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**Evaluation of a
Water Resource Net Zero
Fee Report**

March 30, 2016

Revised May 11, 2016

Prepared for

City of San Buenaventura

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WC-025

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Section 1: Introduction

This evaluation summarizes the economic basis and development of a water resource net zero fee. This recommended fee would apply to new or intensified development that requires an increase in water service but does not transfer sufficient water rights to serve the proposed development.

1.1 Background and Objectives

The City of San Buenaventura (City) owns and operates a water system that serves approximately 32,000 service connections, within and outside the City boundaries. Water is supplied through 3 main sources: local groundwater from the Mound, Santa Paula, and Oxnard Plain basins, treated water purchased from Casitas Municipal Water District (Casitas) and water diverted from the Ventura River. Water service is provided to residential, commercial, industrial and irrigation customers, including fire protection users. Recycled water from the Ventura Water Reclamation Facility is also delivered to recycled water customers located along the existing distribution system alignment.

The City water system is a complex system of 16 pressure zones, 11 wells, 21 booster stations, approximately 380 miles of pipelines ranging from 4-inches to 36-inches in diameter, and a total storage capacity of approximately 52 million gallons (mg) in 32 tanks and reservoirs. The system delivers water from sea level to a maximum elevation of over 1,000 feet. The City operates three treatment facilities, including one membrane filtration treatment plant for surface water sources on the west side of the City, and two iron/manganese removal treatment plants for groundwater sources on the east side¹. The City also maintains and operates the Ventura Water Reclamation Facility.

The City has previously prepared various water planning documents that address water demands and supplies. These documents include the 2005 General Plan documents, Amended 2010 Urban Water Management Plan, and 2011 Water Master Plan. Because these documents were prepared for specific and different purposes, the water demand and supply projections differ. The City prepared a Final 2013 Comprehensive Water Resources Report (CWRR) to compare the water demand and supply projections in the previous reports and compare the City's water demand projections with its available supplies. The City Council approved the Final Report on June 10, 2013 and directed staff to provide an annual update on the City's water supplies and demands. Relevant conclusions of the 2013 CWRR as well as the subsequent annual reports are summarized and form the basis for this evaluation.

To assure that new development does not adversely affect the water supply or water supply reliability of the City's existing customers, Ventura Water desires to implement a water rights dedication and water resource net zero fee ordinance and resolution. The objective of these actions would be to assure that adequate water supplies are available for proposed new or intensified developments without adverse impacts to the City's existing customers or approved new developments. Developers could dedicate adequate water rights to support a proposed new or intensified development, implement extraordinary onsite or offsite conservation measures, and/or pay a net zero fee so that the City could develop the necessary water

¹ City of San Buenaventura Water Master Plan, 2011.

supplies. Accordingly, this study addresses the technical basis for the water resource net zero fee.

1.2 Scope of Services

To develop the technical basis for the net zero fee, the following scope of services was developed:

1. Meet with City staff to identify policy issues associated with a net zero fee.
2. Assist City staff with presentations to the City Water Commission.
3. Describe potential additional water supplies identified in the City's capital improvement program.
4. Identify the probable cost of developing each of the identified potential water supplies.
5. Recommend a water resource net zero fee.
6. Summarize the evaluation in draft and final reports.
7. Work with City staff and legal counsel to develop a water dedication and net zero policy and fee ordinance.
8. Attend community workshops on an as-requested basis.

The assumptions, approach, and methodology are intended to be consistent with the policy guidance provided by the City's Water Commission.

Section 2: Summary of Current and Estimated Future Water Demands and Supplies

The City's water supply is currently being used at nearly full capacity. Based on a review of the previous water demand projections and a detailed evaluation of historical water demands, the Final 2013 Comprehensive Water Resources Report (CWRR) indicates that the calendar year (CY) 2012 water demand including a 6.5 percent water loss factor was 18,004 acre-feet per year (AFY). The recommended baseline water demand for existing conditions (utilizing the most recent 5-year average, CY 2008-2012) was set at 17,601 AFY. Based on the estimated water demands of approved and yet unbuilt new developments as of December 31, 2012, the Final 2013 Comprehensive Water Resources Report projected the near-term water demand to grow to 18,643 AFY by 2019.

The Final 2013 CWRR summarizes the City's current available water supplies as 5,000 AFY from Casitas, 4,200 AFY from the Ventura River (Foster Park), 4,000 AFY from the Mound Groundwater Basin, 4,100 AFY from the Oxnard Plain Groundwater Basin, 1,600 AFY from the Santa Paula Groundwater Basin, and 700 AFY of recycled water. Accordingly, the City's current water supply portfolio totals 19,600 AFY during a normal hydrologic year.

The 2015 CWRR is the latest CWRR and indicates that the CY 2015 water demand including a 6.5 percent water loss factor was 16,995 acre-feet per year (AFY). The reduction in water demand compared to previous years can be attributed to increased water rates and the City's request to customers to voluntarily reduce their water usage by at least 10% in response to the prolonged drought. The recommended baseline water demand for existing conditions (utilizing the most recent 5-year average, CY 2010-2014) was set at 17,167 AFY. Based on the estimated water demands of approved and yet unbuilt new developments as of December 31, 2014, the 2015 Comprehensive Water Resources Report projected the near-term water demand to grow to 18,295 AFY by 2022. Accordingly, the City's current water supply of 19,600 AFY during a normal hydrologic year is only 7.1 percent higher than the projected demand. Since the City's targeted supply buffer is 20% above demand, additional supplies are required.

Section 3: Potential Sources of Additional Water Supply Development

The City's proposed 2016-2022 Capital Improvement Program (CIP) identifies several programs that could increase the City's water supplies. Each water supply program generally consists of several separate CIP projects. The City's CIP planning process occurs every two years and each of the projects are prioritized for implementation. The CIP includes the following potential water supply projects:

- Potable Reuse
- Foster Park Wellfield Restoration (Foster Park)
- Reuse of Ojai Valley Sanitary District Effluent (OVSD)
- Seawater Desalination

The City currently delivers approximately 700 AFY of recycled water from the VWRP for urban landscape irrigation. Based on the March 2013 Estuary Special Studies Phase 2: Facilities Planning Study for Expanding Recycled Water Delivery, the City has several recycled water options to reduce wastewater discharges and increase water supplies, including the Mound Basin Indirect Potable Reuse (IPR) or Direct Potable Reuse (DPR). The City's CIP currently includes a Potable Reuse program. The specific projects included in this program include:

- Project ID 74059 Wastewater Plant - Advanced Treatment Potable Reuse
- Project ID 97949 Waterline - Ventura/Oxnard Emergency Water Intertie
- Project ID 74084 Brine Line Ocean Outfall
- Project ID 74058 Recycled Waterline - Purewater Pipelines
- Project ID 74070 Treatment - Advanced Treatment Plant Land Acquisition

The total estimated capital cost of this program is \$127.8 million (2015) and would have an estimated annual delivery capacity of approximately 3898 AFY. The capital cost to be applied to determine the net zero fee is \$65,757,014 since an estimated \$62 million (2015) is being collected through the Estuary Protection Fund.

Production wells at Foster Park were destroyed in previous storm events and the Ventura River surface water diversion is not functional at this time. The CIP includes the Foster Park Wellfield Restoration Project. The increased capacity from the Foster Park/Ventura River facilities is estimated to be 2500 AFY. The estimated capital cost of these facilities is \$ 23,320,000 (2015 dollars).

The feasibility of reuse of the Ojai Valley Sanitary District effluent which discharges to the Ventura River was evaluated in 2007. The feasibility study identified several uncertainties

including the market for the recycled water and associated environmental issues in the Ventura River. The City's CIP includes the OVSD program. The anticipated delivery capacity is 1120 AFY. The estimated capital cost is \$ 2,440,000 (2015 dollars).

Although ocean desalination was preferred by the City's voters in November 1992 over State Water deliveries, this potential additional future water supply has not been fully developed and is not expected to be phased in until after 2025. An ocean desalination program is included in the City's CIP but will not be required until after 2030. The anticipated delivery capacity is 3000 AFY. The estimated allocated capital cost of the program is \$ 80,000,000 (2015 dollars).

To accommodate uncertainties and variabilities in water supply and demand estimates, a 20 percent supply buffer over projected demands was adopted by the City's Water Commission for water supply planning purposes. The potential net zero fees of these portfolios are evaluated in the following section. Of the potential sources identified for new development in the Final 2015 Comprehensive Water Resources Report, most of the other potential additional future water supplies have uncertainties or complexities that limit their utilization as the basis for development of a water resource in-lieu fee. Currently, State Water is limited by the ability to deliver the water to the City. Although State Water can be wheeled through the Metropolitan Water District of Southern California and Calleguas Municipal Water District, it would be costly and the necessary agreements have not been negotiated. The City continues to discuss potential intertie projects with other local agencies and a Water Intertie Project is included in City's current Capital Improvement Program. In the interim, in June 2013, Council authorized the City's 10,000 acre-foot of State Water Project allocation to be sold in the State's Multi-Year Water Pool Demonstration Program (Program). The Program provides flexibility in pricing and greater return on the City's investment than the traditional pool. Concerns regarding the Saticoy County Yard Well have been raised by the Fox Canyon Groundwater Management Agency and United Water Conservation District. A Limitation and Tolling Agreement was put into effect. It was determined that the 2004 County of Ventura Saticoy Operations Yard EIR was not sufficient for the anticipated operations of the Saticoy County Yard Well and, therefore, additional environmental review is warranted for operation of the well.

Based on these considerations, 3 alternative water supply portfolios were developed for determination of the recommended net zero fee. Portfolio 1 would include all of the programs in the City's CIP that relate to new or restored supplies, Portfolio 2 would include Potable Reuse and Foster Park restoration only, and Portfolio 3 would include all of the new or restored supply projects except OVSD. Of the portfolios, Portfolio 2 would not address the recommended water supply buffer of 20 percent set by the Water Commission.

Section 4: Economic Basis for Recommended Fees

The amount of the recommended water resource net zero fee is based on the required capital cost and financing cost to develop the additional water supplies to serve new development. The anticipated capital cost and yield of the potential water supply programs are summarized in the previous section.

Capital costs are based on the estimated costs included in the City's CIP and escalated in subsequent years based on the ENR Index for Los Angeles. Financing costs are based on the financing policy recommended by the Citizen Rate Advisory Committee in 2014 and adopted by City Council. This policy recommends utilizing pay-as-you-go for 50 percent of capital costs and bond financing for the other 50 percent. This evaluation assumes that bond financing would occur at 5 percent over 30 years with semi-annual payments.

Based on these assumptions, the resulting net zero fee for the alternative portfolios is presented in the following table.

WATER CIP PROJECTS FOR 2016-2022

	Portfolio 1- All New Supply and Supply Restoration Projects		Portfolio 2-potable Reuse and Foster Park Wellfield Restoration Only***		Portfolio 3-Potable Reuse, Foster Park Wellfield Restoration and Desalination****	
Yield	10,518	AFY	6,398	AFY	9,398	AFY
CIP Cost**	\$171,517,014	2015 \$	\$89,077,014	2015 \$	\$169,077,014	2015 \$
Financing Cost (50%)*	\$80,716,229	2015 \$	\$41,919,810	2015 \$	\$79,567,960	2015 \$
Net Zero Cost Basis	\$252,233,243	2015\$	\$130,996,824	2015 \$	\$248,664,974	2015 \$
Unit Cost	\$23,981	\$/AFY	\$20,475	\$/AFY	\$26,457	\$/AFY

* Based on 50% of capital costs at 5.0% for 30 years with semi-annual payments.

** The CIP cost for the Potable Reuse program was reduced by \$62 million which is being collected through the Estuary Protection Fund.

*** Portfolio 2 only provides an adequate water supply through 2025.

**** Portfolio 3 provides an adequate water supply to at least 2050.

The net zero fee would be applied to the amount of the projected annual demand of new or intensified development that is not mitigated by the dedication of water rights or the implementation of extraordinary onsite or offsite conservation measures.

4.1 Adjustments to Water Rights/Credits Based on Water Quality

The assessment of any water rights/credits provided to offset the net zero fee should consider the water quality of the water source that is transferred. For general minerals, it is recommended that the water rights/credits would be reduced by the volume of blend water necessary to achieve the City's water quality goal of 90 percent of the secondary MCL for total dissolved solids or any of the Division of Drinking Water's (DDW's) primary or secondary Maximum Contaminant Level (MCL) for general minerals, whichever is more stringent. For contaminants for which DDW may require treatment, it is recommended that the rights/credits would be reduced by the volume of blend water necessary to achieve 80 percent of the primary MCL for other contaminants. These recommendations are incorporated in the following formula:

$$\text{DWR Credit} = \text{DWR} - \frac{((\text{WQ}(\text{DWR}) \times \text{DWR}) - (\text{WQG} \times \text{DWR}))}{\text{WQG} - \text{WQ}(\text{BW})}$$

Where:

DWR Credit = the annual quantity of the DWR that would be applied the projected annual demand to mitigate the net zero fee.

DWR = annual quantity of water rights/credits to be transferred.

WQ(DWR) = the water quality of the City's water supply which is used to utilize the transferred water rights/credits (i.e. City-operated groundwater well in the same basin as the water rights/credits). The water quality of a private groundwater well will not be used unless the City agrees to use the well to supply water.

WQG = the water quality goal of the blended water which could be a goal established by the City, 90 percent of the primary or secondary MCL for general minerals or 80 percent of a primary MCL for contaminants for which DDW requires treatment at 80 percent of the primary MCL.

WQ(BW) = the water quality of the blend water source.

Section 5: Recommended Water Resource Net Zero Fee

Based on the analysis presented in the preceding section, Portfolio 3- Selected Projects, which addresses projected demands and a 20% buffer, is recommended as the basis for the net zero fee. In this portfolio, Potable Reuse and Foster Park would be implemented prior to 2025 and seawater desalination would be implemented after 2025 but before 2050. Portfolio 3 is recommended because it would provide the water supply buffer consistent with the City's Water Commission policy recommendations. It should be noted that the timelines are estimates only and the City will continue to investigate and pursue other alternative supply projects and opportunities. With the recommended implementation approach, the City would maintain a 20 percent buffer until at least 2050 based on current demand projections. Accordingly, the recommended net zero fee is \$26,457 per acre-foot of new demand.

The selected projects or "suite" of projects" used to calculate the net zero fee does not tie or commit the City to actually building any particular project or suite of projects. As time goes on and new information and data are acquired or as regulations change, it may be decided at a later date to swap out one project for another (i.e. State Water for Desalination). Demand side management projects such as the expansion of the City's recycled water system could also be funded by the collected fees.

Section 6: Potential Implementation Issues

To implement the recommended fee, the City must have an accurate assessment of the potential water demands of proposed new development. Although the water demand factors of new development have been dropping due to the incorporation of water conservation measures, the City should be conservative in its application of water demand factors. Accordingly, it is recommended that the City utilize the City's current local water use demand factors approved by Council on June 10, 2013, as presented in the Final 2013 Comprehensive Water Resources Report, to the recommended water resource net zero fee for appropriateness and conservatism. It is anticipated that the City's water demand factors will be reevaluated in 2023 as indicated in the past CWRR's unless additional information requires an earlier reevaluation. However, the City may want to reevaluate the demand factors in 2020 to coincide with the 2020 Urban Water Management Plan. In addition, it is recommended that the City continuously monitor its available water supplies so that new supplies are developed in a timely manner to serve potential new development.