

PUBLIC HEARING

SUBJECT: ADOPTION OF AMENDMENTS TO THE CITY'S URBAN WATER MANAGEMENT PLAN

SOURCE: Public Works Department - Field Services Division

COMMENT: The Urban Water Management Plan (UWMP) is a requirement of the Urban Water Management Planning Act (UWMPA) (Division 6, Part 2.6 of the California Water Code (CWC) §10610-10656). The UWMPs must be submitted to the Department of Water Resources (DWR). The submittal is required to meet the requirements of the UWMPA, including the most current amendments that have been made. The UWMPA applies to urban water suppliers with 3,000 or more connections being served or supplying more than 3,000 acre-feet (AF) of water annually.

UWMPs are required of the state's urban water suppliers in an effort to assist their resource planning and to ensure adequate water supplies are available for future use. A secondary purpose of the UWMP is to provide for a plan or series of plans during water drought situations. This plan was prepared according to the requirements of the CWC, UWMPA and the UWMP Guidebook 2010.

The City of Porterville adopted the 2010 UWMP update on August 19, 2014. As required, the Plan was reviewed by DWR, and during the review it was determined that the City services a larger population outside the City limits than was stated in the original UWMP. As a result, the total population served by the City increased from 59,650 to 61,946. DWR has reviewed the amended Sections 3.2 Service Area Population through Section 4.2.3 Summary Baseline and Targets and will formally approve the plan once adopted by Council.

Staff's recommendation is to open the public hearing, receive comments, and adopt the amended portion of the 2010 updated UWMP.

RECOMMENDATION: That City Council:

1. Conduct a public hearing and adopt the amendments to Section 3.2 Service Area Population through Section 4.2.3 Summary of Baseline and Targets in the approved UWMP;
2. Submit the amended UWMP to the DWR, the California State Library, and the County; and
3. Make the amended UWMP available to the public for review within 30 days after filing a copy of the plan with the DWR.

ATTACHMENT: Amended Section 3.2 – Section 4.2.3 of the 2010 Urban Water Management Plan.

3.2 Service Area Population

Legal Requirements:

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

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

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

Over the past 30 years, the city of Porterville’s population has grown at an average annual rate of 3.7 percent. However, the city’s population growth has slowed to an average annual rate of 2.8 percent over the past 15 years. According to the 2010 Census, the city currently has a population of 54,165. Water service is provided to an additional population outside of the city limits of about 7,781 in 2010, for a total 2010 population of 61,946. Buildout according to the 2008 General Plan would accommodate a population of 107,300 residents in the Planning Area through year 2030. However, based on the 2010 population of 54,165, and maintaining the projected annual population growth rate of 3.7 percent, as contemplated in the General Plan, the projected 2030 population is 120,431.

Table 3-3: Service Population – Current and Projected

(UWMPGB Table 2)

| | 2010 | 2015 | 2020 | 2025 | 2030 |
|--------------------------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
| Service area population¹ | 61,946 ² | 69,832 ³ | 83,743 ³ | 100,425 ³ | 120,431 ³ |

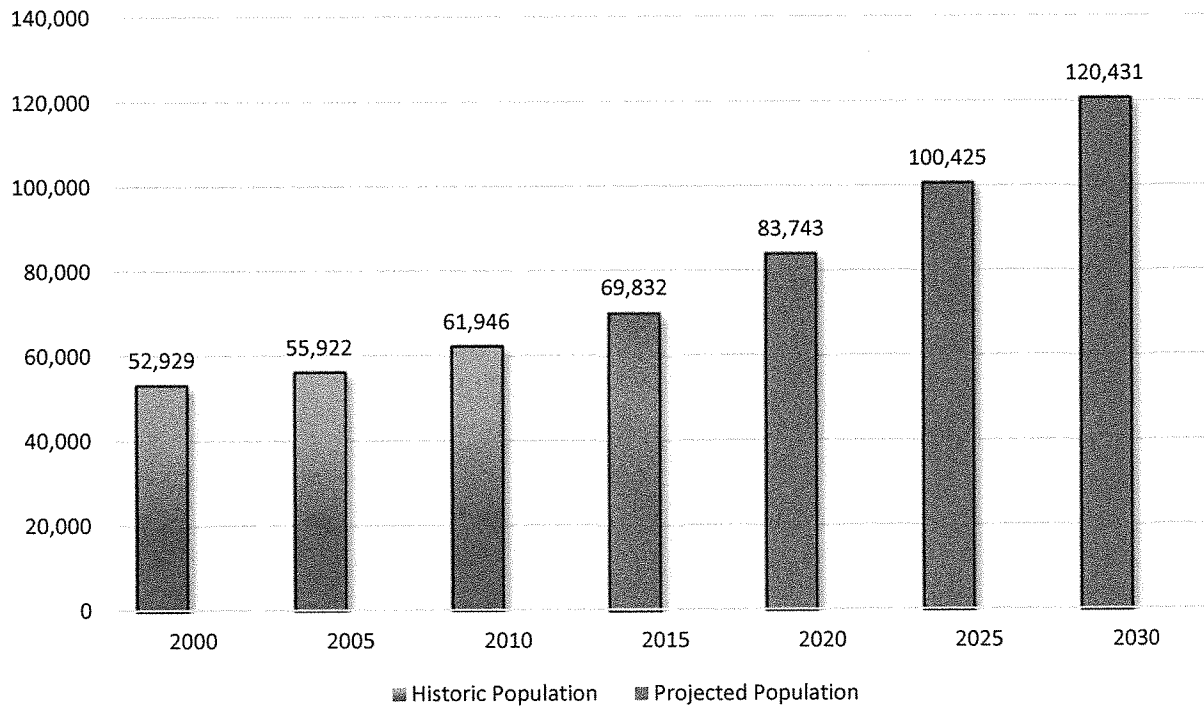
¹ Service area population is defined as the population served by the distribution system.

² Source: Census (2010) plus population outside of city limits.

³ Population projections based on 3.7% annual increase (City of Porterville General Plan).



Figure 3-2: Population – Historical and Projected



The current 2010 city of Porterville population is 54,165 persons in a gross area of 11,270 acres. That equates to an average density of 4.8 persons per gross acre, within the city limits. The current 2010 population between the city limits and the proposed Urban Development Boundary (UDB) is 7,781 persons within 4,900 acres. The service area population includes; city population and population within the UDB outside of city limits, for a total 2010 service population of 61,946. Please see the link below to view city limits and service area.

[http://www.ci.porterville.ca.us/depts/FieldServices/webmap/COP UWMP Service Area Webmap/index.html](http://www.ci.porterville.ca.us/depts/FieldServices/webmap/COP_UWMP_Service_Area_Webmap/index.html)



4 SYSTEM DEMANDS

4.1 Historical Water Use

Water demands within the City's service area are largely residential, with commercial, industrial, institutional, and City-related consumption accounting for approximately 25% of the total water demand (Water Master Plan 2001). As of 2010, the City has 14,746 metered services, which is 97% of the total service connections.

In 2010, the City produced 12,380 AF (4,034,035,380 gallons) of water from groundwater supplies to serve a population of about 61,946. **Table 4-1** details the actual water deliveries for 2005 in terms of metered versus unmetered services.

The city's water use increased in a fairly linear fashion through 2007. Beginning in 2008, water use began to decline due to economic conditions and water conservation measures. It is anticipated that overall use will continue to increase, but at a slower pace due to growth policies and conservation measures being implemented.

Table 4-1: Water Deliveries – 2005

(UWMPGB Table 3)

| Water use sectors | 2005 | | | | Total Volume |
|------------------------------------|------------------|--------|------------------|---------------------|-----------------|
| | Metered | | Not metered | | |
| | # of accounts | Volume | # of accounts | Volume ³ | |
| Single-family | 11,907 | 6,903 | 449 | 413 | 7,316 |
| Multi-family | 800 | 1,296 | 6 | 14 | 1,310 |
| Commercial/Institutional | 1,086 | 2,119 | 4 | 12 | 2,132 |
| Industrial | 22 | 177 | | | 177 |
| Landscape Irrigation | 2 | 48 | | | 48 |
| Other | 156 | 599 | | | 599 |
| Agricultural Irrigation | | | | | 0 |
| System Losses^{1,2} | | | | 610 | 610 |
| Total | 13,953 | 11,142 | 459 | 1,049 | 12,191 |

Units: acre-feet per year

1. Unaccounted for system losses are estimated to be five percent of total production.

2. System losses may include leaks, flushing, fires, flow testing, backflushing, etc.

3. Volumes for unmetered connections are estimated based on the total volume less the metered volume and system losses, and the number of unmetered connections for each water use sector.

Approximately 97 percent of the city of Porterville and surrounding communities served by the City water supply system are metered. All new construction will be metered, and meters may be installed on existing unmetered service connections at the request of the customer. There is no proactive system in place to retrofit the remaining unmetered services with meters at this time.



4.2 Baselines and Targets

Legal Requirements:

§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, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

Determining the City’s baseline per capita use is the first step of calculating the required targets for the 20-year planning period, which will allow DWR to determine the City’s compliance with required reduction described in the Water Conservation Bill of 2009.

4.2.1 Baseline

The first step in developing a baseline water usage rate for the City is determining the applicable range of years for which the baseline average will be calculated. It was determined that the City will use the 10-year approach since the City had no recycled water deliveries in 2008. A 5-year baseline is also calculated to assist in establishing the reduction targets. A summary of the 2008 total and recycled water deliveries, 10-year baseline range, and 5-year baseline range is included in **Table 4-2**.

Table 4-2: Base Period Ranges

(UWMPGB Table 13)

| Base | Parameter | Value |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------|
| 10-year base period | 2008 total water deliveries | 13,615 |
| | 2008 total volume of delivered recycled water | 0 |
| | 2008 recycled water as a percent of total deliveries | 0 |
| | Number of years in base period ¹ | 10 |
| | Year beginning base period range | 2000 |
| | Year ending base period range ² | 2009 |
| 5-year base period | Number of years in base period | 5 |
| | Year beginning base period range | 2003 |
| | Year ending base period range ³ | 2007 |
| <i>Units : acre-feet per year</i> | | |
| <i>¹If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.</i> | | |
| <i>²The ending year must be between December 31, 2004, and December 31, 2010.</i> | | |
| <i>³The ending year must be between December 31, 2007, and December 31, 2010.</i> | | |

The data used to calculate the baseline is summarized in the following table. The UWMPA requirements state a continuous range must be used with the range ending between the end of 2004 and 2010.



Table 4-3: Base Daily Per Capita Water Use – 10 Year Range
(UWMPGB Table 14)

| Base period year | | Distribution system population ¹ | Daily system gross water use (AF/yr) | Daily system gross water use (mgd) | Annual daily per capita water use (gpcd) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------|--------------------------------------|------------------------------------|------------------------------------------|
| Sequence Year | Calendar Year | | | | |
| Year 1 | 2000 | 52,929 | 10,577 | 9.4 | 178 |
| Year 2 | 2001 | 52,388 | 11,174 | 10.0 | 190 |
| Year 3 | 2002 | 51,064 | 12,497 | 11.2 | 218 |
| Year 4 | 2003 | 52,419 | 12,340 | 11.0 | 210 |
| Year 5 | 2004 | 55,240 | 12,796 | 11.4 | 207 |
| Year 6 | 2005 | 55,922 | 12,191 | 10.9 | 195 |
| Year 7 | 2006 | 56,714 | 12,767 | 11.4 | 201 |
| Year 8 | 2007 | 58,181 | 13,775 | 12.3 | 211 |
| Year 9 | 2008 | 58,836 | 13,615 | 12.2 | 207 |
| Year 10 | 2009 | 59,520 | 13,156 | 11.7 | 197 |
| Base Daily Per Capita Water Use | | | | | 201 |
| <small>1. Population based on DOF Table E-4 (city of Porterville), 2001-2010 with 2000 and 2010 Census Counts, plus number of connections outside of the city limits at an average occupancy of 4.32 persons per unit.</small> | | | | | |

The following table summarizes the data used to calculate the 5-year baseline, which has a UWMPA requirement to be a continuous range, ending between the end of 2007 and 2010.

Table 4-4: Base Daily Per Capita Water Use – 5 Year Range
(UWMPGB Table 15)

| Base period year | | Distribution system population | Daily system gross water use (mgd) | Annual daily per capita water use (gpcd) |
|----------------------------------------|---------------|--------------------------------|------------------------------------|------------------------------------------|
| Sequence Year | Calendar Year | | | |
| Year 1 | 2003 | 52,419 | 11.0 | 210 |
| Year 2 | 2004 | 55,240 | 11.4 | 207 |
| Year 3 | 2005 | 55,922 | 10.9 | 195 |
| Year 4 | 2006 | 56,714 | 11.4 | 201 |
| Year 5 | 2007 | 58,181 | 12.3 | 211 |
| Base Daily Per Capita Water Use | | | | 205 |

4.2.2 Targets

Four methods have been developed to determine water use targets for the City. The UWMPA requires a target be established for 2020 and an interim target for 2015. Each method and its calculated water use are described below.



4.2.2.1 Method 1 – 80 Percent

Method 1 is based upon the determined base daily per capita use as determined by the water supplier. The base daily per capita use is 201 gallons per capita per day (gpcd). Method 1 requires that this usage be reduced to by 20%, yielding a target use of 161 gpcd.

4.2.2.2 Method 2 – Performance Standards

Method 2 uses commercial, industrial, institutional, indoor residential, and landscape water usage quantities to calculate a water use target. The City's data is deficient of landscape water usage, therefore making this method impractical for use in calculating a target water use.

4.2.2.3 Method 3 – 95 Percent Hydrologic Region Target

Method 3 is based upon the hydrologic region target, which is reduced by 5% to obtain the 95% target. According to the 20x2020 Water Conservation Plan, the region-specific conservation goal is 188 gpcd for the Tulare Lake region. With this information, Method 3 yields a target use of 179 gpcd.

4.2.2.4 Method 4 – Provisional

Development of Method 4 by DWR began in February 2010. The draft method was released on January 24, 2011. The draft method had to be presented to several agencies including the California Water Commission before being adopted in mid-February 2011 and being released along with DWR's final 2010 guidebook. DWR has stated that this is a provisional method, subject to later revisions during the 2015 UWMP cycle. The methodology for the provisional draft method relies on the base daily per capita use in 2000 and reduction in the three urban use sectors:

- Residential indoor;
- Commercial, industrial, and institutional (CII); and
- Landscape use and water loss.

A discussion of each of these components, and the calculated savings in each of these sectors is included below.

4.2.2.4.1 Residential Indoor Savings

Since indoor and outdoor water use is delivered through a single meter, an assumption of 70 gpcd has been provided by DWR for standard residential indoor water use. To determine indoor residential savings, the draft provisional method outlines two methodologies. First, a best management practices (BMP) calculator has been developed to sum the savings for three conservation elements including single and multi-family residential housing toilets, residential washers, and showerheads. Due to insufficient data on the implementation of these water-saving measures, it will not be discussed further or used to assess indoor residential savings for the city. Therefore,



the City will use what has been termed the “default option” to determine these savings. Based on the draft provisional method, this default value is 15 gpcd.

4.2.2.4.2 Commercial, Industrial and Institutional Savings

Baseline CII water can be easily established for the city since more than 99 percent of the commercial, industrial, and institutional connections were metered in 2000, 2005 and 2010. The calculated baseline for CII use (over the same 2000 through 2009 period) was 42.8 gpcd. The draft provisional method estimates a default value for CII savings of 10 percent. The CII water savings are therefore 4.3 gpcd.

4.2.2.4.3 Landscape and Water Loss Savings

The landscape and water loss water use is determined by subtracting the default indoor water use of 70 gpcd and CII water use of 43 gpcd from the calculated base line per capita use of 201. Based on calculated baseline per capita water use, the landscape and water loss use is 88 gpcd. The draft provisional method estimates a default value for landscape and water loss savings of 21.6 percent. The landscape and water loss savings are therefore 21.9 gpcd.

4.2.2.4.4 Metered Savings

Metered savings are considered in addition to the savings attributed to the three sectors previously discussed. Based on the provisional method, a meter savings of 20 percent is applied to the average delivery per unmetered connection in the midpoint of the baseline period. Using the assumed savings outlined in the provisional method of 20 percent, savings from metering is calculated as 3.6 gpcd.

4.2.2.4.5 Summary

Based on the steps above, the total water savings is estimated at 44.7 gpcd. When compared with the baseline demand of 201 gpcd, this would result in a water conservation target of 156 gpcd.



Table 4-5: Method 4 Summary

| | Baseline Water Use (gpcd) | Water Savings (gpcd) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------|
| Residential Indoor | 70 ¹ | -15 ² |
| CII | 43 ¹ | -4.3 ³ |
| Landscape/Water Loss | 88 | -22 ⁴ |
| Metered | N/A | -3.6 ⁵ |
| Totals | 201 | -44.7 |
| Net Usage | 156 | |
| ¹ Assumed value based on UWMPGB Draft Provisional Method 4 ² Residential indoor water savings based on UWMPGB Draft Provisional Method 4 ³ CII water savings of 10% based on UWMPGB Draft Provisional Method 4 ⁴ Landscape and Water Loss savings of 21.6% based on UWMPGB Draft Provisional Method 4 ⁵ Metered savings of 20% based on UWMPGB Draft Provisional Method 4 | | |

4.2.2.5 Minimum Water Use Reduction Requirement

The final step in determining the applicability of the water use target for the City is to confirm the water use targets discussed above meet the minimum reduction requirements as defined by DWR. The minimum reduction required by DWR must be below 95 percent of the 5-year baseline, which is 205 gpcd, as defined in **Table 4-4**.

4.2.3 **Summary of Baseline and Targets**

Based on the water use targets, the City’s water use target for 2020 is 179 gpcd, while the interim 2015 target is 190 gpcd (based on 50% of the target conservation below the 10-year baseline). The 2020 target was determined using Method 3, 95% of the regional water conservation goal. According to DWR guidelines, this target is valid because it is less than the target confirmation. A summary of the baselines and targets is presented in the following table.



SECTION FOUR

Table 4-6: Baseline and Targets Summary

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Baselines (gpcd) | |
| 10-Year | 201 |
| 5-Year | 205 |
| Target Determinations (gpcd) | |
| Method 1 | 161 |
| Method 2 | N/A |
| Method 3 | 179 |
| Method 4 | 156 |
| Target Confirmation (gpcd) | 195 |
| Target Selected (gpcd) | 179 |
| Interim Target (gpcd) | 190 |
| <i>Notes:</i> <i>Method 1: 80% of 10-Year Baseline</i> <i>Method 3: 95% of Hydrologic Region Target (Tulare – 179 gpcd)</i> <i>Target Confirmation: 95% of 5-Year Baseline</i> <i>Interim Target: Target Selected plus 10-year Baseline, divided by 2</i> | |