Existing Conditions
Water Supply

June 26, 2020

This letter report describes existing water resources and supplies within the City of Watsonville, focused on the Downtown Watsonville Specific Plan Area. Water resources include the naturally occurring surface water and groundwater that comprise the City's watersheds and groundwater basins, as well as the engineered systems used for water delivery to agricultural, rural, and municipal consumers. This report provides an overview of the City's water resources.

Key Terms

The following key terms used in this report are defined as follows:

Acre-foot (af). The volume of water of one-foot depth covering an acre of surface area. One acre-foot of water is approximately 326,000 gallons.

Basin. As defined by the U.S. Geological Survey in its Watershed Boundary Dataset, a Basin is the third-level, 6-digit unit of the hydrologic unit hierarchy. Basins were formerly named "accounting units" in United States Geological Survey terminology.

Conjunctive Use. Typically refers to the capture and recharge of surface water or reclaimed water into a groundwater basin for use during periods of drought or dry conditions. Conjunctive integrates both surface water and groundwater management to minimize the potential impacts of decreased water supply and/or increased demand.

Creek. A natural stream of water smaller than a river, but often a tributary of a river.

Elevation. The depth or elevation above or below sea level at which the surface of groundwater stands.

Ephemeral Stream. A stream that flows only briefly during and following a period of rainfall in the immediate locality.

Groundwater Basin. An aquifer or series of aquifers with defined lateral boundaries and bottom layer.

Groundwater Recharge. The natural or intentional infiltration of surface water into groundwater.

Groundwater. Water that occurs beneath the land surface, specifically within pore spaces of saturated soil, sediment, or rock formations. Groundwater does not include moisture held by capillary action in the upper, unsaturated areas of aquifers.

Hydrologic Unit. As defined in the Watershed Boundary Dataset, an identified area of surface drainage within the United States system for cataloging drainage areas, which was developed in the mid-1970s under the sponsorship of the Water Resources Council and includes drainage-basin boundaries, codes, and names. The drainage areas are delineated to nest in a multilevel, hierarchical arrangement. The hydrological unit hierarchical system has four levels and is the theoretical basis for further subdivisions that form the Watershed Boundary Dataset fifth and sixth levels. A hydrologic unit can accept surface water directly from upstream drainage areas and indirectly from associated surface areas, such as remnant areas, noncontributing areas, and diversions, to form a drainage area with single or multiple outlet points.

Hydrologic Unit Code. As defined in the Watershed Boundary Dataset, the numerical identifier of a specific hydrological unit or drainage area consisting of a 2-digit sequence for each specific level within the delineation hierarchy.

Region. As defined in the Watershed Boundary Dataset, a Region is the first-level, 2-digit unit and is the largest in the hydrological unit. (United States Geological Survey 2013).1

Reservoir. Artificially impounded body of water.

River. A large natural stream of water flowing in a channel to the sea, a lake, or another such stream.

State Water Project (SWP). The California SWP is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants extending more than 700 miles (two-thirds the length of California).

Stream. A stream is a body of water with surface water flowing within the bed and banks of a channel.

Subbasin. As defined in the Watershed Boundary Dataset, a subbasin is the fourth-level, 8-digit unit of the hydrologic unit hierarchy. Subbasins were formerly named “cataloging units” in United States Geological Survey terminology. The average size of a subbasin is 450,000 acres.

Subregion. As defined in the Watershed Boundary Dataset, a Subregion is the second-level, 4-digit unit of the hydrologic unit hierarchy. The hydrologic unit category name is retained for the Federal Standards and Procedures for the National Watershed Boundary Dataset.

[1] U.S. Geological Survey. 2013. *Federal Standards and Procedures for the National Watershed Boundary Dataset, Fourth Edition*.

Subwatershed. As defined in the Watershed Boundary Dataset, a subwatershed is the sixth-level, 12-digit unit of the hydrologic unit hierarchy. Subwatersheds generally range in size from 10,000 to 40,000 acres.

Surface Water. Surface water is water on the surface of continents such as wetlands, streams, rivers, lakes, and reservoirs. Surface water is naturally replenished by precipitation and naturally lost through evaporation and subsurface seepage into the ground.

Tributary. A tributary is a stream or river that flows into a larger stream, river or lake.

Water Resources. Natural resources of water that are potentially useful. Uses of water include agricultural, industrial, household, recreational, and environmental activities.

Watershed Boundary Dataset. The Watershed Boundary Dataset is a comprehensive, aggregated collection of hydrologic unit data consistent with the national criterial for delineation and resolution.

Watershed. As defined in the Watershed Boundary Dataset, in the hierarchy of hydrologic units, a 10-digit hydrologic unit (fifth level) is known as a "watershed." It consists of a subdivision of an 8-digit (fourth level) unit, also known as a "subbasin." These 10-digit hydrologic units range in size from 40,000 to 250,000 acres. The hydrologic term "watershed" refers to the divide that separates one drainage basin from another or to a combination of hydrologic units of any size.

Regulatory Setting

Water resources are managed through numerous regulations, plans, policies and laws, implemented and overseen at the federal, state, and local level. The following presents the important regulatory setting pertaining to water quality, supply, infrastructure, conservation, and climate adaption.

Federal

Clean Water Act

Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA). The CWA established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA also continued requirements to set water quality standards for all contaminants in surface waters. The CWA

made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. It also created grant programs to assist states and local governments with the construction of sewage treatment plants and the implementation of watershed management programs. The CWA has been regularly amended (with substantial amendments in 1981 and 1987) since its enactment and includes multiple programs to protect water quality.

National Pollutant Discharge Elimination System Program

CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit program, which sets nationwide permitting requirements for discharging pollutants into waterways. The limits vary by category of industry and are based on a level of treatment that is achievable using the best available technology. CWA Section 402 prohibits the discharge of pollutants into waters of the United States from any point source without a NPDES permit. To regulate stormwater (non-point source) discharges, the EPA developed a two-phased NPDES permit program, commonly referred to as Phase I and Phase II. The Phase I program for Municipal Sanitary Storm Sewer Systems (MS4s) requires operators of "medium" and "large" MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a stormwater management program as a means to control polluted discharges from these MS4s.

Stormwater discharges from MS4s in urbanized areas are a concern because of the high concentration of pollutants found in these discharges. The NPDES Phase II permit program also requires the development and implementation of stormwater management plans to reduce such discharges. The Phase II program is based on the use of federally enforceable NPDES permits. The Phase II program encourages the use of general permits; provides flexibility for regulated operators to determine the most appropriate stormwater controls; allows for the recognition and inclusion of existing NPDES and non-NPDES stormwater programs in Phase II permits; includes public education and participation efforts as primary elements of the small MS4 program; attempts to facilitate and promote watershed planning and to implement the stormwater program on a watershed basis; and works toward a unified and comprehensive NPDES stormwater program with Phase I of the program.

Clean Water Act Section 303

The EPA is the federal agency with primary authority for implementing regulations adopted under the CWA. The EPA has delegated to the state of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the state's Porter-Cologne Act, described below.

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality

standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of the designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use.

CWA Section 303(d) requires states to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a Total Maximum Daily Load (TMDL) for each of the listed pollutants. The TMDL is the amount of pollutant loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The state TMDL must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings (sources of naturally occurring pollutants) and a margin of safety. The TMDL must also include an analysis that shows links between loading reductions and attainment of water quality objectives. The EPA must either approve a TMDL prepared by the state or, if it denies the state's TMDL, issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of a TMDL, it is intended that the sources of the pollutant that lead to the Section 303(d) listing would be remediated or otherwise managed.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523) passed in 1974, the EPA regulates contaminants of concern to domestic water supply. The act defines contaminants of concern as contaminants that pose a public health threat or alter the aesthetic acceptability (e.g., taste and odor, staining of laundry and porcelain fixtures) of the water. The EPA's primary and secondary maximum contaminant levels (MCLs), which apply to treated water supplies delivered to the distribution system, regulate contaminants of concern. MCLs and the process for setting these standards are reviewed every three years. Amendments to the Safe Drinking Water Act enacted in 1986 and 1996 established an accelerated schedule for setting MCLs for drinking water.

The EPA has delegated the responsibility for administering California's drinking-water program to the California Department of Public Health. The Department of Public Health is accountable to the EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by the EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations (CCR), and described in Title 22 Standards, below.

Executive Order (EO) 13123

Executive Order (EO) 13123, Greening the Government through Efficient Energy Management, is a federal directive enacted in 1999 to government agencies for the implementation of measures to reduce water use. This order directs federal government agencies to reduce potable water use and incorporate cost-effective water conservation measures in their facilities by 2010. Another aspect of the order is Federal agencies must report baseline water usage and report on water usage every two years.

State

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, the State Water Resources Control Board (SWRCB) is provided with the ultimate authority over state water rights and the water quality policy. However, Porter-Cologne also established nine regional boards, or Regional Water Quality Control Boards (RWQCBs), to provide oversight on water quality issues at a regional and local level. The SWRCB has overall responsibility for water quality regulation under division 7 of the Porter-Cologne Water Quality Control Act. This act also divides the state into nine hydrological basins for local administration of the act by the semiautonomous RWQCBs with coordination and oversight from the SWRCB. The RWQCBs have authority to regulate point source discharges, such as municipal stormwater and treated wastewater discharges, through the adoption of waste discharge requirements under chapter 5.5 of the act. In addition, the responsibility for implementing the NPDES permit program has been delegated to the SWRCB and its local RWQCBs.

Title 22 Standards

California's drinking water quality standards are contained in Title 22 of the CCR. Water quality standards are enforceable limits composed of two parts: the designated beneficial uses of water and criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply is among the "beneficial uses" defined in Section 13050(f) of the Porter-Cologne Act as uses of surface water and groundwater that must be protected against water quality degradation. MCLs are components of the drinking water standards adopted by the California Department of Health Services (now the Department of Public Health) pursuant to the California Safe Drinking Water Act (Title 22 CCR, Division 4, Chapter 15, Domestic Water Quality and Monitoring). Primary water quality objectives were established for protection of health. Secondary water quality objectives were established for aesthetic concerns (e.g., taste and odor, staining of laundry and porcelain fixtures), and at elevated levels do not pose a health hazard.

Drinking water MCLs directly apply to water supply systems “at the tap” (i.e., at the point of use by consumers in, for example, their home and office), and are enforceable by the state and County. California MCLs, both primary and secondary, directly apply to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent basin plan. In such cases, MCLs become enforceable limits by the SWRCB and RWQCBs.

California Department of Water Resources

The California Department of Water Resources (DWR) is part of the California Natural Resources Agency. The DWR is responsible for the state of California’s management and regulation of water usage. DWR manages California’s water resources, systems, and infrastructure, including the SWP, in a responsible sustainable way. Responsibilities and duties include preventing and responding to floods, droughts, and catastrophic events, informing and educating the public on water issues, developing scientific solutions, restoring habitats, planning for future water needs, climate change impacts and flood protection, constructing and maintaining facilities, generating power, ensuring public safety, and providing recreational opportunities.

California State Water Resources Control Board

Created by the State Legislature in 1967, the five-member State Water Resource Control Board (SWRCB) protects water quality by setting statewide policy, coordinating and supporting the RWQCB efforts, and reviewing petitions that contest RWQCB actions. The SWRCB is also solely responsible for allocating surface water rights. The SWRCB is one of six branches of the California Environmental Protection Agency. The SWRCB oversees the allocation of the state’s water resources to various entities and for diverse uses, from agricultural irrigation to hydroelectric power generation to municipal water supplies, and for safeguarding the cleanliness and purity of Californians’ water.

Under the federal CWA and the state’s Porter-Cologne Water Quality Control Act, the SWRCB has regulatory authority for protecting the water quality of nearly 1,600,000 acres of lakes, 1,300,000 acres of bays and estuaries, 211,000 miles of rivers and streams, and about 1,100 miles of California coastline. The SWRCB also provides financial assistance to local governments and nonprofit agencies to help build or rejuvenate wastewater treatment plants, and protect, restore, and monitor water quality, wetlands, and estuaries.

SWRCB Division of Drinking Water

The Division of Drinking Water (DDW) regulates public drinking water systems. The Safe Drinking Water Plan for California includes the SWRCB’s assessment of the overall quality of the state's drinking water, the identification of specific water quality problems, an analysis of the

known and potential health risks that may be associated with drinking water contamination in California, and specific recommendations to improve drinking water quality. The State Water Board is updating the Safe Drinking Water Plan (the 2020 Plan) to include the topics from previous plans as well as topics recently added and signed into law.

The requirements for the Safe Drinking Water Plan are set forth in Health & Safety Code Section 116355, which identifies the topics to be addressed and requires periodic updates. Recently, AB 2501 (Chu)(Statutes of 2018, Chapter 871) amended those requirements to add additional topics, including a review of the use of administrators for disadvantaged communities' public water systems and an evaluation of the success of consolidation of drinking water systems.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was passed into California law in fall of 2014 and took effect in January 2015. SGMA requires that state-designated medium- and high-priority basins and subbasins must form a Groundwater Sustainability Agency (GSA) and develop a long-term Groundwater Sustainability Plan (GSP). According to the 2019 SGMA Basin Prioritization final results, the City of Watsonville is within a high-priority basin: Corralitos-Pajaro Valley (3-002.01). This basin is also identified as a critically overdrafted basin.

State Water Project (SWP)

The California State Water Project (SWP) is a state water management project under the supervision of the DWR. The SWP is one of the largest public water and power utilities in the world, providing drinking water for more than 23 million people and generating an average of 6,500 gigawatt hours (GWH) of hydroelectricity annually. However, as it is the largest single consumer of power in the state itself, it has a net usage of 5,100 GWH.

The SWP collects water from rivers in northern California and redistributes it to the water-scarce but populous south through a network of aqueducts, pumping stations and power plants. About 70 percent of the water provided by the project is used for urban areas and industry in Southern California and the San Francisco Bay Area, and 30 percent is used for irrigation in the Central Valley. To reach Southern California, the water must be pumped 2,882 feet (878 m) over the Tehachapi Mountains, with 1,926 feet (587 m) at the Edmonston Pumping Plant alone, the highest single water lift in the world. The SWP shares many facilities with the federal Central Valley Project, which primarily serves agricultural users. Water can be interchanged between SWP and Central Valley Project canals as needed to meet peak requirements for project constituents.

Recycled Wastewater Requirements

Wastewater recycling in California is regulated under Title 22, Division 4, of the CCRs under the jurisdiction of the Department of Public Health. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and prescribe means for ensuring reliability in the production of recycled water. Using recycled water for non-potable uses is common throughout the state and is an effective means of maximizing use of water resources. The RWQCB establishes water reclamation requirements under the Title 22 regulations and is responsible for implementing wastewater recycling projects.

Urban Water Management Planning Act

The Urban Water Management Planning Act was enacted in 1983 and has been amended many times since then. The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 AF of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act describes the contents of the Urban Water Management Plan (UWMP) as well as how urban water suppliers should adopt and implement the plans. The intent of the Act is to encourage water management planning commensurate with the numbers of customers served and the volume of water supplied.

Assembly Bill 1881

Assembly Bill 1881 (AB 1881) built upon many past legislative acts related to landscape water use efficiency. AB 1881, the Water Conservation in Landscaping Act of 2006, enacted many landscape efficiency recommendations of the California Urban Water Conservation Council (CUWCC) for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required DWR, not later than January 1, 2009, to update the existing Model Local Water Efficient Landscape Ordinance and local agencies to adopt the updated model ordinance or an equivalent no later than January 1, 2010. DWR has completed the update of the Model Local Water Efficiency Landscape Ordinance. The law also requires the Energy Commission to adopt performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

The Model Local Water Efficient Landscape limits the water budget for new landscapes (or rehabilitated landscapes), greater than 2,500 square feet, to 70 percent of the local reference ET. The model ordinance lays out the procedures for evaluating potential landscape water use

during the land development process. In addition, the ordinance contains requirements for planting as well as the design and maintenance of irrigation systems, all with the intent of limiting outdoor water use and avoiding irrigation runoff.

Assembly Bill 1420

Assembly Bill 1420 (AB 1420), passed in 2007 and in effect as of January 2009, changes the funding eligibility requirements of Section 10631 of the Water Code (Urban Water Management Planning Act). For any urban water supplier to be eligible for grant or loan funding administered by DWR, the SWRCB, or the Bay-Delta Authority (such as Propositions 50 and 84), the supplier must show implementation of the 14 water use efficiency demand management measures/best management practices (DMMS/BMPs) listed and described in the UWMP Act and the CUWCC Memorandum of Understanding (MOU), or show the schedule by which the supplier will begin implementing the DMMs/BMPs. Any supplier not implementing the measures based on cost-effectiveness must submit proof showing why the measures are not cost-effective.

Assembly Bill 2882

This bill was passed in 2008 and encourages public water agencies throughout California to adopt conservation rate structures that reward consumers who conserve water. Prior to AB 2882 state law authorized water agencies to promote conservation using rate structures; however, some agencies were concerned that such rate structures may be inconsistent with other parts of state law. AB 2882 clarifies the allocation-based rate structures and establishes standards that protect consumers by ensuring a lower base rate for those who conserve water.

Assembly Bill 3616

Assembly Bill 3616 (AB 3616) was enacted in 1990 and authorized the development of Agricultural Water Management Plans and the formation of the Agricultural Water Management Council. Entities join the Agricultural Water Management Council by signing the Agricultural MOU Regarding Efficient Water Management Practices (EWMPs) by Agricultural Water Suppliers in California. Entities signing the MOU voluntarily pledge to undertake the following activities:

- Prepare a water management plan and identify efficient water management practices that will be implemented;
- Perform a comprehensive Net Benefit Analysis on EWMPs to establish cost-effectiveness of each EWMP for implementation.
- Net Benefit Analysis takes into consideration the technical, environmental, socioeconomic, financial and third-party factors, thus helping to determine whether and in what manner implementation may be appropriate.
- Implement, in a timely manner, those EWMPs found to provide benefit in a cost-effective manner.
- Prepare progress reports on implementation of EWMPs and results on a biannual basis.

Senate Bill of Special Extended Session 7 (SBX7-7)

Senate Bill 7 of Special Extended Session 7 (SBX7-7) was signed into law in November 2009, which calls for progress towards a 20 percent reduction in per capita water use statewide by 2020. As a result, the legislation mandates each urban retail supplier to develop and report a water use target in the retailer's 2010 UWMP. The legislation further requires that retailers report an interim 2015 water use target, their baseline daily per capita use, and 2020 compliance daily per capita use, along with the basis for determining those estimates. SBX7-7 provides four possible methods for an urban retail water supplier to use to calculate its water use target. DWR has also developed methodologies for calculating base daily per capita water use, baseline commercial, industrial and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use and landscape area water use. Agencies not in compliance with SBX7-7 will be ineligible for state loan and grant funding.

SBX7-7, also contains requirements for agricultural water suppliers. All agricultural water suppliers, either publicly or privately owned which irrigate 10,000 or more acres are required by SBX7-7 to implement critical EWMPs and additional EWMPs if locally cost effective and technically feasible. Affected agricultural water suppliers must implement EWMP's by July 31, 2012. Critical EWMPs include:

- Each agricultural water supplier is to measure the volume of water delivered to customers with sufficient accuracy to comply with standards set by DWR.
- Each agricultural water supplier is to develop a pricing structure for water customers, based at least in part on the volume of water delivered.

SBX7-7 also created the Agricultural Water Management Planning Act, which requires affected agricultural water suppliers to adopt Agricultural Water Management Plans. These plans facilitate management and conservation of water suppliers, and also guide and document the implementation of EWMPs. The plans are mandatory for many suppliers and are required to be

completed and adopted for affected agricultural water suppliers by December 31, 2012. Agricultural Water Management Plans are to be updated every 5 years.

Senate Bill 606 and Assembly Bill 1668

Senate Bill 606 (SB 606) and Assembly Bill 1668 (AB 1668) establish guidelines for efficient water use and a framework for the implementation and oversight of new standards, which must be in place by 2022. The guidelines include the following provisions:

- Establishing water use objectives for efficient water use that apply to water purveyors for indoor and outdoor residential water use, commercial, industrial, and institution irrigation.
- Providing incentives for water suppliers to recycle water.
- Providing recommendations for small water systems that may be in risk of drought and water shortage vulnerability.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

Local

City of Watsonville 2005 General Plan

The Watsonville 2005 General Plan provides the following goals, policies, and implementation measures pertaining to water resources and supplies that are relevant to the Plan Area (City of Watsonville 1994).[2]

Goal 11.3 Water Supply

Construct and maintain a water system and institute water management policy that will provide a sufficient quantity of appropriate-quality water to meet the needs of the existing and planned community.

Policy 11.A Facilities Coordination Master Plan Consistency

The City shall evaluate, and may place conditions on, new development to achieve consistency with the master plans for streets, parks, water supply, and wastewater management.

Implementation Measure 11.C.5, Site Improvements

New projects within the urbanized area shall be required to complete onsite water connection improvements consistent with water quality standards of the Water Department.

[2] Watsonville, City of. 1994. *Watsonville 2005 General Plan*. Watsonville, California.

Implementation Measure 11.D.2, New Water Demand Mitigation

New demand for water shall be mitigated to the greatest extent possible. The City shall continue its present policy of demand reduction requirements for the new development and the payment of groundwater impacts fees for residential construction. The policies shall be extended to other types of development on an equitable basis.

City of Watsonville Draft 2030 General Plan

The City of Watsonville has prepared its Draft 2030 General Plan, which is an update to the existing Watsonville 2005 General Plan. The 2030 General Plan has yet to be formally adopted and implemented. Nonetheless, the 2030 General Plan contains goals and policy that pertain to water supply and may applicable should the 2030 General Plan be adopted. The following goals, policies, and implementation measures are applicable to water supplies:

Goal 11.2 Water Conservation & Quality

Conserve scarce water resources and preserve water quality for the variety of local uses.

Policy 11.2.1

The City shall promote the conservation of water and provide for the protection of water quality to assure its use for domestic, agricultural, industrial, recreational, and ecological needs.

Implementation 11.2.11 Water Availability & Conservation

The City shall cooperate with the Pajaro Valley Water Management Agency (PVWMA) in its efforts to secure a reliable long-term supply of water. The City shall also continue to improve City water conservation programs, as set forth in the Public Facilities Element, Policy 12.2.2. In addition, the City shall work with PVWMA to educate and create incentives for measures targeting private water users, including: water-efficient plumbing fixtures and faucets, reducing use of lawns and other water-intensive plants, encouraging drought-tolerant native plants and "xeriscapes," mulching to retain soil moisture, and using water-efficient irrigation systems.

Goal 12.2 Water Supply

Construct and maintain a water system and institute a water management policy that will provide a sufficient quantity of water to meet the needs of the existing and planned community. The water provided shall continue to meet all Federal and State health standards.

Policy 12.2.1 Water System Design

The water system shall be designed, constructed, and managed to provide a sufficient quantity of appropriate-quality water for the existing and planned community.

Implementation Measure 12.2.11 Water Supply Master Plan

The City shall continue to review and update the Water Supply and Distribution Master Plan to ensure that the water system can provide adequate water, of appropriate quality, to meet the density of development in accordance with the City's development policies throughout the existing and proposed water service area for the City.

Implementation Measure 12.2.12 Ongoing Planning

The Water Division and the Community Development Department shall monitor growth, and project future growth centers, at no more than three-year increments. The Water Division shall maintain a five-, ten- and fifteen-year plan of capital improvements for the Water System. The City shall use the five-year capital improvement schedule to implement a program of replacement for all water mains that are at least 40 years old, on an "as needed" basis.

Implementation Measure 12.2.15 Site Improvements

New projects within the urbanized area shall be monitored and provide annual status reports on water consumption and quality. The City shall continue the program to identify abandoned wells and have them sealed to prevent aquifer contamination.

Implementation Measure 12.2.21 New Water Demand Mitigation

New demand for water shall be mitigated to the greatest extent possible. The City shall continue its present policy of new water demand reduction requirements for new development and the payment of groundwater impact fees for residential construction. These policies shall be extended to other types of development on an equitable basis.

Implementation Measure 12.2.24 Water Management Plan

The City shall maintain its State Certified Urban Water Management Plan, which shall be amended to conform with the Watsonville Vista 2030 General Plan.

City of Watsonville 2015 Urban Water Management Plan

The City of Watsonville's 2015 UWMP provides information on the present and future water demands and supplies and provides an assessment of the City's water resource needs. The UWMP acts as a guide to maintain efficient use of urban water supplies, to promote conservation programs and policies, and to plan out strategies for responding to water shortages and drought conditions. The City's 2015 UWMP provides a framework for long term water planning and informs the public of the City's plans for long-term resource planning that ensure adequate water supplies for existing and future demands.

City of Watsonville Water System Master Plan

The City of Watsonville is currently preparing its Water System Master Plan. The Water System Master Plan will characterize the future needs of the City's water production, storage, and distribution facilities, and prioritize select areas of the water system for repair or upgrades over a 20-year planning horizon.

City of Watsonville Water Efficient Landscaping Ordinance

The City of Watsonville adopted the Water Efficient Landscaping Ordinance (WMC Chapter 6-3.8), which regulates landscaping and landscape irrigation systems based on an approved landscape water budget. The landscape water budget establishes the maximum amount of allowable water usage for a specified landscape. The Water Efficient Landscaping Ordinance applies to new construction with a landscape area greater than 2,500 square feet, and requires, among other things, weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems (California Department of Water Resources 2015).[3]

Existing Conditions

This section describes existing water resources and supplies in the City of Watsonville and major water demands and uses in the City. When possible, the discussion is focused on the downtown area, because it is most applicable to the Specific Plan Area. Water supply is an important factor in the planning process because it affects the intensity of development and growth that is sustainable. It is essential for the City to identify the amount of water supply it has available versus existing and future demand for water in the City.

Existing Water Supply System

The City of Watsonville owns and operates its water system which is comprised of supply sources (surface water diversions and groundwater wells), distribution systems, storage, and pumping facilities. The City Water Division provides 14,800 service connections servicing a customer population of approximately 66,000 in an area that includes the City of Watsonville and unincorporated areas of Santa Cruz County. The service area consists of nine hydraulic pressure zones, fourteen wells, seven storage reservoirs, nine booster pump stations, over 182 miles of pipelines, and the Corralitos Filter Plant (City of Watsonville 2020).[4]

[3] California Department of Water Resources. 2015. *Model Water Efficient Landscape Ordinance. Barclays California Code of Regulations, Title 23*. Department of Water Resources. September 2015.
[4] City of Watsonville. 2020. Memorandum: Water Master Plan Study Session. Memorandum from City of Watsonville, Public Works & Utilities to Matthew D. Huffaker, City Manager. Memorandum dated January 10, 2020.

The Plan Area is entirely within the hydraulic pressure zone identified as Zone I in City water planning documents, such as the 2015 Urban Water Management Plan and the pending Water System Master Plan. Seven of the City's 14 wells are in Zone 1. Additionally, miles of water main and pipeline are located in Zone 1, including beneath many streets in the Plan Area. For example, water main is present beneath Main Street, Rodriguez Street, and 2nd Street within the Plan Area.

Existing Water Supply Sources

Groundwater

Fourteen groundwater wells currently provide the City with an approximate average of 7,000 AFY of water. All City water is treated at each well site and meets or exceeds state and federal drinking water standards. The City's wells are capable of providing 21,000 AFY of water. The City intends to continue pumping groundwater from its existing well sources. It is likely that additional sources will be explored for future use. At this time, the City's wells are capable of providing for both current and projected water demands (City of Watsonville 2016).[5]

The City uses approximately 12 percent of the groundwater pumped from the Pajaro Valley Basin. Groundwater resources in the Pajaro Valley Basin have been managed by the PVWMA since 1984. The basin is not adjudicated. According to California's Groundwater Bulletin 118, Pajaro Valley groundwater levels have been in a decreasing trend due to pumping in excess of recharge. In September of 2000, 51 square miles of the 110 square mile basin had water levels less than sea level. Between 1964 and 1997, there has been an estimated loss of 300,000 AF of freshwater storage from the basin.

Approximately 200,000 AF of this freshwater storage loss is due to seawater intrusion, while 100,000 AF is due to conditions of chronic overdraft and resultant falling groundwater levels (City of Watsonville 2016).

The PVWMA has completed multiple water supply projects which work together to help reduce overdraft, retard seawater intrusion and improve and protect water quality within the entire basin. The PVWMA has constructed the Harkins Slough Diversion and Recharge Facilities, Watsonville Recycled Water Facility (RWF), supplemental wells, and over 20 miles of the Coastal Distribution System (CDS), a water conveyance pipeline. These facilities work together to reduce groundwater overdraft and seawater intrusion.

In April 2009, the PVWMA began delivering tertiary treated, disinfected recycled water into the CDS from the RWF. Expected to produce 4,000 AFY of new water for Pajaro Valley agriculture, the launch of the recycling project resulted from planning and cooperation between PVWMA,

[5] City of Watsonville. 2016. *2015 Urban Water Management Plan*. Adopted June 2016.

the City, stakeholder groups, and state and federal grant funding. The recycled water project includes inland wells that are used to provide blend water to improve the water quality for agricultural use (City of Watsonville 2016).

Surface Water

During years of normal rainfall, the City utilizes a combination of surface water and groundwater supply sources. The City has pre-1914 water rights on the Corralitos and Browns creeks, north of the City limits. The surface diversions are piped to the Corralitos Filter Plant (CFP) and are treated via slow sand filtration and disinfection. The CFP averages approximately 450 AF of water per year, though it has a capacity of 1,400 AF per year. Its operation is limited by the amount of surface water available in the Corralitos and Browns Creeks. At the Eureka Canyon Intake minimum bypass flows must be maintained by the City to allow for fish passage. The CFP operates seasonally, typically starting in late spring through the fall. During the rainy season the CFP is usually shut down due to the high turbidity of the intake water. Higher turbidity waters are not conducive to the efficiency of a slow sand filtration plant so a creek water turbidity of 10 Nephelometric Turbidity Units (NTU) or less is desired. Only when these conditions are being met does the City collect and treat surface water for distribution (City of Watsonville 2016).

Recycled Water

The City's Wastewater Treatment Facility (WWTF) can provide up to 4,000 AFY of recycled water. Though this recycled water is treated to Title 22 standards, it is not connected to the general distribution system and is intended and used for agricultural purposes only (City of Watsonville 2016). Because the recycled water is intended strictly for agricultural purposes it is not included in the total water supply volume.

Existing Water Supply and Reliability

The City's UWMP project water and demand through the year 2035, based on projected population growth and existing demand. The UWMP provides demand under normal conditions, conditions during a dry year, and conditions during multiple dry years. The UWMP was prepared in 2015 and adopted in 2016, but it does provide water supply and demand projections for 2020, the current year and baseline for the DWSP. Current water supply and demand for 2020, based on the projections in the UWMP, are presented below in Table 1. Water supplies and demand for 2025, 2030, and 2035 are also presented.

Table 1 City of Watsonville Water Supply and Demand Comparisons

	2020	2025	2030	2035
Normal Year (AFY)				
Surface Water	1,000	1,000	1,000	1,000
Groundwater	21,000	21,000	21,000	21,000
Total Water Supply[1]	22,000	22,000	22,000	22,000
Total Water Demand[1]	7,934	8,132	8,340	8,560
Difference	*14,066*	*13,868*	*13,660*	*13,440*
Single Dry Year (AFY)				
Surface Water	0	0	0	0
Groundwater	21,000	21,000	21,000	21,000
Total Water Supply[1]	21,000	21,000	21,000	21,000
Total Water Demand[1]	7,934	8,132	8,340	8,560
Difference	*13,066*	*12,868*	*12,660*	*12,440*
Multiple Dry Year Period –Years 1 (AFY)				
Surface Water	0	0	0	0
Groundwater	21,000	21,000	21,000	21,000
Total Water Supply[1]	21,000	21,000	21,000	21,000
Total Water Demand[1]	7,934	8,132	8,340	8,560
Difference	*13,066*	*12,868*	*12,660*	*12,440*
Multiple Dry Year Period –Years 2 (AFY)				
Surface Water	0	0	0	0
Groundwater	21,000	21,000	21,000	21,000
Total Water Supply[1]	21,000	21,000	21,000	21,000
Total Water Demand[1]	7,934	8,132	8,340	8,560
Difference	*13,066*	*12,868*	*12,660*	*12,440*
Multiple Dry Year Period – Year 3 (AFY)				
Surface Water	0	0	0	0
Groundwater	21,000	21,000	21,000	21,000
Total Water Supply[1]	21,000	21,000	21,000	21,000
Total Water Demand[1]	7,934	8,132	8,340	8,560
Difference	*13,066*	*12,868*	*12,660*	*12,440*

[1] Does not include recycled water supply or demand, which is not connected to the City's general distribution system.

Source: Watsonville 2015 Urban Water Management Plan (City of Watsonville Public Works and Utilities, 2016)

As shown in Table 1, the City currently has approximately 14,066 acre-feet per year of surplus water under normal precipitation conditions. During the third year of an extended dry period, such as drought, the City currently has surplus water supply of approximately 13,066 acre-feet per year. City water supplies, notably supply from groundwater sources, is sufficient for future demand through 2035, even during extended dry years.

Since the City's UWMP was published in 2016, the City's well production has decreased, and total water supply is estimated to be approximately 19,000 acre-feet per year during a normal year and 18,000 acre-feet per year during single and multiple dry years (Beau Kayser, Water Operations Supervisor, City of Watsonville, personal communication, December 2017). Nonetheless, there remains more than 10,000 acre-feet per year of surplus water in 2020 with reduced groundwater pumping.

The City calculated 2018 water demand as part of preparation of the pending Water System Master Plan. Water demand in 2018 was calculated at 6,000,000 gallons per day).[6] This converts to approximately 6,721 AFY. Water demand in 2040 was also calculated and determined to be approximately 7,300,000 gallons per day, or approximately 8,177 AFY. These demand calculations are below the earlier projection used in the UWMP, and therefore, supplies are also sufficient for the 2018 demand calculation and future 2040 demand.

The City has determined that it has sufficient water storage to meet current and 2040 demands in all zones except Zone 2.[7] The downtown area, including the Plan Area, is within Zone 1. Therefore, storage is sufficient for the Plan Area. However, according to the pending Water System Master Plan, existing Well 1 in Zone 1 should be considered for replacement to ensure reliability. The pending Water System Master Plan also recommends replacing pipelines, as needed, throughout the entire water system, including within Zone 1.

Summary of Existing Conditions

- According to the UWMP, 2020 supplies exceed 2020 demand by at least 10,000 AFY, including with reduced groundwater pumping that has occurred since the UWMP was adopted in 2016.
- Based on recent calculations prepared for the Water System Master Plan, the City has adequate water supplies for the existing population as of 2018 and future projections in 2040.

[6] City of Watsonville. 2020. Memorandum: Water Master Plan Study Session. Memorandum from City of Watsonville, Public Works & Utilities to Matthew D. Huffaker, City Manager. Memorandum dated January 10, 2020.
[7] Ibid