Chapter 6
Infrastructure Element

6.1 INTRODUCTION

In order to accommodate sustainable growth of Murrieta's resident population and employment centers, the City must actively plan for and allocate resources to infrastructure systems. This Element addresses Murrieta's facilities for water, wastewater, flood control, storm drainage, electricity and natural gas. It identifies infrastructure issues that affect General Plan implementation, seeking to ensure that adequate infrastructure is provided with all new development projects, and that infrastructure is maintained and upgraded as needed. This Element also seeks to encourage the expansion of recycled water systems throughout the City, as an important part of ensuring sufficient water supplies.

6.2 AUTHORITY FOR ELEMENT

California *Government Code* Section 65302 (b) requires that the General Plan include *"local public utilities and facilities, all correlated with the land use element of the plan."*

6.3 SETTING THE CONTEXT: KEY ISSUES AND CHALLENGES

WATER SUPPLY

The water supply in Murrieta comes from local sources of groundwater and surface water, imported water from the Metropolitan Water District's Colorado River Aqueduct and the State Water Project, recycled water reclamation facilities, and water transfers and exchanges.

Water is provided throughout most of the City by four water districts:

- Western Municipal Water District (WMWD)
- Eastern Municipal Water District (EMWD)
- Rancho California Water District (RCWD)
- Elsinore Valley Municipal Water District (EVMWD)

Their district boundaries are shown in *Exhibit 6-1*, *Water District Service Area Boundaries*. A portion of northeast Murrieta is not served by any water district, and residents in this area rely

on wells; this area is commonly referred to as the “keyhole.” Other, smaller areas throughout the City also lie outside the boundaries of all the water districts.

Due to the varied topography in Murrieta, providing sufficient water pressure can be a challenge. Each water district maintains multiple pressure zones in the City with pump stations and reservoirs. In some areas, such as the western edge of the WMWD area, private pumping systems may be necessary to maintain adequate pressures beyond the meter connection.

The water suppliers are planning to meet increased demand and reduce dependence on imported water. Their plans include water storage and groundwater recharge, treatment of wastewater to supply recycled water, and treatment of other non-potable water sources to increase potable water supply. Brief summaries of some of the districts’ plans are identified below:

- EMWD is seeking to increase water supplies through investment in facilities that treat wastewater, groundwater, and raw water from the State Water Project. In addition, EVMWD plans to increase its supplies of imported water and add wells.
- WMWD plans include developing additional storage and pipeline infrastructure, and seeking diversions from the Santa Ana River.
- RCWD plans to create additional wells and construct a facility to reduce the salinity of recycled water for agricultural use.
- Groundwater recharge is part of most plans to ensure future water supplies. RCWD plans to expand groundwater recharge in the Pauba Valley Basin. EVMWD has prepared a groundwater management plan for the Elsinore Basin to reduce overdraft and improve groundwater supply reliability, which includes replenishment. EMWD does not draw groundwater in the southern part of its service area, where Murrieta lies, but is involved in groundwater recharge in the San Jacinto Watershed.

All four water districts have adopted Urban Water Management Plans (UWMP), the purpose of which is to review current and future water resources, and to establish and maintain water conservation programs for a 25-year planning horizon.

WASTEWATER

Murrieta’s sewage (or wastewater) system consists of both public and private facilities. Developments located outside the public sewer system use on-site septic systems. Septic systems are regulated by the County of Riverside Department of Environmental Health.

Wastewater collection for the City and Sphere of Influence areas is provided by the same four water districts that provide potable water: WMWD, EMWD, RCWD, and EVMWD. Only RCWD and EMWD provide wastewater treatment; RCWD operates two water reclamation plants within the City of Murrieta. Wastewater flows from the other districts discharge into RCWD and EMWD interceptors for treatment.

With continued growth expected to increase demand for wastewater treatment, both EMWD and RCWD plan to expand the capacity of the treatment facilities serving Murrieta, which are respectively, the Temecula Valley Regional Water Reclamation Facility and the Santa Rosa Water Reclamation Facility.

RECYCLED WATER

Wastewater that has gone through tertiary-level treatment can be used as recycled water to irrigate crops and landscaping, so that potable water does not have to be used for these purposes. Water districts also use or plan to use recycled water to replenish groundwater and surface water sources. EMWD, RCWD, and EVMWD plan to expand their use of recycled water to boost water supplies.

EMWD operates a recycled water system, with costs and responsibilities shared through an agreement with RCWD and EVMWD. EMWD has a mandatory recycled water use ordinance requiring customers to use recycled water for appropriate permitted uses, when it is available. RCWD also operates a recycled water system and seeks to provide tertiary treated wastewater to golf courses and major park areas. Accordingly, RCWD non-domestic water mains provide recycled water to these types of uses in the northwest parts of Murrieta, including the Bear Creek and Colony Golf Courses.

Mains for recycled water run through Murrieta west of the I-15 Freeway, along Washington Avenue and Adams Avenue. Other mains exist south of the City boundary in Temecula, entering Murrieta along Winchester Road north of Robert Trent Jones Parkway; there are service connections in the neighborhood west of French Valley Airport.

STORM DRAINAGE

Storm water drainage infrastructure within the City consists of a network of natural and improved streams, storm channels, storm drains, and catch basins. Some regional master planned facilities over 36 inches in diameter are owned and maintained by the Riverside County Flood Control and Water Conservation District (RCFCWCD) with the remainder owned and maintained by the City when located within public right of way or easements, and all non-master planned facilities smaller than 36 inches in diameter are maintained by the City when located within public right of way or easements.

Storm water from the City and most of the Sphere of Influence that is not absorbed into the ground flows eventually to Murrieta Creek and its tributary Warm Springs Creek. Much of Murrieta Creek and sections along Warm Springs Creek lack formal flood control systems, and as a result drainage is haphazard in the less developed areas of the City, even with moderate rain. Murrieta Creek currently lacks the capacity to convey 100-year storm flows through the City.

A Master Drainage Plan prepared by RCFCWCD identifies improvements that would provide flood protection for both existing and future development within the City west of Interstate 15. The plan proposes improvements to Murrieta Creek eleven miles of earthen channel from Rancho California Road in Temecula to Clinton Keith Road in Wildomar, and a network of channels and underground storm drains. Many of the lines in the Murrieta Creek Drainage Plan have been constructed.

In addition, the U.S. Army Corps of Engineers and RCFCWCD are coordinating the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project, along with the City of Murrieta and City of Temecula. This four-phase project includes channel improvements and a 250-acre detention basin with a natural riverine system. Besides providing flood protection, the detention basin is designed to improve groundwater recharge. Flood control is discussed more extensively in the Safety Element.

GROUNDWATER RECHARGE

Strategies for retaining storm water and allowing percolation not only reduce demand on flood control facilities, but have the added benefit of recharging groundwater, which is an important source of water for Murrieta. Groundwater recharge can be integrated into the design of development projects by preserving natural drainage courses, encouraging the use of pervious surfaces, and creating areas for water retention and infiltration. Recharge techniques that may be used on-site or off-site include recharge ponds, injection points, and storm water retention ponds.

ENERGY UTILITIES

Electricity and natural gas are provided by utilities that operate independently of the City. Any new developments must provide verification from the utilities that they are able to accommodate the additional demand for service. Besides facilitating the extension of energy services, the City can play a role in the supply of energy by promoting energy conservation and local installation of renewable energy systems.

Electricity

Electrical power is provided to Murrieta by the Southern California Edison Company (SCE). There are a total of six existing substations that service the area; three are located within the City limits. SCE maintains and operates the transmission and distribution infrastructure necessary to provide electricity to end users throughout its entire service area. SCE provides electricity to approximately 13 million people, 180 cities and communities in 50,000 square miles of service area, encompassing 11 counties in central, coastal and southern California.

A growing percentage of the energy supplied by SCE is from renewable sources: wind, geothermal, solar, biomass, and small hydroelectric.

Locally, SCE is in the process of developing the Triton transmission substation, a new 115/12 kilovolt substation that would serve the cities of Temecula, Murrieta, and unincorporated southwestern Riverside County. The substation would be located in the City of Temecula with the purpose of strengthening SCE's electrical network to maintain reliability and meet the area's forecasted electrical demands.

Wind turbines on residential lots can reduce household consumption of utility-supplied electricity. In order to promote the safe, effective, and efficient construction and use of non-commercial wind energy conversion systems on rural residential lots, the Murrieta City Council adopted Ordinance No. 408-08 establishing standards for these systems in the Rural Residential District.

Natural Gas

The City of Murrieta receives its natural gas service from the Southern California Gas Company (SCG), a subsidiary of Sempra Energy. Currently SCG is the nation's largest natural gas distribution utility, serving approximately 20.5 million customers throughout 20,000 square miles of central and southern California.

The City of Murrieta does not have any natural gas storage facilities. Natural gas is brought to the City through an existing network of gas transmission pipelines, and distributed through existing mains located under City streets, which can be extended to serve new projects.

In northeast and southwest areas of the City where natural gas infrastructure is not available, homes or businesses use propane gas. Individual propane tanks are located on the property and the owners or occupants execute private agreements with propane companies to maintain and refill the tanks.

6.4 SETTING THE VISION: KEY CONCEPTS AND VISION FOR GENERAL PLAN

There are close connections between Murrieta's water supply, wastewater, flood control, and storm drainage. Water used indoors becomes wastewater, while water used to irrigate landscaping may enter the storm drain system. Water conservation measures, therefore, reduce demand for water supply and also for infrastructure that handles wastewater and storm drainage. Conversely, storm water can become part of Murrieta's water supply if it is allowed to recharge groundwater aquifers. Wastewater that is treated is another important water source, whether provided directly through recycled water infrastructure or used to recharge aquifers. Finally, measures that improve groundwater recharge from storm water can reduce demand for flood control facilities while also boosting local water supplies.

Energy efficiency and local production of renewable energy not only reduce demand for energy supplied from outside the area, but fit into the City's overall efforts to promote environmental sustainability.

WATER SUPPLY

Water management will continue to be a challenging venture as the City grows and water supplies throughout California are tight. The City will support water district efforts to develop a more reliable, diverse, and sustainable portfolio of water supplies while also promoting water conservation and groundwater recharge. Related goals and policies are found in the Conservation Element.

The lack of water infrastructure in certain areas of the City, such as the northeastern portion, may be a limiting factor to future development. The City will encourage property owners to annex to water districts in these areas.

WASTEWATER

The City must continue to coordinate with the water districts to make sure new development does not exceed the capacity of wastewater conveyance and treatment facilities, and pays its fair share to increase capacity of those facilities. Water conservation will be a key factor in reducing the amount of wastewater generated per household. Further development in areas of the City where sewer infrastructure is not available may require additional alternative on-site water treatment systems. The City will encourage annexation to water districts in these areas for wastewater facilities.

RECYCLED WATER

Increased use of recycled water for irrigation and other appropriate uses is essential to reduce the demand for potable water. Interagency coordination among the water districts will continue to be important as they upgrade facilities for water treatment and expand distribution systems. The City will support the water districts in their efforts to promote the use of recycled water, and to expand recycled water facilities throughout the City.

STORM DRAINAGE

New development will add impervious surfaces and irrigated areas within the Murrieta Creek drainage basin. To minimize surface water runoff and nuisance flows to storm drains, the City will encourage new development to incorporate Low Impact Development (LID) strategies and landscape design that minimizes the need for irrigation. Related goals and policies are found in the Conservation Element.

To accommodate new growth and revitalization, the City and the Riverside County Flood Control and Water Conservation District should continue to maintain and replace aging storm drain systems and minimize the adverse effects of urbanization upon drainage and flood control facilities. Additional information regarding flooding can be found in the Safety Element.

When it rains, pollutants such as trash, litter, silt, automotive chemicals, animal waste, and other contaminants are washed into the storm drains. The Federal Pollution Control Act prohibits the

discharge of any pollutant into navigable waters from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The City of Murrieta participants in the NPDES permit program through a partnership with County of Riverside, all cities within Riverside County, and the Riverside County Flood Control and Water Conservation District.

The City will continue to coordinate with the Riverside County Flood Control and Water Conservation District to provide for drainage and flood control infrastructure. Impact fees for the construction and maintenance of storm drains will be critical to ensuring that adequate capacity is achieved for the 100-year storm.

GROUNDWATER RECHARGE

The City will promote Low Impact Development and other techniques for groundwater recharge in new developments. Whenever possible, the natural function of creeks and other drainage courses will be preserved when this does not interfere with flood control. Murrieta will also continue collaborative efforts to secure funding for completion of the Murrieta Creek Flood Control, Environmental Restoration and Recreation Project. Related goals and policies are found in the Conservation Element.

ENERGY UTILITIES

The City of Murrieta is dedicated to using energy more efficiently in its municipal operations, as well as promoting energy efficiency and renewable energy production throughout the community. Installations of photovoltaic solar panels and non-commercial wind turbines will be encouraged. Related goals and policies are found in the Conservation Element.

6.5 GOALS AND POLICIES

COORDINATED INFRASTRUCTURE

GOAL INF-1 **New development and redevelopment is coordinated with the provision of adequate infrastructure for water, sewer, storm water, and energy.**

POLICIES

INF-1.1 Encourage future development to occur in areas where infrastructure for water, sewer, and storm water can most efficiently be provided.

INF-1.2 Discourage development in areas without connections to existing infrastructure, unless infrastructure is being provided.

INF-1.3 Encourage the annexation of unserved areas into water district service areas.

INF-1.4 Ensure that new development and redevelopment provides infrastructure for water, sewer, and storm water that adequately serves the proposed uses, and that has been coordinated with affected infrastructure providers.

INF-1.5 Continue to require new development and redevelopment to provide verification that energy utilities are able to accommodate the additional demand for service.

INF-1.6 Provide information to water districts, Riverside County Flood Control and Water Conservation District (RCFCWCD), and energy utilities in their planning efforts to ensure adequate infrastructure is available for anticipated development.

INF-1.7 Encourage the preparation and updates of master plans by the appropriate providers or agencies to conduct detailed long-range planning to ensure the efficient provision of public services, infrastructure, and/or utilities.

INF-1.8 Consult with water districts and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that fee structures are sufficient for new development and redevelopment to pay its fair share of the cost of infrastructure improvements for water, sewer, and storm water.

INF-1.9 Encourage the water districts to proactively manage their assets through the maintenance, improvement, and replacement of aging water and wastewater systems to ensure the provision of these services to all areas of the community.

INF-1.10 Encourage the water districts to improve water and wastewater services in a way that respects the natural environment.

INF-1.11 Ensure sufficient levels of storm drainage service are provided to protect the community from flood hazards and minimize the discharge of materials into the storm drain system that are toxic or which would obstruct flows.

INF-1.12 When managed by the City, continue to maintain and replace aging storm drain systems to ensure the provision of these services to all areas of the community.

INF-1.13 Cooperate in regional programs to implement the National Pollutant Discharge Elimination System program.

INF-1.14 Continue to participate with other agencies on public education and outreach materials for countywide distribution to focus on public education and business activities with the potential to pollute. Distribute Best Management Practices (BMP) guidance for business activities, including but not limited to, mobile detailing, pool maintenance, restaurant cleaning operations, and automotive service centers.

INF-1.15 Continue to implement the City's residential informational and outreach program by providing homeowners with Best Management Practices (BMP) for activities such as, but not limited to:

- Disposal of fats, oils, and grease
- Disposal of garden waste
- Disposal of household hazardous waste
- Disposal of pet waste
- Garden care and maintenance
- Vehicular repair and maintenance
- Vehicular washing

INF-1.16 Continue to annually report the City's activities as part of its submittal to the San Diego Region Water Quality Control Board. Activities the City should report on include, but are not limited to:

- Litter Control
- Solid Waste Collection/Recycling
- Drainage Facility Maintenance
- Catch Basin Stenciling
- Street Sweeping

INF-1.17 Consider incorporating water quality features into new or redevelopment projects with sufficient land area. These features could address both project-specific and other local impacts.

INF-1.18 Minimize the adverse effects of urbanization upon drainage and flood control facilities.

INF-1.19 Encourage the City and the Riverside County Flood Control and Water Conservation District improve the storm drain system in a way that respects the environment.

INF-1.20 When considering development and City annexations, include assessment of all impacts to public facilities, services, and infrastructure, and identify any necessary mitigation.

INF-1.21 Encourage the use of specific plans, development agreements, or mechanisms that specify the nature, timing, cost, and financing mechanisms to be used to fund water, wastewater, and/or storm drainage improvements and services.

INF-1.22 Work with property owners to establish a financing mechanism, such as financing districts, to provide infrastructure and maintenance in major employment locations and corridors, such as the North Murrieta Business Corridor, South Murrieta Business Corridor, and at the confluence of the I-15 and I-215 Freeways.

INF-1.23 Utilize, where appropriate, public financing mechanisms, such as special assessment or community facilities districts to improve existing infrastructure or to install infrastructure in needed areas/or areas to stimulate development.

RECYCLED WATER

GOAL INF-2 Infrastructure for recycled water is expanded throughout Murrieta for irrigation and other non-potable uses.

POLICIES

INF-2.1 Support water district efforts to promote the use of recycled water where infrastructure is available, and to expand infrastructure where it does not currently exist.

INF-2.2 Work with the water districts to explore options for expanding recycled water pipelines to serve City parks and facilities that are near existing infrastructure, such as California Oaks Sports Park and Town Square.

INF-2.3 Continue to require installation of recycled water systems for landscaping, unless there is an exemption from the applicable water district.

INF-2.4 Encourage other major users of irrigation, such as schools and private golf courses, to connect to nearby recycled water pipelines.

INF-2.5 Coordinate with water districts to encourage innovative demonstrations of non-potable uses for recycled water and/or groundwater recharge in City facilities and industrial applications.

Refer to related goals and policies in the Conservation Element: Goal CSV-3 and Policies CSV-3.1 through CSV-3.5, and Goal CSV-4 and Policies CSV-4.1 through CSV-4.7 address storm water management and groundwater recharge.

CAPITAL IMPROVEMENT PROGRAM

GOAL INF-3 A satisfactory Capital Improvement Program.

POLICIES

INF-3.1 Ensure that the Capital Improvement Program (CIP) meets the City's needs.

INF-3.2 Ensure that the Capital Improvement Program (CIP) meets Measure A, or other appropriate local, regional, or State, requirements.

INF-3.3 Amend as necessary and adopt a Capital Improvement Program.

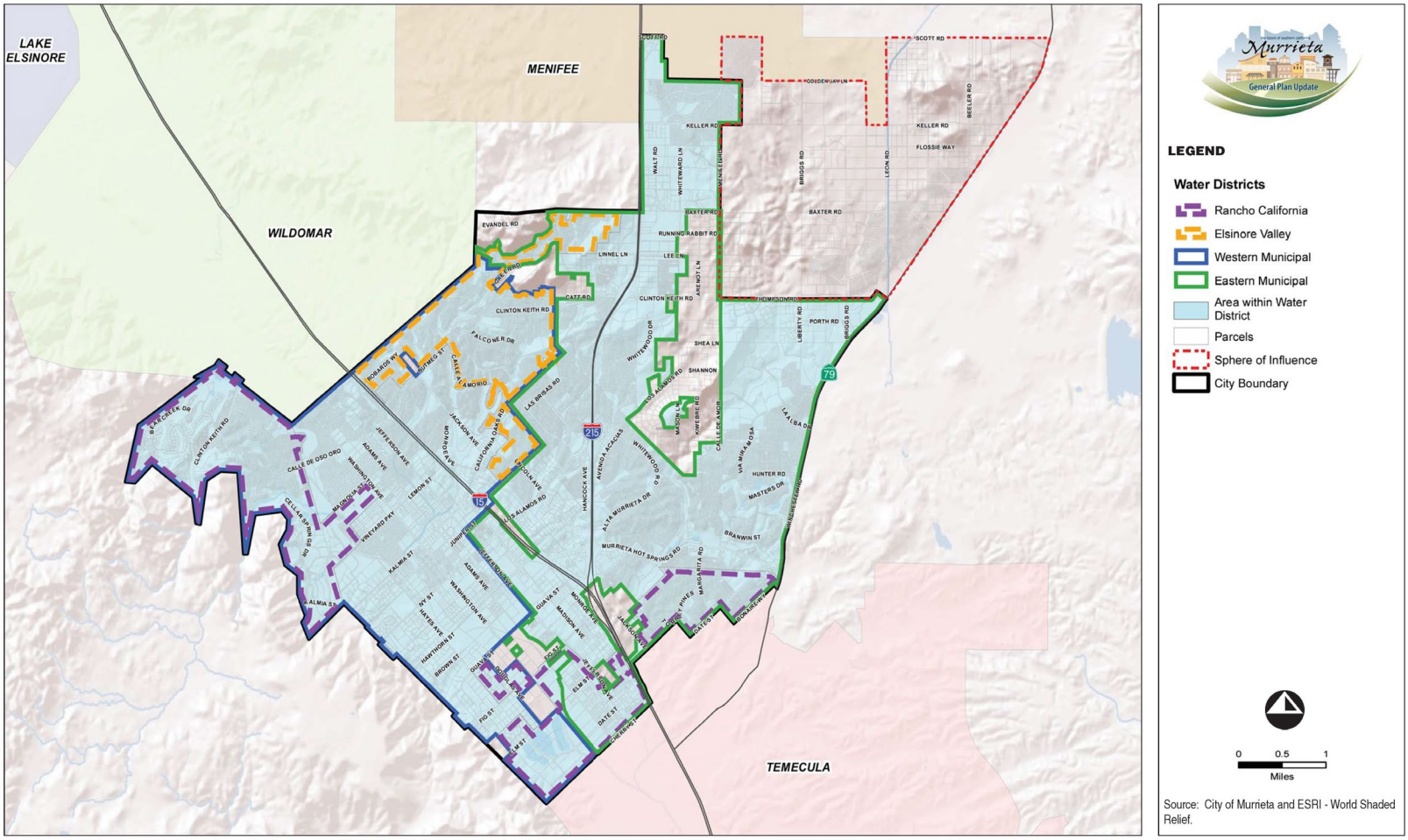
INF-3.4 Bolster and/or upgrade existing transportation facilities and infrastructure that the City maintains that are determined to be vulnerable to extreme weather to make them more resilient to periods of extreme weather events.

6.6 IMPLEMENTATION OF THE ELEMENT

Most of the infrastructure discussed in this Element is built and maintained by entities operating independently of the City of Murrieta. However, the City supports water, sewer, and storm water infrastructure by collecting impact fees from new development. The City has the most direct influence over the construction and maintenance of storm drains, and can direct the construction of other storm water infrastructure in private developments. Larger flood control efforts require coordination with Riverside County Flood Control and Water Conservation District, as well as the U.S. Army Corps of Engineers and neighboring jurisdictions. The City's role in ensuring the provision of water and sewer services is to coordinate land use planning with the water agencies providing those services, and encourage annexation of areas not yet within the service areas of water districts. For those facilities under the City's jurisdiction, it is important that the City's Capital Improvement Program include provisions for new or upgraded facilities, as well as the maintenance of facilities.

Electricity and gas service is provided by utilities on a development-by-development basis, and the City requires new development to verify that service will be available. The City can also contribute to future energy supplies by facilitating efforts to generate renewable energy locally.

Exhibit 6-1 Water District Service Area Boundaries



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Water District Service Area Boundaries
Exhibit 6-1