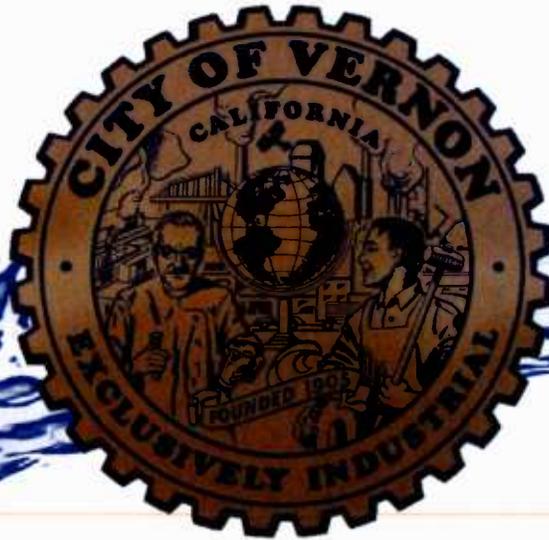


CITY OF VERNON



**2015 URBAN WATER MANAGEMENT PLAN
DRAFT**

MAY 2016

Prepared by



Table of Contents

Table of Contents	i
List of Tables.....	vi
List of Figures.....	vi
List of Appendices.....	vii
Executive Summary	1
Chapter 1 – Introduction and Overview	1-1
1.1 – Purpose	1-1
1.2 – Background	1-1
1.3 – Urban Water Management Planning and the California Water Code	1-1
1.4 – Urban Water Management Plans in Relation to Other Planning Efforts	1-2
1.4.1 – Interagency Coordination.....	1-2
1.4.2 – Public Participation.....	1-2
1.5 – UWMP Organization	1-3
1.5.1 – Organization of Content.....	1-3
1.5.2 – Standardized Forms, Tables and Displays	1-4
1.6 – UWMPs and Grant or Loan Eligibility.....	1-5
1.7 – Resources and Tools.....	1-6
Chapter 2 – Plan Preparation	2-1
2.1 – General Description	2-1
2.2 – Basis for Preparing a Plan.....	2-1
2.2.1 – Public Water Systems	2-2
2.3 – Individual Planning and Compliance	2-3
2.3.1 – Regional UWMP.....	2-3
2.3.2 – Regional Alliance	2-4
2.4 – Reporting Periods and Units of Measure.....	2-5
2.5 – Coordination and Outreach	2-5
2.5.1 – Wholesale and Retail Coordination.....	2-5
2.5.2 – Coordination with Other Agencies and the Community	2-6

2.5.3 – Notice to Cities and Counties	2-6
Chapter 3 – System Description	3-1
3.1 – General Description	3-1
3.2 – Service Area Description	3-1
3.3 – Historical Perspective	3-1
3.4 – Location	3-2
3.5 – Climate	3-4
3.6 – Population	3-5
3.7 – Demographics	3-6
3.8 – Land Use	3-7
Chapter 4 – System Water Use.....	4-1
4.1 – General Description	4-1
4.2 – Recycled versus Potable and Raw Water Demand	4-1
4.3 – Water Uses by Sector	4-2
4.4 – Distribution System Water Losses	4-3
4.5 – Estimating Future Water Savings	4-4
4.6 – Water Use for Lower Income Households	4-5
4.7 – Climate Change	4-6
4.7.1 – City’s Perspective	4-6
4.7.2 – Regional Perspective	4-7
4.7.2.1 – Supply Reliability Risks Due to Climate Change	4-7
4.7.2.2 – Resource Planning	4-8
4.7.2.3 – Knowledge Sharing and Research Support	4-8
4.7.2.4 – Quantification of Current Research	4-10
4.7.2.5 – Implementation of Programs and Policies	4-10
Chapter 5 – SB X7-7 Baselines and Targets	5-1
5.1 – General Description	5-1
5.2 – Updating Calculations from 2010 UWMP	5-2
5.3 – Baseline Periods	5-2
5.3.1 – Determining Baseline GPCD	5-3
5.3.2 – Determining Target Confirmation	5-4

5.4 – Service Area Population	5-5
5.5 – Gross Water Use	5-6
5.6 – Baseline Daily Per Capita Water Use.....	5-7
5.6.1 – Target Method 4: Savings by Water Sector.....	5-7
5.7 – 2015 and 2020 Targets.....	5-9
5.7.1 – 2020 Target Confirmation	5-9
5.8 – 2015 Compliance Daily per Capita Water Use (GPCD).....	5-10
5.9 – Adjustments to 2015 Gross Water Use.....	5-11
5.10 – Regional Alliance	5-11
Chapter 6 – System Supplies	6-1
6.1 – General Description	6-1
6.2 – Purchased or Imported Water	6-1
6.3 – Groundwater	6-1
6.3.1 – Basin Description	6-1
6.3.2 – Groundwater Management.....	6-3
6.3.2.1 – Basin-wide Management	6-3
6.3.2.2 – Local Management.....	6-4
6.3.3 – Overdraft Conditions	6-5
6.3.4 – Historical Pumping.....	6-5
6.4 – Surface Water	6-5
6.5 – Stormwater	6-5
6.6 – Wastewater and Recycled Water.....	6-6
6.6.1 – Recycled Water Coordination.....	6-6
6.6.2 – Wastewater Collection, Treatment and Disposal.....	6-6
6.6.3 – Recycled Water System	6-8
6.6.3.1 City-level Description	6-8
6.6.3.2 Regional Description	6-8
6.6.4 – Recycled Water Beneficial Uses	6-12
6.6.5 – Planned vs. Actual Recycled Water Use	6-14
6.6.6 – Optimization of Future Recycled Water Use	6-15
6.7 – Desalinated Water Opportunities.....	6-20
6.8 – Exchanges or Transfers	6-20

6.8.1 – Groundwater Exchanges.....	6-20
6.8.2 – Groundwater Transfers	6-21
6.9 – Future Water Projects.....	6-21
6.10 – Summary of Existing and Planned Sources of Water.....	6-22
6.11 – Climate Change Impacts to Supply	6-22
Chapter 7 – Water Supply Reliability Assessment	7-1
7.1 – General Description	7-1
7.2 – Constraints on Water Sources	7-1
7.2.1 – Constraints on Imported Water	7-1
7.2.2 – Constraints on Groundwater.....	7-4
7.2.3 – Constraints on Recycled Water	7-4
7.3 – Reliability by Type of Year.....	7-5
7.4 – Supply and Demand Assessment.....	7-5
7.4.1 – Average Year.....	7-6
7.4.2 – Single Dry Year.....	7-7
7.4.3 – Multiple Dry Years	7-7
7.5 – Regional Supply Reliability	7-8
7.6 – Future Reporting of Water Use Compliance.....	7-8
7.6.1 – Statute and Regulation.....	7-8
7.6.2 – Economic Trends	7-11
7.6.2.1 – Regional Manufacturing Labor.....	7-11
7.6.2.2 – Local Tax Revenue.....	7-13
Chapter 8 – Water Shortage Contingency Planning	8-1
8.1 – General Description	8-1
8.2 – Stages of Action.....	8-2
8.2.1 – Water Conservation Stage I.....	8-2
8.2.2 – Water Conservation Stage II.....	8-2
8.2.3 – Water Conservation Stage III.....	8-2
8.3 – Prohibitions on End Uses	8-3
8.3.1 – General Prohibitions.....	8-3
8.3.2 – Water Conservation Stage I.....	8-4

8.3.3 – Water Conservation Stage II.....	8-5
8.3.4 – Water Conservation Stage III.....	8-6
8.4 – Defining Water Features	8-8
8.5 – Penalties, Charges, Other Enforcement of Prohibitions	8-9
8.6 – Categories of Consumption Reduction Methods.....	8-9
8.7 – Determining Water Shortage Reductions	8-9
8.8 – Revenue and Expenditure Impacts	8-10
8.9 – Resolution or Ordinance	8-10
8.10 – Catastrophic Supply Interruption.....	8-10
8.11 – Minimum Supply Next Three Years.....	8-11
Chapter 9 – Demand Management Measures	9-1
9.1 – General Description	9-1
9.2 – Demand Management Measures for Wholesale Agencies.....	9-1
9.3 – Demand Management Measures for Retail Agencies	9-9
9.3.1 – Water Waste Prevention Ordinances.....	9-9
9.3.2 – Metering	9-11
9.3.3 – Conservation Pricing.....	9-11
9.3.4 – Public Education and Outreach	9-12
9.3.5 – Programs to Assess and Manage Distribution System Real Loss	9-12
9.3.6 – Water Conservation Program Coordination and Staffing Report	9-13
9.3.7 – Other Demand Management Measures.....	9-13
9.4 – Implementation over the Past Five Years	9-14
9.5 – Planned Implementation to Achieve Water Use Targets	9-14
9.6 – Members of the California Urban Water Conservation Council.....	9-15
Chapter 10 – Plan Adoption, Submittal, and Implementation	10-1
10.1 – General Description	10-1
10.2 – Inclusion of All 2015 Data	10-1
10.3 – Notice of Public Hearing.....	10-1
10.3.1 – Notice to Los Angeles County.....	10-1
10.3.2 – Notice to the Public.....	10-2
10.4 – Public Hearing	10-2

10.5 – Adoption.....	10-2
10.6 – Plan Submittal	10-3
10.7 – Public Availability	10-3
10.8 – Amending an Adopted UWMP.....	10-3

List of Tables

Table 3.1 – Service Area Climate	3-4
Table 3.2 – Summary of Land Use Analysis	3-7
Table 4.1 – Potable Water Uses by Sector	4-2
Table 4.2 – Lower Income Demand Projection	4-5
Table 5.1 – Summary of Baseline and Target Water Use Calculations	5-1
Table 5.2 – Baseline Per Capita Demand Calculation.....	5-3
Table 5.3 – Calculation of 5-year Target.....	5-4
Table 5.4 – Baseline, Interim and Target Water Use.....	5-9
Table 6.1 – Historical Pumping from the Temescal Basin	6-5
Table 6.2 – Potential Recycled Water Demands	6-13
Table 6.3 – Estimated Sources of Supply.....	6-22
Table 7.1 – Projected Demand	7-6
Table 7.2 – Average Year Supply and Demand Assessment.....	7-6
Table 7.3 – Single Dry Year Supply and Demand Assessment.....	7-7
Table 7.4 – Multiple Dry Supply and Demand Comparison	7-7

List of Figures

Figure 3.1 – Vicinity Map.....	3-2
Figure 3.2 – Water Service Areas in Vernon.....	3-3
Figure 3.3 – Housing Element Excerpt.....	3-5
Figure 6.1 – CBMWD Recycled Water System.....	6-10
Figure 7.1 – Trends in Manufacturing Employment.....	7-12
Figure 7.2 – Trends in State Tax Revenue	7-13

List of Appendices

References

Appendix A – WUE Standardized Tables

Appendix B – California Water Code – Urban Water Management Planning

Appendix C – California Water Code – Sustainable Water Use and Demand Reduction (SB X7-7)

Appendix D – Notification of Intent to Prepare the Urban Water Management Plan

Appendix E – 2015 Consumer Confidence Report

Appendix F -SCAG Demographic Profile

Appendix G – Land Use Analysis

Appendix H - Central Basin Adjudication

Appendix I – CBMWD 2015 UWMP

Appendix J – 2015 Water Audit

Appendix K – Documentation on Climate Change

Appendix L – Datasets for Economic Trends

Appendix M – Ordinance No. 995

Appendix N – Ordinance No. 1115

Appendix O – Ordinance No. 1161

Appendix P – Notice of Phase 1 Water Supply Shortage

Appendix Q – Notice of Phase 2 Water Supply Shortage

Appendix R – CUWCC Reports

Executive Summary

Overview and Plan Preparation

This executive summary provides an overview of the content included in the City of Vernon's (City) 2015 Urban Water Management Plan (UWMP). This report was prepared in compliance with the California Water Code as set forth in the *2015 Urban Water Management Plans Guidebook for Urban Water Suppliers* (referred to hereafter as Guidebook) established by the Department of Water Resources (DWR).

Preparation of an Urban Water Management Plan (UWMP) is required by the California Department of Water Resources (DWR) for all urban water suppliers within the State of California. Urban water suppliers are defined as publicly or privately owned water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers or supply more than 3,000 acre-feet (AF) of water annually. UWMPs must meet requirements established in the California Water Code and the Urban Water Management Planning Act.

This UWMP is organized as directed by DWR in the Guidebook including chapter topics and content, delineation of mandatory statutes, and standardized Water Use Efficiency (WUE) tables. Description and analysis is specific to the City's Water Service Area.

System Water Use

Water use within the Water Service Area consists primarily of commercial/industrial/institutional (CII) with very little water use in other sectors.

Water Conservation Baselines and Target

In accordance with the Water Conservation Act of 2009, the City has calculated its baseline water use and its target for a 20% reduction in per capita water use by 2020 in terms of gallons per capita per day (GPCD). For purposes of per capita water use, the City's population was determined to be 100 for all historical, current and future calculations per discussions with the Department of Water Resources. The City baseline per capita water use is 100,296 GPCD. The City's 2020 target per capita water use is 89,809 GPCD. For purposes of demonstrating progress toward the 2020 goal, the City compared its actual 2015 per capita water use to its interim 2015 per capita water use target of 95,053 GPCD. The City has achieved a per capita water use of 68,057 GPCD, which already exceeds its 2020 goals.

System Supplies

The City has a diverse water supply portfolio including imported water from Central Basin Municipal Water District (CBMWD), groundwater from the Central Basin, and recycled water for power generation from CBMWD.

Water Supply Reliability

Water supply reliability was assessed for projected normal years, single dry years, and multiple dry years. This means that projected supply was compared to projected demand under normal and drought conditions to verify adequacy of supply. All of the City's sources of supply are sustainably managed and are projected to meet demand through 2040. It should be noted that water demand in the City is not tied to weather or population growth; rather, fluctuation in water demand is most closely tied to the economic cycle. The projected water demand is a balance between historical high-intensity commercial and industrial activity, the 2020 water use target and the impacts of ongoing water conservation efforts.

The projected water supply is balance between groundwater water rights, access to additional groundwater through lease or agreement, access to purchased imported water and access to recycled water. Although demands are projected to exceed the City's groundwater rights in the future, access to additional supply through its associations and partnerships is the basis for the City's water reliability.

Water Shortage Contingency Planning

The City has enacted water conservation ordinances in order to provide guidance and authority for responding to water shortages.

Demand Management Measures

Demand management measures (aka water conservation best management practices) refer to water conservation projects and programs implemented by the City and in association with its partners to reduce water use or water loss. The City's water conservation partners include CBMWD, members of the Gateway Water Management Authority and members of the Southeast Water Coalition. The City is a member of the California Urban Water Conservation Council (CUWCC), who assists and monitors water conservation efforts among its members. The City reports progress on water conservation regularly to the CUWCC as part of this coordinated effort.

DRAFT

Chapter 1 – Introduction and Overview

In this introductory chapter, we will provide a discussion on the importance and extent of their water management planning efforts.

1.1 – Purpose

CWC 10608.12

- (p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.*
- (r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.*

The California Water Code requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (AF) of water annually to prepare and adopt an Urban Water Management Plan (UWMP) for submission to the Department of Water Resources (DWR) every five years.

1.2 – Background

The 2015 UWMP is an update to the 2010 UWMP, which was used as a foundation for the current effort to promote consistency. In addition, new regulations and updated guidance from DWR per the Guidebook helped to shape the presentation and content of this document.

1.3 – Urban Water Management Planning and the California Water Code

Following is a summary of the legislation that makes up Urban Water Management Planning:

- AB 1420: Requires implementation of demand management measures (DMMs)/best management practices (BMPs) to qualify for water management grants or loans.
- AB 1465: Requires water suppliers to describe opportunities related to reclaimed water use and stormwater recapture to offset potable water use.
- SB 6101, and SB 2212, which became effective beginning January 1, 2002, requires counties and cities to consider information relating to the availability of water to supply new large developments by mandating the preparation of further water supply planning and Water Supply Assessments.
- SB 1087: Requires water suppliers to report single family residential (SFR) and multi-family residential (MFR) projected water use for planned lower income units separately.

- SB 3185 requires the UWMP to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply.
- AB 1056 requires urban water suppliers to submit their UWMPs to the California State Library.
- SB X7-7: Requires development and use of new methodologies for reporting population growth estimates, base per capita use, and water conservation, and requires meeting the developed water conservation targets in order to qualify for water management grants and loans. This water bill also extended the 2010 UWMP adoption deadline for retail agencies to July 1, 2011.
- SB 1478: This bill was signed on September 23, 2010 and extends the 2010 UWMP deadline for wholesale agencies, such as the Metropolitan Water District of Southern California (MWDSC), to July 1, 2011, as SBx7-7 did for retail agencies.

1.4 – Urban Water Management Plans in Relation to Other Planning Efforts

The following documents were reviewed, cited and incorporated by reference into this UWMP:

- CBMWD 2015 UWMP
- MWD 2015 UWMP
- Vernon 2010 UWMP
- Vernon General Plan

Planning documents inherently deal with uncertainties about the future. Uncertainty cannot be avoided; however, adequate documentation and applied reason ensures defensibility against legal challenges, completeness and comprehensiveness. The following steps have been employed, documented as necessary, to satisfy issues surrounding supply uncertainty as they pertain to development of this UWMP:

- Acknowledge the uncertainty
- Specify the conclusion and how the conclusion was reached
- Reference supporting evidence
- Evaluate the likelihood that the conclusion is incorrect
- Provide an alternative in case the conclusion is proved incorrect
- Respond to comments regarding the conclusion
- Pay attention to the wholesaler's plans
- Use the latest and best data available

1.4.1 – Interagency Coordination

[To be completed following release of Draft]

1.4.2 – Public Participation

[To be completed following adoption hearing]

1.5 – UWMP Organization

1.5.1 – Organization of Content

Executive Summary

Chapter 1 - Introduction and Overview In this introductory chapter, agencies provide a discussion on the importance and extent of their water management planning efforts.

Chapter 2 - Plan Preparation This section will provide information on their process for developing the UWMP, including efforts in coordination and outreach.

Chapter 3 - System Description Suppliers may include maps of the service area, a description of the service area and climate, their Public Water System(s), and the agency's organizational structure and history.

Chapter 4 - System Water Use Describe and quantify the current and projected water uses within the agency's service area.

Chapter 5 - Baselines and Targets Retail agencies and Regional Alliances will describe their methods for calculating their baseline and target water consumption. They will also demonstrate whether or not they have achieved the 2015 interim water use target, and their plans for achieving their 2020 water use target.

Chapter 6 - System Supplies Describe and quantify the current and projected sources of water available to the agency. A description and quantification of potential recycled water uses and supply availability is also to be included in this chapter, to the extent that it pertains to each agency.

Chapter 7 - Water Supply Reliability Water agencies will describe the reliability of their water supply and project the reliability out 20 years. This description will be provided for normal, single dry years and multiple dry years.

Chapter 8 - Water Shortage Contingency Planning Provide the supplier's staged plan for dealing with water shortages, including a catastrophic supply interruption.

Chapter 9 - Demand Management Measures Water suppliers will communicate their efforts to promote conservation and to reduce demand on their water supply and will specifically address several demand management measures.

Chapter 10 - Plan Adoption, Submittal, and Implementation Water agencies will describe the steps taken to adopt and submit the UWMP and to make it publicly available. This chapter will also include a discussion of the agency's plan to implement the UWMP.

WUE Tables

Appendices

1.5.2 – Standardized Forms, Tables and Displays

CWC 10644

(a)(2) The plan, or amendments to the plan, submitted to the department ... shall include any standardized forms, tables, or displays specified by the department.

CWC 10608.52

(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision

(a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24... The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Standardized tables are provided in Appendix A.

By convention, statutes related to meeting the minimum requirements of the Urban Water Management Planning Act are provided in the following format:

CWC XXXXX

Pertinent language taken directly from the California Water Code or in reference thereto.

By convention, citation of public documents is provided in the following format:

Citations from ordinances, government codes, and government planning documents are provided in italics and offset one half inch from the right and left with respect to the general content of this plan.

1.6 – UWMPs and Grant or Loan Eligibility

CWC 10608.56

- (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.*
- (c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.*
- (e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.*
- (f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).*

By submitting this Urban Water Management Plan by the specified deadline, the City of Vernon is eligible for state water grants and loans.

CCR Section 596.1

- (b)(2) "disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.*

Per SCAG¹, the City's 2014 annual median household income (\$53,125) was 70% of the of the statewide annual median household income. The City is a disadvantaged community.

¹ SCAG Profile of the City of Vernon (May 2015): <https://www.scag.ca.gov/Documents/Vernon.pdf>

1.7 – Resources and Tools

The following resources and tools were used in the preparation of this Urban Water Management Plan:

- DWR Workshop for the Preparation of 2015 UWMPs
- DWR Standardized Tables
- Water Use Efficiency (WUE) data portal
- DWR Checklist for UWMP Completeness
- DWR population calculating tool
- DWR Water Audit Worksheet

DATA

Chapter 2 – Plan Preparation

2.1 – General Description

Plan Preparation deals with protocols and documentation for notifications, inter-agency coordination, publication and adoption. Adoption of the UWMP implies subsequent implementation by the adopting agency, and Plan Preparation drills down to the details of the adopting agency's implementation strategy.

2.2 – Basis for Preparing a Plan

CWC 10617

"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems...

CWC 10620

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

CWC 10621

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

The City provides municipal water service in excess of 3,000 AFY. This defines the City as an urban water supplier. Therefore, the City has prepared this Urban Water Management Plan update in compliance with CWC 10621(d).

2.2.1 – Public Water Systems

CWC 10644

(a)(2) The plan, or amendments to the plan, submitted to the department ... shall include any standardized forms, tables, or displays specified by the department.

CWC 10608.52

(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision

(a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24... The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

California Health and Safety Code 116275

(h) "Public Water System" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

The City's Public Water System number is CA1910167.

Standardized Tables are provided in Appendix A.

The layout of this report corresponds to preferences provided by DWR.

2.3 – Individual Planning and Compliance

The City is submitting an individual plan and is participating in a regional alliance.

2.3.1 – Regional UWMP

CWC 10620

(d)(1) *An urban water supplier may satisfy the requirements of this part by participation in area wide, regional, watershed, or basin wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.*

The City is not participating in a regional plan.

2.3.2 – Regional Alliance

CWC 10608.20

(a)(1) ...Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis as provided in subdivision (a) of Section 10608.28...

CWC 10608.28

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

The City is participating in the Gateway Regional Alliance. A copy of this UWMP and accompanying WUE and SB X7-7 tables have been provided to Stetson Engineers, Inc. to assist with their preparation of the of Gateway Regional Alliance report.

2.4 – Reporting Periods and Units of Measure

CWC 1608.20

(a)(1) Urban retail water suppliers...may determine the targets on a fiscal year or calendar year basis.

Water use is reported on a calendar year basis.

Annual water use is reported as acre-feet per year (AFY).

Per capita water use is reported as gallon per capita per day (GPCD).

2.5 – Coordination and Outreach

CWC 10631

(j) An urban water supplier that relies 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).

[To be completed following public review]

2.5.1 – Wholesale and Retail Coordination

[To be completed following submittal to CBMWD for review]

2.5.2 – Coordination with Other Agencies and the Community

CWC 10620

(d)(2) 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.

CWC 10642

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...

[To be completed following public review]

2.5.3 – Notice to Cities and Counties

CWC 10621 (b)

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before 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.

Pursuant to CWC 10621(b), Los Angeles County was notified of the opportunity to review the plan. See Appendix D for a copy of the notification.

Chapter 3 – System Description

3.1 – General Description

System Description provides for demonstrating a deep understanding of the service area including the physical boundary, the associated current and projected population, and demographic and weather-related influences.

3.2 – Service Area Description

CWC Section 10631

Describe the service area of the supplier.

The subsections that follow provide a detailed description of the City's water service area in terms of history, location, vicinity, weather, population and demographics.

3.3 – Historical Perspective

City founders recognized the significance of the three major railroads running through the area. The founders convinced railroad executives to run spur tracks off the main lines and later incorporated the adjacent three miles as an "exclusively industrial" city named after a dirt road, Vernon Avenue, crossing its center.

The first industry in the City dealt with livestock. Two giant stockyards with meat packing facilities became Vernon's signature industry. Twenty-seven slaughterhouses lined Vernon Avenue from Soto Street to Downey Road through the 1960s.

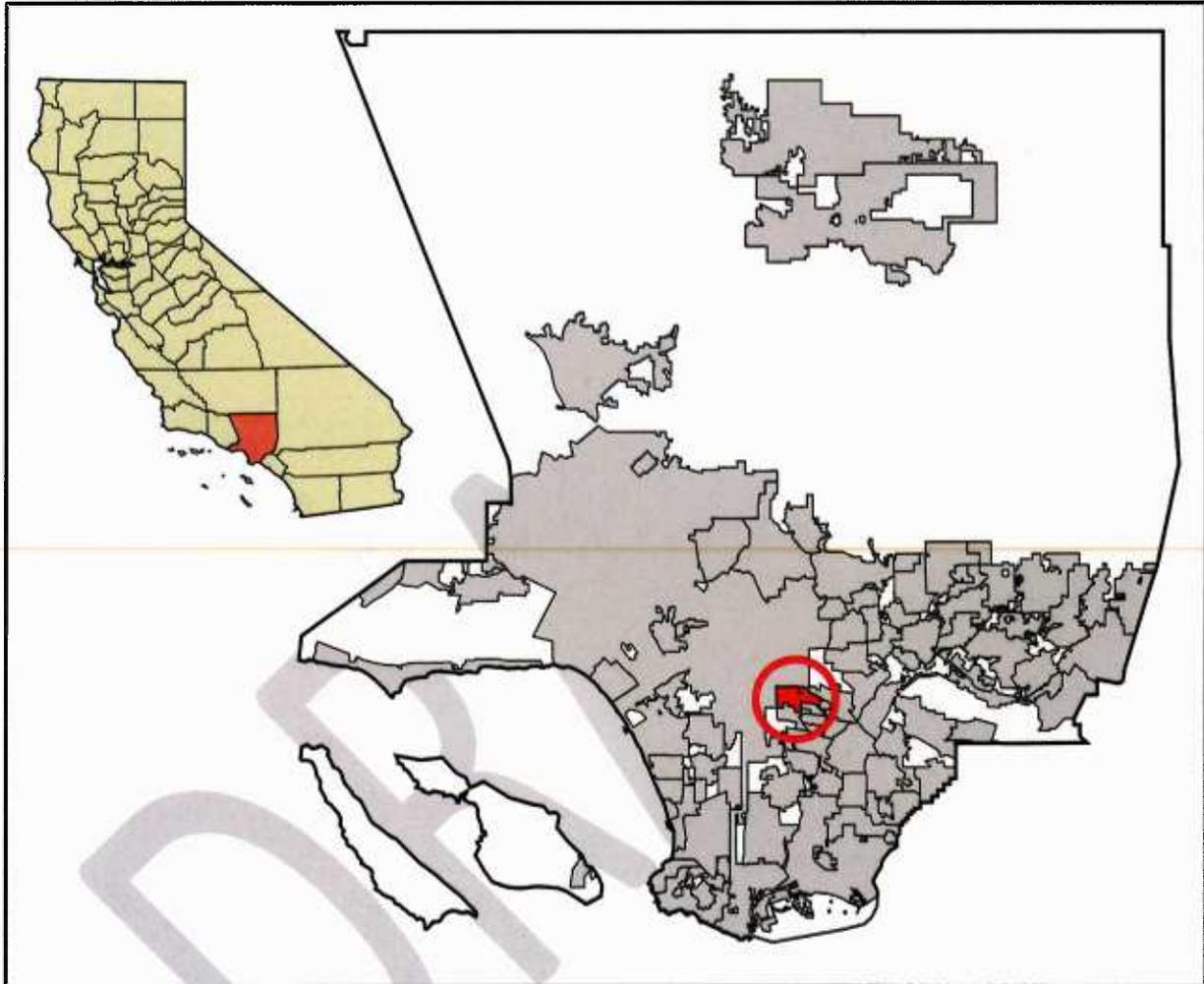
In the 1920s and 1930s, heavy industries proliferated including steel (U.S. and Bethlehem), aluminum (Alcoa), glass (Owens), can-making (American Can) and automobile production (Studebaker). In the 1940s and 1950s, more industries opened for business in Vernon including aerospace contractors (Norris Industries), box and paper manufacturers, drug companies (Brunswick), and food processors (General Mills, Kal Kan). A strong, unionized labor force contributed to excellent middle class incomes for thousands of families in the region.

In 1932, a Vernon bond authorized the construction of the City's own Light & Power plant, which is still operational today. Low-cost power and water, along with low taxes, attracted businesses to Vernon. Today, smaller industrial and commercial establishments are characteristic of the business community in Vernon including fashion design, garment-making, film production, electronics, and waste recycling.

3.4 – Location

The City of Vernon is located in the Los Angeles-Long Beach metro area, as shown in Figure 3.1.

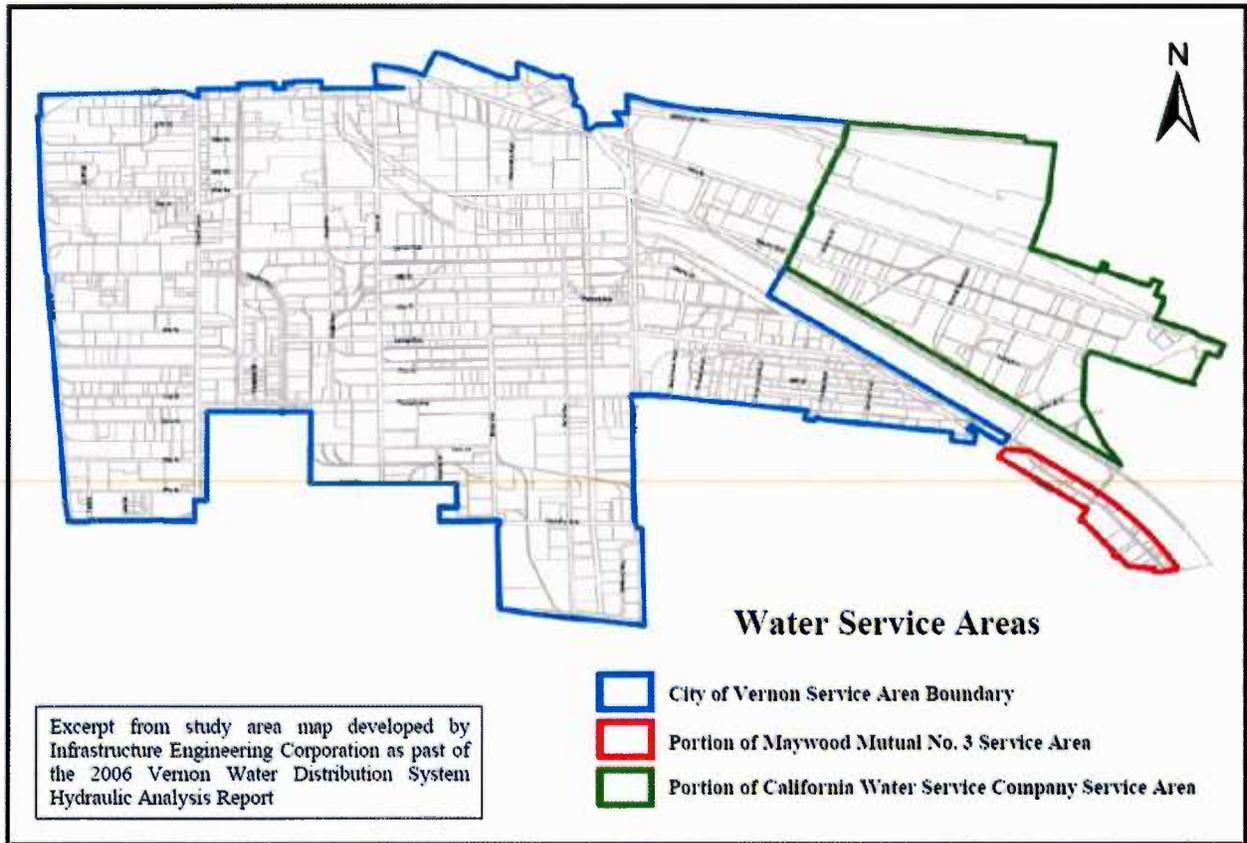
Figure 3.1 – Vicinity Map



The City is surrounded by the cities of Los Angeles, Huntington Park, Maywood, Bell and Commerce.

Most of the geographical area of Vernon is supplied by the City's Water Department. The California Water Service Company (East Los Angeles District, Commerce System) serves some of the northeast portion of the City, and a small portion of southeast Vernon is serviced by the Maywood Mutual Water Company Number 3. The service areas of the three water suppliers serving Vernon are shown in Figure 3.2.

Figure 3.2 – Water Service Areas in Vernon



All analyses and references in this plan refer to the City of Vernon the Water Service Area, shown above.

3.5 – Climate

CWC Section 10631
Describe the service area of the supplier, including... climate...

Information on climate was provided by the IDcide.com website² and based on data compiled from the National Climactic Data Center, the National Oceanic and Atmospheric Administration and the National Weather Service per continuous meteorological data collected at the USC Weather Station (approximately 4.4 miles from Vernon). Table 3.1 provides a breakdown of normal temperatures typical to the vicinity of Vernon.

Table 3.1 – Service Area Climate

Month	Average Monthly High Temperature (degrees F)	Average Monthly Low Temperature (degrees F)	Average Monthly Temperature (degrees F)
January	68.1	48.5	58.3
February	69.6	50.3	60.0
March	69.8	51.6	60.7
April	73.1	54.4	63.8
May	74.5	57.9	66.2
June	79.5	61.4	70.5
July	83.8	64.6	74.2
August	84.8	65.6	75.2
September	83.3	64.6	74.0
October	79.0	59.9	69.5
November	73.2	52.6	62.9
December	68.7	48.3	58.5
Annual Average	75.6	56.6	66.2

The warmest month of the year is August with an average maximum temperature of 84.8 °F, while the coldest month of the year is December with an average minimum temperature of 48.3 °F. Temperature variations between night and day tend to be moderate during both summer and winter with an average difference that can reach 19 °F.

The annual average precipitation is 15.1 inches. Rainfall in is fairly evenly distributed throughout the year. The wettest month of the year is February with an average rainfall of 3.7 inches.

3.6 – Population

CWC Section 10631

Describe the service area of the supplier, including 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 and shall be in five-year increments to 20 years or as far as data is available.

Approximately 100 people live in the City, while 30,000 to 50,000 people come to the City each day for work. That’s a ratio of employees to residents of about 400 to one. The City has been built-out for decades. There have been no changes to residential land use within the Water Service Area for many decades, and none are anticipated. Population growth is stagnant.

Per the City’s General Plan 2014-2021 Housing Element, historical and future population is estimated at 100 as shown in Figure 3.3.

Figure 3.3 – Housing Element Excerpt

**Vernon General Plan
2014-2021 Housing Element**

**Table H-2
Projected Population and Household Growth 2008-2035**

	2008		2020		2035	
	Pop	Hshlds	Pop	Hshlds	Pop	Hshlds
SCAG	100	30	100	30	100	30

Source: 2012 SCAG Regional Transportation Plan Growth Forecast

For purposes of preparing this document, it was determined to impose a constant population of 100 for all calculations within the period 1990 to 2040.

3.7 – Demographics

CWC 10631

Describe the service area of the supplier, including. . . other demographic factors affecting the supplier's water management planning.

All of the Water Service Area, which is comprised predominately of commercial and industrial land uses, is built-out with almost no new accounts anticipated in the future. Over the past 10 years, about 85% of all water was delivered to the commercial and industrial sectors, about 8% was dedicated to power generation, with the remaining 7% comprised of residential, losses and other uses.

The City has very little residential demand or landscaping demand. Residential demand account for less than 0.1% of total demand. The irrigable area in the City is estimated at less than 16 acres, or about 0.7% to total area. As a result, the City does not follow the typical water demand patterns for water systems in California, which tend to vary relative to population and precipitation. Rather, demands on City resources, including water, respond to national and global economic trends.

Due to the nature of Vernon as a center of commercial and industrial activity, water demand within the City is linked to the impacts of the marketplace on the region and beyond. For this reason, there is still potential for increases in water demand despite being built-out. Water demand in the commercial and industrial sectors is linked more directly to economic intensity and productivity than to supporting the needs of the local population. Furthermore, Vernon's infrastructure is designed to meet the needs of the commercial and industrial sectors in general whatever they may be, rather than being limited to the specific needs of its current customers. As such, the infrastructure is very robust and adaptable making it capable of meeting the changing requirements necessary to fulfill its mission of being an "ideal location for industry."

Therefore, Vernon has an obligation to have a system in place capable of meeting the demands associated with high intensity and productivity in the commercial and industrial sectors, whenever those demands arise as dictated by economic factors that are largely outside of the City's control.

Additional demographic data prepared by Southern California Association of Governments is provided in Appendix F.

3.8 – Land Use

A land use analysis was prepared using Southern California Association of Government land use data within the Water Service Area. It should be noted that the City historically transformed itself to meet ever-changing industrial and commercial needs. As an example, during the early years of the City, trains dominated the transportation of goods, but today there is a mixed transportation system. As a result, many parcels originally designated for rail transportation has been repurposed. Also, parcel boundaries are not necessarily consistent with the water service area boundary. Any parcel 50% or more within the Water Service Area was included in the analysis.

The complete analysis is provided in Appendix G. A summary of the analysis is provided in Table 3.2

Table 3.2 – Summary of Land Use Analysis

Sector	Area (acres)	Percent of Total Area
Industrial	881.0	40.0%
Commercial, Wholesaling and Warehousing	723.4	32.8%
Transportation	340.4	15.4%
Utilities	141.9	6.4%
Government	47.6	2.2%
All Others	69.2	3.2%
Totals	2,203.5	100.0%

Chapter 4 – System Water Use

4.1 – General Description

System Demands involve organizing and reducing historical water demand data into pre-determined categories and timeframes. Standardized methodologies are employed to calculate a historical baseline for purposes of demonstrating achievement of water use reduction goals.

4.2 – Recycled versus Potable and Raw Water Demand

The City provides recycled water to one customer and potable water to all others. The City does not receive or deliver raw water. This chapter deals primarily with potable water. Recycled water is discussed in much greater detail in Chapter 6.

DRAFT

4.3 – Water Uses by Sector

CWC 10631

(e)(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, 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...*

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

Historical, current and projected potable water demand by sector is provided in Table 4.1.

Table 4.1 – Potable Water Uses by Sector

Year	Single Family Residence	Multi-Family Residence	Commercial / Industrial	Landscape	Other
2000	7	1	5,052	5,473	35
2005	5	1	5,080	4,681	216
2010	7	1	5,037	2,139	30
2015	5	1	4,480	1,894	17
2020	6	1	4,600	4,600	253
2025	6	1	4,600	4,600	253
2030	6	1	4,600	4,600	253
2035	6	1	4,600	4,600	253
2040	6	1	4,600	4,600	253

Historically, demand in the commercial and industrial sectors were comparable and dominated all other demand sectors. More recently, commercial activity has remained high but industrial activity has declined. The decline in industrial activity is attributed to the economic downturn of 2008.

Economic recovery from 2008 conditions is anticipated. The timing and magnitude of the recovery is unknown; however, future distribution of water demand by sector is anticipated to approach pre-2008 levels. The demand projections provided in Table 4.1 accounts for (1) a high level of intensity in the commercial and industrial sectors, (2) the implementation of modest water conservation activities, and (3) framing future demand in terms of compliance with the Water Conservation Act. More information on compliance with the Water Conservation Act is provided in Chapter 5.

4.4 – Distribution System Water Losses

CWC 10631

(e)(1) Quantify, to the extent records are available, past and current water use over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:...

(J) Distribution system water loss

(3)(A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

The 2015 Water Audit is provided in Appendix J.

4.5 – Estimating Future Water Savings

CWC 10631

(e)(4)(A) *If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*

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

No City codes, standards, ordinances or plans are anticipated to result in future water savings.

4.6 – Water Use for Lower Income Households

CWC 10631.1

(a) 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.

California Health and Safety Code 50079.5

(a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families... In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

Per the Vernon General Plan Housing Element, 80% of the residential population of Vernon is considered lower income. The population in Vernon is stagnant and estimated at 100. Water demand for the entire residential sector is approximately 7 AFY, which is equivalent to 0.08% of total demand. Table 4.2 provides a projection of lower income demand.

Table 4.2 – Lower Income Demand Projection

Sector	2020	2025	2030	2035	2040
Single Family Residential	5	5	5	5	5
Multi-Family Residential	1	1	1	1	1

4.7 – Climate Change

4.7.1 – City’s Perspective

The City perspective on climate change does not impact water supply or demand. Per the Vernon General Plan:

In 2006, the California Legislature adopted AB 32, the Global Warming Solutions Act of 2006, to address concerns regarding the potential impact of climate change on the State’s economy and the environment. The legislation requires the California Air Resources Board to determine the level of greenhouse gases produced in 1990 and outline strategies to ensure that the level of emissions in 2020 do not exceed the 1990 level. The overall goal is to establish a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gas emissions. Specifically, AB 32 (as codified in the California Health and Safety Code) requires the California Air Resources Board to:

- *Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions*
- *Adopt mandatory reporting rules for significant sources of greenhouse gases*
- *Adopt a plan indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms, and other actions*
- *Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms*

SB 375, passed into law in 2008, has the goal of fostering development patterns—and more compact patterns in particular—that reduce the need to drive, thereby reducing air pollution from car exhaust, conserving water, and protecting habitat, among other benefits. This law is designed to align regional land use, housing, and transportation plans with greenhouse gas reduction targets.

In Vernon, emissions are regulated by the Southern California Air Quality District, as well as State and federal agencies. The agencies have imposed regulations to reduce emissions from both stationary and vehicular sources. These actions have led to a substantial improvement in air quality in the Southern California air basin and presumably have had a concurrent effect on greenhouse gas emissions. Further reductions are anticipated as new requirements are imposed by current legislation and regulations.

The City of Vernon is a built out city, and the General Plan does not provide for any substantive increase in either square footage in industrial development or substantive increases in employment (see Table LU-1 in the Land Use Element). Future residential development is limited pursuant to the Land Use Element. This limited residential development will provide a new housing opportunity for local workers to live near places of employment in Vernon, furthering SB 375 goals. Given the limited changes anticipated

as part of this General Plan, the issue of increased emissions resulting from growth is not a significant concern.

4.7.2 – Regional Perspective

A regional perspective on the impacts climate change is provided MWD in following subsection.

4.7.2.1 – Supply Reliability Risks Due to Climate Change

Climate change adds its own uncertainties to the challenges of planning. Metropolitan’s water supply planning has been fortunate in having almost one-hundred years of hydrological data regarding weather and water supply. This history of rainfall data has provided a sound foundation for forecasting both the frequency and the severity of future drought conditions, as well as the frequency and abundance of above-normal rainfall. But, weather patterns can be expected to shift dramatically and unpredictably in a climate driven by increased concentrations of carbon dioxide in the atmosphere. These changes in weather significantly affect water supply planning, irrespective of the debate associated with the sources and cause of increasing concentrations of greenhouse gasses. As a major steward of the region’s water supply resources, Metropolitan is committed to performing its due diligence with respect to climate change.

While uncertainties remain regarding the exact timing, magnitude, and regional impacts of these temperature and precipitation changes, researchers have identified several areas of concern for California water planners. These include:

- *Reduction in Sierra Nevada snowpack;*
- *Increased intensity and frequency of extreme weather events; and*
- *Rising sea levels resulting in*
 - *Impacts to coastal groundwater basins due to seawater intrusion;*
 - *Increased risk of damage from storms, high-tide events, and the erosion of levees; and*
 - *Potential pumping cutbacks on the SWP and Central Valley Project (CVP).*

Other important issues of concern due to global climate change include:

- *Effects on local supplies such as groundwater;*
- *Changes in urban and agricultural demand levels and patterns;*
- *Impacts to human health from water-borne pathogens and water quality degradation;*
- *Declines in ecosystem health and function; and*
- *Alterations to power generation and pumping regimes.*

4.7.2.2 – Resource Planning

Under the 2015 IRP Update, Metropolitan recognizes additional risks and uncertainties from a variety of sources:

- *Water quality*
- *Climate change*
- *Regulatory and operational changes*
- *Project construction and implementation issues*
- *Infrastructure reliability and maintenance*
- *Demographic and growth uncertainty*

Any of these risks and uncertainties, should they occur individually or collectively, may result in a negative impact to water supply reliability. While it is impossible to know how much risk and uncertainty to guard against, the region's reliability will be more secure with a long-term plan that recognizes risk and provides resource development to offset that risk. Some risk and uncertainty will be addressed by following the findings of the 2015 IRP Update. But there are other risks that may take longer to manifest, like climate change or shifts in demographic growth patterns that increase or move the demands for water.

Metropolitan has established an intensive, comprehensive technical process to identify key vulnerabilities. This Robust Decision Making (RDM) approach was used with the 2010 IRP Update. The RDM approach can show how vulnerable the region's reliability is to longer-term risks and can also establish "signposts" that can be monitored to see when critical changes may be happening. Signposts include monitoring the direction of ever-changing impacts from improved Global Climate Models, and housing and population growth patterns. The RDM approach will be revisited with the new resource reliability targets identified in the 2015 IRP Update. Initial 2015 IRP analysis indicated an additional 200,000 AF of water conservation and local supplies may be needed to address these risks. This additional supply goal will be considered when examining implementation policies and approaches as the IRP process continues.

4.7.2.3 – Knowledge Sharing and Research Support

Metropolitan is an active and founding member of the Water Utility Climate Alliance (WUCA). WUCA consists of ten nationwide water providers collaborating on climate change adaptation and greenhouse gas mitigation issues. As a part of this effort, WUCA pursues a variety of activities on multiple fronts.

Member agencies of WUCA annually share individual agency actions to mitigate greenhouse gas emissions to facilitate further implementation of these programs. WUCA also monitors development of climate change-related research, technology, programs, and federal legislation.

In addition to supporting federal and regional efforts, WUCA released a white paper entitled "Options for Improving Climate Modeling to Assist Water Utility Planning for Climate Change" in January 2010. The purpose of this paper was to assess Global

Circulation Models, identify key aspects for water utility planning, and make seven initial recommendations for how climate modeling and downscaling techniques can be improved so that these tools and techniques can be more useful for the water sector. Another recent WUCA publication related to water planning is: "Embracing Uncertainty: A Case Study Examination of How Climate Change is Shifting Water Utility Planning" (2015). A fundamental goal of this recent white paper is to provide water professionals with practical and relevant examples, with insights from their peers, on how and why to modify planning and decision-making processes to better prepare for a changing climate.

In addition to these efforts, the member agencies of WUCA annually share individual agency actions to mitigate greenhouse gas emissions to facilitate further implementation of these programs. At a September 2009 summit at the Aspen Global Change Institute, WUCA members met with global climate modelers, along with federal agencies, academic scientists, and climate researchers, to establish collaborative directions to progress climate science and modeling efforts. WUCA continues to pursue these opportunities and partnerships with water providers, climate scientists, federal agencies, research centers, academia and key stakeholders.

Metropolitan also continues to pursue knowledge sharing and research support activities outside of WUCA. Metropolitan regularly provides input and direction on California legislation related to climate change issues. Metropolitan is active in collaborating with other state and federal agencies, as well as non-governmental organizations, on climate change related planning issues. The following list provides a sampling of entities that Metropolitan has recently worked with on a collaborative basis:

- *USBR*
- *U.S. Army Corps of Engineers*
- *AWWA Research Foundation*
- *National Center for Atmospheric Research*
- *California Energy Commission*
- *California Department of Water Resources*

4.7.2.4 – Quantification of Current Research

Metropolitan continues to incorporate current climate change science into its planning efforts. A major component of the current IRP update effort is to explicitly reflect uncertainty in Metropolitan’s future water management environment. This involves evaluating a wider range of water management strategies, and seeking robust and adaptive plans that respond to uncertain conditions as they evolve over time, and that ultimately will perform adequately under a wide range of future conditions. The potential impacts and risks associated with climate change, as well as other major uncertainties and vulnerabilities, will be incorporated into the update. Overall, Metropolitan’s planning activities strive to support the Board adopted policy principles on climate change by:

- *Supporting reasonable, economically viable, and technologically feasible management strategies for reducing impacts on water supply,*
- *Supporting flexible “no regret” solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts, and*
- *Evaluating staff recommendations regarding climate change and water resources under the California Environmental Quality Act (CEQA) to avoid adverse effects on the environment.*

4.7.2.5 – Implementation of Programs and Policies

Metropolitan has made great efforts to implement greenhouse gas mitigation programs and policies for its facilities and operations. To date, these programs and policies have focused on:

- *Exploring water supply/energy relationships and opportunities to increase efficiencies;*
- *Participating in The Climate Registry, a nonprofit greenhouse gas emissions registry for North America that provides organizations with the tools and resources to help them calculate, verify, report, and manage their greenhouse gas emissions in a publicly transparent and credible way;*
- *Acquiring “green” fleet vehicles, and supporting an employee Rideshare program;*
- *Developing solar power at both the Skinner water treatment plant (completed) and the Weymouth water treatment plant (in progress); and*
- *Identifying and pursuing development of “green” renewable water and energy programs that support the efficient and sustainable use of water.*

Metropolitan also continues to be a leader in efforts to increase regional water use efficiency. Metropolitan has worked to increase the availability of incentives for local conservation and recycling projects, as well as supporting conservation Best Management Practices for industry and commercial businesses.

Chapter 5 – SB X7-7 Baselines and Targets

5.1 – General Description

Baselines and Targets involve implementation of the California Water Conservation Act of 2009. Documentation on historical water usage to define a purveyor’s obligation achieve future water use reduction is required.

Water use baselines and targets are given in units of gallons per capita per day (GPCD). However, the City’s demographic character as “exclusively industrial” does not support the use of population as a reliable indicator of water use. Nonetheless, the City is constrained to report water use baselines and targets in units of GPCD. Note that historical, current and future population is considered to be static at 100. This effectively eliminates population as an impact on water demand, since the change in population is zero. As a result, comparison of a water use target to actual water use is proportional to a volumetric comparison of associated production target and actual production. The City’s responsibility to achieve its 2020 target water use is the same as every other purveyor’s responsibility; however, the target water use itself will appear to be a statistical outlier compared to other purveyors.

It should be noted that the California Water Conservation Act of 2009 anticipated the complexities of including industrial water use in a per capita water use calculation for heavily industrialized water systems. Per CWC Section 10608.24(e):

When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

The Water Conservation Act of 2009 provides a number of methodologies for calculating baseline and target water use. All options were examined, and Method 4 was chosen. Table 5.1 provides a summary of the results of the various approaches to calculating baseline and target water use.

Table 5.1 – Summary of Baseline and Target Water Use Calculations

Approach	Baseline (GPCD)	2020 Target (GPCD)
Method 1	100,296	80,245
Method 1 (Excluding Process Water)	55,699	47,759
Method 2	100,296	81,298
Method 2 (Excluding Process Water)	55,699	44,761
Method 3	100,296	142
Method 4	100,296	89,809

The rest of this chapter provides supporting information regarding application of Method 4.

5.2 – Updating Calculations from 2010 UWMP

CWC 10608.20

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

Methodologies DWR 2011, Methodology 2 Service Area Population

Page 27 - Water suppliers may revise population estimates for baseline years between 2000 and 2010 when 2010 census information becomes available. DWR will examine discrepancy between the actual population estimate and DOF's projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates.

The City has elected to update its 2010 calculations.

5.3 – Baseline Periods

CWC 10608.20

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

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

Based on City supply and demand records known as NEAT Water System Statistics, the updated water use target was determined to be 100,296 GPCD.

5.3.1 – Determining Baseline GPCD

CWC 10608.12

(b) “Base daily per capita water use” means any of the following:

- (1) The urban retail water supplier’s estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*
- (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*

In 2008, 8.1% of retail water deliveries were recycled water. As a result, the baseline must be a continuous 10-year period. The City’s baseline period is a 10-year period ending in 2008, as shown in Table 5.2

Table 5.2 – Baseline Per Capita Demand Calculation

Year	Population	Gross Water Use (AFY)	Per Capita Water Use (GPCD)
1999	100	11,877	106,033
2000	100	12,232	109,197
2001	100	11,976	106,919
2002	100	11,263	100,546
2003	100	11,296	100,844
2004	100	11,708	104,526
2005	100	10,596	94,593
2006	100	10,616	94,776
2007	100	10,742	95,900
2008	100	10,040	89,630
Average			110,296

5.3.2 – Determining Target Confirmation

CWC 10608.12 (b)

(3) *For the purposes of Section 10608.22, the urban retail water supplier’s estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.*

The 5-year average per capita water for determining confirmation is calculated at 98,128 GPCD, as shown in Table 5.3

Table 5.3 – Calculation of 5-year Target

Year	Population	Gross Water Use (AFY)	Per Capita Water Use (GPCD)
2003	100	11,296	100,844
2004	100	11,708	104,526
2005	100	10,596	94,593
2006	100	10,616	94,776
2007	100	10,742	95,900
Average			98,128

5.4 – Service Area Population

CWC 10608.20

- (e) An urban retail water supplier shall include in its urban water management plan due in 2010...the baseline per capita water use,...along with the bases for determining those estimates, including references to supporting data.*
- (f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.*

CWC10644

- (a)(2) The plan...shall include any standardized forms, tables or displays specified by the department.*

Determining and projecting the City's population is a challenge for the following reasons:

- Vernon was 100% built-out prior to 1990.
- There have been no changes to residential land use for many decades, and none are anticipated.
- Historical residential water use is less than 0.1% of total demand.
- Population growth is stagnant.
- The DWR population calculator produced inconsistent results for population within the service area boundary.

Given the City's nature as an "exclusively industrial" city, population is not a factor in Vernon's historical, current or projected water use.

In order to avoid skewing the results of per capita demand calculations, a constant population of 100 was used for all periods. A constant population of 100 is consistent with the Vernon General Plan Housing Element. This concept has been discussed with and approved by WRD.

5.5 – Gross Water Use

CWC 10608.12

(g) "Gross Water Use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

- (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
- (2) The net volume of water that the urban retail water supplier places into long term storage*
- (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier*
- (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.*

California Code of Regulations Title 23 Division 2 Chapter 5.1 Article

Section 596 (a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

Gross water use shown in Table 5.2. Deducting process water did not result in an advantage for the City, as shown in Table 5.1.

5.6 – Baseline Daily Per Capita Water Use

5.6.1 – Target Method 4: Savings by Water Sector

Target Method 4 (Savings by Water Sector) involves series of calculations based on a 10-year average per capita water use, and water deliveries for the fifth year of the 10-year average. The following application is based on data associated with the 10-year period ending in 2008 and the methodology provided in DWR’s *Provisional Method 4 For Determining Water Use Targets* (February 2011).

Step 1. Baseline Water Use and Midpoint Year

Baseline Per Capita Water Use for 10-year period ending in 2008: 100,296 GPCD

CII Water use for midpoint year (2003): 93,598 GPCD

Average CII Water Use for 10-year period ending in 2008: 90,276 GPCD

Step 2. Metering Savings

All City accounts are metered. There are no savings associated with metering.

Step 3. Indoor Residential Savings

Alternative 2 (Default): Indoor Residential Savings is 15 GPCD.

Step 4. CII Savings (Equation 5)

$$\boxed{\text{CII Savings, GPCD}} = \boxed{\text{Average Baseline CII Water Use, GPCD}} \times \boxed{0.10}$$

$$\text{CII Savings} = (0.10)(90,276 \text{ GPCD}) \cong 9,028 \text{ GPCD}$$

Step 5. Landscape Irrigation and Water Loss Savings (Equations 2 and 6)

$$\boxed{\text{Landscape Irrigation and Water Loss Sector Use}} = \boxed{\text{Baseline Per Capita Water Use}} - \boxed{\text{Standard Indoor Residential Use}} - \boxed{\text{CII Water Use in 2004}}$$

$$\text{Landscape Irrigation and Water Loss Sector Use} = 100,296 - 70 - 93,598 = 6,683 \text{ GPCD}$$

$$\begin{array}{|c|} \hline \text{Landscape} \\ \text{Irrigation and} \\ \text{Water Loss} \\ \text{Savings} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Landscape} \\ \text{Irrigation and} \\ \text{Water Loss} \\ \text{Sector Use} \\ \hline \end{array} \times \begin{array}{|c|} \hline 0.216 \\ \hline \end{array}$$

$$\text{Landscape Irrigation and Water Loss Savings} = (6,683)(0.216) \cong 1,444 \text{ GPCD}$$

Step 6. Total Savings (Equation 3)

$$\begin{array}{|c|} \hline \text{Total Savings} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Metering} \\ \text{Savings} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Standard} \\ \text{Indoor} \\ \text{Residential} \\ \text{Savings} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{CII Savings} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{Landscape} \\ \text{Irrigation and} \\ \text{Water Loss} \\ \text{Savings} \\ \hline \end{array}$$

$$\text{Total Savings} = 0 + 15 + 9,028 + 1,444 = 10,487 \text{ GPCD}$$

Step 7. 2020 Water Use Target (Equation 1)

$$\begin{array}{|c|} \hline \text{2020 Water} \\ \text{Use Target} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Baseline Per} \\ \text{Capita Water} \\ \text{Use} \\ \hline \end{array} - \begin{array}{|c|} \hline \text{Total Savings} \\ \hline \end{array}$$

$$\text{2020 Water Use Target} = 100,296 - 10,487 = 89,809 \text{ GPCD}$$

5.7 – 2015 and 2020 Targets

CWC 10608.20

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

CWC 10608.20

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan...

Per CWC 10608.20(g), the City has updated the 2020 water use target using Method 4 as outlined in Section 5.6. The updated baseline water use, 2015 interim water use target and 2020 water use target are summarized in Table 5.4.

Table 5.4 – Baseline, Interim and Target Water Use

Water Use	GPCD
Baseline	100,296
2015 Interim Target	95,053
2020 Target	89,809

5.7.1 – 2020 Target Confirmation

CWC 10608.22

Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

Referring to Section 5.3.2, the 2020 water use target cannot be higher than 98,128 GPCD. The 2020 water use target is 89,809 GPCD. The 2020 water use target 89,809 GPCD is confirmed.

5.8 – 2015 Compliance Daily per Capita Water Use (GPCD)

CWC 10608.12

(e) "Compliance daily per-capita water use" means the gross water use during the final year of the reporting period...

CWC 10608.24

(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

CWC 10608.20

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

As shown in Table 5.4, the updated 2015 interim water use target is 95,053 GPCD.

5.9 – Adjustments to 2015 Gross Water Use

CWC 10608.24

- (d)(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:*
- (A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.*
 - (B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.*
 - (C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.*
- (2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.*

Methodology Document, Methodology 4

This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

Optional adjustment for 2015 Gross Water Use was not performed. The City is aware that future water use compliance may be impacted by economic forces beyond its control, especially with respect to process water used in water-intensive industries. Additional information on the City's approach to future water use compliance by making an adjustment to account for business output and economic development is discussed in Section 7.6.

5.10 – Regional Alliance

The City is a member of the Gateway Regional Alliance. The City acknowledges that compliance per capita water use will be calculated for the Gateway Region independently of this individual plan.

Chapter 6 – System Supplies

6.1 – General Description

System Supplies involve organizing and reducing historical water supply source data into pre-determined categories and discussing the availability and sustainability of each source. Documentation on rights, adjudications, agreements and opportunities for current and projected sources are required.

6.2 – Purchased or Imported Water

The City is a member agency of the Central Basin Municipal Water District and purchases imported water as needed.

6.3 – Groundwater

The City overlies the Central Basin and is party to the Central Basin Third Amended Judgment.

6.3.1 – Basin Description

CWC 10631

(b) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

Per DWR (Bulletin 118), the Central Basin occupies a large portion of the southeastern part of the Coastal Plain of Los Angeles Groundwater Basin (Figure 3). The Central Basin is bounded on the north by a surface divide called the La Brea high, and on the northeast and east by emergent less permeable Tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between Central Basin and Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel Rivers drain inland basins and pass across the surface of the Central Basin on their way to the Pacific Ocean.

Throughout the Central Basin, groundwater occurs in Holocene and Pleistocene age sediments at relatively shallow depths. The Central Basin is historically divided into forebay and pressure areas. The Los Angeles forebay is located in the northern part of the Central Basin where the Los Angeles River enters the Central Basin through the Los Angeles Narrows from the San Fernando Groundwater Basin. The Montebello forebay extends southward from the Whittier Narrows where the San Gabriel River encounters the Central Basin and is the most important area of recharge. Both forebays have unconfined groundwater conditions and relatively interconnected aquifers that extend up to 1,600 feet deep to provide recharge to the aquifer system. The Whittier area extends from the Puente Hills south and southwest to the axis of the Santa Fe Springs-Coyote Hills uplift and contains up to 1,000 feet of freshwater-bearing sediments. The Central Basin pressure area is the largest of the four divisions, and contains many aquifers of permeable sands and gravels separated by semi-permeable to impermeable

sandy clay to clay, that extend to about 2,200 feet below the surface. Throughout much of the Central Basin, the aquifers are confined, but areas with semipermeable aquicludes allow some interaction between the aquifers.

The main productive freshwater-bearing sediments are contained within Holocene alluvium and the Pleistocene Lakewood and San Pedro Formations. Throughout most of the Central Basin, the near surface Bellflower aquiclude restricts vertical percolation into the Holocene age Gaspar aquifer and other underlying aquifers, and creates local semi-perched groundwater conditions. The main additional productive aquifers in the Central Basin are the Gardena and Gage aquifers within the Lakewood Formation and the Silverado, Lynwood and Sunnyside aquifers within the San Pedro Formation. Historically, groundwater flow in the Central Basin has been from recharge areas in the northeast, toward the Pacific Ocean on the southwest. However, pumping has lowered the water level in the Central Basin and water levels in some aquifers are about equal on both sides of the Newport-Inglewood uplift, decreasing subsurface outflow to the West Coast Basin.

Many faults, folds and uplifted basement areas affect the water-bearing rocks in the Central Basin. Most of these structures form minor restrictions to groundwater flow. The strongest effect on groundwater occurs along the southwest boundary to the Central Basin. The faults and folds of the Newport – Inglewood uplift are partial barriers to movement of groundwater from the Central Basin to the West Coast Basin. The La Brea high is a system of folded, uplifted and eroded Tertiary basement rocks. Because the San Pedro Formation is eroded from this area, subsurface flow southward from the Hollywood Basin is restricted to the Lakewood formation. The Whittier Narrows is an eroded gap through the Merced and Puente Hills that provides both surface and subsurface inflow to the Central Basin. The Rio Hondo, Pico, and Cemetery faults are northeast-trending faults that project into the gap and displace aquifers. The trend of these faults parallels the local groundwater flow and does not act as a significant barrier to groundwater flow.

The City draws its groundwater supply from the Central Groundwater Basin. This source annually supplies approximately 200,000 acre-feet of potable water to the area south of the Whittier Narrows to the Pacific Ocean and from the Orange County line to the city of Compton.

In 1959, the State Legislature enacted the Water Replenishment Act, enabling the formation of the Water Replenishment District of Southern California (WRD) as it is now known to be the permanent agency in charge of replenishing both the Central and West Basins. The State Legislature has vested in WRD the statutory responsibility to manage, regulate, replenish and protect the quality of groundwater supplies within its boundaries, of which the City of Vernon is included.

6.3.2 – Groundwater Management

CWC 10631

(b) ...If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

- (1) A copy of any groundwater management plan adopted by the urban water supplier...or any other specific authorization for groundwater management.*
- (2) ...For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.*

6.3.2.1 – Basin-wide Management

Central Basin is adjudicated. A copy of the Central Basin Third Amended Judgment is provided in Appendix H.

Jurisdiction and authority over basin-wide groundwater management are the purview of the Water Replenishment District of Southern California (WRD), who is designated as Watermaster.

The City has adjudicated an Allowable Pumping Allocation (APA) of 7,539 AFY. As a member to the Judgment, the City has access to groundwater as follows:

§I.B.1

Each party...is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting from Central Basin any quantity of Water greater than the party's Allowed Pumping Allocation as hereinafter set forth next to the name of the party in the tabulation appearing in Appendix 2 at the end of this Judgment, subject to further provisions of this Judgment... Each party adjudged and declared above not to be the owner of and not to have the right to extract groundwater from Central Basin is enjoined and restrained in any Administrative Year commencing after the date this Judgment becomes final from extracting any groundwater from Central Basin, except as may be hereinafter permitted to any such party under this Judgment.

§I.B.2

The total extraction right for each party includes a party's Allowed Pumping Allocation (to the extent not transferred by agreement or otherwise), any contractual right acquired through lease or other agreement to extract or use the rights of another party, and any right to extract Stored Water or Carryover as provided in this Judgment. No party may extract in excess of 140% of the sum of (i) the party's Allowed Pumping Allocation and (ii) the party's leased water, except upon prior approval by the applicable body of Watermaster as required pursuant to Section IV(J) as provided herein. Upon application, the body specified in Section IV(J) shall approve a party's request to extract water in excess of such limit, provided there is no Material Physical Harm. Requests to

extract water in excess of such limit shall be reviewed and either approved or denied within thirty (30) days of such request.

6.3.2.2 – Local Management

With respect to local groundwater management options for the City, the following recommendations were published in the 2005 Hydrogeological Evaluation of the City of Vernon Groundwater Supplies:

- Due to the high potential for contamination being introduced into the groundwater from the many industries in the City, it is advisable to spread out the location of wells in order to lessen the risk of potential impacts. Wells that will be pumped simultaneously should be spaced at least 1,300 ft apart to prevent interference between wells; and wells not pumping simultaneously should be spaced at least 800 ft apart. Wells located too close to each other or a well that pumps excessively will cause a localized cone of depression to develop whereby groundwater gradients will be altered and ultimately groundwater will flow towards these wells.
- A Drinking Water Source Assessment Protection Program for City wells should be developed to inform the City's Health and Environmental Control Department as to the location of potential groundwater percolation capture zones. The City should ensure that the industries within these zones are aware that they have the potential to impact the City's groundwater supply.
- Historical data provided by the City showed evidence of pumping levels being recorded instead of true static levels. In order to obtain static levels, it is recommended that the well pump be turned off for at least six hours prior to a level being recorded. The amount of recovery time allowed before each measurement should also be recorded together with the depth to water.
- Installation of a permanent pressure transducer is recommended in each well where one doesn't already exist to collect groundwater level measurements. Access into the wells may be a problem in some instances where the pump base does not have port access for sounders. Possibilities to allow a pressure transducer to be installed into the wells include retrofitting the well with a dedicated sounding tube by strapping a PVC tube onto the pump column.
- To assist in groundwater management of the City's groundwater resources, a Groundwater Monitoring and Management Plan is an essential document that incorporates a standard methodology for the collection of data in sufficient quantities and of adequate quality to enable informed decisions regarding the management of the groundwater resources in the City's service area. The types of data to be collected include groundwater levels, groundwater production, and groundwater quality.
- For on-going groundwater management, a groundwater flow model could be developed for the City area. The model can be used to predict the actual interference effects between wells, evaluate groundwater flow direction changes due to pumping, groundwater level changes in response to various operational scenarios and potential movement of contaminants using particle tracking. The flow model could also be used to predict future groundwater conditions for up to 20 years into the future.

6.3.3 – Overdraft Conditions

CWC 10631

(b)(2) 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.

In 2016, Central Basin was not listed as critically overdrafted by DWR.

6.3.4 – Historical Pumping

CWC 10631

(b) ...If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(3) 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.

Historical pumping from Central Basin is provided in Table 6.1.

Table 6.1 – Historical Pumping from the Temescal Basin

Year	2011	2012	2013	2014	2015
Production	6,301	6,703	6,782	6,602	6,068

6.4 – Surface Water

The City has no surface water supply.

6.5 – Stormwater

The City does not divert stormwater for capture purposes.

6.6 – Wastewater and Recycled Water

6.6.1 – Recycled Water Coordination

CWC 10633

The plan shall 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.

It is the City's philosophy that recycled water shall be used within the jurisdiction wherever its use is economically justified, financially and technically feasible and consistent with legal requirements, preservation of public health, safety and welfare of the environment.

To that end, the City has previously completed the task, in coordination with CBMWD, of evaluating potential recycled water use within the service area as a precursor to continued development of the Southeast Water Reliability Project. Special care was taken to exclude potential recycled water use from various industrial processes involving food processing. Vernon is satisfied that CBMWD, who is the lead agency in the Central Basin for the development and distribution of recycled water, is aware of all potential recycled water use within the service and that CBMWD makes use of this knowledge in the justification for the expansion of the recycled water system, future rate structure and phasing of implementation.

6.6.2 – Wastewater Collection, Treatment and Disposal

CWC 10633

(a) (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.

CWC 10633

(b) (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.

Per the Vernon General Plan, the City owns its own sewage collection system which discharges into the system managed by the Los Angeles County Sanitation Districts (LACSD). The majority of Vernon is within District 23, but also contains territory in Districts 1 and 2. These Districts, along with more than a dozen others, are signatories to the Joint Outfall System (JOS) which provides for the operation and maintenance of an interconnected system of wastewater collection, treatment, reuse, and disposal facilities across a large portion of the urban region.

The JOS includes the following water reclamation plants (WRP):

- The Joint Water Pollution Control Plant (Carson)
- Whittier Narrows WRP (South El Monte)
- Los Coyotes WRP (Cerritos)
- San Jose Creek WRP (Industry)
- Long Beach WRP (Long Beach)
- Pomona WRP (Pomona)
- La Cañada WRP (La Cañada-Flintridge)

The City generated an estimated 4,655 AFY of wastewater in 2015. Per the Fiscal Year 2013-14 Twenty-Fifth Annual Status Report on Recycled Water Use prepared by the Los Angeles County Sanitations Districts, the JOS produced a total effluent of 422,537 AFY. Of that total, 127,727 AFY met Title 22 standards for recycled water and 82,458 AFY was reused.

Recycled water supply for the CBMWD distribution system originates at the San Jose Creek WRP and the Los Coyotes WRP. Per the CBMWD 2015 UWMP Draft:

The source of Central Basin's recycled water comes from LACSD treated wastewater. Central Basin does not collect or treat its municipal wastewater. LACSD operates six WRP's in the Los Angeles Basin producing approximately 457 MGD of secondary effluent. Approximately one-third of the secondary effluent undergoes additional treatment for non-potable uses such as recycled water.

Central Basin purchases a portion of this recycled water from the Los Coyotes WRP and the San Jose Creek WRP. These plants provide approximately 137 MGD of Title 22 tertiary treated water for distribution. Under the March 11, 2015 Agreement for Purchase and Sale of Recycled Water with LACSD, Central Basin is allotted 20.54 MGD (23,000 AFY) of recycled water through 2017, but the allotment will decrease to 9.38 MGD (10,500 AFY) after 2017. Central Basin has never exceeded 5.27 MGD (5,900 AFY). LACSD looks to beneficially reuse all of its recycled water and the Agreement with Central Basin reflects a reasonable growth margin to allow for increases in demand and new customers. A detailed description of the two WRP's are provided below.

San Jose Creek Water Reclamation Plant

The San Jose Creek WRP is located in unincorporated Los Angeles County adjacent to the City of Whittier. The San Jose Creek WRP was built in the early 1970's and serves a large residential population of approximately one million people. The WRP has a wastewater treatment capacity of 100 MGD and approximately 62.52 MGD of recycled water is produced for use at locations throughout the region. Over 130 sites are served that provide groundwater recharge at the San Gabriel River and Rio Hondo Spreading Grounds as well as irrigation of parks, schools and greenbelts. Approximately 22 MGD of the recycled water from San Jose Creek WRP is sent to percolation basins for groundwater recharge.

Los Coyotes Water Reclamation Plant

The Los Coyotes WRP is located in Cerritos serving a population of 370,000 people. The WRP has a wastewater treatment capacity of 37.5 MGD and produces approximately 21.20 MGD of recycled water that is used at over 270 sites throughout the region. The recycled water provides irrigation for schools, golf courses, parks, nurseries and greenbelts as well as industrial use at local companies for carpet dyeing and concrete mixing.

The amount of wastewater collected and treated by the two WRP's is expected to remain relatively consistent during the next 25 years despite population increases. According to LACSD analysis, population increases are not projected to be significant enough to make it economically feasible to expand the WRP's. Since 1999, LACSD's effluent has been decreasing annually due to conservation efforts and economic conditions. Based on LACSD's "FY 2013-14 Annual Report on Recycled Water", the San Jose Creek WRP is treating wastewater at approximately 40 percent below the plant capacity and the Los Coyotes WRP is treating wastewater at approximately 41 percent below its capacity. Central Basin does not directly treat or discharge any wastewater as they are a wholesaler.

Generally, Central Basin provides irrigation to parks, golf courses, schools, nurseries, freeway and street medians, slopes, and other greenbelt areas. Various industries, such as the Shaw-Tufted Carpet Mill use recycled water for carpet and textile dyeing, metal finishing, concrete mixing, cooling tower supply, and other process water use. Industrial uses include but are not limited to concrete mixing (Robertson's Ready-Mix in Paramount and Santa Fe Springs), sand mold manufacturing process (Pacific Alloy Castings in South Gate), cooling plant operations at co-gen facilities (Metropolitan State Hospital in Norwalk), and power plant cooling (Malburg Power Plant in Vernon).

6.6.3 – Recycled Water System

CWC 10633

(c) (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.

6.6.3.1 City-level Description

The City purchases recycled water from CBMWD for the on-site cooling towers of the Malburg Generation Station power plant. In order to provide this service, the City has constructed approximately 10,000 linear feet of recycled water pipeline, capable of supplying recycled water from CBMWD to the station. The City has entered into an agreement with CBMWD to provide recycled water to the station. In the event that the recycled water supply is interrupted, this agreement stipulates that CBMWD will increase the supply of Tier 2 imported potable water to compensate for any disruption of recycled water, regardless of the drought conditions in Central Basin. The Malburg station uses approximately 800 AFY.

6.6.3.2 Regional Description

Per CBMWD²:

In response to increasing demands for water, limitations on imported water supplies and the threat of drought, Central Basin Municipal Water District developed a regional water recycling program. The program is comprised of two distribution systems – the E. Thornton Ibbetson Century Water Recycling Project (Century Distribution System) and the Esteban Torres Rio Hondo Water Recycling Project (Rio Hondo Distribution System) – as well as three pumping stations, including the Rio Hondo Pump Station, Hollydale Pump Station, and Cerritos Pump Station. The Century Distribution System and Rio Hondo Distribution System are interconnected by an intricate 70-mile distribution system and operate as one recycled water supply system. The combined projects are referred to as the “Central Basin Water Recycling Project.”

In constructing the 70-mile pipeline system, Central Basin is able to distribute treated recycled water obtained through the Sanitation Districts of Los Angeles County. The Central Basin Water Recycling Project delivers approximately 5,000 acre-feet of recycled water annually to over 300 industrial, commercial and landscape connections. Central Basin’s use of recycled water augments the precious groundwater and imported water supplies of southeast Los Angeles County.

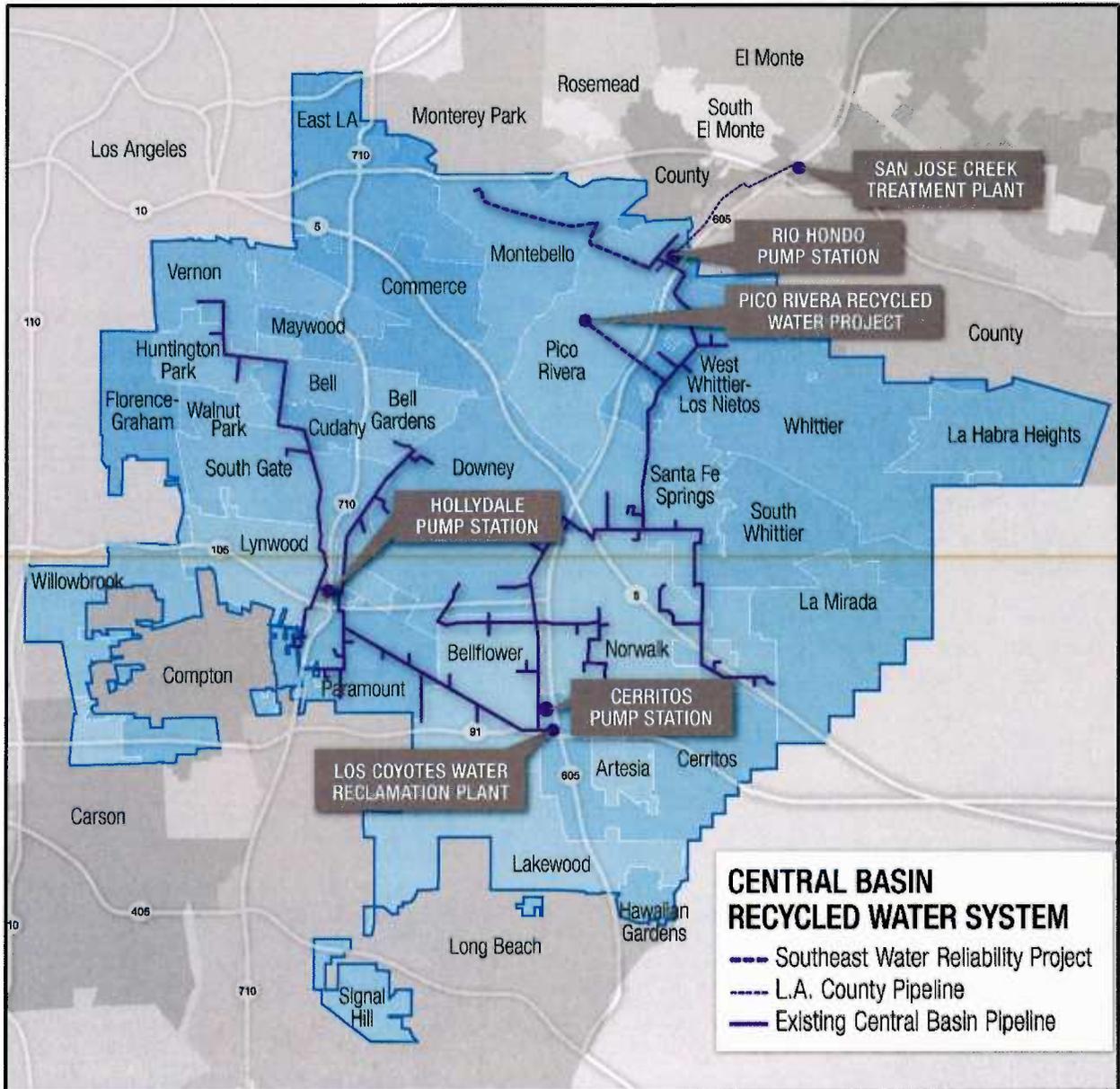
Central Basin promotes recycled water as an ideal alternative for business and municipal use. As the customer base continues to expand ranging from irrigation users like golf courses and parks to unconventional commercial and industrial users new benefits of recycled water continue to be discovered. For example, in the City of Pico Rivera, Smith Park utilizes recycled water to irrigate over eight acres of landscaping and turf; in total, the park uses over 6 million gallons of recycled water. In another example, Air Products, an industrial gas company located in the City of Santa Fe Springs, uses over 73 million gallons of recycled water for its cooling tower.

Through innovative marketing, recycled water is now being used with textiles, paper production, dye houses, co-generation plants and printing. The largest recycled water user in the Central Basin area is the Malburg Power Generation Station in the city of Vernon, using more than 420 million gallons of recycled water annually. Metro State Hospital and Wheelabrator-Norwalk Energy Company, Inc. are also large recycled water users, with a combined annual use of 101 million gallons.

² Central Basin: Our Recycled Water Program, site accessed May 5, 2016
<https://www.centralbasin.org/en/recycled-water/our-recycled-water-program/>

A map of the CBMWD recycled water system is shown in Figure 6.1.

Figure 6.1 – CBMWD Recycled Water System



Per the CBMWD 2015 UWMP Draft:

Central Basin's regional water recycling program is comprised of two distribution systems: E. Thornton Ibbetson Century Water Recycling Project (Century Distribution System) and the Esteban Torres Rio Hondo Water Recycling Project (Rio Hondo Distribution System). These distribution systems are interconnected to operate as one recycled water supply system to deliver recycled water for landscape irrigation, commercial, and industrial uses throughout the Central Basin service area. Central Basin's recycled water system is comprised of over 80 miles of pipeline with diameters ranging from 4-inch to 48-inch pipelines, three pumping stations owned by Central Basin, one pump station owned by the City of Cerritos, and service laterals.

The Century Distribution System began delivering recycled water in 1992. The system currently delivers tertiary treated recycled water from LACSD's Los Coyotes WRP and serves the cities of Bell, Bellflower, Bell Gardens, Compton, Cudahy, Downey, Lakewood, Huntington Park, Lynwood, Norwalk, Paramount, Santa Fe Springs, South Gate, and Vernon.

In 1994, the Century Distribution System was extended into the northern portion of Central Basin's service area. The extension, known as the Rio Hondo Distribution System, delivers tertiary treated recycled water from LACSD's San Jose Creek WRP and serves the cities of Pico Rivera and Whittier in addition to all cities by the Los Coyotes WRP.

In FY 2014-15, Central Basin's recycled water system delivered approximately 5,160 AF of water for non-potable uses. Over the next 25 years it is anticipated that Central Basin will increase its sales with new connections. Central Basin works toward connecting new customers to its recycled water system every year to further reduce demands on imported potable water.

6.6.4 – Recycled Water Beneficial Uses

CWC 10633

(d) (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.

CWC 10633

(e) (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.

The City has participated in the development of the Central Basin Water Recycling Master Plan. As a purveyor of both imported water and groundwater, the City has provided input on customer development, rates, facilities and impacts. The City has a current contract to purchase from CBMWD tertiary treated water, meeting all requirements of Title 22 of the California Code of Regulations. In an effort to reduce reliance on imported water and conserve regional groundwater, CBMWD is moving forward with the Southeast Water Reliability Project (SWRP). SWRP will reduce current regional demand on imported water by 25% by delivering more than 5 billion gallons of recycled water annually to the many large industrial and irrigation sites in the Central Basin area.

Recycled water is one of the cornerstones of CBMWD's efforts to augment local supplies and reduce dependence on imported water. Since the planning and construction of CBMWD's recycled water system in the early 1990's, CBMWD has become a leader in distributing and marketing recycled water. This new supply has assisted the City of Vernon in meeting its process water demand for power generation. It is only limited by the infrastructure needed to deliver this source to the City of Vernon. Such infrastructure, the Southeast Water Reliability Project Proposed Phase 2, is already in the planning stages and includes a 42- inch diameter, looped pipeline.

CBMWD, in coordination with its members, has taken the lead in recycled water development in the Central Basin, and the City defers to the wholesaler's documentation on potential uses, incentives and methods of encouragement regarding the continued development of recycled water.

Per the 2008 CBMWD Recycled Water Master Plan, Table 6.2 lists the potential recycled water demands by end user, address, demand, sector and type (if known). Specific demands associated with the Southeast Regional Energy Project, which was included in the 2008 CBMWD Recycled Water Master Plan, has been removed from this list, since the project has been cancelled. Also, potential demand associated with Tissurama Industries, Inc. has been removed from the list since this company has gone out of business subsequent to the release of the current Recycled Water Master Plan. The sum of the remaining potential recycled water demands is 5,722 AFY.

Table 6.2 – Potential Recycled Water Demands

End User	Address	Demand (AFY)	Sector	Type
Air Products & Chemicals, Inc	3305 E 26th St	22	Industrial	Chemical
All American Mfg Co.	2201 E 51st St	12	Industrial	Manufacturing
All West Iron, Inc.	2881 Saco St	13	Industrial	Metals
Allied Feather & Down Corp	2661 E 46th St	37	Industrial	Fabric
Aluminum Corp of America	3200 Fruitland Ave	13	Industrial	Metals
American Activewear, Inc	2807 Santa Fe Av	42	Industrial	Fabric
Ameriprid	5950 Alcoa Av	66	Industrial	Laundry
Arcadia, In	3225 Washington Blvd	31	Industrial	Manufacturing
A's Match Dyeing Co. Inc.	2522 E 37th St	556	Industrial	Fabric
Catalina Pacific Concrete	2026 E 27th St	15	Industrial	Concrete
Charleston Tex Inc.	2807 Santa Fe Av	798	Industrial	
Complete Garment, Inc	2121 E 38th St	93	Industrial	Fabric
D/K Environmental	3650 E 26th St	11	Industrial	Manufacturing
Darling International	2601 E 26th St	29	Industrial	Manufacturing
Dynix Textile Corp	4900 E 50th St	40	Industrial	Fabric
Flowserve Corporation	2300 Vernon Ave	21	Industrial	Chemical
Fortune Fashions Inc	4700 Boyle Ave	15	Industrial	Fabric
Fruitland Associates, LLC	3336 Fruitland Ave	6	Irrigation	
Hollander Home Fashions	4553 Seville Ave	47	Industrial	Fabric
JDS Finishing, Inc	5383 Alcoa Ave	510	Industrial	Fabric
Knit Heaven Inc.	2037 E 38th St	18	Industrial	Fabric
LA Washrack	4317 Downey Rd	41	Industrial	Laundry
Life Like Products, Inc.	2340 E 52nd St	14	Industrial	Manufacturing
Metro Wash & Laundry	6270 Boyle Ave	182	Industrial	Laundry
NI Industries, Inc	5215 Boyle Ave	346	Industrial	Metals
Owens Illinois, Inc.	2828 & 2910 E 50th St	26	Industrial	Manufacturing
Owens Illinois, Inc.	2923 Fruitland Ave	106	Industrial	Manufacturing
Pabco Paper Products Co.	4460 Pacific Blvd	183	Industrial	Paper
Pacific Fabric Finishing	3308 Fruitland Ave	34	Industrial	Fabric
Pacific Fabric Finishing	3314 Fruitland Ave	12	Industrial	Fabric
Pacific Fabric Finishing	5164 Alcoa Ave	14	Industrial	Fabric

End User	Address	Demand (AFY)	Sector	Type
Packaging Adv Corp	4633 Downey Rd	138	Industrial	Paper
Ramcorp Professional	5075 Pacific Blvd	53	Industrial	Cleaning
Robertson Ready Mix	3365 E 26th St	11	Industrial	Concrete
SC Vernon Business Park LLC	6033 Malburg Way	4	Irrigation	Office
Service Packing	3399 Vernon Ave	152	Industrial	Manufacturing
Service Packing	3425 Vernon Ave	18	Industrial	Manufacturing
Soft Touch Tissue	5353 Downey Rd	39	Industrial	Paper
Southland Box Co	4955 Maywood Ave	18	Industrial	Manufacturing
Standard Concrete Products,	2822 Soto St	11	Industrial	Concrete
Stone Blue, Inc	2501 E 28th St	529	Industrial	Laundry
TGI Fashion, Inc.	3270 E 26th St	62	Industrial	Fabric
Unipolo Fabric Corp	4900 E 50th St	482	Industrial	Fabric
US Filter Recovery Services	5375 Boyle Ave	25	Industrial	Manufacturing
Vernon Truck Wash, LLC	3308 Bandini Blvd	28	Industrial	Truck
Wimatex, Inc.	5801 E 2nd St	194	Industrial	Fabric
Zion Textiles, LLC	2300 E 52nd St	164	Industrial	Fabric
Total Potential Recycled Water Demand		5,281		

6.6.5 – Planned vs. Actual Recycled Water Use

CWC 10633

(e) (Provide) a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

The 2010 UWMP projected recycled water use in 2015 at 1,800 AFY. The actual 2015 volume delivered was 762 AFY. The discrepancy is due to the cancellation in the Southeast Regional Energy Project improvements which had been anticipated to increase demand for recycled water for energy production.

6.6.6 – Optimization of Future Recycled Water Use

CWC 10633

(f) *(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.*

CWC 10633

(g) *(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.*

Central Basin Municipal Water District (CBMWD) administers the recycled water program within its sphere of influence, which include the City's water service area. The City works cooperatively with CBMWD, but defers to the wholesaler regarding optimization of future recycled water use.

CBMWD plans to increase access to recycled water through expansion of its distribution system. Per the CBMWD 2015 UWMP Draft:

It has been part of Central Basin's Capital Improvement Projects Plan and Five (5) Year Recycled Water Facilities Plan (Recycled Water Master Plan) to expand the existing recycled water distribution system. Current drought conditions, new regulations, and available funding through Proposition 1 have accelerated Central Basin's expansion efforts. Projects included in the Preliminary Capital Improvement Projects Plan are described below.

Central Basin Municipal Water District Recycled Water Distribution System Storage Project - *The existing Central Basin recycled water system is divided into three pressure zones. Zone 1 in the north is supplied from the Rio Hondo Pump Station. To the south is Zone 2, which can receive water from Zone 1 through a pressure-reducing valve or from the Cerritos Pump Station through variable frequency drives currently set to maintain system pressures. Zone 3 lies in the western portion of the service area and is supplied through the Hollydale Pump Station from Zone 2. All three pressure zones make a hydraulically closed system with no storage to buffer customer demands. Since water can be fed from Zone 1 into Zone 2, but not completely in the opposite manner, Rio Hondo Pump Station needs to be operational whenever there are demands in Zone 1 downstream of the pump station in the Pico Rivera and Montebello areas.*

Operation of the recycled water system cannot be evaluated with an isolated view of only new customers due to the movement of water from one pressure zone to another and with two water sources. Hydraulic analysis encompasses all aspects of the recycled water system from pressure-reducing valve settings to pumping station operations. System expansion, customer changes in operations and demands can significantly alter system conditions experienced without storage.

In addition, recycled water supply is defined by a contract agreement with the Los Angeles Sanitation Districts for two recycled water sources. Central Basin's two recycled water supply sources are the San Jose Creek Water Reclamation Plant and the Los Coyotes Water Reclamation Plant. Overall volume limits can be increased over time and will need to be considered for future expansion. In the future, storage will help prevent supply shortages and balance demands from supply sources.

Prospective expansion projects and demands are emerging due to potable water conservation measures being implemented by the State of California, and locally within Central Basin's service area. To ensure a reliable regional recycled water supply to offset potable water demands; Central Basin is looking to implement storage in the form of storage tanks. The number, type, size, and locations for storage tanks is yet to be determined. Piping and pumping needs are also to be determined. Central Basin is looking to complete an in depth storage study that will include the additional demands currently being developed under related expansion projects.

West San Gabriel Recycled Water Expansion Project - Central Basin, Montebello Land Company, City of Montebello, San Gabriel Valley Water Company, and the City of Monterey Park are looking to construct a pipeline to bring recycled water supply into northern area of the City of Montebello, City of San Gabriel and the City of Monterey Park.

The recycled water pipeline will extend from the existing Central Basin system in the City of Montebello. Currently, confirmed annual recycled water demand is estimated to be 800 AFY, including temporary irrigation estimated to be 200 AFY. Additional recycled water connections and demand estimated as 1,500 AFY are currently being investigated and will influence final pipe diameters and length. Final design diameter for the pipeline will be between 16-inches and 30-inches in diameter. The present design, for confirmed demands in the amount of 800 AFY, consist of 16-inch diameter piping for 20,500 (3.8 miles) linear feet. A pump station and master meter will also be constructed for this project.

Project timelines will be impacted by the demand needs of the Montebello Hills Specific Plan, a new housing development, in the City of Montebello. The developer, Montebello Land Company, has a need for recycled water supply as soon as October 2016. To accelerate this project, Central Basin is exploring the possibility of dividing this project into phases.

Phase 1 and phase 2 will bring a 16-inch to 30-inch diameter pipeline approximately 7,500 linear feet up to points of connection for the Montebello Hills Specific Plan, Montebello Town Center, and the Shops at Montebello. Phase 3 will extend a 16-inch to 30-inch diameter pipeline north 5,500 linear feet to serve Resurrection Cemetery and additional sites currently being investigated. Phase 3 will extend the pipeline an additional 7,000 linear feet to serve additional sites out of Central Basin's service area. Additional pipeline alignments may be added to connect additional sites.

La Mirada Recycled Water Expansion Project - It has been part of Central Basin's Capital Improvement Projects Plan and Five (5) Year Recycled Water Facilities Plan (Recycled Water Master Plan) to expand our existing recycled water distribution system. Current drought conditions, new regulations, and available funding through Proposition 1 have accelerated Central Basin's expansion efforts.

A recycled water project Central Basin is currently looking to fast-track is the La Mirada Recycled Water Expansion Project. Central Basin already has a willing city (La Mirada) and a willing retail water agency (Suburban Water Systems) to provide the support necessary to make the project viable.

Central Basin is planning to expand the existing recycled water distribution system in south Santa Fe Springs into La Mirada to pick up several large landscaped facilities including La Mirada Park, La Mirada Golf Course, La Mirada High School, Olive View Cemetery, Biola University, La Mirada City Buildings, Behringer Park, and many more recycled water sites that are currently being investigated. The number of potential recycled water customer connections is estimated to be around 24 sites. These sites are estimated to use a cumulative total of approximately 900 AFY of potable water for landscape irrigation. Facilities needed consist of approximately 9,100 linear feet of 8-inch diameter piping; 10,100 linear feet of 12-inch diameter piping; and 20,900 linear feet of 16-inch diameter piping. The recycled water expansion would start by connecting to Central Basin's existing recycled water pipelines at Bonavista Avenue, continue east on Gannet Street, go north on Valley View Avenue, and then continue east through the most cost effective route.

Gateway Cities Recycled Water Expansion Project - The cities of South Gate, Bell Gardens, and Lynwood and Central Basin are looking into partnering to expand Central Basin's existing recycled water system into their cities to supply more sites with recycled water. Under a bundled project named the Gateway Cities project, submitted for Proposition 84 funding, the benefit will be providing 453 AFY of water savings and water quality improvement. This will be done by preparing planning, design, and environmental documentation for pipelines that will extend the Central Basin recycled water system. After completing this portion of the project, the partnering agencies plan to look to Proposition 1 funding for the design and construction of the project. The Project will provide 453 AFY of recycled water to irrigate nine parks and schools, reducing the need for potable water supply at these facilities.

Bell Gardens

Central Basin and the City of Bell Gardens are looking to construct a pipeline to expand the recycled water supply into the City. The recycled water pipeline will extend from the existing Central Basin system located on Park Lane to sites located within the City. Currently, confirmed annual recycled water demand is estimated to be 90 AFY. Central Basin has an existing 16-inch pipeline on Park Lane before the cross section with Garfield Avenue. Central Basin plans to extend a 16-inch pipeline for approximately 2,950 linear feet along Garfield Avenue from Park Lane to Florence Place and a 12-inch pipeline for approximately 2,320 linear feet along Florence Place to Sudan Avenue to connect Suva Elementary School. The plan is to also add an 8-inch pipeline along Emil Avenue from Florence Place to connect Bell Gardens Park.

Lynwood

Central Basin and the City of Lynwood are looking into constructing a pipeline to expand the recycled water supply into the City. The recycled water pipeline will extend from the existing Central Basin system located on Wright road to sites located within the City. Currently, confirmed annual recycled water demand is estimated to be 206 AFY. Central Basin has an 8-inch pipeline along Wright Road. Central Basin plans to extend a 12-inch pipeline for approximately 6,120 linear feet along Fernwood Avenue from Wright Road to Bullis Road and a 12-inch pipeline for approximately 1,800 linear feet along Bullis Road to connect Lynwood City Park, Linear Park, and Lynwood City Hall Complex.

South Gate

Currently, confirmed annual recycled water demand is estimated to be 236 AFY. Final design diameter for the pipeline will be between 8-inch and 12-inches. The current design for confirmed demands of 236 AFY, consist of 12-inch diameter piping for 14,000 linear feet and 8-inch diameter piping for 1,860 linear feet. The City of South Gate Recycled Water Line Extension will start with a 12-inch line from Burke Avenue to Alameda Street and will serve Firestone Boulevard Medians, South Gate Middle School, San Gabriel Avenue Elementary, South Gate High School, Willow Elementary School, the East Los Angeles Community Education Center, and the Alameda Street Commercial Industrial Development Complex. There will be an 8-inch line along California Avenue from City Place to Southern Avenue that will serve South Gate City Hall and Cesar Chavez State Park.

Pico Rivera Mines Avenue Recycled Water Expansion Project - Central Basin is looking to construct a pipeline to expand the recycled water supply within the City of Pico Rivera. The recycled water pipeline will extend from the existing Central Basin system located on Mines Avenue to sites located within the City. Previous capital projects implemented a 12-inch and 8-inch recycled water lateral in Mines Avenue. Several potential sites require additional expansion to be connected and supplied recycled water. This project will connect the identified sites with estimated recycled water use of 275 AFY.

Additional construction needed for the previous Mains Avenue Phase 1B Project is a 6-inch to 8-inch diameter recycled water lateral extending from Mines Avenue for 5,700 linear feet.

City of Downey Recycled Water Expansion Project - Central Basin and the City of Downey are looking to construct a pipeline to expand the recycled water supply into the City. The recycled water pipeline will extend from the existing Central Basin system located on Garfield Avenue to sites located within the City.

Currently, recycled water demand is estimated to be 125 AFY. Central Basin currently has a 12-inch pipeline along a public alley and Garfield Avenue. Central Basin plans to extend a 16-inch diameter pipeline for approximately 2,250 linear feet along south boundary of Los Amigos Golf Course and Quill Drive from Garfield Avenue and Gladys Street to Old River School Road in order to connect Rancho Los Amigos Medical Center. Subsequently, to connect Apollo Park, Central Basin plans to extend a 12-inch pipeline for approximately 2,810 linear feet along Quill Drive from Old River School Road to the east side of Apollo Park.

Bundling this project with two other non-disadvantaged communities such as the City of Pico Rivera and the City of Santa Fe Springs for Proposition 1 grant funding is currently being investigated.

City of Monterey Park Recycled Water Expansion Project - *This project expands the recycled water system into the City of Monterey Park. Water services within the City is served by the City of Monterey Park, California Water Service Company and San Gabriel Water Company.*

The expansion consists of approximately 11,500 linear feet of pipeline construction. Project Costs are estimated at \$3,675,000 for the 11,500 linear feet of pipeline construction. Planning, Design, Environmental, and Project/Construction Management are estimated at 2.5 percent, 7 percent, 2 percent and 6.5 percent of construction cost respectively. Approximately 750 AFY demand.

Pico Rivera North Recycled Water Expansion Project - *This project expands the recycled water system into north of Pico Rivera. Water services within the City of Pico Rivera is served by three water purveyors: 1) City of Pico Rivera; 2) Pico Water District; and, 3) The San Gabriel Valley Water Company. Water is additionally conveyed to the Rio Hondo Spreading Grounds and San Gabriel Spreading Grounds in Pico Rivera. Approximately 150 AFY demand.*

The expansion on the Northern portion of the service area consists of approximately 3,000 linear feet of pipeline construction. Project Costs are estimated at \$875,000 for the 3,000 linear feet of pipeline construction. Planning, Design, Environmental, and Project/Construction Management are estimated at 2.5 percent, 7 percent, 2 percent and 6.5 percent of construction cost respectively.

Pico Rivera South Recycled Water Expansion Project - *This project expands the recycled water system into south Pico Rivera. Water services within the City of Pico Rivera is served by three water purveyors: 1) City of Pico Rivera; 2) Pico Water District; and, 3) The San Gabriel Valley Water Company. Water is additionally conveyed to the Rio Hondo Spreading Grounds and San Gabriel Spreading Grounds in Pico Rivera.*

The expansion on the Southern portion of the service area consists of approximately 7,000 linear feet of pipeline construction. Project Costs are estimated at \$2,024,000 for the 7,000 linear feet of pipeline construction. Planning, Design, Environmental, and Project/Construction Management are estimated at 2.5 percent, 7 percent, 2 percent and 6.5 percent of construction cost respectively. Approximately 200 AFY demand.

Projected Recycled Water Sales – *Recycled water within Central Basin's service area is projected to increase from its current sales of about 7,647 AF to 13,911 AF by 2040.*

6.7 – Desalinated Water Opportunities

CWC 10631

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

Vernon is landlocked and has no opportunity to develop desalinated ocean water, independently. There is no brackish water or groundwater underlying the City that would benefit from desalination.

As a member of the Gateway Regional Alliance, the Gateway Water Management Authority and the Southeast Water Coalition, there may be opportunities in the future to partner with purveyors who have access to these sources.

6.8 – Exchanges or Transfers

CWC 10631

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

As a member of the Gateway Regional Alliance, the Gateway Water Management Authority and the Southeast Water Coalition, and as a party to the Central Basin Third Amended Judgment, there may be opportunities for exchanges or transfers with other member agencies and parties.

6.8.1 – Groundwater Exchanges

Per the Judgment:

§III.C.2.

Any party not having existing facilities for the taking of imported water as of the beginning of any Administrative Year, and any party having such facilities as of the beginning of any Administrative Year who is unable, without undue hardship, to obtain, take, and put to beneficial use, through its distribution system or systems existing as of the beginning of the particular Administrative Year, imported water in a quantity which, when added to its Allowed Pumping Allocation for that particular Administrative Year, will meet its estimated needs for that particular Administrative Year, may purchase water from the Exchange Pool, subject to the limitations contained in this Section III(C) (Subpart "C" hereinafter).

6.8.2 – Groundwater Transfers

Per the Judgment:

§I.B.4.

Any rights decreed and adjudicated herein may be transferred, assigned, licensed or leased by the owner thereof provided, however, that no such transfer shall be complete until compliance with the appropriate notice procedures established by Watermaster.

§IV.F.

Irrespective of the category of storage utilized, each party to this Judgment may not cumulatively have in storage at any time Stored Water totaling more than two hundred percent (200%) of that party's Allowed Pumping Allocation. Subject to the foregoing, the right to produce Stored Water may be freely transferred to another party to this Judgment, or as otherwise permitted herein.

§VI.B.

Subject to the other provision of this Judgment, and any rules and regulations of the Watermaster requiring reports relative thereto, nothing herein contained shall be deemed to prevent any party hereto from assigning, transferring, licensing or leasing all or any portion of such water rights as it may have with the same force and effect as would otherwise be permissible under applicable rules of law as exist from time to time.

6.9 – Future Water Projects

CWC 10631

(g) ...The urban water supplier shall include a detailed description of expected future projects and programs... 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.

The City has no independent future supply projects.

As a member of the Gateway Regional Alliance, the Gateway Water Management Authority and the Southeast Water Coalition, as a party to the Central Basin Third Amended Judgment, and as a member agency of CBMWD, the City participates in regional supply projects.

6.10 – Summary of Existing and Planned Sources of Water

CWC 10631

- (b)** 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 10631(a).
- (4)** (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.

The City has access to groundwater from Central Basin, imported water from Central Basin Municipal Water District and recycled water from Central Basin Municipal Water District.

These sources are anticipated to be available in sufficient quantities to meet projected water demand.

This mix a sources is anticipated to break down roughly as shown in Table 6.3.

Table 6.3 – Estimated Sources of Supply

Source	AFY
Central Basin Groundwater Rights	7,539
Central Basin Groundwater Leases, Stored Water, Purchase of Replenished Water from WRD	1,021
CBMWD Imported Potable Water	1,500
CBMWD Imported Recycled Water	800
Total Supply	10,860

6.11 – Climate Change Impacts to Supply

WRD issued a report in 2007 regarding the impacts of climate on resources in the Central and West Coast basins. A copy of the report is provided in Appendix K.

Per WRD:

...will climate change affect the groundwater supplies in the Central and West Coast Basins, which provides about 40% of the total water demand for this area? Very simply, no one knows for sure, but close monitoring, planning, and responses to changes will likely be necessary.

Chapter 7 – Water Supply Reliability Assessment

7.1 – General Description

Water Shortage Reliability deals with establishing local authority to impose water use constraints on end users in order to assure sustainability under stressful emergency and long-term water shortage conditions.

7.2 – Constraints on Water Sources

CWC 10631

(c)(2) 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.

CWC 10634

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.

7.2.1 – Constraints on Imported Water

CBMWD is sustainably managed. However, as member of Metropolitan they are subject to constraints on supplies available via the State Water Project and the Colorado River Aqueduct. Per the CBMWD 2015 UWMP Draft:

Water reliability is among the future challenges of continued urbanization in Southern California. Since 2010, Southern California water agencies have been subject to imported water curtails from the Delta and by the imposition of an allocation plan to reduce imported water deliveries to member agencies of Metropolitan. This section discusses the future reliability of water sources that Central Basin purchases from Metropolitan as well as local sources of water that Central Basin's retail agencies depend.

Metropolitan Water Supply Reliability

Metropolitan has undertaken numerous planning initiatives to ensure water supply reliability having experienced the historical droughts of 1977-78, 1987-92, 2007-09, and the current drought that include: the IRP, the Water Surplus and Drought Management Plan (WSDM), the Water Supply Allocation Plan (WSAP), and Local Resources Program (LRP) investments. These initiatives have provided the policy framework for Metropolitan and its member agencies to manage their water resources in a way that meets the needs of a growing population even with recurrences of the worst historic hydrologic conditions locally and in key watersheds that supply Southern California. A brief

description of each water management initiative Metropolitan has undertaken to ensure continued reliability over the next 20 years follows.

Metropolitan Integrated Resource Plan

The fundamental goal of the IRP is to have a reliable water system within Southern California. Since the 2010 IRP, drought in California and across the southwestern United States has put the IRP adaptive management strategy to test. Dry conditions in California have persisted into 2015, resulting in a fourth consecutive year of drought. 2015 began with the driest January on record, resulting in the earliest and lowest snowpack peak in recorded history at only 17 percent of the traditional snowpack peak on April 1st. Since 2006, there were only two wet years, with the other eight years below normal, dry, or critically dry. The Colorado River watershed has also experienced an extended reduction in runoff. The continuing dry conditions in Southern California have impacted the region's local supplies, including its groundwater basins.

Metropolitan serves as both importer of water and regional water planner. The IRP has served as the reliability roadmap for the region. Throughout 2015, Metropolitan engaged in a comprehensive process with its Board of Directors and member agencies to review how conditions have changed since the 2010 IRP Update and to establish targets for achieving regional reliability, taking into account known opportunities and risks. Areas reviewed in the 2015 IRP Update include demographics, hydrologic scenarios, water supplies from existing and new projects, water supply reliability analyses, and potential resource and conservation targets.

The 2015 IRP Update approach explicitly recognizes that there are remaining policy discussions that will be essential to guiding the development and maintenance of local supplies and conservation. Following adoption of the 2015 IRP Update and its targets for water supply reliability, Metropolitan will begin a process to address questions such as how to meet the targets for regional reliability, what are local and regional responsibilities, how to finance regional projects, etc. This discussion will involve extensive interaction with Metropolitan's Board of Directors and member agencies, with input from the public. The findings and conclusions of the 2015 IRP Update are (Metropolitan, Integrated Water Resources Plan, 2015):

- Action is needed – Without the investments in conservation, local supplies and the California WaterFix targeted in the 2015 IRP Update, Metropolitan's service area would experience an unacceptable level of shortage allocation frequency in the future.*
- Stabilize SWP supplies – The goal for SWP supplies is to adaptively manage flow and export regulations to achieve a long-term Delta solution that will enable a healthy ecosystem and address water reliability challenges. Also, efforts will be made to work with California WaterFix and California EcoRestore to facilitate a continuation of collaborative adaptive management with key regulatory agencies.*
- Develop and protect local supplies and water conservation – The 2015 IRP Update embraces and advances the regional self-sufficiency ethics by increasing the targets for additional local supplies and conservation.*

- *Maximize the effectiveness of storage and transfers – Rebuilding Metropolitan’s supply of water reserves is imperative when the drought is over. A comprehensive water transfer approach that takes advantage of water when it is available will help to stabilize and build storage reserves, increasing the ability for Metropolitan to meet water demands in dry years.*
- *Continue with the adaptive management approach – The IRP is updated periodically to incorporate changed conditions, and an implementation report is prepared annually to monitor the progress in resources development. The 2015 IRP also includes Future Supply Actions that would advance a new generation of local supplies through public outreach, development of legislation and regulation, technical studies and support, and land and resource acquisitions.*

Metropolitan’s Local Resources Programs

A key element within Metropolitan’s IRP objectives to ensure regional reliability is to enhance local resources. The LRP provides financial incentives to member agencies to develop and use recycled water and recovered groundwater to reduce dependence on imported water supplies. Since the LRP’s inception in 1982, Metropolitan has provided \$372 million to produce about 2.2 MAF of recycled water and \$132 million to produce 791,000 AF of recovered degraded groundwater for municipal use.

Metropolitan made significant improvements to the LRP in October 2014 such as providing three incentive payment structures. Metropolitan offers three LRP incentive payment options to choose from including:

sliding scale incentives up to \$340 per AF over 25 years, sliding sale incentives up to \$475 per AF over 15 years, or fixed incentives up to \$305 per AF over 25 years. This approach helps reduce operational and programmatic costs for the member agencies while creating more diversified regional resources. Metropolitan provides funding for numerous projects including recycled water, conservation, groundwater recovery, surface water storage, and ocean water desalination to help meet future demands.

Central Basin has long been involved with Metropolitan in the LRP program for recycled water development. Since 1991, Metropolitan has provided Central Basin with approximately \$15 million for recycled water development, \$3.5 million for conservation programs, and \$5.3 million for groundwater recovery projects.

Metropolitan Facility Improvements

One of Metropolitan’s most significant investments is Diamond Valley Lake (DVL), which was completed in 1999 and reached capacity in early 2003 along with the Inland Feeder. DVL is built in the saddle of two mountains in southwestern Riverside County. DVL is Southern California’s largest reservoir holding 810 MAF that nearly doubled Southern California’s surface storage capacity and provides additional water supplies for drought, peak summer, and emergency needs. DVL stores water imported during years when there is ample supply. There are two types of storage within the DVL, dry-year, or seasonal storage, and emergency storage. When at capacity, DVL holds enough water to meet the region’s emergency and drought needs for six months and is an important component in Metropolitan’s plan to provide a reliable supply of water to Southern California.

7.2.2 – Constraints on Groundwater

Central Basin is sustainably managed by WRD. The basin has a large storage capacity. The basin is reliant on imported water, regional stormwater capture and recycled water for replenishment. Each of these sources has its own constraints; however, WRD’s diversified supply portfolio tends to reduce those constraints.

7.2.3 – Constraints on Recycled Water

There is an oversupply of recycled water in Central Basin. However, there is currently insufficient distribution infrastructure to reach all potential recycled water customers.

REF

7.3 – Reliability by Type of Year

CWC 10631

(c)(1) 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.

As a party to the Central Basin Third Amended Judgment and as a member agency of CBMWD, the City has the means to acquire the quantities of water necessary to support the anticipated commercial and industrial activities within the Water Service Area under all demand conditions.

7.4 – Supply and Demand Assessment

CWC 10635

(a) 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.

It is not the City objective to predict the demand in a given year in the future. This is due to the unpredictable nature of the economic cycle which the City must response to. Rather, the City is prepared to provide adequate supply as needed to support robust commercial and industrial activity within the Water Service Area.

With this in mind, the City has a goal of achieving water reliability consistent with (1) a high level of water use intensity in the commercial and industrials sectors, (2) the implementation of water conservation activities, and (3) framing future demand in terms of compliance with the Water Conservation Act.

The City acknowledges that its primary goal is to support commercial and industrial activity with a secondary goal of working toward compliance with its per capita water use target. Combining these goals leads to a water use projection for any given year in the future as shown in Table 7.1.

Table 7.1 – Projected Demand

Sector	AFY
Single Family Residential	6
Multi-Family Residential	1
Commercial	4,600
Industrial	4,600
Other	253
Losses	600
Energy Production (Recycled Water)	800
Total	10,860

Achieving the demand projection shown in Table 7.1 is consistent with the City’s water use target:

$$\left(\frac{89,809 \text{ gallons}}{\text{person} \cdot \text{day}}\right) (100 \text{ persons}) \left(\frac{\text{AF}}{325,851 \text{ gallons}}\right) \left(\frac{365 \text{ days}}{\text{year}}\right) \cong 10,060 \text{ AFY}$$

$$\text{Potable Water} + \text{Recycled Water} = 10,060 \text{ AFY} + 800 \text{ AFY} = 10,860 \text{ AFY}$$

Note that the demand for potable is higher than the City’s Allowable Pumping Rights of 7,539 AFY. This means that the City will acquire only as much additional supply as needed to meet demand during those years when potable demand exceeds groundwater rights.

7.4.1 – Average Year

Under all average years through 2040, projected water demand is 10,860 AFY and projected water supply is 10,860 AFY, as shown in Table 7.2. There is no projected surplus.

Table 7.2 – Average Year Supply and Demand Assessment

Year	2020	2025	2030	2035	2040
Projected Single Dry Year Supply	10,860	10,860	10,860	10,860	10,860
Projected Single Dry Year Demand	10,860	10,860	10,860	10,860	10,860
Surplus	0	0	0	0	0

7.4.2 – Single Dry Year

Under all single dry years through 2040, projected water demand is 10,860 AFY and projected water supply is 10,860 AFY, as shown in Table 7.3. There is no projected surplus.

Table 7.3 – Single Dry Year Supply and Demand Assessment

Year	2020	2025	2030	2035	2040
Projected Single Dry Year Supply	10,860	10,860	10,860	10,860	10,860
Projected Single Dry Year Demand	10,860	10,860	10,860	10,860	10,860
Surplus	0	0	0	0	0

7.4.3 – Multiple Dry Years

During the multiple dry year period from 2012 to 2015, the City declared a Phase II Water Supply Shortage in year 4 aimed at reducing water demand by 2%. In the event of similar 4-year drought, the City would anticipate implementing a Phase II Water Supply Shortage in year 4 resulting a 2% reduction.

Supply and demand projections associated with multiple dry years is provided in Table 7.4. There is no projected surplus.

Table 7.4 – Multiple Dry Supply and Demand Comparison

Dry Year		2020	2025	2030	2035	2040
First Year	Supply	10,860	10,860	10,860	10,860	10,860
	Demand	10,860	10,860	10,860	10,860	10,860
	Surplus	0	0	0	0	0
Second Year	Supply	10,860	10,860	10,860	10,860	10,860
	Demand	10,860	10,860	10,860	10,860	10,860
	Surplus	0	0	0	0	0
Third Year	Supply	10,860	10,860	10,860	10,860	10,860
	Demand	10,860	10,860	10,860	10,860	10,860
	Surplus	0	0	0	0	0
Fourth Year	Supply	10,643	10,643	10,643	10,643	10,643
	Demand	10,643	10,643	10,643	10,643	10,643
	Surplus	0	0	0	0	0

7.5 – Regional Supply Reliability

CWC 10620

(f) 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.

The City is a member of the Gateway Regional Alliance, the Gateway Water Management Authority and Southeast Water Coalition, who work collectively to maximize the resources of the Central Basin.

7.6 – Future Reporting of Water Use Compliance

The City's water use is tied to the economic cycle. In 2015, water use continues to be impacted by the effects of the economic downturn of 2008, which saw a drop in industrial activity. As a result, the City easily complied with its water use target, even though the primary contributor to water use reduction was outside of the City's control. This UWMP provides a projection through 2040; during that time, the economic cycle will fluctuate independently of water conservation efforts, population growth and weather. This subsection is intended to provide guidance in demonstrating future water use compliance in the event of high water use intensity associated with a surge in economic activity.

Following are (1) provisions of the California Water Code and associated regulation that deal with adjusting compliance water use to account for changes in commercial and industrial activity, and (2) historical data that establish economic trends impacting the City's water use and implementation strategies.

7.6.1 – Statute and Regulation

In the event that water use exceeds the 2020 target of 10,860 GPCD due to increased commercial and industrial activity, the City will have an opportunity to adjust its per capita water use to account for the increase. Note that population for future reporting will remain constant at 100. Refer to Methodology 8 of *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (February 2016) for details on preparing the adjustment.

CWC Section 10608.24 provides the following option relative to the City circumstances:

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

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

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

Water Code Section 10608.12(d) defines "Commercial water user" as "a water user that provides or distributes a product or service."

Water Code Section 10608.12(h) defines “Industrial water user” as “a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.”

The following option is the most appropriate for the City’s case:

Adjustments to institutional water use resulting from new or expanded operations and adjustments to commercial or industrial water use resulting from increased business output and economic development.

In the event the City’s future water use exceeds the 2020 water use target, the following steps and calculations should be made (*Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*, pp. 59-62):

Adjustment 2 accounts for substantial changes to commercial, industrial or institutional (CII) water use due to new or expanded institutional water use or increased commercial and/or industrial business output and economic development. The increase in water use due to economic activity should be as a result of factors outside of service area population growth. Therefore, any adjustment may primarily be driven by institutions and businesses that serve nonresident populations and customers. Examples include the expansion of a college or university that draws students from outside the service area, a regional mall, or a business making a product that is sold broadly.

To account for possible changes in water use between sectors (an industrial facility becoming a commercial facility) water suppliers must first document that the percentage reduction in CII water use between baseline years and the compliance year is less than the percent reduction from the baseline water use required to meet the supplier’s water use target. Water suppliers whose CII percentage reduction is greater than the water use target percent reduction are not eligible for Adjustment 2.

Water suppliers must document that the increase in commercial, industrial or institutional water use proposed for adjustment has increased due to new or expanded institutions, or to increased business output and economic development. Water suppliers can document the increase through measures such as institutional enrollments, employment statistics, and statistics on business output or trade.

Step 1: Quantify CII Water Use Reduction

This step is intended to identify CII water use that may be eligible for adjustment. The calculations also separate the effect of changes in CII water use due to new or expanded institutions and economic development from that due to growth in population. Only the former may be eligible for this adjustment.

1.1. Calculate daily CII water use per capita for both the baseline period and the compliance year(s) using Methodology 7. Calculate the percentage reduction achieved in CII daily per capita water use for the compliance year(s) compared to the baseline period.

1.2. If the percentage reduction in CII daily per capita water use in the compliance year(s) (from Step 1.1) equals or exceeds the target percentage reduction in baseline GPCD, no economic adjustment can be made.

[Given that the City's population is static for the purpose of these calculations, all increases described in Step 1 will be due to economic development.]

Step 2: Documentation of Basis and Supporting Data for the Adjustment

Water suppliers making the economic adjustment must provide both a narrative description and numeric water use data to substantiate the adjustments. The data must illustrate the specific changes in commercial, industrial, or institutional water use by customer accounts where possible, between the baseline period and the compliance year(s).

2.1 For substantial changes to institutional water use from new or expanded operations:

2.1.1 Provide a narrative that identifies and documents new institutions or existing institutions with expanded operations within the service area that have caused institutional water use to increase significantly during the reporting period.

2.1.2 Calculate the change in the compliance year's institutional daily per capita water use compared to that in the baseline period.

2.2 For substantial changes to commercial or industrial water use from increased business output and economic development:

2.2.1 Provide a narrative that identifies and explains the increase in commercial and industrial water use within the service area due to increased business output and economic development.

2.2.2 Document the change in compliance year(s) daily commercial and/or industrial water use per capita compared to that in the baseline period.

Step 3: Correlation with Institutional or Economic Development Indicators

Demonstrate that the increase in commercial, industrial, or institutional water use is directly related to a net expansion in institutional operations, or a net increase in business output and economic development between the supplier's baseline period and compliance year(s). This step is necessary to prove that the increase in CII use is driven by economic factors and is not a result of service area population growth or change in water management.

3.1 Provide the institutional or economic development indicators that correlate with the increase in commercial, industrial, or institutional water use documented in Step 2. Institutional or economic indicators include:

- Employment statistics that show net increases in the specific commercial, industrial, or institutional sectors³.*
- Net increase in institutional enrollment, census, employment, or occupancy.*

³ Employment Development Department publishes monthly labor force data by county.

- *Net gain in measures of business output and economic development such as production volume, sales tax revenue, U.S. Department of Commerce measures of retail trade, or other indicators of manufacturing and wholesale activities⁴.*
- *Net gain in measures of non-resident population such as hotel occupancy rates, or measures of consumer expenditures such as attendance at entertainment venues.*
- *Net increase in commercial sector activities due to an extraordinary mega-event, such as hosting the Olympic Games or Super Bowl, during the compliance year.*
- *Other economic indicators.*

3.2 Adjust any economic indicators measured in dollars for inflation by using the Consumer Price Index (CPI) (reference to specific CPI series, such as USACPIBLS).

Step 4: Document CII Water Use Reduction Programs and Efforts

Describe, in the demand management section of the supplier's urban water management plan or through the California Urban Water Conservation Council BMP reports submitted in lieu of the UWMP Demand Management Measures (DMM) section, the CII demand management measures the water supplier has implemented. Water suppliers not implementing CII DMMs are not eligible for the compliance year economic adjustment.

Step 5: Calculate the Economic Adjustments due to New or Expanded Institutions or Increased Business Output and Economic Development

To calculate the compliance daily per capita water use adjusted for economic activity, subtract the net change in commercial daily per capita water use, institutional daily per capita water use, or industrial daily per capita water use (from Step 2.1.2 or 2.2.2) from the unadjusted compliance year daily per capita water use.

7.6.2 – Economic Trends

Economic trends that support an adjustment to future water use compliance are examined below. The economics trends that make the most sense for the City are regional manufacturing labor and local tax revenue. Datasets for economic trends are provided in Appendix L.

7.6.2.1 – Regional Manufacturing Labor

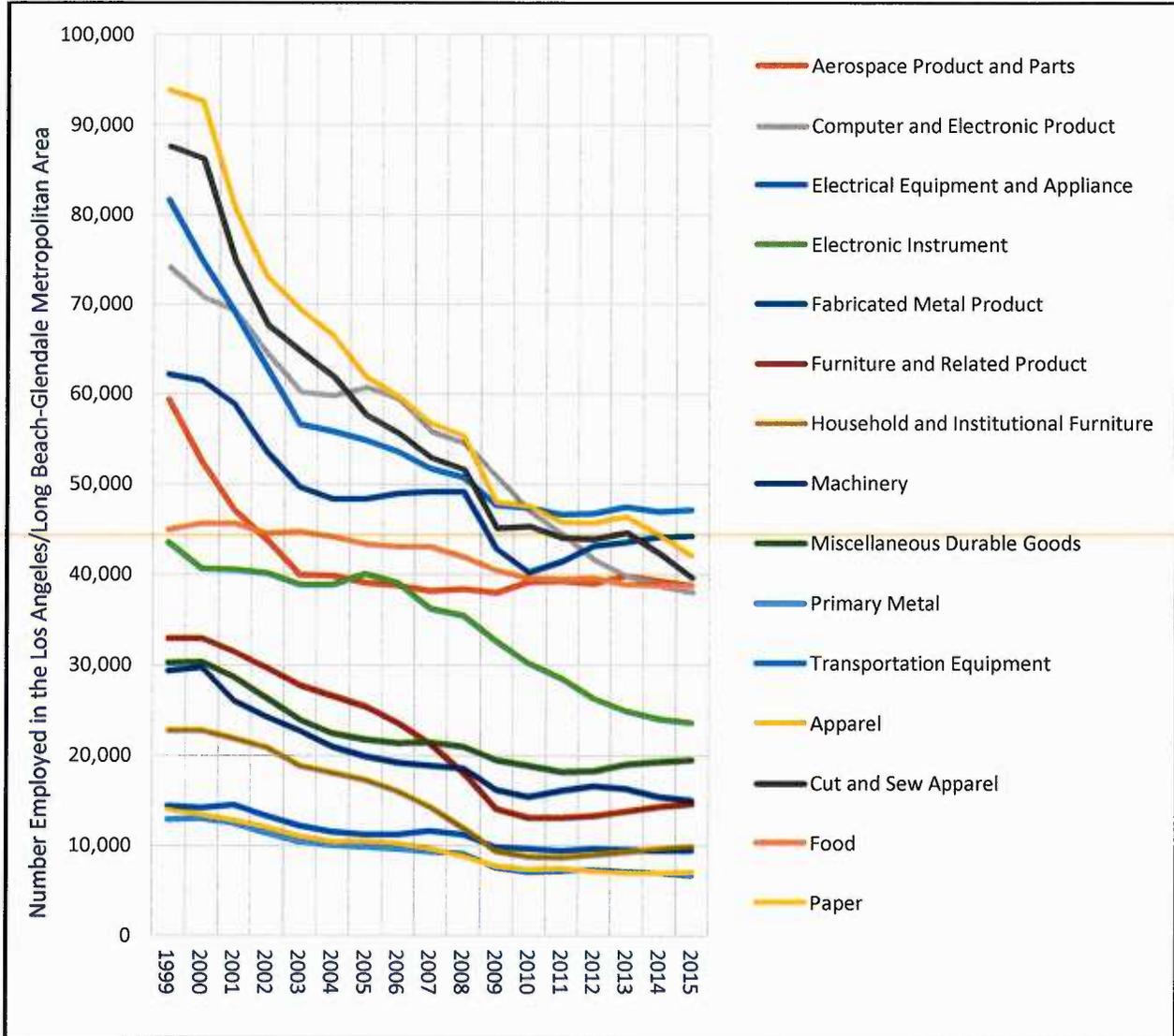
Detailed manufacturing labor trends by sector are provided by the Labor Market Information Division of the California Employment Development Department⁵. Given that the City's small population is not a factor in labor trends, extending labor statics to the larger metropolitan area is appropriate as an indirect indicator of industrial activity.

⁴ Board of Equalization publishes annual reports on local sales tax distribution by city.

⁵ <http://www.labormarketinfo.edd.ca.gov/>

Figure 7.1 provides manufacturing employment trends for a large number of sectors with a presence in the City.

Figure 7.1 – Trends in Manufacturing Employment



These data represent the Los Angeles/Long Beach/Glendale Metro Area. A large portion of the City's labor force is assumed to live in this area. The period is consistent with development of the City's baseline calculations for its water use target. In the event an adjustment to actual water use is required in the future to meet comply with the water use target, an uptick in any of these manufacturing labor trends should be evident in the data set for the subject compliance year. Cross-referencing manufacturing employment to high-intensity water users will serve to justify a future compliance water use adjustment.

It should be noted that mechanization is a common response to cost-reduction in recovering industrial markets. It is possible, even likely, that water use for industrial processes will increase as demand for

manufacturing increases regardless of a corresponding increase in manufacturing labor. In such a case, the City will document equivalent labor performed by machines in addition to actual labor.

7.6.2.2 – Local Tax Revenue

Detailed tax revenue trends are provided by the California State Board of Equalization⁶. Figure 7.2 provides City tax revenue trends for retail sales and total taxable outlets. The trends were adjusted for inflation indexed to 2015 based on the California Consumer Price Index published by the California Department of Finance⁷.

Figure 7.2 – Trends in State Tax Revenue



These data represent productivity in the City in terms of taxable revenue. The period is consistent with development of the City’s baseline calculations for its water use target, although detailed data for 2014 and 2015 had not been compiled and released prior to the adoption of this document. In the event an adjustment to actual water use is required in the future to meet comply with the water use target, an uptick in the taxable revenue trend should be evident in the data set for the subject compliance year. Cross-referencing City tax revenues to high-intensity water users will serve to justify a future compliance water use adjustment.

⁶ <http://www.boe.ca.gov/news/tsalescont.htm>

⁷ http://www.dof.ca.gov/HTML/FS_DATA/LatestEconData/documents/BBCYCPI_013.xls

Chapter 8 – Water Shortage Contingency Planning

8.1 – General Description

Water Shortage Contingency Planning deals with the imposition water use constraints on end users in order to assure sustainability under stressful emergency and long-term water shortage conditions.

CWC 10632

(a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier.

The City of Vernon adopted Ordinance No. 995 in 1991 (Appendix M), which enacted Article VI of Chapter 25 of the Code of the City of Vernon, "Water Conservation", containing Code Sections 25.100 through 25.111. Minimum requirements were outlined in this Ordinance to protect the water supplies and to establish standards for reductions in the use of water in the City of Vernon. The City's "Water Conservation" code was further amended in 2006 through the adoption of City Ordinance No. 1115 (Appendix N). Continuing the City's proactive approach to water conservation, the City recently adopted Ordinance No. 1161 (Appendix O) in October 2009, which further expanded the City's water conservation efforts by amending Article VI of Chapter 25 of the Code of the City of Vernon. This Ordinance established general water waste provisions, as well as conservation measures for Phase I, Phase II and Phase III water shortages. These shortages equate to water supply deficiencies of 20%, 30% and 50% and greater, respectively. The City has developed a three stage rationing plan to invoke during declared water shortages, in addition to specific water waste provisions mandated regardless of supply conditions. The rationing plan includes mandatory rationing in order to obtain the associated customer reduction goal.

Citation from the City Code related to Water Conservation are provided throughout this chapter in italics print.

8.2 – Stages of Action

CWC 10632

(a)(1) 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.

Following are the three (3) Water Conservation Stages outlined in the City:

8.2.1 – Water Conservation Stage I

A Phase I water supply shortage may be declared when the City Council determines it is likely that the City of Vernon will suffer a shortage in City water supplies up to 20%, but shall become mandatory when the City Council determines that the City will suffer a water shortage in excess of 20% of its normal water supplies.

8.2.2 – Water Conservation Stage II

A Phase II Water Supply Shortage exists when the City Council determines, in its sole discretion, that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions, except that a phase II Water Supply Shortage shall become mandatory when the City Council determines that the City will suffer a water shortage in excess of 30% of its normal water supplies. Upon the declaration by the city of a Phase II Water Supply Shortage condition, the city will implement the mandatory Phase II conservation measures.

8.2.3 – Water Conservation Stage III

A Phase III Water Supply Shortage condition is also referred to as an "Emergency" condition. A Phase III condition exists when the City of Vernon declares a water shortage emergency or when the City Council determines that the City will suffer a shortage of more than 50% of its normal water supplies. Upon the declaration of a Phase III Water Supply Shortage condition, the City shall notify its residents and businesses that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety and shall implement the mandatory Phase III conservation measures.

8.3 – Prohibitions on End Uses

CWC 10632

- (a)(4)** *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.*
- (5)** *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.*

The following are the mandatory prohibitions and consumption reduction methods related generally to water conservation and specifically to the three (3) Water Conservation Stages.

8.3.1 – General Prohibitions

No customer of the City of Vernon shall make, cause, use or permit the use of city water in a manner contrary to any provision of this article or in an amount which exceeds that permitted pursuant to action taken by the city council in accordance with the provisions of this article.

In addition, the following water conservation requirements are effective at all times and are permanent. Violations of this section will be considered waste and an unreasonable use of water.

- a. **Limits on Watering Hours:** *Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 10:00 a.m. and 5:00 p.m. on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.*
- b. **Limit on Watering Duration:** *Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a seventy percent (70%) efficiency standard.*
- c. **No Excessive Water Flow or Runoff:** *Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.*

- d. **No Washing Down Hard or Paved Surfaces:** Washing down hard or exterior paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.
- e. **Obligation to Fix Leaks, Breaks or Malfunctions:** Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered is prohibited and shall be repaired as soon as reasonably practicable.
- f. **Re-circulating Water Required for Water Fountains and Decorative Water Features:** Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.
- g. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial vehicle washing facility.
- h. **Drinking Water Served Upon Request Only:** Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.
- i. **No Installation of Single Pass Cooling Systems:** Installation of single pass cooling systems is prohibited in buildings requesting new water service.
- j. **Limits on Commercial Car wash and Laundry Systems:** Installation of non-re-circulating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

8.3.2 – Water Conservation Stage I

In addition to the prohibited uses of water identified in Section 25.101, the following water conservation requirements apply during a declared Phase I Water Supply Shortage:

- a. **Limits on Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three (3) days per week on a schedule established and posted by the City. Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 6:00 a.m. and 6:00 p.m. Pacific Standard Time. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water

per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.

- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification by the city unless other arrangements are made with the city.*

8.3.3 – Water Conservation Stage II

In addition to the prohibited uses of water identified in Sections 25.101 and 25.103, the following additional water conservation requirements apply during a declared Level II Water Supply Shortage:

- a. **Watering Days:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to two (2) days per week on a schedule established and posted by the city. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one (1) day per week on a schedule established and posted by the city. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.*
- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the city unless other arrangements are made with the city.*
- c. **Limits on Filling Ornamental Lakes or Ponds:** Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this article.*
- d. **Limits on Washing Vehicles:** Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-of nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.*

- e. **Limits on Filling Residential Swimming Pools & Spas:** Re-filling of more than one (1) foot and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.
- f. **Commercial Nurseries Watering Limitations:** Commercial Nurseries shall be prohibited from watering lawn, landscaped or other turf areas more often than every other day and shall be prohibited from watering between the hours of 10:00 a.m. and 4:00 p.m.
- g. **Mandatory Water Restrictions:** No customer shall make, cause, use or permit the use of city water for any purpose in excess of eighty-five percent (85%) of the amount used the same corresponding monthly billing period two (2) years preceding the city council declaring a Phase I Water Supply Shortage. In the case of a newly established business, no restriction shall be required until such time that the business has been established for one (1) year, at which time the preceding year's corresponding monthly billing shall be used to determine the businesses monthly water consumption.

8.3.4 – Water Conservation Stage III

In addition to the prohibited uses of water identified in Sections 25.101, 25.103 and 25.104, the following water conservation requirements apply during a declared Phase III Water Supply Shortage Emergency:

- a. **No Watering or Irrigating:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless the city has determined that recycled water is available and may be applied to the use:
 - 1. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self-closing water shut-off nozzle or device;
 - 2. Maintenance of existing landscape necessary for fire protection;
 - 3. Maintenance of existing landscape for soil erosion control;
 - 4. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;
 - 5. Maintenance of landscape within active public playing fields and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section 25.104(a) and the time restrictions as established in section 25.103(a);
 - 6. Actively irrigated environmental mitigation projects.
- b. **Obligation to Fix Leaks, Breaks or Malfunctions:** All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty four (24) hours of notification by the city unless other arrangements are made with the city.

- c. **Commercial Nurseries Watering Limitations:** *Commercial Nurseries shall be prohibited from watering lawn, landscaped or other turf areas more often than every third (3rd) day and shall be prohibited from watering between the hours of 6:00 a.m. and 6:00 p.m.*
- d. **Mandatory Water Restrictions:** *No customer shall make, cause, use or permit the use of city water for any purpose in excess of seventy-five percent (75%) of the amount used the same corresponding monthly billing period two (2) years preceding the city council declaring a Phase I Water Supply Shortage. In the case of a newly established business, no restriction shall be required until such time that the business has been established for one (1) year, at which time the preceding year's corresponding monthly billing period shall be used to determine the businesses monthly water consumption.*
- e. **Fire Hydrant Use:** *The use of water from a fire hydrant shall be limited to fire fighting and related activities. Other uses of city water for municipal purposes shall be limited to activities necessary to maintain the public health, safety and welfare.*
- f. **Customer Water Conservation Report:** *The city may, by written request, require all commercial and industrial customers using 100 acre feet or more per year of potable water to submit a water conservation plan and quarterly progress reports on such plan. The conservation plan shall include recommendations for increased water savings, including increased water recycling based on feasibility. The quarterly report shall include progress to date on implementation of such recommendations.*

8.4 – Defining Water Features

CWC 10632

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Health and Safety Code Section 115921

As used in this article the following terms have the following meanings:

(a) "Swimming pool" or "pool" means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. "Swimming pool" includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools.

As a general prohibition:

Re-circulating Water Required for Water Fountains and Decorative Water Features:
Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

Upon declaration of a Water Conservation Stage II or III:

Limits on Filling Ornamental Lakes or Ponds:
Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a supply shortage level under this article.

The City is unaware of any water features within the Water Service Area. Therefore, implementation of the above restriction will have a negligible impact.

8.5 – Penalties, Charges, Other Enforcement of Prohibitions

CWC 10632

(a)(6) Penalties or charges for excessive use, where applicable.

For each violation by any customer of the water use curtailment provision of Sec. 25.104(g), a surcharge shall be imposed in an amount equal to fifty percent (50%) of the portions of the water bill that exceeds the respective percentages set in said section. For each violation by any customer of the water use curtailment provision of Sec. 25.105(d), a surcharge shall be imposed in an amount equal to 100 percent (100%) of the portions of the water bill that exceeds the respective percentages set in said section.

8.6 – Categories of Consumption Reduction Methods

On August 5, 2014, the City issued a Notice of Phase 1 Water Supply Shortage (see Appendix P). In addition to prohibitions and limitation on irrigation, the Notice included the following consumption reduction methods:

Obligation to fix leaks, breaks or malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within 72 hours of notification by the City unless other arrangements are made with the City.

On June 4, 2015, the City issued a Notice of Phase 2 Water Supply Shortage (see Appendix Q). In addition to prohibitions and limitation on irrigation, the Notice included the following consumption reduction methods:

Obligation to fix leaks, breaks or malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within 48 hours of notification by the City unless other arrangements are made with the City.

8.7 – Determining Water Shortage Reductions

CWC 10632

(a)(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The City regularly monitors and reports its water production and consumption to Watermaster (WRD). This database would be used to determine a prescribed baseline for comparison to actual water use.

8.8 – Revenue and Expenditure Impacts

CWC 10632

(a)(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), 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.

As an industrial City, few of the actions related to discretionary water use reduction will impact revenue or expenditures, given the small associated demands. However, Mandatory Water Restrictions of 85% of historical use under Water Conservation Stage II and 75% of historical use under Water Conservation Stage III may pose a short-term drop in revenue. It should be noted that revenue associated with commodity rates for water service are not a significant portion of the City's operating budget; therefore, even the impact of a Mandatory Water Restriction will be minimal. The City may change its rate structure as necessary to account for a revenue shortfall.

8.9 – Resolution or Ordinance

CWC 10632

(a)(8) A draft water shortage contingency resolution or ordinance.

The current water conservation ordinance meets all requirements for water shortage contingency planning. No changes to the ordinance are required.

8.10 – Catastrophic Supply Interruption

CWC 10632

(a)(3) 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.

The City will implement Water Conservation Stage I, II or III as appropriate for the loss of supply associated with a catastrophic supply interruption.

8.11 – Minimum Supply Next Three Years

CWC 10632

(a)(2) 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.

At a minimum for the next three years, the City will have access to 140% of its Allowable Pumping Allocation in Central at 10,555 AFY, and sufficient recycled water to operate the Malburg Generation Station at 800 AFY.

REF

Chapter 9 – Demand Management Measures

Demand Management Measures (DMMs) are established methods and practices for water use reduction. DWR requires implementation of all DMMs through a coordinated effort at the wholesale and retail levels. However, DWR acknowledges that there may be local influences on the viability of individual DMMs and makes allowances for non-implementation.

9.1 – General Description

Demand Management Measures (DMMs) are established methods and practices for water use reduction. DWR requires implementation of all DMMs through a coordinated effort at the wholesale and retail levels. However, DWR acknowledges that there may be local influences on the viability of individual DMMs and makes allowances for non-implementation.

9.2 – Demand Management Measures for Wholesale Agencies

CWC 10631

(f) Provide a description of the (wholesale) supplier's water demand management measures. This description shall include all of the following:

(1)(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(ii) Metering.

(iv) Public education and outreach.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, (provide) a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

The City works closely with CBMWD and its member agencies to effectively implement demand management measures by encouraging its customers to participate in and take advantage of wholesaler programs. Per the CBMWD 2015 UWMP:

Central Basin continues to engage in a variety of activities and programs designed to reduce water use consumption in our region. Conservation outreach activities included retrofitting projects at publicly-owned properties; an awareness program that provided web-based notification tools; demonstration gardens; drought-tolerant landscaping and

gardening workshops; drought response training and user manuals for Central Basin purveyors; and the distribution of "Turf-it-out!" information materials.

Public Information Programs

Central Basin's public information efforts consist of a variety of programs and practices that are used to educate the public about water conservation. Conservation literature is provided to the public at various one-day programs and at community events.

Central Basin also provides the community with a Speakers Bureau through which Central Basin's Board of Directors and staff work with local civic organizations and service clubs to provide information on a variety of programs and projects that promote conservation. Additionally, Central Basin provides education through our website, an interactive Blog, and various publication materials.

Central Basin has continued to engage its community through outreach and public education programs by integrating social marketing strategies with existing programs. Central Basin uses a variety of social media platforms to disseminate information through websites such as Twitter, Facebook, Instagram, Pinterest, LinkedIn and YouTube. Central Basin has realized many campaign successes of increased community involvement, which is reflective in the upward curve of its website traffic.

By using technology, Central Basin is connected with residents and businesses in a new and exciting way to promote the benefits and importance of water conservation. Central Basin's social media strategy is tailored to meet the needs of the local community.

Additional Public Information and Outreach programs include:

Metropolitan Inspection Trips

As a Metropolitan Member Agency, Central Basin has two representatives on the Metropolitan Board of Directors. Inspection trips are a key part of Metropolitan's efforts to educate community leaders on water issues and the statewide water delivery system. The tours offered include: State Water Project Inspection Trip, Colorado River Aqueduct Inspection Trip and Diamond Valley Lake Inspection Trip. These tours are available throughout the year.

Water Education Tours (W.E.T.)

Central Basin offers one-day tours of the water delivery system to members of their community. Through participation in the tours, community members are educated on the key water issues facing our region and are able to visit recycled water pump stations, waste water treatment facilities, drought demonstration gardens and a recycled water customer.

Max the Water Dog

In an effort to engage the whole family on water issues, Central Basin has introduced Max the Water Dog mascot as the latest edition to Central Basin's outreach programs. Max is a water conservation super hero that was introduced to provide a fun approach on learning about water. Max the Water Dog appears at community events and interacts with the public.

Community Outreach Booths

Another aspect of Central Basin's community engagement efforts is Community Outreach Booths. Throughout the year, Central Basin hosts community outreach booths at a variety of community events. District representatives are on-hand to talk with members of the community about vital water issues and provide information on resources available.

Residential Programs

High-Efficiency Toilet (HET) programs are a key element in the conservation successes Central Basin has experienced over the years. Central Basin's HET programs have been implemented through various partnership and grant programs, and have been made available throughout the service area. Thousands of free HETs have been distributed to eligible customers over the last few years.

Since 2010, Central Basin has completed more than 26,000 HET direct installations in single family, multifamily, and commercial, industrial and institutional (CII) facilities throughout Central Basin's service area.

Central Basin continues to implement region-wide residential rebate programs through the SoCal Water smart rebate program. Central Basin adds additional funding to qualifying washing machine devices and receives supplementary funding from participating retail agencies.

Commercial, Industrial, and Institutional Programs

Central Basin participates in Metropolitan's "SoCal WaterSmart" rebate program. Through Metropolitan's SoCal WaterSmart, commercial, industrial, and institutional customers are eligible for rebates to help encourage water efficiency and conservation. The SoCal WaterSmart program offers cash rebates on a wide variety of water-saving technologies.

Conservation Manager

As the regional wholesaler, Central Basin employs one full-time Conservation Manager who works throughout Central Basin's service area to promote water conservation. The manager also works with cities and water agencies to foster consumer behavioural change and implement various conservation programs that result in significant reduction in overall retail water use. Central Basin also employs two interns that provide support to the outreach efforts. The current Conservation Manager is Sandi Linares-Plimpton, who can be reached at 323-201-5511 or sandil@centralbasin.org.

Sources of funding for Central Basin's water conservation program in the last five years include: Department of Energy grant, DWR grant, Metropolitan Member Agency Conservation Program Allocation, water retail agency partnerships, and through its own fiscal budget.

Additional Innovative Conservation Programs

Smart Gardening Workshops

Central Basin continues a partnership with the Los Angeles County Department of Public Works to bring free, educational gardening workshops to local residents. The workshops,

which are offered in English and Spanish, provide information on California native plants, composting and gardening tips for residents, business owners, and local landscapers.

These partnerships have proven to be diverse in nature and valuable in strengthening the conservation efforts within Central Basin's service area, particularly within the more disadvantaged areas.

Conservation Information Working Group

On a monthly basis, Central Basin meets with its purveyors to discuss various topics pertaining to water conservation and public outreach. Guest speakers are also invited to provide insight on new water efficient technologies and programs available.

Drought Outreach Training

Central Basin conducted Drought Outreach Training for city staff members as part of its outreach efforts to help the service area meet their mandated conservation goals. Cities that serve as water retailers are the first in line of contact with residents when paying water bills and dealing with water related concerns. A handbook was designed for these city staff members to provide the latest information on the drought, water efficient rebates and other conservation information. Central Basin staff provided copies of the handbook and provided training to city staff members on how to best respond to water conservation questions.

Drought Gardening Classes

With the increased interest in removing lawns to conserve water, Central Basin partnered with Metropolitan to host Drought Gardening Classes throughout the service area. These three hour classes provide information and the tools on how to create drought tolerant landscaping. Residents are taught by a landscape professional. Each resident leaves the class with a better understanding on how water flows outside their home and how to best capture and use it for irrigation.

Conservation Pricing

Although the conservation pricing BMP refers to the rate structure of a retail water agency to encourage a reduction of water use, Central Basin, as a wholesale agency, employs a water budget structure for its retail agencies based on a two tier rate structure. More information is described in Section 6.3 under imported water rates.

SCADA Integrated Asset Management Program

The Integrated Asset Management Program is a customized computer software program that manages assets by identifying operating and maintenance inefficiencies followed by alarming operators of equipment failures. The software is unique because it uses Supervisory Control and Data Acquisition System (SCADA) data to monitor the assets and by doing so, it streamlines processes for asset maintenance and has paved the way for energy reduction.

Grant Programs

Central Basin has been successful in receiving grant funding for conservation programs at the federal, state, and local levels through agencies such as the United States Department of Energy (DOE), DWR, and Metropolitan. The following list provides a brief

summary of the individual water conservation grants that have been implemented since 2005:

DWR Grant (Prop 50) – High Efficiency Living Program (HELP) 10,000 HET Direct Install

In 2007, Central Basin was awarded a DWR grant in the amount of \$1,563,900. The grant program provided funding to market, purchase and install 9,000 HETs in multi-family residential units throughout the service area, which was completed in 2014. The water savings for this program will reach over 200 AFY for 25 years.

DWR Grant (Prop 50) – Urban City Makeover Program

Through the DWR Prop 50 Urban City Makeover Program, grant funding in the amount of \$113,746 provided nine disadvantaged cities with a number of water-saving resources. These included: HETs, water free urinals, native plants, weather-based irrigation controllers and water brooms. The participating cities are: Bell Gardens, Commerce, Cudahy, Hawaiian Gardens, Huntington Park, Lynwood, Maywood, Paramount, and South Gate. This program concluded in December 2013.

DWR Grant (Prop 50) – Commercial Landscape Wireless Valve End Use Management Research Project

The Commercial Landscape Wireless Valve End Use Management Research Project awarded to Central Basin by DWR in the amount of \$302,052, involves the implementation of wireless valve ETo controllers in non-residential sites. The research goal is to enhance water management and water efficiency at the local, regional, and state wide levels.

DWR Grant (Prop 50) – Large Landscape Water Conservation/Management and Education Program

The Large Landscape Water Conservation, Runoff Reduction and Educational Program provides \$900,000 in funding for the implementation of a water management program using weather-based irrigation controllers and wireless technologies to significantly reduce the amount of runoff from large landscapes, street medians, and residential properties.

Included in the grant funding are five large community demonstration gardens. Central Basin partners with local public agencies such as cities and school Districts to create Demonstration Gardens that enrich the environmental awareness of the community and promote the benefits of water efficient gardens.

U.S. D.O.E. (Energy Efficiency Conservation Block Grant) Water and Energy Emergency End Use Demand Management Measures Grant

The Water and Energy Emergency End Use Demand Management Measures Grant in the amount of \$2,000,000 was awarded to Central Basin under the United States Department of Energy Recovery Act - Energy Efficiency and Conservation Block Grant Program. Under this program, funding is provided to purchase and install a series of wireless ETo controllers in residential and commercial settings that use radio commands for periodic pressure and management adjustments. A second element of the grant addresses water and energy demand management in recycled pipelines.

U.S. D.O.E. Conservation Awareness Program (CAP)

Central Basin completed the first grant awarded to a water agency that implemented conservation in both water and embedded energy. One project component was the development of the Conservation Awareness Program (CAP). CAP is a web-based notification program that allows water retailers to send their customers notifications, ordinances, irrigation schedules, and other custom messages. Water retailers are able to create a user account to send such notices, and residents (customers) are able to subscribe to their water provider. The website also features information on water conservation practices and rebates for water efficient devices. This program is offered at no cost to both residents and water providers.

U.S. D.O.E. Conservation Retrofit Program

On November 30, 2014, Central Basin completed the Department of Energy Conservation Retrofit Grant Program. The participants included the Bellflower Unified School District, the Compton Unified School District, the Lynwood Unified School District and the Montebello Unified School District. Overall, 40 school sites were audited and 32 received complete retrofits totaling to more than 8,000 completed retrofits. These installations will save an estimated 21 million gallons of water annually. These installations will assist our region in reducing our dependence on imported water supplies and will help these public facilities in decreasing their monthly water bills.

High Efficiency Living Program (Proposition 50 Grant)

On December 31, 2015 Central Basin completed the scope of work of the High Efficiency Living Program Proposition 50 Grant, which provided funding to replace high water use toilets with water efficient toilets in multi-family units throughout the service area. We installed a total of 9,484 toilets through this program. A total of 1,793 toilets installed were 0.8 gallon per flush. The remaining 7,691 toilets installed were 1.28 gallon per flush toilets. The estimated water savings through the implementation of the grant is estimated at 8,052 acre-feet of potable water and will have an estimated embedded energy savings of 256,391 kilowatts for the twenty-year life of toilets installed.

Education Programs

Collaborative classroom visitation programs are a key element in Central Basin's student outreach efforts. The following is a brief description of the free water education programs offered by Central Basin:

- Water Squad Investigations (Grades 4-12)
- Water Wanderings (Grades 4-5)
- Think Watershed (Grades 4-6)
- Think Earth! It's Magic (Grades K-5)
- Think Water! It's Magic (After School Program for Grades K-5)
- "Water Is Life" Poster Contest (Grades 4-8)
- Waterlogged (Grades 9-12)

- *Sewer Science (Grades 9-12)*
- *Conservation Connection: Water & Energy in southern California (Grades 5 – 8)*
- *Water for the City: southern California Urban Water Cycle (Grades 4 –8)*

Think Earth! It's Magic (Grades K-5): A collaborative program between Central Basin and the Think Earth Environmental Education Foundation to stage free, environmental magic shows for elementary schools. Each year, this traveling magic show visits schools throughout the region to teach students about the importance of applying environmentally friendly practices around their homes and schools. It is the only program in the state to combine an award-winning, grade-appropriate classroom curriculum with an environmental magic show assembly.

Think Water! It's Magic (Afterschool Program for Grades K-5): An adaptation of Central Basin 's popular Think Earth! It's Magic program, Think Water! It's Magic brings the educational environmental magic shows to extended day care and after school programs throughout the service area. The magic shows cover such topics as the water cycle, water quality, water recycling, and the importance of conservation.

Think Watershed (Grades 4-6): Think Watershed is a partnership of environmental stakeholders in southern California interested in creating and implementing a watershed education program for grades 4 -6 using the Los Angeles County Office of Education's Floating Lab. Components of the program include a classroom watershed curriculum focused on the San Gabriel River Watershed and then a field trip on board the Floating Lab, a modern marine science research vessel docked in Rainbow Harbor, Long Beach.

Water Squad Investigations (Grades 4-12): Successfully launched in fall 2006, Water Squad Investigations is a collaborative water education program between Central Basin, LACSD and the Los Angeles County Department of Parks and Recreation. Through the program, students go on a one-day field trip to the San Jose Creek WRP and the Whittier Narrows Nature Center. By day's end, students will have gained a greater understanding of how water recycling can help conserve drinking water and simple ways to conserve water around their homes.

Water Wanderings (Grades 4-5): A classroom visitation program between Central Basin and the S.E.A. Lab in Redondo Beach. This hands-on program takes fourth and fifth-graders on a 2 1/2 –hour journey through California's water system. Students participate in activities that include "Touring Tide Pool," a van outfitted with touch-tanks, enabling students to touch live marine creatures and plants. Water Wanderings meets many of the fourth grade and fifth grade state standards for social science and science. By participating in this free program, students learn to appreciate California's water as a scarce, valuable resource.

Water Is Life Poster Contest (Grades 4-8): As part of Central Basin's annual recognition of Water Awareness Month each May, the "Water is Life" Poster Contest is a collaborative arts program between Central Basin and Metropolitan. Through the contest, students are encouraged to create posters that creatively depict various water uses and/or water use. Central Basin then selects a grand-prize winner who is awarded a fully-loaded laptop computer or tablet device. The winning poster is also submitted to Metropolitan

to be included in the annual calendar and featured on water bottles and other promotional items.

Conservation Connection: Water and Energy in Southern California (Grades 6-8): This action-based curriculum provides students with the opportunity to look critically at important environmental issues and take responsibility for finding solutions. After learning about the vital role that water and energy play in our lives, students will have the opportunity to survey their family's water and energy use and survey water and energy use in their school. From there, they will develop, implement and monitor plans to decrease water and energy use.

Waterlogged (Grades 9-12): A high school visitation program between Central Basin and the Roundhouse Marine Studies Lab and Aquarium, an oceanographic teaching station. The program offers local high schools five exciting curriculum programs, each aligned to the California State Science Content Standards. Through specimen dissections, examples of current aquatic/marine science research, and practical hands-on activities, students learn about the scientific method, the ecology of the Pacific Ocean, and the unintended impact of human life on the aquatic/marine environment.

Solar Cup (Grades 9-12): A partnership between Central Basin and Metropolitan, Solar Cup is a hands-on education program in which high school teams throughout southern California learn about water conservation and renewable energy by building and racing solar powered boats. Four Central Basin teams along with other teams throughout southern California compete against each other in both sprint and endurance races at Lake Skinner, in Temecula. As part of the seven-month long program, teams also research and complete various technical reports and create a water-related public service announcement. The culminating Solar Cup races take place each year in May.

Conservation Connection Water & Energy in Southern California (Grades 5-8): Where do we get the water and energy that we use? Will we always have enough to meet our needs? Conservation Connection answers those questions, showing the connections between California, our water and energy supply, and us. But providing information is only part of Conservation Connection. The goal of the curriculum is to get students actively involved— in their homes and at school – in conserving water and energy. Within the program, students have the opportunity to survey their family's water and energy use and survey water and energy use at their school. After gathering data, analyzing their findings and reviewing recommendations, students make, implement, and monitor plans to decrease water and energy use. By participating in this action-based curriculum, students will learn to look critically at important environmental issues and take responsibility for finding solutions.

Sewer Science (Grades 9-12): Sewer Science is an award-winning, hands-on laboratory program that will teach high school students in the District's service area about wastewater treatment. During a week-long lab course, students will create fake wastewater and employ physical, biological and chemical treatment methods and procedures to test its quality. The lab will be facilitated by biologists and chemists from LACSD, allowing students the opportunity to learn first-hand from experienced science professionals. The program meets California State Content Standards in the high school sciences for chemistry, physics and microbiology.

9.3 – Demand Management Measures for Retail Agencies

CWC 10631

(f)(A)...*The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*

(B) *The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:*

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

9.3.1 – Water Waste Prevention Ordinances

The City adopted Ordinance No. 1161 (Appendix O) in October 2009, which further expanded the City's water conservation efforts by amending Article VI of Chapter 25 of the Code of the City of Vernon. This Ordinance established general water waste provisions, as well as conservation measures for Phase I, Phase II and Phase III water shortages. The water waste provisions apply regardless of supply conditions, and include:

- **Limits on Watering Hours:** Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 10:00 a.m. and 5:00 p.m. on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system.
- **Limit on Watering Duration:** Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a seventy percent (70%) efficiency standard.

- No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.
- No Washing Down Hard or Paved Surfaces: Washing down hard or exterior paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.
- Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered is prohibited and shall be repaired as soon as reasonably practicable.
- Re-circulating Water Required for Water Fountains and Decorative Water Features: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.
- Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial vehicle washing facility.
- Drinking Water Served Upon Request Only: Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.
- No Installation of Single Pass Cooling Systems: Installation of single pass cooling systems is prohibited in buildings requesting new water service.
- Limits on Commercial Car Wash and Laundry Systems: Installation of non-recirculating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

City crews have been trained in the areas of water waste and actively monitor the City for water waste activities. The Public Works and Water Superintendent currently tracks total City water demands through billing meter data. These data are used to evaluate the effectiveness of the water waste prohibitions.

9.3.2 – Metering

CWC 526

(a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract... shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.

CWC 527

(a) An urban water supplier that is not subject to Section 526 shall do both the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

All existing and new City service connections are metered ensuring proper billing by volume. There is a meter retrofit program in place.

There is no large landscape irrigation in the Water Service Area and therefore no need for conversion of mixed use accounts to multiple meters including a dedicated landscape meter.

9.3.3 – Conservation Pricing

The City does not use conservation pricing for water use reduction. To promote its “exclusively industrial” nature, the City provides water service at some of the lowest rates in the region to attract commercial and industrial customers.

The City’s commodity rate for water is the same for all use types (i.e. commercial, industrial, and residential). Water use in the City, which is primarily commercial and industrial, is more closely linked to market trends than to the habits of consumers. As a result, the established rate structure provides local businesses with the security and assurance of availability they need to make daily operational decisions.

Research shows that price elasticity of demand for water among commercial, institutional and industrial (CII) customers varies widely depending the end use. Domestic uses (e.g. toilet flushing, food preparation, general cleaning, etc.) respond in a similar fashion to residential uses, which tend to have a relatively low price elasticity of approximately -0.2. Water-dependent industrial processes where a high quality source is required (e.g. food and beverage processing, chemical manufacturing, etc.) tend to have a very low price elasticity. Industrial processes where a substitute for high quality water exists (e.g. cooling, irrigation, truck washing, etc.) tend to have a moderate price elasticity.

Given the large volume of water dedicated to CII customers for industrial processes, conservation pricing has been determined to have a negligible effect on water savings and a negative effect on attracting commercial and industrial customers to the City.

9.3.4 – Public Education and Outreach

The City continues to operate a strong outreach program, as it has for the past several decades. Public information about the City and its mission, programs and events are constantly disseminated to numerous interested parties in order to promote water conservation. The City provides information for customers at the front desk of the Department of Community Services and maintains a strong link with the local news media through press releases of important subjects reinforcing the water conservation message. The City uses numerous printed materials to send information to the community. The publication includes articles on water quality, conservation and infrastructure improvement information. In addition, the Department of Community Services publishes an annual water quality report, which provides quality information, and promotes water conservation. The Water Quality Report is delivered to every service address in the City's Water Service Area. Publications are also available for download on the City's website at www.cityofvernon.org.

In coordination with CBMWD, the City provides water conservation information and links to wholesaler programs on its website.

The City is almost entirely industrial and commercial, with a very small residential population of approximately 100 people. The City has only one school within its Water Service Area, which is the Vernon Elementary School. The City of Vernon's Public Works and Water Superintendent gives presentations at the School, which highlight efficient use of resources and water conservation.

Expansion of the school education program with Vernon Elementary School is underway. The City plans to create a poster contest to promote water conservation with the school children. The program is anticipated to consist of providing each age appropriate class with poster paper and a water conservation related giveaway. The winning posters in three age categories may be displayed in the Department of Community Services. The students will also receive information on water supply and simple water conservation tips, which meet state educational requirements. The City will track the number of classes which participate to track the effectiveness of the School Education Program.

9.3.5 – Programs to Assess and Manage Distribution System Real Loss

The City's water section reads over one thousand water service meters each month. Meter readers inspect each service meter for leaks or damage that may adversely impact the functionality or accuracy. The City's automated billing system flags high and low meter readings. This information is sent electronically to maintenance crews who then perform inspections of suspect service meters in an expedient fashion. The City's in-house construction crews make water system repairs in an efficient and productive fashion, providing for significant reduction in water loss. Vernon has a complex database system that meticulously quantifies water consumption, water production and net water loss for the entire water distribution system. This allows Vernon staff to continuously monitor water consumption and water loss in order to ensure that no system failures have occurred and to conserve precious water supplies. The City plans to conduct a comprehensive water audit to further pinpoint possible manifestations of water loss and to develop a repair program, if necessary, to minimize losses.

Water Audit

Master Plan CIP

Leak Detection

Maintenance Log

9.3.6 – Water Conservation Program Coordination and Staffing Report

The City's designated Water Conservation Coordinator is the Public Works and Water Superintendent. This senior management position spends approximately five percent of the time managing the provisions in the water conservation program, implementing the public information program and planning the school education program. During periods of declared drought, the time allocated to conservation duties increases to approximately 50 percent. The City's conservation coordinator often represents the City at regional and statewide workshops and organizations. In addition, the conservation coordinator also seeks Federal, State, and local funding to develop new programs that promote water conservation throughout the City's Water Service Area.

9.3.7 – Other Demand Management Measures

The construction of new development is limited in the City of Vernon due to the lack of vacant or underutilized land within the service area. All new Commercial, Industrial and Institutional development proceeds as follows:

- Building plans must be submitted to the City's Building Section for review and approval.
- Water saving appurtenances and fixtures are a requirement of the approval process and documentation regarding the implementation of such devices is required to obtain a permit.
- A water consumption review is performed based upon the Building Section's estimated water use.
- An appropriately sized water meter is selected in order to ensure that all consumption is billed by volume, which in turn provides a financial incentive to encourage water conservation.

The City works in coordination with CBMWD as a member agency in the implementation of conservation programs to promote CII conservation. CBMWD participates in MWD's "Save A Buck" region-wide CII rebate program and helps promote these rebates for use by businesses, schools and other qualifying facilities throughout the City's service area.

Rebates are offered for commercial clothes washers, water brooms, cooling tower conductivity controllers, x-ray machine recirculating devices, water free urinals, high efficiency toilets, weather-based irrigation controllers, pre-rinse spray valves, nozzles and various industrial pressure devices.

In 2002, the California Urban Water Conservation Council (CUWCC) pursued and received a \$2.3 million grant from the California Public Utilities Commission (CPUC) to purchase and install restaurant pre-rinse spray nozzle valves. The new nozzles use 1.6 gpm compared to 2 to 6 gpm valves. These valves conserve water, reduce heating costs and reduce waste-water discharge. CBMWD supported CUWCC's efforts in marketing the program. The nozzles and installations were provided free of charge to several food services customers in the City's Water Service Area.

9.4 – Implementation over the Past Five Years

CWC 10631

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1)(A) ... a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

The City is a member of the CUWCC. See Appendix R for reporting on best management practices for water use reduction over the past five years.

9.5 – Planned Implementation to Achieve Water Use Targets

CWC 10631

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1)(A) ...The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

The City has already achieved its 2020 water use target.

The City will continue to work closely with its regional partners to implement water conservation projects and programs. These partners include CBMWD, the Gateway Water Management Authority, and the Southeast Water Coalition.

The primary focus of the City will continue to be water conservation programs aimed at CII customers including water audits, high efficiency toilets, retrofit of industrial water fixtures, conversion of industrial processes to recycled water.

Given that a residential water demand is less than 0.1% of total demand, a number of programs associated with residential water conservation will not be implemented at the City level. These include Interior and Exterior Water Audits for Single and Multi-Family Customers, Residential Plumbing Retrofit, Large Landscape Conservation Programs and Incentives, High-efficiency Washing Machine Rebate Programs, and Residential Ultra-low-flush Toilet Replacement Program. City residents are still eligible for these programs through CBMWD and MWD.

9.6 – Members of the California Urban Water Conservation Council

CWC 10631

- (i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.*

The City is a signatory to the MOU.

REF

Chapter 10 – Plan Adoption, Submittal, and Implementation

Plan Adoption, Submittal, and Implementation describe the steps taken to adopt and submit the UWMP and to make it publicly available. This chapter also includes a discussion of the implementation plan.

10.1 – General Description

Plan Adoption, Submittal, and Implementation describe the steps taken to adopt and submit the UWMP and to make it publicly available. This chapter also includes a discussion of the implementation plan.

10.2 – Inclusion of All 2015 Data

10.3 – Notice of Public Hearing

10.3.1 – Notice to Los Angeles County

CWC 10621

(b) Every urban water supplier required to prepare a plan shall... at least 60 days prior to the public hearing on the plan ... notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

CWC 10642

...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...

10.3.2 – Notice to the Public

CWC 10642

...Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection...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...

Government Code 6066

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

10.4 – Public Hearing

CWC 10642

...Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon.

CWC 10608.26

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.*
- (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.*
- (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.*

10.5 – Adoption

CWC 10642

...After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10.6 – Plan Submittal

CWC 10621

(d) An urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

CWC 10644

(a)(1) 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.

CWC 10635

(b) 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.

10.7 – Public Availability

CWC 10645

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.

10.8 – Amending an Adopted UWMP

CWC 10621

(c) 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).

CWC 10644

(a)(1) 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.