City of Dublin
General Plan

Chapter 12

ENVIRONMENTAL RESOURCES MANAGEMENT: WATER RESOURCES ELEMENT

12.1 INTRODUCTION

An adequate and high quality water supply is considered a basic need, and the use and quality of water has long been regulated by government. Since water moves easily across jurisdictional boundaries, much of the regulation is at the regional, state and federal levels. However, since cities and counties have legal authority over development and land use, they must consider the adequacy of water supplies and how development affects the quantity and quality of water available for other beneficial uses.

The long term adequacy of groundwater and surface water resources has become a major public concern in California. Water related issues include lowered groundwater levels and salt loading, increased stormwater runoff, sediment and pollutants in runoff, water diversions into and out of the watershed of the greater San Francisco Bay Area, summer rationing in dry years, the water needs of fish and wildlife, the rates of water usage, conservation methods, water storage limitations, the growing re-use of water and continuing changes in state and federal regulations.

The City of Dublin does not control the supply or the delivery of water to customers, nor does the City control cost and pricing mechanisms related to water supply. The City does not manage regional flood control facilities either. However, the City works in collaboration with other agencies that provide these services, and therefore the scope of the Water Resources Element reflects this reality. The scope of City influence extends mainly to promoting and encouraging water conservation among business and residential users, implementing Low Impact Development measures to help treat stormwater, as well as managing the stormwater runoff and pipelines that lead to flood control facilities. The Water Resources Element is intended to guide these efforts.

12.1.1 PURPOSE

The primary purpose of this element and the reason for including this optional Element in the Dublin General Plan is to ensure that the City's water resources are sustained and protected, and to consolidate information and polices related to the conservation and management of water resources, riparian corridors, and watershed lands. The Water Resources Element also defines the stormwater facilities needed to serve Dublin at buildout of the General Plan.

12.1.2 RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS

California Government Code Section 65302 requires a Land Use Element that includes the location and extent of various land uses, and a Conservation Element that includes water and its hydraulic force, rivers and other waters. Section 65302 also states that the Conservation Element may cover control of streams and other waters, protection of watersheds, and flood control. Note, however, that Government Code Section 65301(a) allows a legislative body to adopt a General Plan in any format deemed appropriate or convenient.

Some other water-related topics are addressed in other Elements. Water availability as a factor in future development is addressed in the Land Use Element. The Conservation Element addresses riparian corridors and erosion/siltation control. The Schools, Public Lands, and Utilities Element addresses

water supply and connections to public water systems. The Public Safety Element addresses flood hazards, fire suppression, and hazardous materials.

The Water Resources Element has been developed to be consistent with and complementary to other Elements. References to policies in other Elements are provided where they support or implement the objectives of the Water Resources Element.

1.3 Scope and Organization

The Water Resources Element is organized as follows:

Section 2 reviews the Legislation and the Regulatory Environment, Water Sources, Water Demand and Use, Conservation and Efficiency, and how to ensure Water Quality and Manage Urban Runoff.

Section 3 includes the City's policies to manage water resources, use water efficiently, and ensure water quality, flood protection, and manage stormwater.

12.2 BACKGROUND

12.2.1 KEY LEGISLATION AND THE REGULATORY ENVIRONMENT

The regulatory environment for water resources can generally be divided into three categories: water supply, water use and conservation, and water quality management. Recent legislation is described briefly below, which explains what is required by mandate and offers insight into why Dublin has some of the ordinances and requirements that it does.

Water Supply Legislation

In 2001, two water supply planning bills were enacted that require greater coordination and more data to be shared between water suppliers and local land use agencies for large development projects.

Senate Bill 610 requires a Water Supply Assessment (WSA) for any development project of more than 500 housing units (or the commercial/mixed-use equivalent). The WSA needs to be part of any CEQA document prepared for the project. If there is not adequate water to reliably supply the project in normal, dry, and multiple dry years, new water sources need to be identified.

Senate Bill 221 prohibits any land use agency from approving a subdivision map of more than 500 housing units (or 10% increase in the total number of existing water connections) unless there is written verification from a water provider that a sufficient and reliable water supply is available.

Water Use and Conservation Legislation

Senate Bill X7-7 was enacted in November 2009, requiring all water suppliers to increase water use efficiency. The legislation sets a statewide goal of reducing per capita urban water use by 20% by December 31, 2020. Collectively, the State of California shall make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015.

Assembly Bill 1881, the Water Conservation in Landscaping Act of 2006, requires that local jurisdictions

prepare and adopt a Water Efficient Landscaping Ordinance (WELO). The intent of requiring a WELO for each California jurisdiction is to ensure the installation of water efficient landscapes in new development and to reduce water waste in existing landscapes.

Water Quality Legislation

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the United States Environmental Protection Agency promulgated rules establishing Phase 1 of the National Pollutant Discharge Elimination System (NPDES) stormwater program.

The California Regional Water Quality Control Board issued the Alameda Countywide NPDES Municipal Stormwater Permit in 2003 to the Alameda Countywide Clean Water Program, of which Dublin is a member. In October 2009, the California Regional Water Quality Contro Board issued the Municipal Regional Stormwater NPDES Permit to the Alameda Countywide Clean Water Program, as well as to permittees in Contra Costa County, Santa Clara County, San Mateo County, Fairfield-Suisun, and Vallejo. Provision C.3 of the permit requires all jurisdictions to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in development projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

12.2.2 WATER SUPPLY

Potable Water

The Dublin San Ramon Services District (DSRSD) is the water retailer for residents in the City of Dublin and the Dougherty Valley portion of the City of San Ramon. DSRSD buys wholesale potable water from Zone 7 of the Alameda County Flood Control and Water Conservation District (also referred to as the Zone 7 Water Agency, or Zone 7). Zone 7 obtains water most of its water supply from the State Water Project (SWP), with additional supplies derived from the local watershed and the Byron Bethany Irrigation District. Zone 7 uses the main groundwater aquifers in the Tri Valley area to store imported water. Approximately eighty percent of the valley's water comes from the SWP, traveling from the Sierra Nevada mountains through Lake Oroville and the Sacramento/ San Joaquin Delta. The water is then pumped into the South Bay Aqueduct near Tracy, where it enters the Tri-Valley. Zone 7 also pumps DSRSD's groundwater quota for delivery to DSRSD customers.

Our mission is to efficiently provide high quality wastewater and water services to the communities we serve in an environmentally and fiscally responsible manner.

Recycled Water

To improve the reliability of the Tri-Valley's water supply, particularly in dry years, DSRSD and East Bay Municipal Utility District (EBMUD) created the San Ramon Valley Recycled Water Program (SRVRWP) in 1995. The partnership has built a water recycling plant adjacent to the DSRSD wastewater treatment facility and a backbone transmission system that connects to DSRSD and EBMUD recycled pipelines. DSRSD personnel operate these facilities on behalf of the partnership. Recycled water is used in the Tri Valley area primarily by large irrigation customers: golf courses, parks, greenbelts, roadway medians, schools, office complexes, and common areas in homeowner associations. A joint powers authority, the DSRSD-EBMUD Recycled Water Authority (DERWA), governs the partnership. Two directors from each agency serve on the DERWA Board of Directors.

Wastewater Collection and Treatment

DSRSD owns and operates sewers in the cities of Dublin and San Ramon and a wastewater treatment plant in the City of Pleasanton. Under contract, DSRSD also treats wastewater collected by the City of Pleasanton. DSRSD's service area is shown in Figure 12-1.

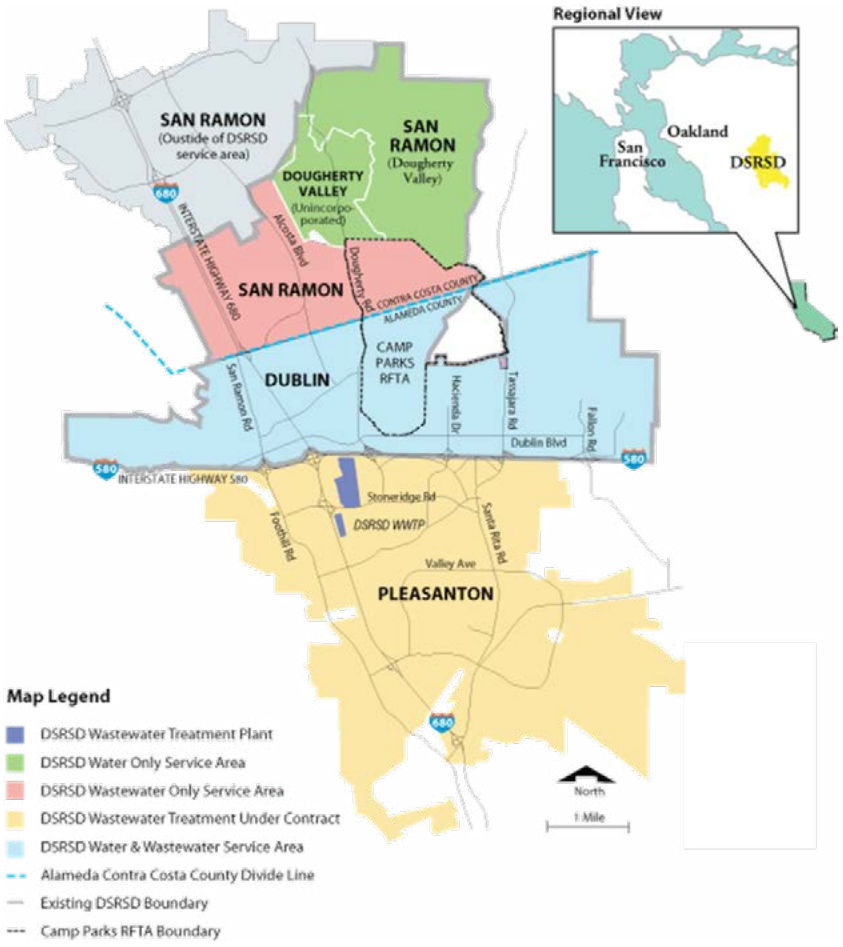


Figure 12-1: DSRSD Service Area
Source: DSRSD Urban Water Management Plan (2010)

Two wastewater treatment plants serve Tri-Valley residents, businesses, and institutions. DSRSD operates the plant located in the City of Pleasanton, which has a capacity of 17 million gallons per day (MGD). The City of Livermore operates the other plant, which has a capacity of 8 MGD. Regional wastewater disposal matters are the business of the Livermore Amador Valley Water Management Agency (LAVWMA), a joint powers authority formed in June 1974 between DSRSD and the cities of Pleasanton and Livermore. LAVWMA is responsible for maintaining the pipeline that transports treated wastewater from the two treatment plants to San Lorenzo. It is discharged into San Francisco Bay by the East Bay Dischargers Authority, another joint powers authority formed by cities and agencies in the East Bay, which operates and maintains a large outfall system to the Bay.

12.2.3 WATER DEMAND AND USE

Potable and Recycled water use in Dublin has generally risen from 2002-2012, as illustrated in the table below. Much of this increased water usage is the result of planned growth.

Table 12.1 | **DSRSD WATER DEMAND IN DUBLIN, 2002-2012**

	DUBLIN SAN RAMON SERVICES DISTRICT WATER DEMAND (MILLIONS OF GALLONS PER YEAR)										
TYPE OF USE	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Commercial	333.3	558.3	557.6	511.8	455.2	519.0	405.9	278.5	262.4	266.5	267.4
Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Institutional	357.2	364.0	356.9	363.9	338.1	347.2	389.1	281.9	248.3	242.8	249.1
Irrigation	457.6	433.8	445.7	351.3	387.3	405.4	428.6	372.5	350.6	350.4	391.1
Multi-Family	204.4	227.2	235.3	268.1	261.2	284.3	312.9	320.8	323.5	330.4	337.2
Single-Family	941.7	959.6	1,041.8	1,011.9	1,050.2	1,074.7	1,094.5	1,005.4	957.5	954.6	1,075.5
TOTAL WATER DEMAND	**2,294.2**	**2,542.9**	**2,637.3**	**2,507.0**	**2,492.0**	**2,630.6**	**2,630.9**	**2,259.2**	**2,142.2**	**2,144.7**	**2,320.2**
RECYCLED WATER	**14.9**	**99.5**	**72.9**	**319.8**	**182.3**	**301.7**	**306.0**	**315.9**	**295.8**	**355.5**	**398.7**

Source: DSRSD (2013)

The largest categorical consumer of water is residential users, and more specifically, single-family residential users. Although the total water demand over the past 10 years has increased for the single-family residential category, the total number of single-family households has increased at a greater rate than the total water demand rate. Therefore, the average annual consumption of a single-family household has decreased from 140,700 gallons per year in 2002 to 117,200 gallons per year in 2012 (Source: DSRSD, 2013). This 16.4% decrease in the average household consumption is due to many factors, including a greater use of water efficient features, installation of more water-efficient landscapes, and greater public education regarding the importance of water conservation.

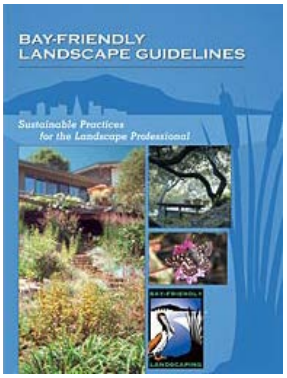
12.2.4 WATER CONSERVATION AND EFFICIENCY

DSRSD has a comprehensive Water Conservation Program in place that includes both supply- and

demand-side measures, including audits, incentives, optimal management practices, enforcing wastewater and landscape regulations, education programs, support activities, metering, and pipe replacement. DSRSD also recommends that local cities require water conservation measures as a standard feature in the design and construction of proposed development projects.

The City of Dublin currently utilizes several means to promote water conservation and efficiency in new development:

- Implementation of Chapter 8.88 of the Municipal Code (Water Efficient Landscape Regulations) which requires that development projects of a certain size and scope be designed with landscape materials and maintenance that is sensitive to reducing water use. Chapter 8.88 conforms to the state mandate to either have a local Water Efficient Landscape Ordinance or require that new projects conform to the statewide Water Efficient Landscape requirements.
- Implementation of Chapter 7.94 of the Municipal Code (Dublin Green Building Code), with the purpose of enhancing the design and construction of buildings and encouraging sustainable construction practices in several categories including water efficiency and conservation.
- Participation and collaboration with outside organizations and agencies on programs to educate the public and provide hands-on assistance to increase water conservation efforts.



The City is also committed to conserving water to the greatest degree possible in public facilities such as community buildings and parks. The City follows the requirements of the Water Efficient Landscape Regulations at all civic sites and implements the recommendations of the Bay Friendly Landscape Guidelines for water-efficient landscapes. In addition, the City has been aggressive in utilizing water efficient appliances and features in the construction of new civic buildings and when remodeling existing facilities. For example, the Shannon Community Center was designed and constructed to LEED Silver certification standards, and included several water conservation elements that contributed to that effort.

12.2.5 WATER QUALITY, FLOOD PROTECTION, AND STORMWATER MANAGEMENT

Historically, the Tri-Valley has experienced relatively frequent, but substantial, flooding because many streams which drain large areas of impermeable soils converge in the area. During periods of intense rainfall, runoff rapidly causes some stream flows to exceed floodway capacities and inundate adjacent areas.

Extensive flood channel improvements required of development projects during the past 20 years have significantly reduced this type of flood hazard. As a result of good planning and system maintenance, the Tri-Valley now experiences minimal flood damage compared with many other areas of California.

Responsibility for flood protection in Dublin lies with Zone 7, which maintains improved flood-control channels and installs new drainage channels. Under Zone 7 permits, development projects have improved many of the existing channels and have created new flood protection facilities. Zone 7 continues to work with local jurisdictions and the development community to identify means and methods to provide greater flood protection in its service area. In 2006, Zone 7 adopted the Stream Management Master Plan (SMMP), which incorporates multi-benefit projects to address flood protection.

The local storm drainage system consists of underground pipes, local channels and watercourses, and vegetated swales throughout newer neighborhoods. These facilities carry water runoff within the drainage basin to the flood-control channels and further to regional stormwater facilities. Developers of new projects must install adequately-sized storm drains to connect to the City's existing underground storm drain network.

To accommodate future buildout in accordance with the General Plan, the City will continue to require that new developments install appropriately-sized storm drains. The City also schedules improvements to older portions of the storm drain network through the City's Capital Improvement Program.

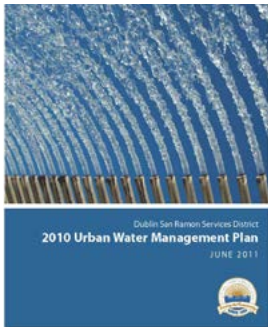
Dublin currently utilizes several means and methods to ensure that the City's stormwater is properly managed and treated by the time it enters regional flood control facilities in compliance with NPDES and other required permits:

- Implementation of Chapter 7.20 of the Municipal Code (Watercourse Protection), which is enacted to safeguard and preserve watercourses, protect lives and property, prevent damage due to flooding, protect drainage facilities, control erosion and sedimentation, restrict discharge of polluted materials, and enhance recreational and beneficial uses of watercourses.
- Implementation of Chapter 7.74 of the Municipal Code (Stormwater Management and Discharge Control Ordinance), which is designed to ensure the future health, safety and general welfare of Dublin citizens by eliminating non-stormwater discharges to the municipal storm drain system and reducing pollutants in stormwater discharges to the maximum extent practicable;

- Implementation of the Dublin Clean Water Program, which is a federally-mandated program under the federal Clean Water Act. The purpose of the Clean Water Program is to eliminate pollutants, such as oil, dirt, pesticides, litter, and other similar contaminants, from entering the storm drain system so only clean water enters our waterways and ultimately the San Francisco Bay. The City conducts public education and outreach efforts as well as responds to reports of clean water violations; and
- Monitoring construction sites to ensure adequate Best Management Practices (BMPs) are implemented to reduce water pollution during construction in compliance with the State General Construction Permit issued by the California State Water Resources Control Board.

12.3 GUIDING AND IMPLEMENTING POLICIES

12.3.1 WATER SUPPLY



A. Guiding Policy

1. Work with Zone 7 and DSRSD to secure an adequate water supply for, and provide water delivery to, existing and future customers in Dublin.

B. Implementing Policies

1. In anticipation of planned future growth, continue working with DSRSD and Zone 7 to plan and provide for sufficient future water supplies.

12.3.2 WATER CONSERVATION AND EFFICIENCY IN EXISTING DEVELOPMENT

A. Guiding Policy

1. Increase water conservation efforts and strive to maximize water use efficiency in existing residential, commercial, and industrial buildings and grounds.
2. Support DSRSD in extending recycled water service to established areas of Dublin.

B. Implementing Policies

1. Encourage DSRSD to continue offering free water saving devices to any DSRSD customer.
2. Encourage Zone 7 to continue its on-going rebate program for water-conserving fixtures and appliances.
3. Continue collaborative efforts and programs with outside organizations such as the California Youth Energy Services (CYES), which trains and employs local youth to provide resource conservation audits and water/energy retrofits to local residences ("Green Home Audits").
4. Continue collaborative efforts with DSRSD to plan for and convert existing customers to utilize recycled water.

12.3.3 WATER CONSERVATION AND EFFICIENCY IN NEW DEVELOPMENT

A. Guiding Policy

1. Promote the conservation of water resources in new development

B. Implementing Policies

1. Continue implementation of the Water Efficient Landscape Regulations, which requires grouping plants with the same water requirements together (hydrozoning), the installation of water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls, and the minimal use of turf.
2. Support DSRSD's ongoing efforts to extend recycled water infrastructure ("purple pipe") to new locations.
3. Continue implementation of the Green Building Code to ensure that the design, operation, construction, use, and occupancy of every newly constructed building or structure is subject to assessment of its efficiency features.

12.3.4 WATER CONSERVATION AND EFFICIENCY IN PUBLIC FACILITIES

A. Guiding Policy

1. Promote the conservation of water resources in public facilities.
2. Promote the use of recycled water in public facilities.

B. Implementing Policies

1. Retrofit existing parks with new irrigation controllers that link to a centralized irrigation system that downloads daily weather reports from a local weather station and adjusts the amount of irrigated water applied to each park each day.
2. At the completion of each public construction and/or capital improvement project, conduct an irrigation audit to ensure proper water utilization.
3. Ensure that future publicly-owned facilities (e.g. street medians, park sites) have a healthy growing environment by receiving soil that is appropriate to support plant growth. The soil is typically provided by the developer dedicating the median and/or park site, so the soil to be provided shall meet City standards.
4. Continue to demonstrate low water-use techniques at public parks and other City-owned facilities.
5. During construction or reconstruction of public facilities, institute water conservation measures such as hot-on-demand water faucets, low-flush toilets, and low water-using appliances to the greatest degree possible.
6. In the design and construction of all public facilities, utilize Bay Friendly Landscape Guidelines for water-wise landscaping.
7. When recycled water lines are extended to established areas in Dublin, examine retrofitting public facilities and connecting existing public landscape irrigation systems to the recycled water distribution system.

12.3.5 WATER QUALITY, FLOOD PROTECTION, AND STORMWATER MANAGEMENT

A. Guiding Policies

1. Protect the quality and quantity of surface water and groundwater resources that serve the community.
2. Protect water quality by minimizing stormwater runoff and providing adequate stormwater facilities.
3. To minimize flooding in existing and future development, design stormwater facilities to handle design-year flows based on buildout of the General Plan.

B. Implementing Policies

1. Support Zone 7's efforts to complete planned regional storm drainage improvements.
2. With the goal of minimizing impervious surface area, encourage design and construction of new streets to have the minimum vehicular travel lane width possible while still meeting circulation, flow, and safety requirements for all modes of transportation.
3. Discourage additional parking over and above the required minimum parking standards for any land use unless the developer can demonstrate a need for additional parking.
4. Conserve the City's urban forest, including trees in parks as well as street trees, so as to continue and enhance surface water filtration and community character.
5. Review design guidelines and standard details to ensure that developers can incorporate clean water runoff requirements into their projects.
6. Maximize the runoff directed to permeable areas or to stormwater storage by appropriate site design and grading, using appropriate detention and/or retention structures, and orienting runoff toward permeable surfaces designed to manage water flow.
7. Review development plans to minimize impervious surfaces and generally maximize infiltration of rainwater in soils, where appropriate. Strive to maximize permeable areas to allow more percolation of runoff into the ground through such means as bioretention areas, green strips, planter strips, decomposed granite, porous pavers, swales, and other water-permeable surfaces. Require planter strips between the street and the sidewalk within the community, wherever practical and feasible.
8. Continue conducting construction site field inspections to ensure proper erosion control and materials/waste management implementation to effectively prohibit non-stormwater discharges.
9. Support Zone 7 in updating and implementing its Stream Management Master Plan so as to protect and enhance the water quality of streams and groundwater.
10. Ensure adequate setbacks from creeks/waterways and development. Retain existing vegetation where feasible and, where necessary, plant buffers with native plant species.