 2010. The City's goal is to maximize the use of local sources in providing a reliable supply for the existing and planned development within its service area.

Water sources available to the City are groundwater from Chino Groundwater Basin, treated groundwater water from the Chino Basin Desalter Authority (CDA), recycled water from Inland Empire Utilities Agency (IEUA), and imported water from the Water Facilities Authority (WFA).

Groundwater from the Chino Groundwater Basin (Chino Basin or Basin) is extracted through the 28 wells owned and operated by the City. Currently, twenty-four (24) wells are operational, and four (4) are inactive. Nine (9) more wells, capable of producing approximately 36,288 AFY, are planned for the future. The City also draws groundwater on behalf of San Antonio Water Company (SAWC) as part of an agreement that transfers SAWC's groundwater rights to the City. The agreement came upon when high levels of nitrate were found in SAWC's well water in the mid-1990s.

The City obtains imported water from WFA's Agua de Lejos Treatment Plant located in Upland, which treats State Water Project water from MWD obtained through IEUA.

Chino Basin Desalter Authority treats groundwater for removal of total dissolved solids (TDS) and nitrates at its two treatment facilities (CDA I and CDA II). CDA I also treats production from four wells for volatile organic compounds (VOCs).

Recycled water is supplied by the Inland Empire Utilities Agency (IEUA) plants RP-1 and RP-5.

Table 4-1 (DWR Table 16) shows the existing and projected water supplies through 2035.

4.2 IMPORTED WATER

Imported water is obtained from the WFA, which was formed in 1980 as a Joint Powers Authority by the Cities of Ontario, Chino, Chino Hills, and Upland, and the Monte Vista Water District. The WFA was formed to construct and operate water treatment facilities for providing supplemental potable water to its member agencies. The WFA constructed the Agua de Lejos Treatment Plant in Upland in 1988 with a rated capacity of 68 MGD. It is currently rated at 81 mgd. The Agua de Lejos Water Treatment Plant is a conventional plant with coagulation, flocculation, sedimentation, filtration, and chloramine disinfection. The plant operators are certified and ensure that effluent meets all primary and secondary drinking water standards. Treated water flows from the plant have varied from a low of 12 mgd during the low demand periods, to 70 mgd during the higher demand periods.

The source of supply to the WFA is State Water Project (SWP) water purchased from the Metropolitan Water District of Southern California (MWD) through the IEUA. It is classified as a full service supply, which will be satisfied by MWD under all foreseeable hydrologic conditions (MWD 2010 UWMP and WFA 2010 UWMP). The WFA obtains the raw water from a connection to MWD's Rialto Feeder Pipeline, which starts at MWD's Silverwood Lake Reservoir in the San Bernardino Mountains. State Water Project water is generally low in dissolved minerals. MWD has identified total organic carbon, bromides, and salinity as the water quality issues in the SWP system. Because of a high potential for the creation of triahalomethanes from the SWP water, WFA utilizes chloramines for disinfection.

The City of Ontario owns 31.4 percent of the plant capacity (25.4 mgd, 28,500 AFY). During the last 10 years, the City of Ontario has taken an average of 11,304 AFY from the WFA, with a maximum of 15,772 AFY in 2004, and a low of 4,191 AFY in 2009.

The treated water is delivered to the City's system via two turnouts. Turnout 1, is located adjacent to the 1212-1A and 1212-1B Reservoirs at the northwest corner of Eighth Street and Fern Avenue, and Turnout 2, is located adjacent to the 1212-3 Reservoir at the southeast corner of Campus Avenue and A Street. The maximum capacity available to the City is assumed to be 19,924 AFY, which equals the total capacity of 28,000 AFY less the Dry Year Yield shift obligation of 8,076 AFY. Year 2010 and future imported water anticipated to be purchased from WFA is shown in Table 4-1 (DWR Table 16).

Table 4-1 (DWR Table 16)
Water supplies — current and projected

Water Supply Sources		2010	2015	2020	2025	2030	2035 - opt
Water purchased from[1]:	Wholesaler supplied volume (yes/no)						
Wholesaler 1 Water Facilities Authority (WFA)		8,923	13,000	15,633	16,747	17,831	20,000
Wholesaler 2 Chino Basin Desalter Authority (CDA)		5,000	8,533	8,533	8,533	8,533	8,533
Supplier-produced groundwater[2]		20,955					
Initial Safe Yield			11,374	11,374	11,374	11,374	10,337
Land Use Conversions			3,320	6,641	9,961	13,282	16,602
Annual Early Transfers			1,455	2,721	4,082	5,442	6,803
Adjustment to Transferred Rights			(0)	(3,529)	(5,293)	(7,058)	(8,822)
Ontario Recharge			1,704	3,408	5,111	6,815	8,519
Fontana Recharge			600	1,200	1,800	2,400	3,000
Non-Agricultural Rights			380	760	1,141	1,521	1,901
San Antonio Water Company Shares			765	765	765	765	765
Recharge, Leases, and Transfers			775	902	690	508	278
Recycled Water		1,976	4,173	7,726	11,279	14,832	18,385
	Total	36,854	46,079	56,134	66,190	76,245	86,301

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future. If these numbers differ from what is contracted, show the contracted quantities in Table 17.

[2] Volumes shown here should be consistent with Tables 17 and 18.

4.3 DESALINATED WATER

The Chino Basin Desalter Authority (CDA) was formed in 2002 as a Joint Powers Authority consisting of Inland Empire Utilities Agency; Jurupa Community Services District; Cities of Ontario, Chino, Chino Hills, and Norco; and Santa Ana River Water Company. Western Municipal Water District joined in 2010. CDA's goals include:

- Achieve hydraulic control of the Chino Basin to prevent contaminated Chino Basin groundwater from entering Santa Ana River
- Remove contamination (primarily nitrates, as well as TCE, PCE, and TCP) from groundwater in the southern portion of the Basin

- Deliver the treated water to member agencies to offset the need for imported water

As part of the Optimum Basin Management Plan for Chino Basin, the member agencies decided to extract and treat approximately 40,000 AFY of groundwater from the southern portion of the Basin, treat it to potable water standards, and deliver it to the member agencies.

Chino Basin Desalter Authority currently owns and operates two desalters that pump and treat approximately 28,000 acre feet of groundwater per year. The Chino I Desalter, located at 6905 Kimball Avenue in Chino, was completed in 2000 by the Santa Ana Watershed Project Authority (SAWPA) as the first phase of a groundwater management project. CDA took over Chino I Desalter from SAWPA in 2002, and expanded it to its current rated capacity of 14.2 mgd in August 2005. The Chino I Desalter cannot provide this rated capacity due to the high total dissolved solids in the product water. The Chino II Desalter is located at 11202 Harrel Street in Mira Loma. It was completed in 2006 as the Phase 2 Project. Its current rated capacity is 10 mgd (permitted is 15 mgd), including 5 mgd raw water bypass. It is reported that it has not achieved this rated capacity.

The Phase 3 project will increase the Chino II Desalter capacity to 22.7 mgd. Although Chino Desalter I capacity will not be increased, additional raw water capacity will be provided by six new wells in the Chino Creek Well Field, which will achieve the hydraulic control of the Basin.

Treated water is sold to CDA members through "take or pay" contracts. Chino I and Chino II Desalters are built with groundwater extraction wells, pumps and pipelines that direct water to advanced treatment facilities for pretreatment, filtration, air stripping of volatile organic compounds, ion exchange for nitrate removal, reverse osmosis for salt removal, and disinfection. The final product is a high quality drinking water, which is transported to member agencies through pipelines, pumps, and reservoirs.

The City has 1,500 AFY capacity in the Chino I Desalter. It is transmitted to the City's 1010 Zone near the intersection of Archibald Avenue and the extension of Schaeffer Avenue. In addition, the City has 3,500 AFY capacity from the Chino II Desalter, which is delivered to the 1010 Zone and 925 Zone near the intersection of Philadelphia Street and Milliken Avenue. When the Phase 3 Project is completed, the City's capacity will increase to 8,533 AFY. In the future, supply from CDA-1 will remain at 1,500 AFY, and supply from CDA-2 will increase to 7,033 AFY following the expansion of Chino II Desalter.

Table 4-2 lists wholesale supplies from CDA and WFA.

Table 4-2 (DWR Table 17)
Wholesale supplies — existing and planned sources of water

Wholesale sources[1,2]	Contracted Volume[3]	2015	2020	2025	2030	2035 - opt
WFA	20,000	13,000	15,633	16,747	17,831	20,000
CDA	8,533	8,533	8,533	8,533	8,533	8,533

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Water volumes presented here should be accounted for in Table 16.

[2] If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale supplier, if more than one.

[3] Indicate the full amount of water

4.4 GROUNDWATER

Requirement

#4. (Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . . (10631(b))?

The Chino Groundwater Basin (Chino Basin) is the City's only source of groundwater. The Chino Basin has approximately 5 million acre feet of water in storage, and an estimated 1 million acre-feet of additional unused storage capacity. The water rights in the Chino Basin were adjudicated in 1978. The average safe yield of the Chino Basin is approximately 145,000 AFY.

The City currently owns and operates 28 wells, 24 of which are active. Four (4) wells are currently inactive. The City's 2010 Water Master Plan includes 9 new wells primarily to supply the New Model Colony.

The City of Ontario has pumped an average of 29,315 AFY during the past ten years, with a high of 35,384 acre-feet in 2002, and a low of 21,997 acre-feet in 2010.

Requirement

#15. (Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management…(10631(b)(1)).

Watermaster

The 1978 judgment in the case of Chino Basin Municipal Water District v. the City of Chino defines the water rights in the Chino Groundwater Basin. The judgment is administered by the Chino Basin Watermaster (Watermaster). The original Watermaster was the Chino Basin Municipal Water District (now IEUA). It was replaced in 1998 by a board which is made up of one representative from each of the nine pumpers. The Chino Basin Watermaster is responsible for managing water use and supplies within the Chino Basin. The Watermaster's primary responsibilities include:

- Maintain and increase the water supply
- Sustain and improve water quality
- Ensure that water will be fairly shared
- Provide cooperative leadership
- Study and increase understanding of the basin

The Watermaster is comprised of three stakeholder groups based on how they use the water extracted from the Basin. The groups are called Pools and are represented by Pool Committees:

- Overlying Agricultural Pool Committee, representing dairymen, farmers, and the State of California
- Overlying Non-Agricultural Pool Committee, representing area industries
- Appropriative Pool Committee, representing local cities, public water districts, and private water companies

Representatives from the three Pools form an Advisory Committee to oversee the regular activities of the Watermaster. The Pool Committees handle business affecting their own members and then make

recommendations to the Advisory Committee. The Advisory Committee, in turn makes recommendations to the Watermaster Board of Directors, consisting of nine members appointed by the San Bernardino County Superior Court.

The Watermaster publishes an annual report that summarizes the status and management of the Basin. The report updates the different Pool Committees on issues such as, progress on independence from imported water, the current water crisis and solutions to lessen its effects, and water supply programs.

As a beneficiary of groundwater from the Chino Basin and an Appropriative Pool Representative, the City complies with any regulations imposed by the Watermaster. A copy of the Chino Basin Watermaster 33rd Annual Report for the fiscal year 2009-2010 is included in Appendix B.

Optimum Basin Management Program

The Optimum Basin Management Program (OBMP) was adopted by the Watermaster after a 1998 court decree required the development of a detailed plan outlining issues facing Chino Basin and solutions to resolve them. The purpose of the program is to address water quality problems within the Chino Groundwater Basin and increase and improve the water supply available from this source. The OBMP identifies groundwater recovery in the southern portion of the basin as a way to improve basin water supplies.

The OBMP and the specific actions contained within it have guided the Watermaster's activities ever since its adoption. The OBMP includes nine major tasks:

1. Comprehensive monitoring program for documenting changes in water level, quality, and flow by testing at wells within the Basin
2. Comprehensive recharge program
3. Water supply plan for the impaired areas of the Basin to improve water quality and supply
4. Regional supplemental water program
5. Comprehensive groundwater management plan for monitoring Zone 1 to stop land subsidence
6. Cooperative programs with the Regional Board and other agencies to improve Basin management
7. Salt management program
8. Groundwater storage management program
9. Conjunctive use programs

The 2000 "Peace Agreement" and the 2007 "Peace Agreement II" of the OBMP guides the management of the Chino Basin, including the construction and operations of the Desalters, hydraulic control of the Basin, groundwater production and replenishment for the Desalters, yield accounting, recharge. Details of OBMP are discussed in the 2008 OBMP State of the Basin Report. A copy of this report is included in Appendix C.

Dry Year Yield Storage Program

The Dry Year Yield (DYY) Storage Program is a cooperative conjunctive use program involving MWD, IEUA, CBWM, Three Valleys Municipal Water District (TVMWD) and Chino Basin groundwater producers. Under the DYY Program, MWD is allowed to store up to 100,000 AFY of water in the Chino Basin when surplus water is available during wet years and to produce 33,000 AFY in dry, drought, or emergency periods.

The City of Ontario authorized execution of an agreement with IEUA to participate in the DYY program in 2003. Participation obligates the City to reduce its use of imported water compared to the previous year by a fixed amount, known as the "shift obligation". The City's shift obligation is 8,076 AFY. During years when MWD calls for extraction, the City's WFA production would be reduced by 8,076 AFY compared to the previous year and it would extract this amount from the designated DYY wells. Because Jurupa Community Services District (JCSD) does not have an imported water connection, it has entered into an agreement with the City of Ontario for meeting its shift obligation. Under this agreement, JCSD conveys groundwater to the City in an amount equal to its shift obligation. In the past three years, JCSD pumped 2,000 acre-feet, and 1,043 acre-feet for the City of Ontario for JCSD's shift obligation.

DYY funds were recently used for the construction of three groundwater wells (Wells 45, 46, and 47) and an ion-exchange facility located at John Galvin Park to treat water extracted from Well 44 and Well 52. When MWD calls for stored water delivery, the City will operate these facilities to meet its shift obligation. MWD will pay for the cost of operations and the City would pay MWD (through IEUA) the full service water rate. The City can use the DYY facilities to meet its normal water demands during other periods but is responsible for the O&M costs.

This program allows the City to be less reliant upon imported water supplies. The additional groundwater capacity allows the City to increase the percentage of groundwater supply used to meet peak demands.

Requirement

#16. (Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater (10631(b) (2)).

The City extracts groundwater from the Chino Groundwater Basin, which is one of the largest groundwater basins in the Southern California area with storage capacity estimated at five to seven million acre-feet. It collects roughly 140,000 acre-feet of water each year. Chino Basin encompasses about 235 square miles of the upper Santa Ana River watershed and lies within portions of San Bernardino, Riverside, and Los Angeles counties. The location of the groundwater basin is illustrated on Figure 4-1.

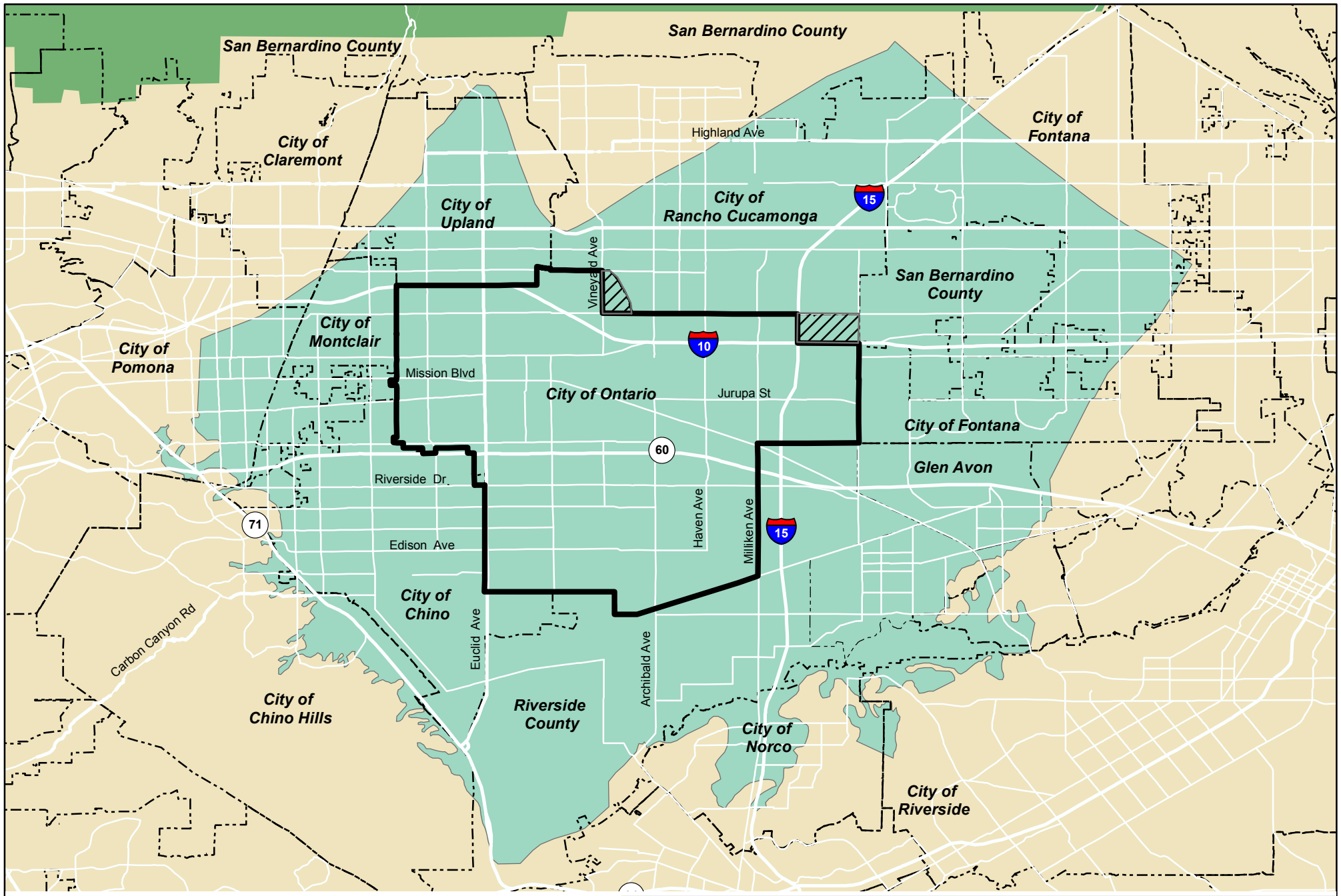
Groundwater quality in Chino Basin is generally good with better quality in the northern portion of the basin where recharge occurs. Salinity (TDS) and nitrate-nitrogen concentrations increase in the southern portion of the basin. Areas of high nitrate concentrations are shown on Figure 4-2. The City of Ontario has inactivated several wells (Well 3, 4, 9, and 15) due to high nitrate and perchlorate concentrations detected above the maximum contaminant levels (MCL). Well 50 has been inactivated due to color.

Requirement

#17. For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board (10631(b) (2)).

The Chino Basin Judgment (Judgment) was entered by the California State Superior Court for San Bernardino County on January 27, 1978. The Judgment adjudicates water rights in the Chino Basin and establishes the Watermaster to account for and implement the management of the Basin. The Judgment was expanded in 2000 and 2007 with the addition of Peace Agreements I and II, respectively, which further clarified the Watermaster's operations.

A copy of the 1978 Chino Basin Judgment is included in Appendix D.



Legend

- City Boundary
- Chino Groundwater Basin

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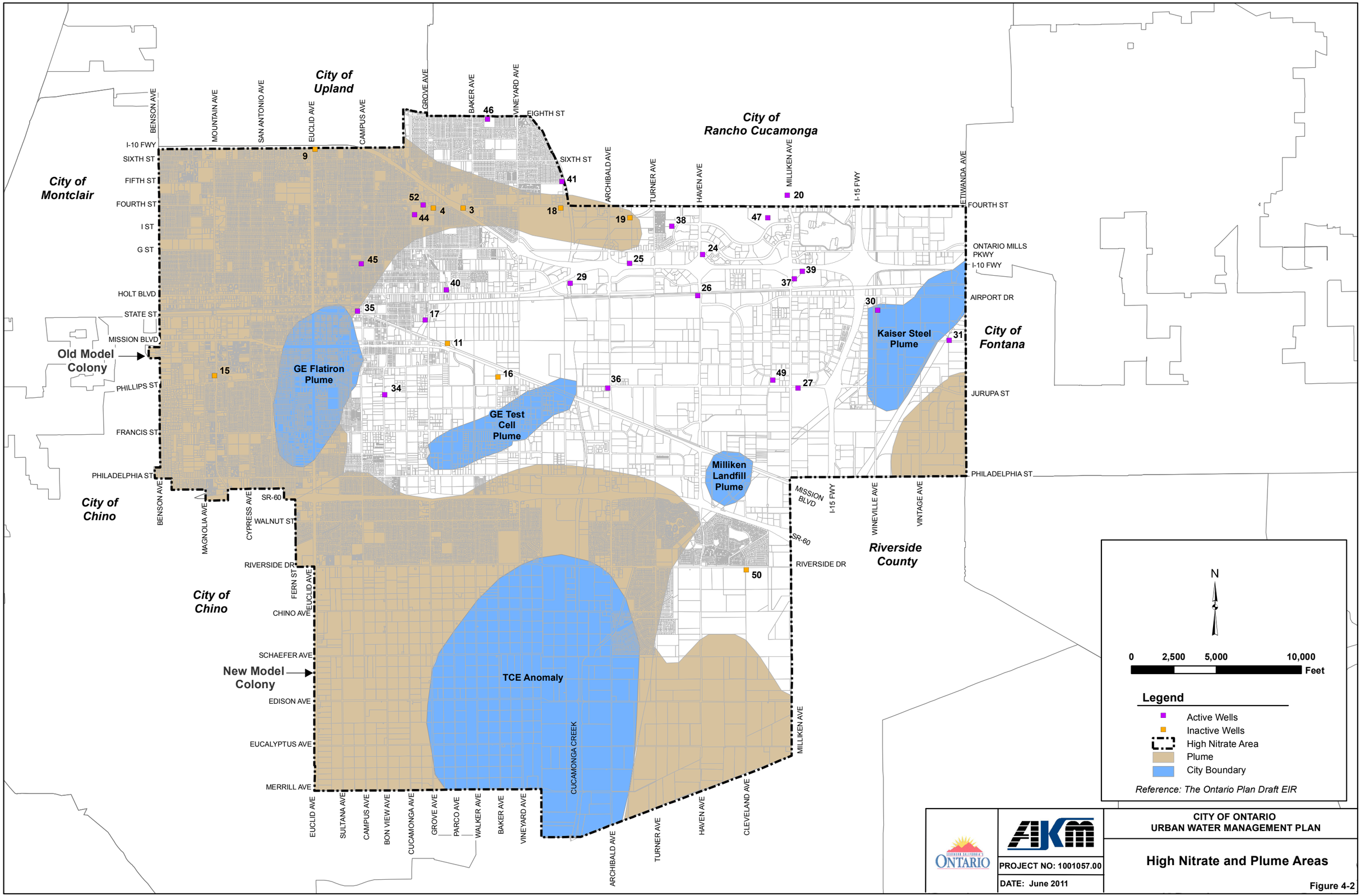
PROJECT NO: 1001057.00

DATE: June 2011

CITY OF ONTARIO
URBAN WATER MANAGEMENT PLAN

Chino Groundwater Basin

Figure 4-1


City of Upland
City of Rancho Cucamonga
City of Montclair
City of Fontana
City of Chino
Riverside County
Old Model Colony
New Model Colony
GE Flatiron Plume
GE Test Cell Plume
Milliken Landfill Plume
Kaiser Steel Plume
TCE Anomaly
CUCAMONGA CREEK
BENSON AVE
MOUNTAIN AVE
SAN ANTONIO AVE
EUCLID AVE
CAMPUS AVE
GROVE AVE
BAKER AVE
VINEYARD AVE
EIGHTH ST
SIXTH ST
ARCHIBALD AVE
TURNER AVE
HAVEN AVE
MILLIKEN AVE
I-15 FWY
ETIWANDA AVE
FOURTH ST
ONTARIO MILLS PKWY
I-10 FWY
AIRPORT DR
JURUPA ST
PHILADELPHIA ST
I-10 FWY
FIFTH ST
I ST
G ST
HOLT BLVD
STATE ST
MISSION BLVD
PHILLIPS ST
FRANCIS ST
SR-60
WALNUT ST
RIVERSIDE DR
FERN ST
CHINO AVE
SCHAEFER AVE
EDISON AVE
EUCALYPTUS AVE
MERRILL AVE
MAGNOLIA AVE
CYPRESS AVE
WINEVILLE AVE
VINTAGE AVE
SULTANA AVE
BON VIEW AVE
CUCAMONGA AVE
PARCO AVE
WALKER AVE
CLEVELAND AVE
N
0
2,500
5,000
10,000
Feet
Legend
Active Wells
Inactive Wells
High Nitrate Area
Plume
City Boundary
Reference: The Ontario Plan Draft EIR
ONTARIO
AKM
PROJECT NO: 1001057.00
DATE: June 2011
CITY OF ONTARIO
URBAN WATER MANAGEMENT PLAN
High Nitrate and Plume Areas
Figure 4-2

Groundwater Rights

Requirement

#18. (Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree (10631(b) (2)).

Chino Basin Judgment

The Judgment declared that the initial safe yield of the Chino Basin is 140,000 AFY. The safe yield is defined in the Judgment as "The long-term average annual quantity of groundwater (excluding replenishment or stored water but including return flow to the Basin from use of replenishment or stored water), which can be produced from the basin under cultural conditions of a particular year without causing an undesirable result." The Operating Safe Yield (OSY) is defined as "The annual amount of groundwater which Watermaster shall determine, pursuant to criteria specified in Exhibit "I", can be produced from Chino Basin by the Appropriative Pool parties free of replenishment obligation under the physical solution herein."

There are three pools of water users: agricultural, non-agricultural (industrial users), and appropriative (municipalities and other government entities). The safe yield is allocated at 82,800 AFY to the agricultural pool, 7,366 AFY to the non-agricultural pool, and 54,834 AFY to the appropriative pool.
OSY

Appropriative Rights

Per the Judgment, the City of Ontario has appropriative rights to 20.742 percent of the OSY. With an initial OSY of 54,834 AFY, Ontario's current appropriative right is 11,373.82 AFY. As the long term OSY is estimated at 49,834 AFY, the City's appropriative right will be 10,337 AFY in the future.

The City of Ontario purchased 2,322 AFY of the overlying non-agricultural rights.

Land Use Conversions

The City has existing rights to 1,423 AFY for land use conversions. This will increase to 16,602 AFY as agricultural land uses are converted in the future. Because of reduced basin recharge with the land use changes, adjustments are made to the rights obtained through land use conversions. The current adjustment is a deduction of 502 AFY, and the ultimate adjustment is a deduction of 8,833 AFY.

Annual Early Transfers

Peace Agreement I authorized Watermaster to approve an "Early Transfer" of water to the Appropriative Pool in an amount not less than 32,800 AFY that is the expected approximate quantity of water not produced by the Agricultural Pool. The quantity of water subject to Early Transfer is the greater of 32,800 acre-feet or 32,800 acre-feet plus the actual quantity of water not produced by the Agricultural Pool for the fiscal year that is remaining after all land use conversions are satisfied per the Agreement. The Early Transfer Water is annually allocated among the Appropriative Pool members in accordance with their pro-rata share of the initial Safe Yield. For the City of Ontario, this is 6,803 AFY (32,800 x 0.2074). This should also include the 765 AFY the City has in the San Antonio Water Company, which would give the City another 503 AFY in early transfers.

Increased Groundwater Recharge

The City is entitled to water rights due to increased groundwater recharge with stormwater and recycled water in accordance with OBMP. These are assigned at the same percentage as the appropriative rights. The City of Ontario is entitled to 3,455 AFY currently. Based on the year 2035 total recharge of 35,000 AFY estimated by IEUA, Ontario would be entitled to 8,519 AFY in the future.

Groundwater recharge with recycled water is projected to be 21,000 AFY. Based on sewage flow generation, Ontario would be entitled to 53% (11,130 AFY). However, for this UWMP, the groundwater recharge allocated to Ontario is assumed to be 8,519 AFY.

Additionally, the City has a long term contract to purchase recharged recycled water rights from the City of Fontana, which does not operate a water system. The existing and future rights from the City of Fontana are 600 AFY and 3,000 AFY, respectively.

Groundwater from San Antonio Water Company

The City of Ontario owns 295 shares of the San Antonio Water Company (SAWC), which provides 765 AFY of appropriative rights to the City (1.535 percent of the OSY). In the past, the City of Ontario obtained this capacity from a well owned and operated by the SAWC. Because of high nitrates in the groundwater, the City entered into a license agreement with SAWC in October 2001 to pump its capacity from its Wells 31, 37, and 38.

Requirement

#19. For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition (10631(b)(2)).

Chino Basin is the City's only source of groundwater. It was adjudicated in 1978 per the Chino Basin Judgment.

Groundwater Supplies During the Past Five Years

Requirement

#20. (Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(3)).

In the past five years, the City has produced an average of 27,159 AFY from the Chino Basin, with a high of 28,996 AFY in 2009, and a low of 21,997 AFY in 2010. It has accounted for an average of 65.2 percent of the potable water production, with a high of 73.3 percent in 2009, and a low of 60.2 percent in 2007.

Table 4-3 displays the amount of groundwater pumped since 2006.

Table 4-3 (DWR Table 18) Groundwater — volume pumped						
Basin name(s)	Metered or Unmetered[1]	2006	2007	2008	2009	2010
Chino Basin	Metered	28,793	26,946	27,064	28,996	20,955
Total groundwater pumped		28,793	26,946	27,064	28,996	20,955
Groundwater as a percent of total water supply						

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Indicate whether volume is based on volumeteric meter data or another method

Future Groundwater Supply

Requirement

#21. (Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records (10631(b)(4)).

Estimated quantities of groundwater that are planned to be drawn out of Chino Basin are presented in Table 4-4 (DWR Table 19). Volumes are forecasted to rise steadily along with growth of population, businesses and industries in the City. Based on future estimates, groundwater in the next decades will account for 44 to 47% of the City's total water supply. Table 4-4 shows the projected amount of groundwater to be pumped over the next 25 years in 5 year increments.

Table 4-4 (DWR Table 19) Groundwater — volume projected to be pumped					
Basin name(s)	2015	2020	2025	2030	2035 - opt
Chino Basin	20,373	24,242	29,631	35,049	39,383
Total groundwater pumped	20,373	24,242	29,631	35,049	39,383
Percent of total water supply	44.2%	43.2%	44.8%	46.0%	45.6%

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Include future planned expansion

4.5 TRANSFER OPPORTUNITIES

Requirement

#24. Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (10631(d)).

No transfers and exchanges of water, either on a short-term or long-term basis, are presently proposed. Table 4-5 shows future transfer and exchange opportunities.

Table 4-5 (DWR Table 20) Transfer and exchange opportunities			
Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
Chino Basin Parties	N/A	Annual	*
Total			

Units (circle one): acre-feet per year million gallons per year cubic feet per year

**See Table 4-1 (Recharge, Leases, and Transfers)*

4.6 DESALINATED WATER OPPORTUNITIES

Requirement

#31. Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply (10631(i)).

Desalination operations within Chino Basin are administered by the Watermaster through CDA. The City currently has a capacity of 5,000 AFY in the two existing Desalters. Its capacity will increase to 8,533 AFY when Chino II Desalter Phase 3 project is completed in 2015.

4.7 RECYCLED WATER OPPORTUNITIES

Requirement

#44. Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area (10633).

The City of Ontario has been using recycled water produced by IEUA since 1972. Recycled water was first used at the Whispering Lakes Golf Course and Westwind Park.

IEUA began its planning for a regional recycled water production and delivery program in the early 1990s, and completed the IEUA Regional Recycled Water Program Feasibility Study in January 2002. This study formulated facilities to deliver over 70,000 AFY of recycled water to customers in its service area, and for groundwater recharge. IEUA then prepared a regional recycled water program implementation plan, which prioritized the recommendations of the 2002 Regional Recycled Water Program Feasibility Study. Continuing with its efforts to maximize the use of this resource, IEUA completed the 2005 Recycled Water Implementation Plan, which proposed projects to deliver 93,000 AFY of recycled water produced at its four water recycling facilities.

IEUA developed its Recycled Water Three Year Business Plan in 2007 to provide a road map for expansion of its system. The plan is intended to be updated annually, and focus on the following three years. The current plan anticipates providing 50,000 AFY by 2012, and 104,000 AFY by 2025. In 2009, IEUA produced about 65,000 acre-feet. Approximately half of the water was used within the service area (32,362 acre-feet), and the remainder was discharged to the Santa Ana River for reuse in Orange County.

The City of Ontario prepared a Recycled Water Master Plan in 2006 to incorporate recycled water into its supply portfolio efficiently. The 2006 Master Plan was fully coordinated with IEUA's recycled water planning efforts. The Recycled Water Master Plan is currently being updated. It is based upon providing 18,385 AFY in its service area, consisting of 6,898 AFY in OMC, and 11,487 AFY in the NMC.

The existing recycled water delivered to the City is for irrigation and industrial purposes. The existing recycled water use in OMC is approximately 1,547 AFY. The 2011 Recycled Water Master Plan determined that service can be extended to existing potable water users to serve 3,407 AFY. Additionally, 1,944 AFY can be served to currently vacant 813 acres of mixed use, commercial, industrial, and airport land uses in OMC. It may be possible to further extend the use of recycled water in the OMC by 5,230 AFY for irrigation, commercial, industrial, and multi-family residential customers.

The future demand of 18,385 AFY includes of 17,340 AFY for common area irrigation in residential

Table 4-6 (DWR Table 23) Recycled water — potential future use							
User type	Description	Feasibility[1]	2015	2020	2025	2030	2035 - opt
Agricultural irrigation							
Landscape irrigation[2]			2,450	4,946	7,442	9,938	12,435
Commercial irrigation[3]			1,037	2,004	2,971	3,938	4,905
Golf course irrigation			597	597	597	597	597
Wildlife habitat							
Wetlands							
Industrial Reuse							
Groundwater recharge							
Seawater barrier							
Getothermal/Energy							
Indirect potable reuse							
Other (Airport)			90	179	269	358	448
Other							
	Total	0	4,173	7,726	11,279	14,832	18,385

Units (circle one): acre-feet per year million gallons per year cubic feet per year
[1] Technical and economic feasibility.
[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)
[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

neighborhoods and commercial areas, 597 AFY in golf courses, and 448 AFY at the airport. Table 4-6 (DWR Table 23) lists the potential recycled water users.

4.8 WASTEWATER COLLECTION AND TREATMENT SYSTEM

Requirement

#45. (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal (10633(a)).

Wastewater is collected by the City's sewer system, a network made up of 365.7 miles of gravity pipe, 7,582 manholes, and 3 pump stations with 11,588 feet of associated force mains. Approximately 18.75 mgd of sewage is generated from OMC, which is equivalent to 107 gpd per person. The ultimate sewer load is estimated to be 45.03 mgd. The local sewers tie directly into one of the IEUA trunk sewers that cross the City.

Most sewage from OMC is transported to IEUA's Regional Plant No.1 (RP-1), which was constructed in 1948 by the Cities of Ontario and Upland, and purchased by IEUA in 1973. It has a current rated capacity of 44 mgd. RP-1 capacity will be expanded to 60 MGD after 2020 (IEUA Wastewater Facilities Master Plan 2002). RP-1 also serves the Cities of Rancho Cucamonga, Upland, Montclair, Fontana, and unincorporated San Bernardino County.

The remaining OMC flows and flows from NMC are directed to RP-5, which was placed in operation in 2004. The existing rated capacity of RP-5 is 16.3 mgd. Current planning anticipates expanding the rated capacity to 21 mgd. RP-5 also serves the Cities of Chino and Chino Hills.

Raw sewage collected from the local cities passes through screening and grit removal units, primary clarifiers, aeration basins, secondary clarifiers, chemical addition, tertiary filters, chlorination, and dechlorination prior to discharge. Biosolids removed during the treatment process are thickened, digested, and dewatered. Once the solids are stabilized and dewatered, they are directed to the Inland Empire Composting Facility for processing into soil amendment.

A portion of the effluent is discharged to nearby creeks, and flows into the Santa Ana River, and then ultimately recharges Orange County's groundwater basin. The rest of the flow is distributed to IEUA's recycled water customers, including Cucamonga Valley Water District (CVWD), Fontana Water Company

(FWC), Monte Vista Water District (MVWD), San Antonio Water Company (SAWC), San Bernardino County, and the cities that contribute the raw sewage as previously mentioned. (Ref: IEUA's 2010 UWMP).

Not all of the wastewater collected by IEUA can be treated with available, conventional means. A special pipeline, referred to as Non-reclaimable Waste (NRW) Line, transports non-reclaimable wastewater to the Los Angeles County Sanitation District facilities in Whittier for treatment and disposal.

Table 4-7 (DWR Table 21) lists the amount of wastewater generated from the City's water service area and the volume that meets the recycled water standard. None of IEUA's NRW Line customers are serviced by the City's sewer system. Therefore, all wastewater collected by the City's sewer system can be treated to meet recycled water standards.

Table 4-7 (DWR Table 21)
Recycled water — wastewater collection and treatment

Type of Wastewater	2005	2010	2015	2020	2025	2030	2035 - opt
Wastewater collected & treated in service area	15,116	21,003	26,889	32,776	38,663	44,550	50,436
Volume that meets recycled water standard	15,116	21,003	26,889	32,776	38,663	44,550	50,436

Units (circle one): acre-feet per year million gallons per year cubic feet per year

4.9 TREATED WASTEWATER THAT MEETS RECYCLED WATER STANDARDS

Requirement

#46. (Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project (10633(b)).

All of the City's wastewater is collected by IEUA trunk sewers for treatment. IEUA currently produces 65,000 AFY of recycled water. Total recycled water used in 2009 was 32,362 acre-feet, with 12,970 acre-feet for irrigation, 2,106 acre-feet for industrial processes, 10,993 acre-feet for agriculture, and 6,294 acre-feet was for groundwater recharge. The remainder, 32,637 acre-feet, or slightly above 50 percent, was discharge to the Santa Ana River. The minimum obligation for discharge to the Santa Ana River is 17,000 AFY. Therefore, if additional facilities were in place, an additional volume of 15,638 acre-feet could have been used in IEUA's service area.

Recycled water supply available to IEUA is expected to increase to 121,000 AFY in 2035. With the minimum obligation of 17,000 AFY of recycled water discharge to the Santa Ana River per the 1969 Santa Ana River Judgment, 104,000 AFY will be left for groundwater recharge (35,000 AFY), industrial uses (17,000 AFY), irrigation (49,000 AFY), and agricultural (3,000 AFY).

Future discharges will depend on the development of the regional IEUA facilities and local systems. It is the regional goal to use as much of the available recycled water as feasible.

Table 4-8 (DWR Table 22) shows the projected amount of treated water that satisfies IEUA's obligation to Orange County.

Table 4-8 (DWR Table 22)
Recycled water — non-recycled wastewater disposal

Method of disposal	Treatment Level	2010	2015	2020	2025	2030	2035 - opt
Orange County groundwater basin recharge	Tertiary Level	32,638	17,000	17,000	17,000	17,000	17,000
	Total	32,638	17,000	17,000	17,000	17,000	17,000

Units (circle one): acre-feet per year million gallons per year cubic feet per year

4.10 RECYCLED WATER

Existing Recycled Water Use

Requirement

#47. (Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use (10633(c)).

Recycled water is currently used for commercial, golf course and landscape irrigation purposes. The commercial customer has an existing demand of 35 AFY, the golf course has 558 AFY, and all the other landscape irrigation customers have a combined demand of 1,383 AFY. The actual recycled water usage, based on existing records, of the aforementioned groups is tabulated in Table 4-9 (DWR Table 24).

Table 4-9 (DWR Table 24)
Recycled water — 2005 UWMP use projection compared to 2010 actual

Use type	2010 actual use	2005 Projection for 2010[1]
Agricultural irrigation		3,295
Landscape irrigation[2]	1,383	3,662
Commercial irrigation[3]	35	969
Golf course irrigation	558	
Wildlife habitat		
Wetlands		
Industrial reuse		
Groundwater recharge		
Seawater barrier		
Getothermal/Energy		
Indirect potable reuse		
Total	1,976	7,926

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the

[2] Includes parks, schools, cemeteries, churches, residential, or other public facilities)

[3] Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

Potential Recycled Water Uses

Requirement

#48. (Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses (10633(d)).

The City prepared a Recycled Water Master Plan in 2006 to incorporate recycled water into its supply portfolio efficiently. The 2006 Master Plan was fully coordinated with IEUA's recycled water planning efforts. The Recycled Water Master Plan was updated in 2011. It is based upon providing 18,385 AFY in its service area, consisting of 6,898 AFY in OMC, and 11, 487 AFY in the NMC. The 2011 Recycled Water Master Plan has determined the technical and economical feasibility of serving these uses.

The existing recycled water delivered to the City is for irrigation and industrial purposes. The existing recycled water use in OMC is approximately 1,547 AFY. The 2011 Recycled Water Master Plan determined that service can be extended to existing potable water users in OMC to serve an additional 3,407 AFY. Recycled water use in the currently vacant areas in OMC (813 acres) is estimated at 1,944 AFY consisting of mixed use, commercial, industrial, and airport land. It may be possible to further extend the use of recycled water in the OMC by 5,230 AFY for irrigation, commercial, industrial, and multi-family residential customers.

The future demand of 18,385 AFY includes of 17,340 AFY for common area irrigation in residential neighborhoods and commercial areas, 597 AFY in golf courses, and 448 AFY at the airport. Table 4-6 (DWR Table 23) lists the potential recycled water users.

Projected Recycled Water Use

Requirement

#49. (Describe) the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision (10633(e)).

Table 4-9 (DWR Table 24) shows the recycled water use in 2010, and the 2005 projection. The existing usage is lower than the 2005 projections primarily due to the slow down in the economy and resultant housing/commercial/industrial developments.

Projected recycled water use is shown in Table 4-6 (DWR Table 23).

Actions and Incentives to Encourage Recycled Water Use

Requirement

#50. (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year (10633(f)).

IEUA Programs

IEUA offers a variety of incentives to encourage increased usage of recycled water within its service area. Some of these incentives are:

- Financial assistance for capital improvement projects to customers that are required to have separate systems for potable and non-potable water
- Technical assistance to customers in preparing engineering reports needed for Department of Public Health approval of recycled water use
- Adoption of Ordinance No. 75, which states that customers must utilize recycled water when it is available or be subjected to a 50% surcharge on their potable water rate
- Discounts for NRW Line users who opt to use recycled water when it becomes available

Consequently, these incentives are readily transferrable to the City's customers since IEUA supplies all of the City's recycled water needs. In return, the City offers reduced rates for recycled water compared to potable water rates.

City of Ontario Programs

The City of Ontario has been planning its recycled water system in cooperation with IEUA since 2005. This planning will allow the future development to take place with adequate water supply as required by law.

The City has taken several measures to encourage the use of recycled water to the maximum extent feasible. These consist of:

1. Included in the Municipal Code, Title 6 Health and Sanitation, Section 8C, Recycled Water Use, which requires the use of recycled water through §1, Ordinance 2689, effective June 17, 1999, and §29, Ordinance 2816, effective December 1, 2005

2. Developer agreements for new OMC and NMC projects that require the installation of recycled water pipelines and appurtenances to common irrigation areas, parks, and schools

3. Recycled water rates that are significantly lower than the potable water rates

   Municipal Code Section 6-8.703, Policy states "*It is the policy of the City that recycled water be used for any purposes approved for recycled water use, when it is economically, technically, and institutionally feasible. Recycled water shall be the primary source of supply for commercial and industrial uses, whenever available and/or feasible. Use of potable water for commercial and industrial uses shall be contrary to City policy; shall not be considered the most beneficial use of a natural resource; and shall be avoided to the maximum extent feasible.*"

   Sec. 6-8.715 Rates, fees, charges and deposits provides that "*Under certain circumstances, the City may contribute to the cost of designing and/or constructing the facilities needed to deliver recycled water to an applicant's property. Subject to the availability of funds, the City may:*

   (1) Reimburse an applicant for costs incurred to install oversized facilities in the public right-of-way.

   (2) Elect to participate in or construct pipelines, reservoirs, pumping stations or other facilities, as it determines necessary, and/or as funds are available.

The City's water rates are a combination of Readiness-to-Serve Charge, which is based on meter size, and Usage Charge, which is based on the amount of water use. Table 4-10 compares the Readiness-to-Serve Charge for potable water and recycled water. Usage rates for potable water and recycled water are listed in Tables 4-11 and 4-12, respectively.

As seen in Table 4-10, the readiness to serve charge for a potable water meter is twice the charge for a recycled water meter. The variable usage charge for potable water is on an ascending block, where the cost of water per hundred cubic feet (HCF) increases for consumptions greater than 15 HCF. However, the variable cost of recycled water is on a

Table 4-10
Readiness-to-Serve Charge

Meter Size	Potable Water Per Month	Recycled Water Per Month
5/8"	$ 21.10	$ 10.55
1"	$ 37.40	$ 18.70
1 1/2"	$ 82.80	$ 41.40
2"	$ 119.50	$ 59.75
3"	$ 232.80	$ 116.40
4"	$ 369.20	$ 184.60
6"	$ 763.10	$ 381.55
8"	$ 1,132.50	$ 566.25
10"	$ 1,747.30	$ 873.65

Table 4-11 Potable Water Usage Charge		
Usage	**Old Model Colony**	**New Model Colony**
Up to 15 HCF	$2.16 per HCF	$2.72 per HCF
Over 15 HCF	$2.51 per HCF	$3.08 per HCF

Table 4-12 Recycled Water Usage Charge	
Usage	**Charge**
Up to 1000 HCF	$1.30 per HCF
Over 1000 HCF	$1.19 per HCF

descending block, where an increase in usage prompts a lower cost per HCF. This pricing, which became effective starting January 1, 2011, highlights how much more favorable it is to utilize recycled water when it is available and provides a greater incentive for customers to reduce their potable water consumption.

Table 4-13 (DWR Table 25) shows the projected recycled water use resulting from the programs adopted by

Table 4-13 (DWR Table 25) Methods to encourage recycled water use						
	Projected Results					
Actions	2010	2015	2020	2025	2030	2035 - opt
Financial incentives						
Variable Rates for Recycled and Potable Water	1,547	4,173	7,726	11,279	14,832	18,385
name of action						
Total	1,547	4,173	7,726	11,279	14,832	18,385
Units (circle one): acre-feet per year million gallons per year cubic feet per year						

the City of Ontario.

Plan for Optimizing the Use of Recycled Water

Requirement

#51. (Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use (10633(g)).

In 2006, the City prepared a Water and Recycled Water Master Plan. The Water and Recycled Water Master Plans have been updated in 2011 to reflect the most recent land use and water resource planning. The two master plans provide the maximum feasible utilization of recycled water, and define the areas where recycled water will be served in the future. Electronic copies of the 2011 Water and Recycled Water Master Plans are included as supporting documents.

Development Agreements require the installation of dual distribution systems.

4.11 FUTURE WATER PROJECTS

Requirement

#30. (Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision

(f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program (10631(h)).

The City of Ontario will increase its supply capacity in desalter water through CDA, and groundwater pumping capacity from the Chino Basin to meet increasing potable water demands. As described above, a significant increase in recycled water has been planned, and is being implemented to decrease dependence on imported water.

Desalter capacity will be increased by 3,500 AFY when the expansion of Chino II Desalter is completed in 2015.

The City's Capital Improvement Program recommended by the 2010 Water Master Plan Update includes nine (9) new wells that are planned to be constructed to meet the City's ultimate groundwater demand. Well 43 has already been drilled, and sites for Wells 42, 48, and 51 have been identified. Wells 54, 55, 56, 57, and 58 are still in the planning phase. Given that all of the wells, with the exception of Wells 42 and 43, are planned to serve NMC, their construction is contingent upon the pace of development in NMC. Current planning is based on each well being able to produce 2,500 gpm. If needed, wellhead treatment or blending will be used to meet the primary and secondary drinking water standards. Table 4-14 presents the future desalter and well projects.

Table 4-14 (DWR Table 26)
Future water supply projects

Project name[1]	Projected start date	Projected completion date	Potential project constraints[2]	Normal-year supply[3]	Single-dry year supply[3]	Multiple-dry year first year supply[3]	Multiple-dry year second year supply[3]	Multiple-dry year third year supply[3]
Chino II Desalter		2012	None	3,500				
Well 43		2011		4,032				
Well 42	As Needed by NMC			4,032				
Well 48	As Needed by NMC			4,032				
Well 51	As Needed by NMC			4,032				
Well 54	As Needed by NMC			4,032				
Well 55	As Needed by NMC			4,032				
Well 56	As Needed by NMC			4,032				
Well 57	As Needed by NMC			4,032				
Well 58	As Needed by NMC			4,032				
		Total	0	39,788	0	0	0	0

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] Water volumes presented here should be accounted for in Table 16.

[2] Indicate whether project is likely to happen and what constraints, if any, exist for project implementation.

[3] Provide estimated supply benefits, if available.

SECTION 5

WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

5.1 WATER SUPPLY RELIABILITY

Requirement

#5. An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions (10620(f)).

The City of Ontario (City) strives to maximize local water supplies that minimize the need for imported water from other regions. About two-thirds of the City's water supply is groundwater pumped through its own wells in the Chino Groundwater Basin. The ongoing expansion of the recycled water system will further reduce the need for imported water since irrigation demands that would otherwise require additional water purchase will be served with recycled water. The construction of Wells 45, 46, and 47, as part of the Dry Year Yield (DYY) Storage Program, also increases the City's groundwater pumping capacity to meet peak demands. Additionally, the City plans on constructing nine (9) new wells to serve the future development in New Model Colony (NMC).

The City practices rigorous water conservation programs through its participation in the California Urban Water Conservation Council (CUWCC), adoption of ordinances pertaining to water shortage contingency planning, conservation pricing, and various public outreach programs designed to encourage its customers to reduce their water consumption. Conservation pricing is discussed in more detail in Section 4, and the water conservation programs are described in Section 3.

Requirement

#23. For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable (10631(c)(2)).

The City's participation in the DYY Storage Program, as previously mentioned in Section 4, will reduce the City's supply from WFA by 8,076 AFY as it fulfills its "shift obligation" during dry or emergency periods. During normal years, however, there will be no obligatory supply reduction and, and the City benefits from the construction of Wells 45, 46, and 47, which are funded by the DYY Storage Program. Metropolitan Water District of Southern California (MWD) will determine if a "shift obligation" will be necessary. Table 5-1 (DWR Table 29) shows this possible reduction in supply.

The loss of 8,076 AFY of supply from WFA will have no significant impact on the City's overall supply since it is only 29% of the 28,000 AFY that the City has rights to purchase. Moreover, the City only purchased an average of 11,297 AFY from WFA from 2000 to 2009. Even if the City continues to import an amount of water equal to the average and at the same time fulfill its "shift obligation," there will still be an excess of 8,627 AFY of water available from WFA.

The Chino Basin Watermaster, working in partnership with the Metropolitan Water District of Southern California (MWD) identified the potential to store and recover up to 500,000 acre-feet in the Chino Basin (IEUA 2010 UWMP).

Table 5-1 (DWR Table 29) Factors resulting in inconsistency of supply							
Water supply sources[1]	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Additional information
Wholesaler 1 - Water Facilities Authority (WFA)	DYY Program	8,076	X	X		X	
Units (circle one): acre-feet per year million gallons per year cubic feet per year *[1] From Table 16.*							

The amount of imported water from WFA has also been in decline since 2008. Moreover, the loss of WFA water can be readily replaced by extra ground water production as one of the provisions of the DYY Program. Table 3-14 presents the City's historical purchase of imported water. The DYY Program will remain in effect until 2025.

5.2 WATER SHORTAGE CONTINGENCY PLANNING

Requirement

#37. Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (10632(c)).

To further prepare for water shortages caused by natural disasters, the City adopted Ordinance No. 2907 on June 16, 2009. Under this ordinance, Chapter 8A ("Emergency Water Conservation") was updated with more stringent prohibitions and penalties as previously outlined in Title 6 of the Ontario Municipal Code under the 1999 Ordinance No. 2500 (Ontario WMP, 2010). It established mandatory water shortage stages 1 to 4, which target a strict enforcement of water conservation routines following a water crisis, caused by prolonged drought, and any other natural disasters.

Stage 0 is a voluntary stage. When conservation goals are not met simply through voluntary reduction in water use or when supplies are reduced by 10%, Stage 1 prohibitions are implemented. Stage 2 occurs when there is a 10% to 20% reduction in supplies. Lastly, a reduction in supplies by more than 20% constitutes Stage 3 prohibitions. Severe water supply interruptions, caused by earthquakes, wide-spread fires, or other natural disasters, prompt Stage 4 prohibitions. Depending on the public's initiative to voluntarily conserve water at times of crisis, the City can determine when and how quickly to implement the mandatory conservation phases. Public hearings will be held prior to declaration of the stages to evaluate the extent of the water shortage and to inform customers about the water crisis.

Requirement

#38. Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning (10632(d)).

During a water shortage crisis, certain mandatory restrictions on water use will be imposed on the public. Stage 0 prohibitions are entirely voluntary. Stages 1 to 4 prohibitions will be progressively implemented according to the severity of the water crisis. The City has been utilizing recycled water for street sweeping, so it does not add to the potable water demand. Table 5-2 (DWR Table 36) lists the mandatory water conservation efforts that correspond to each of the stages.

Table 5-2 (DWR Table 36)
Water shortage contingency — mandatory prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	
Avoid hose washing of sidewalks, walkways, driveways, parking areas or other paved surfaces, except as required for sanitary purposes	0 to 4
Wash motor vehicles, trailers, boats and other types of mobile equipment using a hand-held bucket or a hose equipped with a positive shutoff nozzle for quick rinses, or at the immediate premises of a commercial car wash or with recycled water for approved uses	0 to 4
Avoid using water to clean, fill or maintain levels in decorative fountains, ponds, lakes or other similar aesthetic structures unless such water is part of a recycling system	0 to 4
Encourage restaurants, hotels, cafes, cafeterias or other public places where food is sold, served or offered for sale, to serve drinking water only to those customers expressly requesting water	0 to 4
Promptly repair all leaks from indoor and outdoor plumbing fixtures	0 to 4
Avoid watering lawn, landscape or other turf area more often than every other day and during the hours between 6:00 a.m. and 6:00 p.m.	0 to 4
Avoid causing or allowing the water to run off landscape areas into adjoining streets, sidewalks or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering	0 to 4
Exclusively using water from fire hydrants for fire fighting and related activities necessary to maintain the public health, safety, and welfare	1 to 4
Restriction of potable water use for construction activities in areas where recycled water is available for such use	1 to 4
Prohibition of watering lawn, landscape, or other turf areas at commercial nurseries, golf courses, and other water dependent industries more than every other day	2 to 4
Limiting outdoor watering and replenishment of swimming pools based on street address for all other customers not considered as water dependent industries	2 to 4
Prohibition of filling or refilling empty swimming pools without the consent of the City Manager or his/her designee	2 to 4
Prohibition of using potable water for construction activities	3 and 4
No outdoor water usage except only when equipped with a hand-held hose with a shutoff nozzle	4
Prohibiting the filling, cycling, filtering, or refilling swimming pools, spas, jacuzzis, fountains or other like devices	4

City water customers desiring to be wholly or partly exempt from the mandatory prohibitions have to file a written application to the City Manager, who will then review the application and decide if the exemption can be granted or rejected. An application may be approved if the water customer can prove that he/she has already taken the all practical steps to reduce his/her water consumption.

Requirement

#39. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply (10632(e)).

Consumption reduction methods are listed in Table 5-3 (DWR Table 37). The severity of the water shortage will influence which methods will be implemented. A Stage 4 water shortage will target the implementation of all consumption reduction methods. Water savings estimates are based on the amount of reduction needed at each stage of water shortage. Voluntary conservation is expected to reduce consumption by 5%. A Stage 1 shortage will reduce consumption by up to 10%. For a Stage 2 shortage, between 10% and 20% of supply will be lost, so a consumption reduction of at least 15% will be necessary. For Stage 3, more than 20% of supply will be unavailable, and mandatory consumption reduction will have to be at least 20%. Since a Stage 4 shortage will only be declared at times of wide-spread fires and natural calamities, such as earthquakes and floods, a major disruption in water deliveries will be expected. When this happens, customers will be mandated to reduce their consumption by more than 20%, and up to 50%.

Table 5-3 (DWR Table 37)
Water shortage contingency — consumption reduction methods

Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Encourage participation in water conservation programs	0	5%
Take advantage of rebates for water-efficient appliances		
Prohibit new construction of non-recycling decorative fountains and single-pass cooling systems		
Prohibit new construction of commercial carwash and laundry facilities that do no reuse water		
Enforce Stage 1 prohibitions and fines	1	10%
Enforce Stage 2 prohibitions and fines	2	15%
Enforce Stage 3 prohibitions and fines	3	20%
Enforce Stage 4 prohibitions and fines	4	>20%

Requirement

#40. Penalties or charges for excessive use, where applicable (10632(f)).

Fines will be imposed on customers who fail to comply with the provisions of “Emergency Water Conservation” as detailed in Ordinance No. 2907. All penalties and charges apply to each of the water shortage stages. The penalties are shown in Table 5-4 (DWR Table 38).

Written violation notices will be sent by regular mail for the first offense and by certified mail for any subsequent offenses to the customer’s billing address.

Table 5-4 (DWR Table 38) Water shortage contingency — penalties and charges		
Penalties or Charges	**Stage When Penalty Takes Effect**	
Penalty for excess use		
Charge for excess use		
The City issues a written notice of a first violation to the water customer.	0 to 4	1st Violation
The City imposes a surcharge in an amount of one hundred dollars ($100.00) added to the water customer's water bill.	0 to 4	2nd Violation
The City imposes a surcharge in an amount of two hundred dollars ($200.00) added to the water customer's water bill.	0 to 4	3rd Violation
The City imposes a surcharge in an amount of five hundred dollars ($500.00) added to the water customer's water bill, and install a flow restrictive device and charge the customer for the installation and disassembly.	0 to 4	4th and any subsequent violations

Requirement

#41. An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments (10632(g)).

To illustrate the potential financial impact of a 10% to 50% reduction in water demand, total deliveries and production for 2010 have been used. The following assumptions are made:

- Revenue is calculated using the average usage rates discussed in Section 4, in which Old Model Colony (OMC) is billed at $2.16 per hundred cubic feet (HCF) for consumption up to 15 HCF and $2.51 per HCF thereafter. New Model Colony (NMC) is billed at $2.72 per HCF for the first 15 HCF and $3.08 per HCF over 15 HCF. The average usage charge amounts to $2.62 per HCF (Reference: Ontario Municipal Code).
- The groundwater replenishment rate at $527 per AF applies to any groundwater volume greater than the operating safe yield, which totals 11,374 AFY for Ontario.
- The amount of water that is unaccounted for is assumed to remain at 5% of demand during water shortages. Unaccounted for water is due to line flushing, maintenance, fire hydrant usage, leaks, and the difference in the accuracies of the sales and production/purchase meters.
- The unit cost of WFA water is $736 per acre-feet (AF) and $794 per AF for CDA water. (Reference: Ontario Cost of Water, 2011)
- The unit cost of groundwater with safe yield and rights purchased is $250 per AF, and extra volumes pumped out greater than the safe yield are charged at $527 per AF.
- Cost of operations and maintenance is not reduced because it is assumed to remain constant during the shortage period.
- The water shortage is assumed to last one year.

Table 5-5 shows the total demand at each stage of reduction and the corresponding projected production. Table 5-6 compares the revenues and costs of supply during a water shortage period.

TABLE 5-5
Demand and Production Volumes at Each Reduction Stage

Volume (AF)	Baseline Year	10% Reduction	15% Reduction	20% Reduction	50% Reduction
Total Demand	35,403	31,863	30,093	28,323	17,702
Total Production	34,990	33,456	31,597	29,739	18,587
Expected Water Loss	0	1,593	1,505	1,416	885
WFA	12,918	2,129			
CDA	5,327	5,327	5,327	5,327	5,327
Groundwater Wells	16,745	26,000	26,270	24,412	13,260
Total		33,456	31,597	29,739	18,587

TABLE 5-6
Revenue and Supply Costs at Each Demand Reduction Stage

	BASELINE YEAR 2010	Stage 1 (10% Demand Reduction)	Stage 2 (15% Demand Reduction)	Stage 3 (20% Demand Reduction)	Stage 4 (50% Demand Reduction)
Total Deliveries (AF)	35,403	31,863	30,093	28,323	17,702
Revenue from Sales	$ 40,366,218	$ 36,329,596	$ 34,311,285	$ 32,292,974	$ 20,183,109
Total Production (AF)	34,990	31,450	29,679	27,909	17,288
Total Groundwater (AF)	16,745	26,000	26,270	24,412	13,260
Groundwater (safe yield)	$ 4,186,242	$ 5,198,205	$ 5,198,205	$ 5,198,205	$ 3,315,000
Groundwater (replenishment)		$ 2,744,184	$ 2,886,474	$ 1,907,308	
WFA (cost)	$ 9,507,722	$ 1,567,080	$ -	$ -	$ -
CDA (cost)	$ 4,229,570	$ 4,229,570	$ 4,229,570	$ 4,229,570	$ 4,229,570
Water Supply Cost	$ 17,923,534	$ 13,739,039	$ 12,314,249	$ 11,335,083	$ 7,544,570
Revenue minus Supply Cost	$ 22,442,684	$ 22,590,557	$ 21,997,036	$ 20,957,891	$ 12,638,539
diff compared to baseline	$ -	$ 147,873	$ (445,648)	$ (1,484,793)	$ (9,804,145)
diff with baseline revenue		0.4%	-1.1%	-3.7%	-24.3%

As shown in Table 5-5, when demand is reduced by at least 15%, water from the wells and CDA will be sufficient to meet demand. At a 50% reduction in demand, all demand can be supplied by the wells. However, it is assumed that CDA water will be taken in order to continue the hydraulic control and water quality requirements of the OBMP. Table 5-6 illustrates that although reduction in demand results in lower overall cost of water supply, the significant drop in demand causes the revenue to plummet as well. With the exception of Stage 1 scenario, an overall revenue reduction, relative to the baseline year, 1.1% at Stage 2, 3.7% in Stage 3, and 24.3% in Stage 4 is inevitable.

In the event that the City's revenues and expenditures are severely affected by a water shortage, the following measures could be taken to alleviate the financial impacts:

- Rate Adjustment
- Development of Reserves

- Decrease in Capital Expenditure
- Decrease in O&M Expenditure

Rate increases are not viewed positively by the customers particularly when they reduce consumption. Negative consequences that will arise from the cost-cutting actions include dissatisfaction of the customers, reduced funding for Capital Improvement Projects and system maintenance, and reduced staff availability for emergency response.

Requirement
#42. A draft water shortage contingency resolution or ordinance (10632(h)).

Enacted on June 16, 2009, through Ordinance No. 2907, Chapter 8A of the Municipal Code details the City's water shortage contingency plan. It contains general prohibitions, exceptions, means of water conservation at different stages of water shortage, penalties and charges for non-compliance, and hearing procedures for contesting violations. A copy of Ordinance No. 2907 is found in Appendix E.

5.3 WATER QUALITY

Requirement
#52. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability (10634).

Groundwater

Overall, groundwater quality in Chino Basin is generally good with better quality in the northern portion of the basin where recharge occurs. However, salinity (TDS) and nitrate-nitrogen concentrations increase in the southern portion of the basin, where several industries operated in the past. CDA treats the tainted groundwater by means of reverse osmosis, ion exchange, and air stripping, resulting in high quality drinking water. Volatile organic compound (VOC) plumes throughout Chino Basin are constantly being monitored. (Reference: IEUA UWMP 2010).

The City has already inactivated several wells (Well 3, 4, 9, and 15) due to high nitrate and perchlorate concentrations detected above the maximum contaminant levels (MCL). Areas of high nitrate concentrations are shown in Figure 4-2. The impact on supply due to the closure of these wells is lessened by constructing replacement wells at other locations where contaminant levels are low, and constructing wellhead treatment facilities. The additional wells that are planned for the future are described in Section 4.

Another concern is the groundwater from the City's Well 50, which is now non-operational due to color.

Several sites in the City have been indentified to have VOC contamination in the soil and groundwater (Reference: IEUA UWMP 2010).

High levels (maximum concentration of 5,620 µg/L at one site) of trichloroethene (TCE) and chromium (485 µg/L) were found at one of the City's inactive well sites in 1987. They were found to have come from the General Electric Flatiron Facility, which operated a clothes iron manufacturing plant in the City from the early

1900s to 1982. Detectable, but low, concentrations of tetrachloroethene (PCE), toluene, and total xylenes were also found. The plant is no longer in operation, but an industrial park occupies the site. Since 1991, that area has been regularly monitored, and in 1995, two wells were constructed to extract groundwater, treat it, and direct it to the Ely Basins via the West Cucamonga Channel. The treated water ends in the Chino Basin Aquifer, where it is allowed to percolate. In 2010, an injection well was constructed to inject treated water into Chino Basin. VOCs are also removed from contaminated soil through a Soil Vapor Extraction (SVE) system, which began in 2003.

VOCs were also located at the General Electric Test Facility, whose operations include testing and maintenance of commercial and military aircraft engines. In the past, hazardous wastes were disposed in dry wells, and this activity caused VOCs, such as TCE, PCE, cis-1,2-DCE, 1,2-dichloropropane, 1,1-DCE, 1,1-DCA, and chloroform, to appear in the soils and groundwater. A maximum concentration of 1,240 µg/L of TCE was measured at the site and 190 µg/L was quantified at an offsite monitoring well. Groundwater and soil remediation began in 1988 after a Consent Order was agreed upon by General Electric and the California Department of Public Health (CDPH). Since then, regular monitoring has been conducted, and status reports have been submitted. In 1996, vapor extraction treatment began, and as recently as 2008, contaminant levels in shallow soils have been deemed acceptable. The remediation process will continue until most, if not all, of the VOCs have been eliminated.

Additionally, organic and inorganic compounds were discovered in the underlying groundwater when groundwater monitoring at the Milliken Sanitary Landfill began in 1987 as part of Solid Waste Assessment Test. An Evaluation Monitoring Program (EMP) was then launched, and 29 monitoring wells were drilled to assess the extent of damage of the compounds on the groundwater. Amounts of TCE, PCE, and dichlorodifluoromethane were found in combined concentrations as high as 159.6 µg/L. Other VOCs found at the site are vinyl chloride, benzene, 1,1-dichloroethane, and 1,2-dichloropropane. The landfill is owned by the County of San Bernardino and managed by the County's Waste System Division. It was inactivated in 1999.

In the past, treated municipal wastewater from the Cucamonga County Water District (now the CVWD) and IEUA was discharged in ponds in the southern portion of the City. Although these ponds, called the Cucamonga ponds, have been out of operation since the mid-1980s, groundwater contaminants may still be present. The contaminants have never been identified.

Quantities of TCE are found in wells located south of the Ontario International Airport. The maximum concentration of TCE found at one of the wells was 38 µg/L during the 2003 to 2008 period. The TCE came from past activities at the airport, contributed by Aerojet, the Boeing Company, the Department of Defense, the Lockheed Martin Corporation, and the Northrop Grumman Corporation. These groups have voluntarily begun investigating the extent and source of the TCE. So far, four (4) monitoring wells have been constructed. CDA's Chino Basin Desalter Facility 1 will be used to eliminate the TCE plume. Currently, Watermaster is seeking compensation from the responsible parties for the costs of cleanup and treatment.

Water quality in the Chino Basin is closely monitored by the Watermaster in compliance with the Optimum Basin Management Plan (OBMP). Data are collected by Regional Water Quality Control Board (RWQBC), California Department of Toxic Substances Control (DTSC), and other agencies that obtain groundwater from Chino Basin. The Watermaster then combines all data into a comprehensive database (Reference: IEUA UWMP 2010). OBMP is discussed in further detail in Section 4.

Imported Water

Imported water is obtained through WFA and CDA. The source water for WFA is State Water Project (SWP) water which originates from rain and snow of the Sierra Nevada, Cascade, and Coastal mountain ranges. It travels through several rivers and canals, and is pumped over the Tehacapi Mountains to the East Branch and West Branch of the SWP. The East Branch supplies the Silverwood Lake Reservoir in the San Bernardino Mountains, which in turn supplies the Rialto Pipeline, the MWD conveyance facility feeding WFA's Agua de Lejos Treatment Plant.

The State Water Project water is generally of good quality. The Metropolitan Water District of Southern California (MWD) has identified total inorganic carbon, bromides and salinity as the water quality issues in the SWP water. The SWP water is low in dissolved minerals such as calcium, magnesium, sodium, potassium, iron, manganese, nitrate and sulphates. The chloride levels vary widely from a low of 40 mg/L to over 400 mg/L depending on Bay-Delta conditions (WFA 2010 UWMP). Bromides and total organic carbon can react with ozone and chlorine and create disinfection byproducts (DBP), which have been linked to cancer and reproductive and developmental effects. The USEPA adopted stringent DBP regulations in 1998, and more stringent regulations are expected in the future. Concerned with the formation of Trihalomethanes, WFA utilizes chloramines for disinfection, and produces high quality potable water that meets all federal and state drinking water regulations.

The salinity level of the SWP water is a concern for WFA member agencies because of its potential impacts on the recycled water and groundwater programs. The Regional Basin Plan regulates the amount of salt that can enter the groundwater. The regional salinity management and removal programs that are being implemented, such as desalters, have made it possible to utilize SWP water without impacting the quality of recycled water and groundwater. The projected impacts of water quality on the City's supplies are quantified in Table 5-7.

Table 5-7 (DWR Table 30)
Water quality — current and projected water supply impacts

Water source	Description of condition	2010	2015	2020	2025	2030	2035 - opt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Units (circle one): acre-feet per year million gallons per year cubic feet per year

Reports on the quality of water that the City delivers to its customers are made available annually. Table 5-8 summarizes the City's 2009 Water Quality Report. A full copy of the report is attached in Appendix F.

Table 5-8
City of Ontario 2010 Water Quality Report

Primary Drinking Water Standards

Substance (Units)	MCL (AL) [MRDL]	PHG (MCLG) [MRDLG]	Local Ground Water		Imported Water, WFA		Purchased Water, JCSD						Primary MCL Violation
							CDA1		CDA2		IXP		
			Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	
Aluminum (ppm)	1	0.6	0.007	ND - 0.17	0.077	0.057 - 0.091	NA	NA	NA	NA	NA	NA	No
Arsenic (ppb)	10	0.004	0.4	ND - 3.5	ND	ND	NA	NA	NA	NA	NA	NA	No
Barium (ppm)	1	2	0.006	ND - 0.14	NA	NA	NA	NA	NA	NA	ND	ND - 0.1	No
Chromium, Total (ppb)	50	(100)	4.2	1.8 - 7.7	NA	NA	3.9	3.9	2.1	ND - 4	4.1	1.5 - 5.4	No
Combined Filter Effluent Turbidity (NTU)	TT	NA	NA	NA	0.02	0.01 - 0.20	NA	NA	NA	NA	NA	NA	No
Copper (ppm) (measured at consumer's tap in 2009)	1.3 (Action Level)	0.3	90th percentile: 0.22	0 of 50 samples exceeded AL	NA	NA	NA	NA	NA	NA	90th percentile: 0.16	NA	No
Dibromochloropropane (ppt)	200	1.7	23	ND - 160	NA	NA	NA	NA	NA	NA	NA	NA	No
Fluoride (ppm)	2	1	0.2	0.1 - 0.3	ND	ND - 0.1	0.1	0.1	NA	ND - 0.2	0.1	0.1	No
Gross Alpha Particle Activity (pCi/L)	15	(0)	NA	NA	3.5	ND - 6.4	NA	NA	NA	NA	NA	NA	No
Gross Beta Particle Activity (pCi/L)	50	(0)	NA	NA	4.2	ND - 7.0	NA	NA	NA	NA	NA	NA	No
Lead (ppb) (measured at consumer's tap in 2009)	15 (Action Level)	2	90th percentile: ND	4 of 59 samples exceeded AL	NA	NA	NA	NA	NA	NA	90th percentile: ND	NA	No
Nitrate [as nitrate] (ppm)	45	45	14	4-38	NA	NA	21	21	18	11 - 25	29	11 - 33	No
Nitrate [as nitrogen] (ppm)	10	10	3.4	1.1 - 8.6	0.5	ND - 0.8	NA	NA	NA	NA	NA	NA	No
Nitrate and Nitrite [as nitrogen] (ppm)	10	10	3.4	1.1 - 8.6	0.5	ND - 0.8	NA	NA	NA	NA	NA	NA	No
Perchlorate (ppb)	6	6	1	ND - 5	NA	NA	NA	NA	NA	NA	NA	NA	No
Uranium (pCi/L)	20	0.43	NA	NA	2.7	2.4 - 3.2	NA	NA	NA	NA	NA	NA	No
Chlorine, free (ppm)	[4]	[4]	0.58	0 - 1.69	NA	NA	NA	NA	NA	NA	NA	NA	No
Chlorine, total (ppm)	[4]	[4]	0.77	0.05 - 1.76	1.2	0.81 - 1.61	NA	NA	NA	NA	NA	NA	No
Haloacetic Acids [HAA5] (ppb)	60	NA	6.7	ND - 16	7	3 - 15	NA	NA	ND	ND	6.6	ND - 8.6	No
Total Coliforms (% positive)	5	0	0.11	0 - 0.7	0.4	ND - 2.0	0	0	0	0	0	0	No
Total Trihalomethanes [TTHM] (ppb) *	80	NA	22.9	ND - 77	59	30 - 74	ND	ND	ND	ND - 1.0	12	14-Oct	No

Table 5-8 (Continued)
City of Ontario 2010 Water Quality Report

Secondary Drinking Water Standards

Substance (Units)	MCL (AL) [MRDL]	PHG (MCLG) [MRDLG]	Local Ground Water		Imported Water, WFA		Purchased Water, JCSD						Primary MCL Violation
							CDA1		CDA2		IXP		
			Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	
Aluminum (ppb)	200	600	7	ND - 170	77	57 - 91	NA	NA	NA	NA	NA	NA	No
Chloride (ppm)	500	NA	10	3 - 60	72	59 - 98	100	100	75	9.3 - 96	122	19 - 210	No
Color (Color Units)	15	NA	0.04	ND - 3	NA	NA	NA	NA	NA	NA	NA	NA	No
MBAS (ppb)	500	NA	3	ND - 70	NA	NA	ND	ND	ND	ND - 60	39	ND - 90	No
Odor (T.O.N.)	3	NA	NA	NA	2	1 - 3	NA	NA	NA	NA	NA	NA	No
Specific Conductance (µS/cm)	1600	NA	386	290 - 650	478	450 - 530	540	540	496	380 - 550	736	460 - 1000	No
Sulfate (ppm)	500	NA	17.9	4.6 - 71	43	31 - 51	9.4	9.4	8	4 - 12	22	15 - 27	No
Total Dissolved Solids (ppm)	1000	NA	239	130 - 430	258	230 - 270	320	320	317	220 - 560	587	280 - 820	No
Turbidity (Units)	5	NA	0.06	ND - 3.4	0.08	0.05 - 0.30	ND	ND	ND	ND	ND	ND - 0.27	No

Unregulated Contaminants (plus Sodium and Hardness)

Substance (Units)	MCL (AL) [MRDL]	PHG (MCLG) [MRDLG]	Local Ground Water		Imported Water, WFA		Purchased Water, JCSD						Primary MCL Violation
							CDA1		CDA2		IXP		
			Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	
Boron (ppb)	NA	NL=1,000	NA	NA	143	100 - 170	110	110	ND	ND	ND	ND	No
Total Hardness [CaCO3] (ppm)	NA	NA	148	94 - 260	96	91 - 100	150	150	165	120 - 190	247	160 - 380	No
Sodium (ppm)	NA	NA	19	12 - 34	55	50 - 61	31	31	24	21 - 27	30	21 - 32	No
Vanadium (ppb)	NA	NL = 50	NA	NA	4.3	3.5 - 5.3	NA	NA	NA	NA	NA	NA	No
Trichloropropane (ppt)	NA	NL = 5	NA	NA	NA	NA	15	15	ND	ND	ND	ND - 15	No

Notes:

AL: Action Level
CDA: Chino Basin Desalter Authority
MCL: Maximum Contaminant Level
MCLG: Maximum Contaminant Level Goal
MRDL: Maximum Residual Disinfection Level
MRDLG: Maximum Residual Disinfection Level Goal
NA: Not Applicable
ND: Not Detected
NL: Notification Level
NP: Not Provided
NTU: Nephelometric Turbidity Units
pCi/L: picocuries per liter
PHG: Public Health Goal
ppb: parts per billion
ppm: parts per million
PDWS: Primary Drinking Water Standard
T.O.N.: threshold odor number
TT: Treatment Technique
µmhos/cm: micromhos per centimeter
WFA: Water Facilities Authority

5.4 DROUGHT PLANNING

Requirement

#22. Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) an average water year, (B) a single dry water year, (C) multiple dry water years (10631(c)(1)).

As previously mentioned, the City's water supply proves to be stable and reliable due to its many available sources. However, drought periods are inevitable since the City only gets an average of 11.3 inches of rain annually. This makes the City more susceptible to a water shortage because a large percentage of the supply is from groundwater. Table 5-9 (DWR Table 27) lists the average, single-dry, and multiple-dry water years. Base years are selected based on recent annual rainfall, instead of runoff, because the majority of the City's water supply comes from groundwater and not surface water. Average year is chosen to be 2005 since the rainfall for that year most closely resembles the City's average annual rainfall as shown on Figure 2-5. The single-dry year selected is 2001 during which only 2.58" of rainfall was measured. The driest 3-year period is determined to be 2006 to 2009, where the average annual rainfall was 6.63".

Table 5-9 (DWR Table 27)
Basis of water year data

Water Year Type	Base Year(s)
Average Water Year	2005
Single-Dry Water Year	2001
Multiple-Dry Water Years	2006-2009

Supply reliability, based on historical conditions, is presented in Table 5-10 (DWR Table 28). With the exception of 2009, records show that supplies tend to be higher during dry years compared to a normal year. The drop in 2009 is attributed primarily to the effectiveness of the water conservation programs implemented by the City, and to a smaller extent to the slow down in the economy. This demonstrates that the City has adequate capacity to increase supply when necessary even during periods when there is limited rainfall.

Table 5-10 (DWR Table 28)
Supply reliability — historic conditions

Average / Normal Water Year (2005)	Single Dry Water Year (2001)	Multiple Dry Water Years			
		2006	2007	2008	2009
42,205	44,011	43,901	45,259	43,164	39,537
Percent of Average/Normal Year:	104.3%	104.0%	107.2%	102.3%	93.7%

All volumes are in acre-feet
2001, 2005-2008 data from City's General Production Reports
2009 data from Ontario System Operations file

Requirement

#35. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage (10632(a)).

Under Ordinance No. 2907, the addition of "Emergency Water Conservation Plan" to the City's Municipal Code identifies the water crisis stages and the different water conservations and prohibitions that correspond with each stage. The prohibitions are listed in Table 5-2. As shown in Table 5-11, Stage 0 calls for voluntary

water conservation efforts, and the rest requires mandatory compliance with the conservation practices. A shortage of 0 to 10% in supply prompts Stage 0, and Stage 1 will be in place if voluntary conservation is deemed inadequate. Stage 2 occurs when a shortage of up to 20% is identified. Finally, a shortage of 20% or more triggers the implementation of water conservation and prohibitions under Stages 3 and 4. If supplies are reduced by 50%, all prohibitions listed in the "Emergency Water Conservation Plan" will be strictly enforced, and penalties will be imposed accordingly.

Table 5-11 (DWR Table 35)
Water shortage contingency — rationing stages to address water supply shortages

Stage No.	Water Supply Conditions	% Shortage
0	Voluntary	0-10%
1	Mandatory	0-10%
2	Mandatory	11-20%
3	Mandatory	>20%
4	Mandatory	>50%

[1] One of the stages of action must be designed to address a 50 percent reduction in water supply.

Requirement

#36. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply (10632(b)).

Supplies from CDA and groundwater are expected to remain the same during dry years. The supply from CDA is under a contract, and the City's current capacity is 5,000 AFY. It will increase to 8,533 AFY when the Chino II Desalter capacity is expanded in 2015. Moreover, the City is entitled to extract an additional 8,076 AFY from the designated DYY wells (Wells 45, 46, and 47) in dry years when imported water supply from WFA is reduced by 8,076 AFY as required by the DYY Program. Increased groundwater production is feasible since the DYY Program allows MWD to store up to 100,000 AFY of water during normal years and to produce 33,000 AFY during dry, drought, or emergency periods. Ultimately, however, the net change in the City's supplies will be zero since the imported water from WFA can easily be replaced by groundwater from the DYY wells, and additional groundwater pumping.

Supply reliability, based on current sources, is presented in Table 5-12 (DWR Table 31). This assumes that the years 2010, 2011, and 2012 are dry years. Supply from WFA is reduced according to the DYY Program, and that same amount is added to groundwater production. As groundwater production increases over the subsequent years, the groundwater amount allowed by the DYY Program becomes a smaller percentage of the total groundwater supply mix.

Table 5-12 (DWR Table 31)
Supply reliability — current water sources

Water supply sources[1]	Average / Normal Water Year Supply[2]	Single Dry Water Year Supply[2]	Multiple Dry Water Year Supply[2]		
			2010	2011	2012
Groundwater	28,799	30,032	29,957	30,883	30,883
Chino Basin Desalter Authority	5,000	5,000	5,000	5,000	5,000
Water Facilities Authority	13,406	5,330	5,330	5,330	5,330
DYY Supply	0	8,076	8,076	8,076	8,076
Recycled Water (IEUA)	1,806	1,806	1,547	2,597	3,123
Percent of normal year:	100.0%	102.5%	101.8%	105.9%	106.9%

Units (circle one): acre-feet per year million gallons per year cubic feet per year

[1] From Table 16.

[2] See Table 27 for basis of water type years.

Requirement

#43. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis 10632(i).

The City implements monitoring mechanisms to track both water production and consumption to determine water savings and losses. These mechanisms are listed below:

- Reading of water meters
- Remote Metering Program
- Replacement of residential meters every 15 years and large meters every 5 to 10 years
- Meter readings at inter-agency connections
- Valve Exercising Programs
- Recording of water production from the groundwater wells, WFA, CDA, and other inter-agency connections

Requirement

#53. Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier (10635(a)).

Normal year supply and demand projections are presented in Table 5-13 (DWR Table 32).

Table 5-13 (DWR Table 32)
Supply and demand comparison — normal year

	2015	2020	2025	2030	2035 - opt
Supply totals (from Table 16)	46,079	56,134	66,190	76,245	86,301
Demand totals (From Table 11)	46,079	56,134	66,190	76,245	86,301
Difference	(0)	(0)	(0)	(0)	0
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

Units are in acre-feet per year.

The following assumptions are made to estimate supply and demand during a single dry year:

- The provisions of a Stage 1 water shortage will be implemented, and customers will be subjected to a 10% consumption reduction.
- The supply of recycled water will be the same as in normal years and dry years.
- The reduction in WFA supplies (8,076 AFY) will be compensated by the extra groundwater production from the designated DYY wells during dry years. The DYY Program will expire in 2025.

- The groundwater supply will be the same as in a normal year. The City has rights, storage and leases. The City can also purchase replenishment water.
- Water losses have been included in the potable water demands as 5% of the annual demand.

Supply and demand projections for a single dry year are presented in Table 5-14 (DWR Table 33).

Table 5-14 (DWR Table 33)
Supply and demand comparison — single dry year

	2015	2020	2025	2030	2035 - opt
Supply totals[1,2]	46,079	56,134	66,190	76,245	86,301
Demand totals[2,3,4]	41,888	51,294	60,699	70,104	79,509
Difference	4,190	4,841	5,491	6,141	6,792
Difference as % of Supply	9.1%	8.6%	8.3%	8.1%	7.9%
Difference as % of Demand	10.0%	9.4%	9.0%	8.8%	8.5%

Units are in acre-feet per year.

[1] *Consider the same sources as in Table 16.If new sources of water are planned, add a column to the table and specify the source, timing,and amount of water.*

[2] *Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.*

[3] *Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.*

[4] *The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.*

The following assumptions are made to estimate supply and demand for a three-year multiple-dry year period:

- The first dry year is similar to a single dry year, in which customers voluntarily reduce consumption by 10%.
- The second dry year is considered a Stage 2 water shortage, and a 15% reduction in consumption is made mandatory. This will be imposed at the City Council's discretion.
- The third dry year is considered a Stage 3 water shortage, and a minimum of 20% consumption reduction is required. This will be imposed at the City Council's discretion.
- The supply of recycled water will be the same in normal years and dry years.
- The reduction in WFA supplies (8,076 AFY) will be compensated by extra groundwater production from the designated DYY wells during dry years. The DYY will expire in 2025.
- The groundwater supply will be the same as in a normal year. The City has rights, storage and leases. The City can also purchase replenishment water.
- Water losses have been included in the potable water demands as 5% of the annual demand.

The projected supply and demand for the years 2010 to 2014 are presented in Tables 5-15 and 5-16, respectively. The first three years in the sequence represent the multiple dry year period, and the last two are normal years.

TABLE 5-15 Projected Supply for a Multiple Dry Year Period Beginning in 2010					
Supply Sources	2010	2011	2012	2013	2014
Climate Condition	Dry	Dry	Dry	Normal	Normal
Groundwater (AFY)	20,955	21,072	21,189	21,476	22,691
Groundwater DYY Shift (AFY)	8,076	8,076	8,076	-	-
CDA (AFY)	5,000	5,000	5,000	5,000	5,000
WFA (AFY)	8,923	13,000	13,000	13,000	13,000
WFA DYY Shift (AFY)	(8,076)	(8,076)	(8,076)	-	-
Recycled Water - IEUA (AFY)	1,547	2,072	2,597	3,123	3,648
Total (AFY)	36,425	41,144	41,786	42,599	44,339

TABLE 5-16 Projected Demand for a Multiple Dry Year Period Beginning in 2010					
	2010	2011	2012	2013	2014
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water (AFY)	35,403	36,704	38,004	39,305	40,605
Conservation (AFY)	(3,540)	(5,506)	(7,601)	-	-
Recycled Water (AFY)	1,976	2,415	2,855	3,294	3,734
Total (AFY)	33,839	33,614	33,258	42,599	44,339

The projected supply and demand for the years 2015 to 2019 are presented in Tables 5-17 and 5-18, respectively. The first three years in the sequence represent the multiple dry year period, and the last two are normal years.

TABLE 5-17 Projected Supply for a Multiple Dry Year Period Beginning in 2015					
Supply Sources	2015	2016	2017	2018	2019
Climate Condition	Dry	Dry	Dry	Normal	Normal
Groundwater (AFY)	21,539	22,212	22,884	23,557	24,229
Groundwater DYY Shift (AFY)	8,076	8,076	8,076	-	-
CDA (AFY)	8,533	8,533	8,533	8,533	8,533
WFA (AFY)	13,000	13,527	14,053	14,580	15,106
WFA DYY Shift (AFY)	(8,076)	(8,076)	(8,076)	-	-
Recycled Water - IEUA (AFY)	4,173	4,884	5,594	6,305	7,015
Total (AFY)	47,245	49,155	51,065	52,974	54,884

TABLE 5-18 Projected Demand for a Multiple Dry Year Period Beginning in 2015					
	2015	2016	2017	2018	2019
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water (AFY)	41,906	43,206	44,507	45,807	47,108
Conservation (AFY)	(4,191)	(6,481)	(8,901)	-	-
Recycled Water (AFY)	4,173	4,884	5,594	6,305	7,015
Total (AFY)	41,888	41,609	41,200	52,112	54,123

The projected supply and demand for the years 2020 to 2024 are presented in Tables 5-19 and 5-20, respectively. The first three years in the sequence represent the multiple dry year period, and the last two are normal years.

TABLE 5-19
Projected Supply for a Multiple Dry Year Period Beginning in 2020

Supply Sources	2020	2021	2022	2023	2024
Climate Condition	Dry	Dry	Dry	Normal	Normal
Groundwater (AFY)	24,902	25,946	26,990	28,034	29,078
Groundwater DYY Shift (AFY)	8,076	8,076	8,076	-	-
CDA (AFY)	8,533	8,533	8,533	8,533	8,533
WFA (AFY)	15,633	15,856	16,079	16,301	16,524
WFA DYY Shift (AFY)	(8,076)	(8,076)	(8,076)	-	-
Recycled Water - IEUA (AFY)	7,726	8,437	9,147	9,858	10,568
Total (AFY)	56,794	58,771	60,749	62,726	64,704

TABLE 5-20
Projected Demand for a Multiple Dry Year Period Beginning in 2020

	2020	2021	2022	2023	2024
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water (AFY)	48,408	49,709	51,009	52,310	53,610
Conservation (AFY)	(4,841)	(7,456)	(10,202)	-	-
Recycled Water (AFY)	7,726	8,437	9,147	9,858	10,568
Total (AFY)	51,294	50,689	49,955	62,168	64,179

The projected supply and demand for the years 2025 to 2029 are presented in Tables 5-21 and 5-22, respectively. The first three years in the sequence represent the multiple dry year period, and the last two are normal years.

TABLE 5-21
Projected Supply for a Multiple Dry Year Period Beginning in 2025

Supply Sources	2025	2026	2027	2028	2029
Climate Condition	Dry	Dry	Dry	Normal	Normal
Groundwater (AFY)	30,122	31,166	32,210	33,254	34,299
Groundwater DYY Shift (AFY)	8,076	-	-	-	-
CDA (AFY)	8,533	8,533	8,533	8,533	8,533
WFA (AFY)	16,747	16,964	17,181	17,397	17,614
WFA DYY Shift (AFY)	(8,076)	-	-	-	-
Recycled Water - IEUA (AFY)	11,279	11,990	12,700	13,411	14,121
Total (AFY)	66,681	68,653	70,624	72,596	74,567

TABLE 5-22 Projected Demand for a Multiple Dry Year Period Beginning in 2025					
	2025	2026	2027	2028	2029
Climate Condition	Dry	Dry	Dry	Normal	Normal
Potable Water (AFY)	54,911	56,211	57,512	58,812	60,113
Conservation (AFY)	(5,491)	(8,432)	(11,502)	-	-
Recycled Water (AFY)	11,279	11,990	12,700	13,411	14,121
Total (AFY)	60,699	59,769	58,710	72,223	74,234

The projected supply and demand for the years 2030 to 2035 are presented in Tables 5-23 and 5-24, respectively. The first three years in the sequence represent the multiple dry year period, years 2033 and 2034 are normal, and 2035 is assumed to be the beginning of another multiple dry year period.

TABLE 5-23 Projected Supply for a Multiple Dry Year Period Beginning in 2030						
Supply Sources	2030	2031	2032	2033	2034	2035
Climate Condition	Dry	Dry	Dry	Normal	Normal	Dry
Groundwater (AFY)	35,343	36,179	37,016	37,853	38,689	39,383
CDA (AFY)	8,533	8,533	8,533	8,533	8,533	8,533
WFA (AFY)	17,831	18,265	18,699	19,132	19,566	20,000
Recycled Water - IEUA (AFY)	14,832	15,543	16,253	16,964	17,674	18,385
Total (AFY)	76,539	78,520	80,501	82,482	84,463	86,301

TABLE 5-24 Projected Demand for a Multiple Dry Year Period Beginning in 2030						
	2030	2031	2032	2033	2034	2035
Climate Condition	Dry	Dry	Dry	Normal	Normal	Dry
Potable Water (AFY)	61,413	62,714	64,014	65,315	66,615	67,916
Conservation (AFY)	(6,141)	(9,407)	(12,803)	-	-	(6,792)
Recycled Water (AFY)	14,832	15,543	16,253	16,964	17,674	18,385
Total (AFY)	70,104	68,849	67,465	82,279	84,290	79,509

A summary of the supply and demand for the multiple dry years period are presented in Table 5-25 (DWR Table 34). It also shows the surplus water as a percentage of supply and demand. Based on the following comparison, it can be concluded that the City's water system can meet the demands, even during dry years. However, customer cooperation in water conservation will be vital in attaining this.

Table 5-25 (DWR Table 34)
Supply and demand comparison – multiple dry-year events

		2015	2020	2025	2030	2035 - opt
Multiple-dry year first year supply	**Supply totals**[1,2]	47,245	56,794	66,681	76,539	86,301
	Demand totals[2,3,4]	41,888	51,294	60,699	70,104	79,509
	Difference	5,357	5,500	5,982	6,434	6,792
	Difference as % of Supply	11.3%	9.7%	9.0%	8.4%	7.9%
	Difference as % of Demand	12.8%	10.7%	9.9%	9.2%	8.5%
Multiple-dry year second year supply	**Supply totals**[1,2]	49,155	58,771	68,653	78,520	86,301
	Demand totals[2,3,4]	41,609	50,689	59,769	68,849	79,509
	Difference	7,546	8,082	8,883	9,670	6,792
	Difference as % of Supply	15.4%	13.8%	12.9%	12.3%	7.9%
	Difference as % of Demand	18.1%	15.9%	14.9%	14.0%	8.5%
Multiple-dry year third year supply	**Supply totals**[1,2]	51,065	60,749	70,624	80,501	86,301
	Demand totals[2,3,4]	41,200	49,955	58,710	67,465	79,509
	Difference	9,865	10,794	11,914	13,036	6,792
	Difference as % of Supply	19.3%	17.8%	16.9%	16.2%	7.9%
	Difference as % of Demand	23.9%	21.6%	20.3%	19.3%	8.5%

Units are in acre-feet per year.

[1] *Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.*

[2] *Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.*

[3] *Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.*

[4] *The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.*

SECTION 6

DEMAND MANAGEMENT MEASURES

6.1 INTRODUCTION

Demand Management Measures (DMMs) are mechanisms used in increasing water conservation. The Urban Water Management Plan Act includes 14 DMMs (CWC 10631 (f)) that must be evaluated in the UWMP. The 14 DMMs are listed in the Requirement #26 below:

Requirement

#26. (Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) water survey programs for single-family residential and multifamily residential customers; (B) residential plumbing retrofit; (C) system water audits, leak detection, and repair; (D) metering with commodity rates for all new connections and retrofit of existing connections; (E) large landscape conservation programs and incentives; (F) high-efficiency washing machine rebate programs; (G) public information programs; (H) school education programs; (I) conservation programs for commercial, industrial, and institutional accounts; (J) wholesale agency programs; (K) conservation pricing;(L) water conservation coordinator; (M) water waste prohibition; (N) residential ultra-lowflush toilet replacement programs (10631(f)(1) and (2).

Requirement

#27. A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan (10631(f)(3)).

Requirement

#28. An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand (10631(f)(4)).

Requirement

#29. An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation (10631(g)).

California Urban Water Conservation Council (CUWCC) was formed in 1991 (last amended June 9, 2010) to increase efficient water use through partnerships with urban water suppliers, public interest groups, and private entities through implementation of voluntary Best Management Practices (BMPs). The Council's goal is to integrate urban water conservation BMPs into the planning and management of California's water resources. BMPs are conservation practices that have been identified by the CUWCC conferences,

workshops, free publications, research regarding water management practices, leadership on water legislation and networking with other agencies and special interest groups. As a member of the California Urban Water Conservation Council (CUWCC), the City is a signatory to the Memorandum of Understanding (MOU). The BMPs cover all the DMMs.

As part of fulfillment of the BMPs, the City has implemented the following 44 water conservation programs, both in the residential and Commercial/Industrial/Institutional (CII) sectors, in the past 5 years:

1. PSA Contest
2. Project WET
3. Quakes Stadium Messaging
4. Edu-Grant
5. Demonstration Garden at LA County Fair
6. WEWAC Website
7. Ontario Cares Program
8. Ultra-Low Flush Toilet Giveaway
9. HET/ULF Toilet Exchange
10. High Efficiency Toilet/ULF Toilet Rebate (Residential and CII)
11. High Efficiency Clothes Washer Rebate (Residential and CII)
12. Zero Water Urinal Upgrade/New Construction Rebate (CII)
13. Water Broom Rebate (CII)
14. Pre-Rinse Nozzle Rebate
15. Conductivity Controller Rebate
16. Weather Based Irrigation Controller – Standard (Residential)
17. Weather Based Irrigation Controller Rebate (CII)
18. Sprinkler Nozzle Rebate (Residential)
19. Centralized Computer Irrigation Controller Rebate (CII)
20. PH/Conductivity Controller Rebate (CII)
21. High Efficiency Nozzle for Large Rotary Sprinklers Rebate (CII)
22. Rotating Nozzles with Pressure Regulating Heads Rebate (CII)
23. WBIC Rebate
24. Water-Wise Turf Removal Incentive
25. Synthetic Turf Rebate (Residential and CII)
26. National Theatre for Children
27. CII Rebate (Save-A-Buck)
28. Garden in Every School
29. Cooling Tower Conductivity Controller Rebate (CII)
30. California Friendly Landscaping Classes
31. Public Outreach Materials
32. Water Fair
33. Film Presentation, “Cadillac Desert “
34. “Splash into Reading” Program
35. Recycled Water Connections
36. MFHET Direct Installation Program
37. Landscape Evaluation Audit Program (LEAP)
38. Steam Sterilizer Rebate (CII)
39. Connectionless Food Steamer Rebate (CII)
40. Air-Cooled Ice Machine Rebate (CII)
41. Dry Vacuum Pump Rebate (CII)
42. Ultra-Low Water Urinal Rebate (CII)
43. High Efficiency Toilet 1.28 gpf or less (Flushometer and Tank) Rebate (CII)
44. HET Dual Flush (Flushometer & Tank) Rebate (CII)

As a signatory to the MOU, the City is required to prepare and submit biennial BMP Implementation Reports, providing sufficient information to inform the Council on the progress being made towards implementing the

BMP process. The City's latest report will cover the two year period from 2009 to 2010. California Department of Water Resources deems an agency that is a member of the CUWCC to be in compliance with the requirements of subdivision (f) and (g) of California Water Code Section 10631 by complying with all the provisions of the MOU (latest amendment) and submitting the annual reports required by Section 6.2 of the MOU.

A copy of the completed CUWCC Reporting is included in Appendix G.

SECTION 7
CLIMATE CHANGE

7.1 CLIMATE CHANGE

The City of Ontario will benefit from not having to pump water saved through more efficient use of potable water, as well as from replacing potable water with recycled water for commercial, industrial, and irrigation purposes.

The estimated power savings in efficient use of potable water is illustrated in Table 7-1 in 5-year increments between 2010 and 2035. These estimates are based upon pumping groundwater from Chino Basin, with an average total dynamic head of 875 feet, which conveys the pumped groundwater to the storage reservoirs

Table 7-1
Power Saved in Efficient Use of Potable Water

Description	2010	2015	2020	2025	2030	2035
Efficient Potable Water Use (AF/YR)	35,403	41,906	48,408	54,911	61,413	67,916
Normal Potable Water Use (AF/YR)	37,173	44,001	50,829	57,656	64,484	71,312
Potable Water Saved (AF/YR)	1,770	2,095	2,420	2,746	3,071	3,396
Potable Water Saved (CFS)	2.45	2.89	3.34	3.79	4.24	4.69
Horsepower Saved per Hour	373	442	511	579	648	716
Kilowats Saved per Hour	279	330	381	432	483	534
KW Saved/Year	2,440,362	2,888,585	3,336,808	3,785,031	4,233,254	4,681,477

The estimated power savings by replacing potable groundwater with recycled water is shown in Table 7-2 between 2010 and 2035. These estimates are based upon pumping groundwater to the ground surface elevation (treatment plant locations), with an average total dynamic head of 660 feet. They do not include pumping from the ground level to reservoirs, as recycled water will be pumped from the treatment facilities to the recycled water reservoirs.

Table 7-2
Power Savings in Using Recycled Water in lieu of Potable Groundwater

Description	2010	2015	2020	2025	2030	2035
Recycled Water Use (AF/YR)	1,547	4,915	8,282	11,650	15,017	18,385
Recycled Water Use (CFS)	2.14	6.79	11.44	16.09	20.75	25.40
Horsepower Saved per Hour	246	782	1,318	1,854	2,389	2,925
Kilowats Saved per Hour	184	583	983	1,383	1,782	2,182
KW Saved/Year	1,608,461	5,109,852	8,611,243	12,112,635	15,614,026	19,115,417