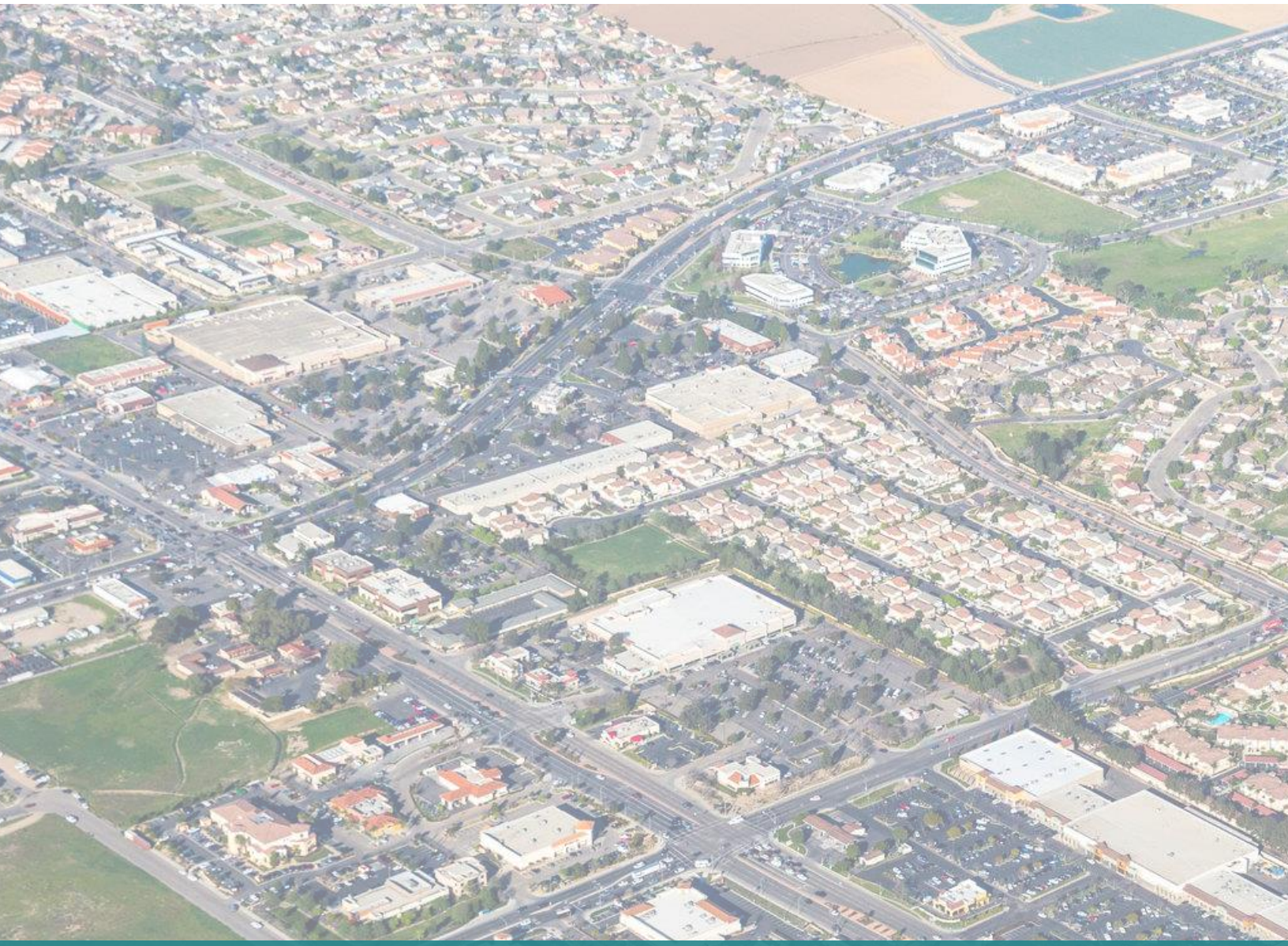

Santa Maria General Plan

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Infrastructure

Existing Conditions Report

December 2020

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Table of Contents

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Existing Conditions Report

This Report identifies existing utilities and service systems within the City of Santa Maria. Public utilities in the Planning Area include water, wastewater, and stormwater facilities. This provides the baseline for the City of Santa Maria General Plan Update to establish policies and actions that will provide adequate utility services and community facilities to support projected growth in the city.

Key Findings

- Water. The City of Santa Maria provides municipal drinking water supply within the City's water service area, which is generally bounded by the City limits. The water supply is comprised of a blend of groundwater and imported water from the State Water Project. Water supply rights exceed the City's anticipated long-term needs.[1] However, the City's water supply reliability requires improvement. To improve water supply reliability the City has plans to construct new water supply wells and rehabilitate an existing well.[2] Water conservation has been a focus for the City and is reflected in the long-term demand forecasts. The City's water storage and distribution system is adequate to meet fire flow and anticipated growth. The City has planned projects to keep the water storage and distribution system in good working condition. With the planned improvements, the City's water system should meet projected long-term needs.
- Wastewater. The City provides wastewater collection and treatment services within the wastewater service area, which includes the City limits and an area to the south of the City that is outside City limits.[3] The City's wastewater treatment facility is located on Black Road to the west of the City and is rated to treat 13.5 million gallons per day of wastewater. The wastewater treatment facility requires upgrades to meet long-term wastewater flow projections and new wastewater treatment discharge limitations. The City has plans to initiate a study to evaluate the existing wastewater treatment facility and make the required upgrades to continue providing reliable wastewater treatment services. The wastewater collection system requires upgrades to several of the sewer trunk pipelines. The required improvements to the wastewater collection system are planned for construction to meet projected long-term needs. [4]
- Stormwater System. The City of Santa Maria and the Santa Barbara County Flood Control and Water Conservation District ("District") provide stormwater conveyance, management, and recharge facilities in and around the City. The City and District have instituted several programs to improve and increase groundwater recharge to the Santa Maria Basin, including adoption of Low-Impact Development guidelines and construction of recharge basins. These basins are intended to slow the movement of stormwater and allow the stormwater to percolate into the groundwater basin to recharge it. The City is enrolled in the Phase II General Municipal Separate Storm Sewer System (MS4) permit, which requires the City to implement best management practices to protect and improve stormwater quality. Improvements are needed in floodwater retention capacity and connectivity between parts of the stormwater system. Key improvements will be performed by the Santa Barbara County Flood and Water Conservation District.[5]

Introduction

The City of Santa Maria (City) provides water production, water distribution, wastewater collection, wastewater treatment, and stormwater conveyance services within its respective service area.

Purpose of Report

This Report discusses the ability of the existing water, sewer, and storm drainage infrastructure to meet current needs and anticipated future of growth of the city. It provides an understanding of current conditions, existing infrastructure planning, the regulatory setting, and planned improvements for the water, sewer, and storm drainage systems. The findings of this Report will be used to establish policy direction for the General Plan Update.

Context

The City of Santa Maria (City) is located approximately 250 miles south of San Francisco and 170 miles north of Los Angeles. It lies within the Santa Maria river valley in a fertile plain surrounded by hills on three sides and the Pacific Ocean to the west.

The City of Santa Maria's Utilities Department Water Resources Division provides water and wastewater services to over 23,000 residential and commercial accounts. These services include water production and distribution and wastewater collection and treatment.[6]

Plans of Significance

The following studies and plans evaluate the City's water, wastewater, and stormwater infrastructure.

- City of Santa Maria Utilities Capacity Study (2012). This Study identifies 2012 and long-term capacity deficiencies within the City's water and wastewater systems and recommends Capital Improvement Projects (CIPs) to allow the City to continue to provide reliable and cost-effective service to its water and wastewater customers. The Study is based on planned buildout of the existing General Plan resulting in a population of 124,000 people. The Study defines "buildout" as the maximum growth (and population) of the City based on the permitted General Plan land uses and densities as well as assumptions about household size and occupancy rates.
- City of Santa Maria Sewer System Management Plan Audit (2020). The 2020 Report is part of an audit required by the State Water Resources Control Board to comply with adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The report contains information on the existing collection system and ways the City is managing the system to reduce the likelihood of sewer system overflows. The information in the audit report provided background information on the collection system.
- City of Santa Maria Draft Integrated Management Plan (Stormwater) (2016). The plan is intended to study options and present ideas to protect and improve water quality and/or quantity in the Santa Maria River Watershed and the Santa Maria Groundwater Basin upstream, downstream, and within the city to achieve regulatory requirements and promote sustainability. Regulatory requirements include, but are not limited to, the municipal stormwater permit, applicable obligations under Total Maximum Daily Loads (TMDL), and monitoring activities to assess

achievement of regulatory requirements. The information in the Draft Integrated Management Plan was used as a reference to understand the status of stormwater infrastructure in the City, including background information on planned stormwater infrastructure projects.

- City of Santa Maria Urban Water Management Plan (UWMP) (2015). UWMPs are prepared by urban water suppliers every five years. The UWMP supports the City's long-term water resource planning to ensure the City has adequate water supplies available to meet existing and future water needs. Future water needs are based on the proposed land use and population projections in the existing General Plan. The UWMP informed this Report's understanding of the City's long-term water supply and the projects required to improve water supply reliability.

Projects of Significance

Significant City projects pertaining to water-related infrastructure systems are shown in Table 1. The intended goal of each project of significance is described in Table 1.

Table 1: Projects of Significance

#	Project Name	System	Project Goal	Expected Year of Implementation	Cost
1	New Well Construction[1]	Water	Increase water supply reliability	2022	$3,443,000
2	Well Rehabilitation[2]	Water	Increase water supply reliability	2020 – 2024	$975,000
3	Well Generators[2]	Water	Increase water supply reliability	2020 - 2021	$600,000
4	Water Main Replacements[2]	Water	Replace mains at end of service life	2021 - 2024	$950,000
5	Reservoir 4 & 5 Improvements[2]	Water	Exceeded service life	2020-2023	$1,000,000
6	Dejoy Phase II[3]	Wastewater Collection	Increase collection system capacity	2020 - 2022	$4,231,000
7	Wastewater Treatment Upgrade – Planning[2]	Wastewater Treatment	Increase capacity to accommodate future water quality objectives	2020 - 2022	$500,000
8	Wastewater Treatment Upgrade – Design and Construction[4]	Wastewater Treatment	Comply with future waste discharge requirements and increase capacity	2024 - 2030	$100M - $200M
9	Additional Sludge Drying Beds[2]	Wastewater Treatment	Increase biosolid drying capacity	2020 – 2022	$1,400,000
10	Cogeneration System[2]	Wastewater Treatment	Decrease energy costs	2020 – 2021	$5,500,000

11	West Green Canyon Phase II[5]	Stormwater	Improve and increase groundwater recharge	2020	$6,709,000
12	Unit Two Channel Improvements[5]	Stormwater	Improve and increase groundwater recharge	2020	$1,297,000
13	Install Trash Collection Devices on Stormwater Drains[2]	Stormwater	Required to meet MS4 permit	2020-2024	$500,000

Notes:

1. Data source is the UWMP (2015).
2. Data source is the City of Santa Maria Capital Projects (CIP) Budget FY 2020-24.
3. Data source is the City of Santa Maria 2012 Utilities Capacity Study.
4. Planning studies to identify required wastewater treatment upgrades have not been completed. Cost shown is a rough order of magnitude and will be refined by the City in future studies.
5. Data source Santa Barbara County Flood Control and Water Conservation District CIP 2015-2020
6. Expected year of implementation will be refined by the City in future studies.

Sources: UWMP, 2015; City of Santa Maria CIP 2020-24; City of Santa Maria Utilities Capacity Study, 2012.

Regulatory Setting and Permitting Background

This section of the Report describes permitting and regulations for the City's water, wastewater, and stormwater systems.

Water System

Public water systems in California are regulated by the Federal Safe Drinking Water Act (SDWA), California Code of Regulations Titles 17 and 22, and related statutes such as the California Safe Drinking Water Act (CA SDWA). The SDWA authorizes the Environmental Protection Agency (EPA) to set national health-based standards for drinking water. These standards focus on both naturally occurring and manmade contaminants and are set using maximum contaminant levels (MCL) for various parameters of concern. All water suppliers must notify customers quickly when there is a serious problem with water quality that would affect compliance with State and Federal regulations. Water systems must provide an annual consumer confidence report providing information on the source and quality of the customer's tap water. Additionally, California sets Public Health Goals (PHGs) for additional chemicals in drinking water. PHGs are initiated based on availability of new data, set at concentrations anticipated to not produce adverse health effects, and are used as the health basis to update the State's primary drinking water standards.

The City owns and operates a public water supply system (Water System ID 421-0011) that is subject to, among other provisions, the requirements of the Federal and State Safe Drinking Water Acts. The City also holds an operations permit for their supply and distribution system that is enforced and monitored by the State Water Resources Control Board Division of Drinking Water (DDW).

A NPDES Statewide Permit for Drinking Water System Discharges to Waters of the United States (2014-0194-DWQ) was adopted by the State of California in November 2014, effective February 25, 2015. Water purveyors that discharge from drinking water systems to surface waters were required to apply for coverage or certify a Notice of Non-Applicability ("NONA") by September 1, 2015. The City submitted a NONA letter to the State Water Resources Control Board (State Water Board) on August 25, 2015 because the City: 1) is named in an MS4 Permit that authorizes discharges from drinking water systems; and 2) discharges drinking water discharges solely into its own MS4 system.[7]

Collection System

On May 2, 2006, the State Water Resources Control Board (SWRCB) adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (General WDRs). The General WDRs apply to public agencies that own or operate a sanitary sewer system comprised of more than one mile of sewer pipes or lines that convey wastewater to a publicly owned treatment facility. The General WDRs refer to these public agencies as "enrollees." The Monitoring and Reporting Program associated with the General WDRs was revised in 2013. The City applied for coverage under the General WDRs by submitting a Notice of Intent to comply with the terms of the WDRs, along with the required fees to the SWRCB in August 2006, and commenced development of the required Sewer System Management Plan (SSMP).

The City adopted its first SSMP in July 2009. The document contained the elements required by the General WDR including: goals; organization; legal authority; operations and maintenance program; design and performance standards; overflow emergency response plan; fats, oils, and grease (FOG) control program; system evaluation and capacity assurance plan; monitoring, measurement, and program modifications; program audits; and a communication program.

Wastewater Treatment

Discharge from the City of Santa Maria's wastewater treatment facility is regulated by the Central Coast Regional Water Quality Control Board (CCRWQCB) Waste Discharge Requirements (WDR) Order No. R3-2010-0001.

In 2020, the CCRWQCB adopted general waste discharge requirements (Order No. R3-2020-0020) for discharges from domestic wastewater systems with flows greater than 100,000 gallons per day to land. The new WDR will trigger the need for the City to evaluate and potentially upgrade the existing treatment process in order to comply with new permit requirements. Enrollment of facilities into the new general permit is expected to take time, and the date the City will be requested to enroll is unknown. When the City is required by the CCRWQCB to enroll in the new general permit the City will likely need to request a time schedule order (TSO) from the CCRWQCB to provide the City with time to plan, design, and construct facilities as required to meet the discharge requirements.

Stormwater System

The Municipal Stormwater Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s) throughout California. The EPA defines an MS4 as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a State (40 CFR 122.26(b)(8)).

Pursuant to the Federal Water Pollution Control Act (Clean Water Act) section 402(p), stormwater permits are required for discharges from an MS4 serving a population of 100,000 or more. The Municipal Stormwater Program manages the Phase I Permit Program (serving municipalities over 100,000 people), the Phase II Permit Program (for municipalities less than 100,000), and the Statewide Stormwater Permit for the State of California Department of Transportation. The State Water Board and Regional Water Quality Control Boards (collectively, the Water Boards) implement and enforce the Municipal Stormwater Program.[8]

The City is named as a permittee under the State Board's 2013 Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems ("Phase II Permit"), Order No. 2013-0001-DWQ. The Phase II Permit implements the requirements of the CWA by prescribing core elements: Program Management; Education and Outreach; Public Involvement and Participation; Illicit Discharge Detection and Elimination; Construction Site Stormwater Runoff Control; Pollution Prevention/Good Housekeeping; Post-Construction Stormwater Management; Water Quality Monitoring, Program Effectiveness Assessment and Improvement; Total Maximum Daily Loads Compliance; and Annual Reporting.[9]

California Industrial Stormwater General Permit

The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (Industrial General Permit or IGP) implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the United States. The IGP regulates discharges associated with 10 federally defined categories of industrial activities.[10]

The Industrial General Permit regulates industrial stormwater discharges and authorized non-stormwater discharges from industrial facilities in California. Industrial facilities such as manufacturers, landfills, mining, steam generating electricity, hazardous waste facilities, transportation with vehicle maintenance, larger sewage and wastewater plants, recycling facilities, and oil and gas facilities are typically required to obtain Industrial General Permit coverage. The Industrial General Permit is called a general permit because many industrial facilities are covered by the same permit but comply with its requirements at their individual industrial facilities. The State Water Board and Regional Water Quality Control Boards (collectively, the Water Boards) implement and enforce the Industrial General Permit.

California Construction Stormwater General Permit

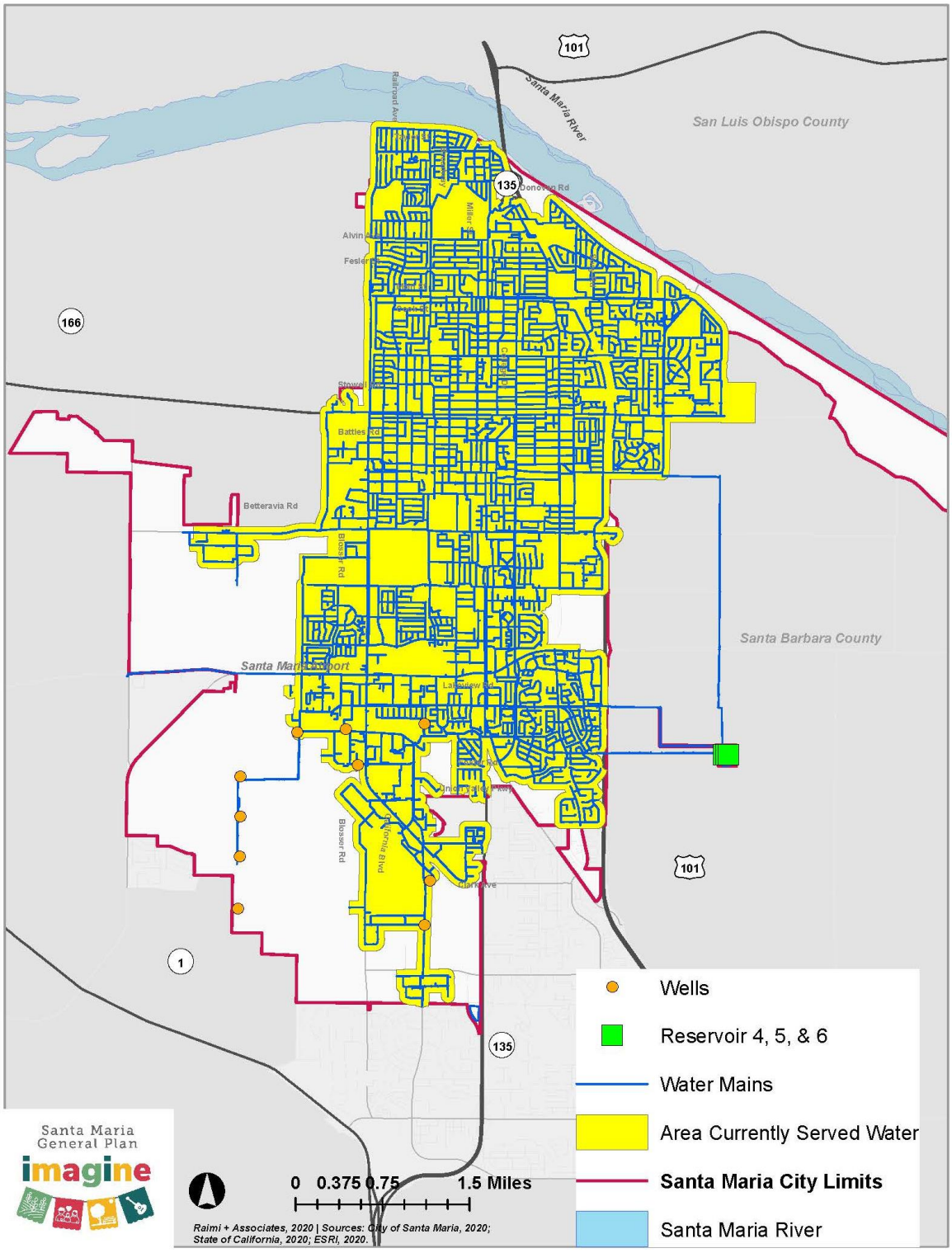
The Construction General Permit Order 2009-0009-DWQ regulates dischargers whose projects disturb 1 or more acres of soil or whose projects disturb less than 1 acre but are a part of a larger common plan of development that in total disturbs 1 or more acres. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction Stormwater General Permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes a site map, a list of BMPs the discharger will use to protect stormwater runoff, a visual monitoring program, a chemical monitoring program for "non-visible" pollutants, and a sediment monitoring plan if the site discharges to an impaired water body.[11]

Water System

The City owns a public water system with 23,118 active water service connections.[12] Figure 1 illustrates the current City Limits and the current water service area and infrastructure. The water system primarily serves residential, commercial, and industrial land uses within City Limits.

Figure 1. City of Santa Maria Water Service Area and Infrastructure



Water Supply

The City's water portfolio is comprised of the following water supply sources: local groundwater, purchased water from the State Water Project (SWP), associated return flows recaptured from the Santa Maria Basin (Basin), assigned rights to water from the Basin, and assigned rights to augmented yield from Twitchell Reservoir. Imported water supplies for the City are obtained from the SWP via a contract with Central Coast Water Authority (CCWA).[13] The City's water supply, as shown in Table 2, is projected to remain relatively constant from 2020 to 2040 and is expected to be sufficient to meet demands.[14]

Table 2: Current and Projected Water Supplies Acre-ft per Year (AF/YR) for the City (2015)

Source	2015	2020	2025	2030	2035	2040
Purchased Water from SWP[1]	4,081	10,805	10,729	10,652	10,576	10,499
Groundwater[2]	12,795	12,795	12,795	12,795	12,795	12,795
Twitchell Yield/Commingled Groundwater[3]	14,300	14,300	14,300	14,300	14,300	14,300
Return Flows SWP Water[4]	4,510	7,023	6,974	6,924	6,874	6,824
Transfers In	0	0	0	0	0	0
Exchange In[5]	0	5,000	5,000	5,000	5,000	5,000
Recycled Water	0	0	0	0	0	0
Desalination Water	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total[6]	35,686	49,923	49,798	49,671	49,545	49,418

Notes:

1. Volume of water in 2015 presents actual water available in 2015; volumes shown in 2020, 2025, 2030, 2035, and 2040 are based on the long-term reliability documented in The State Water Project Final Delivery Capacity 2015 Report (California Department of Water Resources, Natural Resources Agency, 2015).
2. Groundwater supplies are based on appropriative rights in Santa Maria Groundwater Basin as defined in the Stipulation. Pursuant to the Court's Phase 5 Tentative Decision, the City has been assigned 5,100 AF/YR of prescriptive rights, which is included in this data.
3. Further details can be found in Exhibit "F" of the Stipulation in the 2015 UWMP.
4. Pursuant to the Stipulation, the City is entitled to recapture 65 percent of its SWP use in the Basin.
5. Additional water can be from any of these sources: Table A amount, surplus exchanges from San Luis Obispo county, and surplus Table A amount from Santa Barbara.
6. See Chapter 7 of 2015 UWMP for details on these water supplies.

Sources: Urban Water Management Plan (Table 6-3), 2015.

Water Supply Types

Below is a brief description of each water supply source listed in Table 2.

- State Water Project. The City has a Water Supply Agreement with CCWA for 17,280 acre feet per year (AF/YR) of Table A imported SWP water. SWP water originates within the Feather River watershed, is captured in Lake Oroville, and flows via the Sacramento-San Joaquin Delta, the California Aqueduct, and the Coastal Branch Extension, into CCWA's treatment and conveyance facilities. Pursuant to the Stipulation[15], Santa Maria agreed to import and use within the Basin no less than 10,000 AF/YR of available SWP water, or the full amount of available SWP water if the amount available is less than 10,000 AF in a given year.[16]
- Groundwater. Groundwater discharges from the Basin include consumptive use of groundwater by agricultural, municipal, and industrial users (e.g. the oil industry for secondary recovery of oil), and groundwater discharges to the ocean. The total groundwater storage capacity of the Basin is approximately 2,300,000 AF (California Department of Water Resources, 2004). The large volume of groundwater in storage provides a buffer to drought conditions in the Basin.
- Twitchell Yield. The Twitchell Reservoir is operated as a flood control and water conservation reservoir. Releases are controlled from Twitchell Reservoir to maximize recharge of the Basin through percolation in the Santa Maria Riverbed. The Stipulation sets the Twitchell yield at 32,000 AF/YR. The City is entitled to 14,326 AF/YR.
- Return Flows. Under the Stipulation, the City is entitled to a fixed percentage of the annual amount of SWP water it uses within the Basin. The fixed percentage for the City is 65 percent, based on a rolling average of the prior five years of imported water use. These return flows augment the yield in the Basin through the recharge that occurs when these sources are used within the Basin.
- Transfer In and Exchange In. The Stipulation allows permanent or temporary transfer of the developed groundwater yield associated with the operation of the Twitchell Reservoir. These are mechanisms that could augment the reliability of supplies during a dry period. Transfer and exchange opportunities lie with the Twitchell Management Authority, CCWA, and NCSD where transfers and exchanges can occur on an as-needed basis.
- Recycled Water. The City does not currently use and has no plans to use recycled water in the near future; however, the City's treated wastewater discharges to disposal ponds that percolate into the subsurface and recharge the groundwater basin as return flows. These return flows and recharge to the groundwater basin help protect against seawater intrusion and improve groundwater quality by lowering total dissolved solids (TDS) concentrations.
- Desalination. There are no specific opportunities identified for using desalinated water as a source of supply for the City. CCWA does not consider desalination to be a cost-effective method of increasing reliability of imported water.[17]

Water Demands

The Santa Maria area has experienced average annual population growth of 2.38 percent between 1992 and 2015. During the last decade (2010 – 2019), the City's population grew at a rate of 11.8 percent, climbing from 91,313 in 2005 to 102,087 in 2015. The City is expected to experience average annual population growth of 1.5 percent from 2015 through 2040.[18]

A summary of historic and projected population within the Santa Maria's service boundaries is presented in Table 3.

The City's 2010 UWMP predicted the 2015 population to reach approximately 102,300, and 2020 population to reach 109,500. The population in 2015 and 2020, as presented in UWMP report, are 102,087 and projected to be 108,800, respectively.

Table 3: Population – Current and Projected (2015)

Year	Service Area Population
2010[1]	99,553
2015[1]	102,087
2020[2]	108,800
2025[2]	117,600
2030[2]	126,300
2035[2]	135,100
2040[2]	141,500

Notes:
1. Data source is California Department of Finance (2015)
2. Data source is Santa Barbara County Association of Governments (2015)

Sources: UWMP (Table 3-1), 2015.

Projected water usage between different types of water users is shown in Table 4.

Table 4: Water Use – Projected, 2020, 2025, 2030, 2035, and 2040 (2015)

Water Use Sectors	2020 Deliveries (AF)[2]	2025 Deliveries (AF)	2030 Deliveries (AF)	2035 Deliveries (AF)	2040 Deliveries (AF)
Single-family	5,461	5,899	6,338	6,777	7,101
Multi-family	1,943	2,099	2,255	2,411	2,526
Commercial	2,344	2,533	2,721	2,909	3,049
Industrial	580	627	673	720	754
Landscape	1,184	1,280	1,375	1,470	1,540
Sales/exchanges to other agencies[1]	1,420	1,820	3,420	3,420	3,420
Losses	863	942	1,111	1,176	1,224
Total	13,795	15,200	17,893	18,883	19,614

Notes:
1. Water sales consist of sales to Nipomo Community Services District (NCSD) and Golden State Water Company (GSWC).
2. Deliveries for 2020 are values projected in 2015.

Sources: UWMP (Table 4-2, Table 4-3, Table 4-4), 2015.

The City is expected to have an available supply exceeding projected demands through 2040 as seen in Table 5.

Table 5: Supply and Demand – Projected, 2020, 2025, 2030, 2035, and 2040 (2015)

Water Use Sectors	2020 Deliveries (AF)[2]	2025 Deliveries (AF)	2030 Deliveries (AF)	2035 Deliveries (AF)	2040 Deliveries (AF)
Water Supply Availability[1]	49,923	49,923	49,798	49,671	49,545
Expected Water Usage[2]	13,795	15,200	17,893	18,883	19,614
Surplus Water	36,128	34,723	31,905	30,788	29,931

Notes:
1. See Table 2 for details.
2. See Table 4 for details.

Water Conservation

The City is committed to optimizing its available water resources, including groundwater, and implementing water conservation programs throughout its service area. In an effort to expand the breadth of offered programs, the City partners with wholesale suppliers, local retailers, and other agencies that support water conservation programs.

The City understands the importance of water conservation for California's future. The City's water conservation programs, in effect at all times, include the following:

- Water Efficiency Landscape Ordinance. On July 3, 2018, the City adopted an ordinance that amends (Z2015-0004) Municipal code, Chapter 12-44 Landscape Standards, to comply with Governor Brown's Drought Executive Order (EO B-29-15). EO-B29-15 is an update to the California Model Water Efficient Landscape Ordinance to reduce potable water usage on landscaping.
- Irrigation System. The City of Santa Maria's Recreation and Parks Department initiated a program to improve the efficiency of irrigation programs of the City's landscaped areas. Under this program, the irrigation system is regularly upgraded by replacing antiquated lines, heads, and valves. In addition, a state-of-the-art computerized control system is installed at many sites to improve irrigation efficiency. Furthermore, a self-guided garden tour offers a variety of plants suggested for planting to reduce water irrigation demand. In addition to these water conservation programs the Recreation and Parks Department also uses non-potable water when available to further reduce use of potable water.
- Public Information Programs. The City practices a comprehensive public education program that has led to lower water usage.
- Residential and System Water Audit Program. A comprehensive water audit program increases conservation in the City. The residential program includes home water visits in which the City inspects residential plumbing fixtures and irrigation systems. The system audit program includes a thorough water meter inspection plan and a notice of high-water use policy.
- Fixed Base Meter Reading System. The City installed a fixed-base meter reading system on 75 percent of its system[19]. This meter reading system reduces water demand by identifying customer leaks.
- Water Conservation Outreach. The City continues to work with the community to encourage water conservation on a voluntary basis. Water conservation activities include bus ads, water conservation kits, soil moisture meters, shower timers, toilet tank banks, and other promotional items.

Water Storage and Distribution System

The City has three existing water storage reservoirs: Reservoir No. 4, Reservoir No. 5, and Reservoir No. 6. The total combined usable storage volume is 17.9 million gallons, as shown in Table 6.

Table 6: Existing Storage (2016)

Storage Facility (Date Installed)	Usable Volume[1] (Million Gallons)	Material
Reservoir No. 4 (1960)	5.2	Concrete, Partially Buried
Reservoir No. 5 (1975)	6.2	Concrete, Partially Buried
Reservoir No. 6 (2002)	6.5	Concrete, Partially Buried
Total	17.9	

Notes:

1. Excludes "dead space," which is not used in order to protect reservoir structure; "dead space" is assumed to be 3-ft of storage which translates to 0.87 MG for Reservoir 4, 0.75 MG Reservoir 5, and 0.39 MG for Reservoir 6.

Sources: 2012 Utilities Capacity Study (Table 3-16), 2015.

Fire Flow Demand

The 2012 Utilities Capacity Study, citing the California Fire Code, requires residential fire flow of 1,500 gallons per minute (gpm) for at least 2 hours and 3,000 gpm for 4 hours for other land use categories. Based on the established fire flow criteria, the 2012 Utilities Capacity Study determined that the water distribution system had adequate capacity to meet minimum fire flow requirements at planned buildout from the 2011 General Plan.

System Evaluation

The City evaluated the water system as part of the 2012 Utilities Capacity Study and found that the system had adequate capacity to accommodate buildout demand. The recommendations provided in the evaluation focused on increasing reliability of the City's water supply and planning to replace aging infrastructure.

Planned Capital Improvement Projects

The City has Capital Improvement Projects (CIP) planned for the water system as listed in Table 7. Although the City has adequate capacity in the existing distribution system and production capabilities to meet future water needs, the system requires improvements to enhance reliability of supply and distribution.

Table 7: Water System Capital Projects Planned Fiscal Year 2020-2024

Project[1]	Justification	2020-21	2021-22	2022-23	2023-24	Total Funding
RESERVOIR SITE IMPROVEMENTS Improvements at reservoir sites 4 and 5 to maintain and prolong the life of the reservoirs; Repair and replacement of roof structure at reservoir 4.	Infrastructure has exceeded service life	$200,000	$100,000	$700,000		$1,000,000
WATER MAIN UPGRADE Replacement of water main lines identified in the City's 2012 Utilities Capacity Study.	Infrastructure has exceeded service life		$150,000	$400,000	$400,000	$950,000
WELL GENERATORS AND ENCLOSURES Purchase of generators and construction of generator enclosures for three well sites.	Increase supply reliability	$600,000				$600,000
WELL REHABILITATION Well rehabilitation and placement of packers. Extend well header line from well 11 to well 6 to increase well capacity and meet potable water requirements.	Increase supply reliability	$100,000	$175,000	$500,000	$200,000	$975,000

Notes:

1. Listed projects are from the City's 2020-24 CIP Budget and do not include general maintenance projects.

Source: City of Santa Maria Adopted Budget, 2020-24.

Table 8 shows the projects recommended by the 2012 Utilities Capacity Study to meet the planned buildout population. The projects are not incorporated in the City's 2020-24 CIP. The deficiency that will be addressed for each project is listed in

Table 8.

Table 8: Recommended Water System Capital Project (2015)

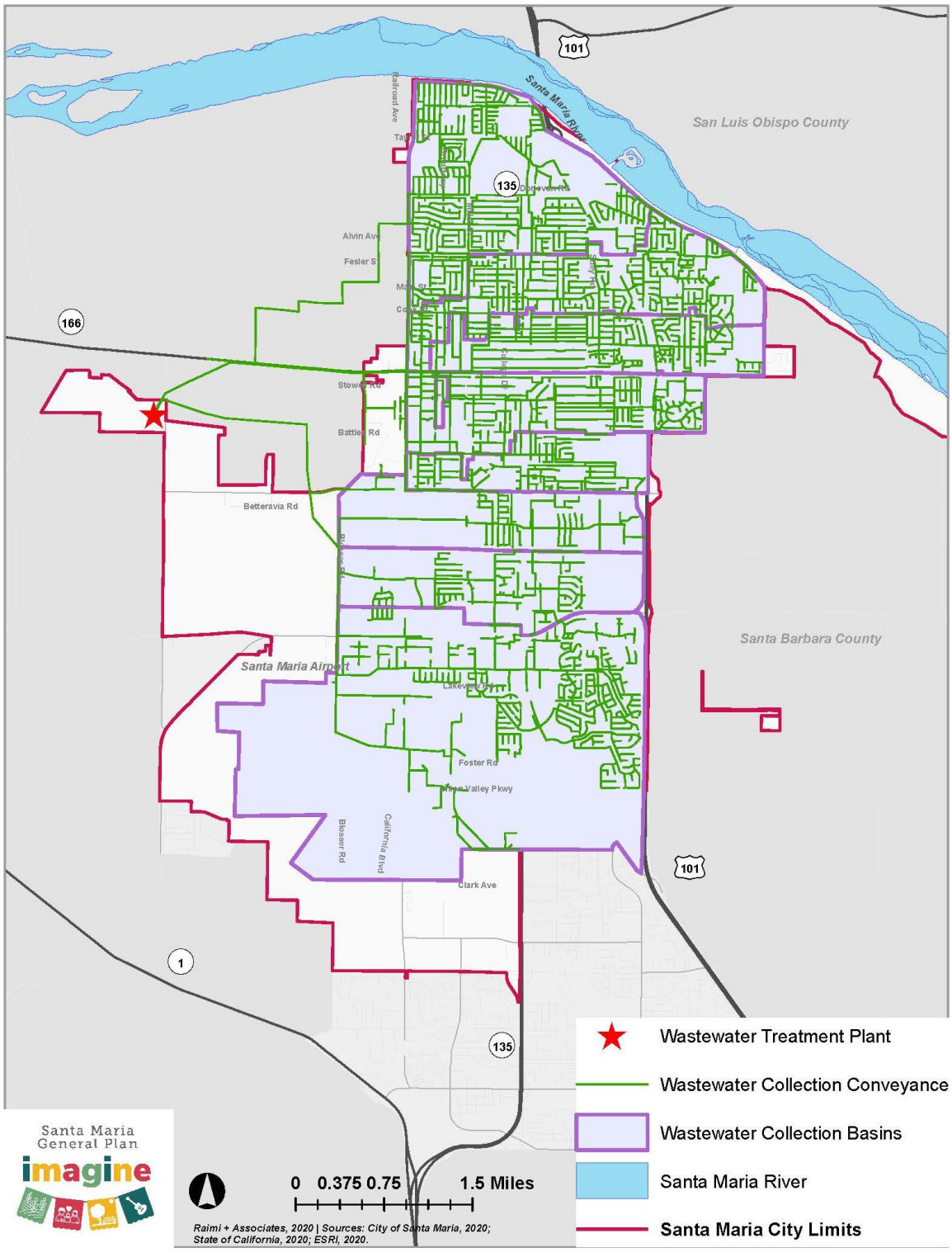
Priority Group	Priority No.	Deficiency To be Addressed	Description	Total Project Cost (2015 Dollars)
C	1	Increase water supply reliability	2,000 gpm Potable Well	$3,443,000
C	2	Increase water supply reliability	2,000 gpm Potable Well	$3,443,000
C	3	Increase water supply reliability	2,000 gpm Potable Well	$3,443,000
C	4	Increase water supply reliability	Standby Generator for Existing Well	$450,000

Source: City of Santa Maria 2012 Utilities Capacity Study Update (Table 4-1), 2015.

Wastewater System

The City operates its own wastewater collection and treatment system. The City's wastewater collection system consists of eight wastewater basins with associated trunk sewers and one treatment plant. The basins generally drain east to west to trunk lines that run to the treatment plant. There are some portions of the City that are serviced by the Laguna County Sanitation District (LACSD), which primarily serves the Orcutt area. Error! Reference source not found. shows the wastewater conveyance and treatment system.

Figure 2. City of Santa Maria Wastewater Collection and Treatment System



Sanitary Sewer Collection System

The wastewater collection system is comprised of approximately 250 miles of gravity-flow sewer pipes and mains, and one lift station with 0.2 mile of force main serving 117 residential parcels. The oldest sewer mains were installed in the early 1900s. However, more than 80% of the sewer mains were installed after 1960 as shown in Table 9.[20]

Table 9: Sewer Main by Age as of 2019

Year	Miles	Percentage of Total
Unknown	23.40	9.5%
1920-1939	5.17	2.1%
1940-1959	9.56	3.9%
1960-1979	86.06	34.9%
1980-1999	87.14	35.3%
2000-Present	35.60	14.4%
Total	246.93	100%
Source: City of Santa Maria Sewer System Management Plan (Table 1), 2018.		

Most of the older pipes are constructed of vitrified clay pipe (VCP) and newer pipes of polyvinyl chloride pipe (PVC). Sewer mains range in size from four inches to 30 inches in diameter, with 60 percent constructed of VCP, 25 percent constructed of PVC, and the remaining constructed of presently unknown material. Table 10 presents the City's collection system by diameter of sewer main.

Table 10: Sewer Main Size by Diameter as of 2018

Size, inches	Miles	Percentage of Total
Unknown	16.00	6.5%
6 inches or less	97.08	39.3%
8	77.22	31.3%
9-18	44.73	18.1%
19-36	11.96	4.8%
Total	246.93	100%
Source: City of Santa Maria Sewer System Management Plan (Table 2), 2018.		

System Evaluation

The City evaluated the collection system as part of the 2012 Utilities Capacity Study and found that portions of the system did not have adequate capacity to accommodate buildout flows and some assets were operating past their useful lives. The 2012 Utilities Capacity Study recommended the City make upgrades to the collection system to reliably convey future sewer flows.

Wastewater Treatment and Disposal Facilities

The City owns and operates a municipal treatment and disposal system located at 601 Black Road. The treatment facility is designed to treat 13.5 million gallons per day (MGD) of sewage. The treatment processes consist of headworks, grit removal, primary clarifiers, trickling filters, intermediate clarifier, secondary trickling filters, secondary clarifiers, gravity sludge thickeners, anaerobic digesters, and sludge drying beds. The treated wastewater is discharged to percolation ponds located adjacent to the site.[21]

Average Annual Flow. The average daily sewage flow as measured at the WWTP, calculated by totalizing the flow over a period and dividing by the number of days in that period. In the case of average annual flow (AAF) the period is a 365-day calendar year. The Utilities Capacity Study lists AAF as 8.17 MGD.

Peak Hour Wet Weather Flow. Peak Hour Wet Weather Flow (PHWWF) is the theoretical maximum sustained sewage flow the collection system will experience. PHWWF is used to size pipelines and lift stations. According to the Utilities Capacity Study the AAF to PHWWF factor for the City is 2.0.

The 2012 Utilities Capacity Study projected the future wastewater volumes to be treated at the WWTP. Table 11 includes the projections and applies the Peak Hour Wet Weather (PHWWF) peaking factor to the future average annual flow (AAF).

Table 11: Projected WWTP Flows from 2012 Utilities Capacity Study

Year	Current System Design (MGD)	2015 (MGD)	5-Year or 2019 (MGD)	10-Year or 2024 (MGD)	Buildout (MGD)
Average Annual Flow (AAF)	13.5	8.17	8.68	9.99	14.78
Peak Hour Wet Weather Flow (PHWWF)		16.34	17.35	19.98	29.57
Source: City of Santa Maria 2012 Utilities Capacity Study (Table 5-11), 2015.					

System Evaluation

In 2009, the City evaluated the hydraulic capacity of the existing facility and made improvements to the system to increase capacity from 9.5 MGD to 13.5 MGD. The evaluation did not assess future treatment needs or potential changes in water quality requirements. The wastewater treatment facility will be

receiving new waste discharge permit requirements that will require a re-evaluation of the existing treatment capacity.

Planned Capital Improvement Projects

The City has the following CIP planned for the wastewater system listed in Table 12.

Table 13 provides a summary of the sewer collection system projects identified in the Utilities Capacity Study as required to meet the planned buildout population that have not been completed and are not included in the City's 2020-24 CIP.

Table 12: Wastewater System Capital Projects Planned Fiscal Year 2020-2024

Project[1]	Justification	2020-21	2021-22	2022-23	2023-24	Total Funding
WASTEWATER TREATMENT PLANT STUDY Wastewater Treatment Plant operations study to meet upcoming regulatory requirement for discharge limits.	Additional permit requirements	$500,000				$500,000
TELEMETRY SYSTEM REWIRING Rewiring of telemetry system at the Wastewater Treatment Plant.	Exceed useful life	$600,000				$600,000
SEWAGE SLUDGE BEDS Construction of additional sewage sludge beds on the north and south sides of the Wastewater Treatment Plant to create additional space for drying, or dewatering.	Inadequate treatment capacity		$700,000	$700,000		$1,400,000
COGENERATION SYSTEM Design and construct a cogeneration system at the Wastewater Treatment Plant.	Offset energy consumption	$5,500,000				$5,500,000
SEWER MAIN IMPROVEMENTS-DEJOY PHASE 2-A1 To fund the upgrading of the DeJoy sewer mains to accommodate future growth as identified in the City's 2012 Utilities Capacity Study.	Inadequate capacity	$2,115,500	$2,115,500			$4,231,000

Project[1]	Justification	2020-21	2021-22	2022-23	2023-24	Total Funding
SEWER LINE REPLACEMENTS Replacement of a 6" sewer line due to cracks caused by root intrusion on Camino Colegio.	End of useful life	$50,000	$200,000			$250,000
SEWER MAIN IMPROVEMENTS-KNUDSEN WAY-A2 To fund the upgrading of the sewer mains to accommodate future growth as identified in the City's 2012 Utilities Capacity Study.	Inadequate capacity	$140,625	$140,625			$ 281,250

Notes:

1. Listed projects are from the City's 2020-24 CIP and do not include general maintenance projects.

Source: City of Santa Maria Capital Projects, 2020-24.

Table 13: Recommended Sewer System Capital Project Not Planned in 2020-24 CIP

Priority Group	Priority No.	Deficiency to be Addressed	Description	Total Project Cost (2015 $)
A	4	Inadequate capacity[1]	McCoy Ln and CA-135 Intersection	$53,000
B	1	Inadequate capacity[2]	W Main St	$26,000
C	1	Inadequate capacity[3]	Parallel to W Main St	$1,483,000
C	2	Inadequate capacity[3]	E Tunnel St	$225,000
C	3	Inadequate capacity[3]	East Fesler St	$1,112,000
C	4	Inadequate capacity[3]	Between Channel Dr and Preisker Ln	$166,000
C	5	Inadequate capacity[3]	Alcala Dr	$531,000
C	6	Inadequate capacity[3]	Rowland Dr	$181,000
C	8	Inadequate capacity[3]	Elaine Ave	$141,000
D	1	Inadequate capacity[4]	Southwest Trunk	$11,675,000
D	2	Inadequate capacity[4]	West Main Trunk	$3,510,000
D	4	Inadequate capacity[4]	W La Brea Ave	$2,035,000
D	5	Inadequate capacity[4]	W McCoy Ln	$119,000
D	7	Inadequate capacity[4]	North Railroad	$806,000
D	8	Inadequate capacity[4]	Between W Main St and W Church St	$625,000

Priority Group	Priority No.	Deficiency to be Addressed	Description	Total Project Cost (2015 $)
D	9	Inadequate capacity[4]	Santa Maria Trunk	$829,000
D	10	Inadequate capacity[4]	S McClelland St	$250,000
D	11	Inadequate capacity[4]	Biscayne St	$86,000
D	12	Inadequate capacity[4]	Between W Chapel St and W Main St	$437,000
D	14	Inadequate capacity[4]	Between W Pershing St and W Camino Colegio Rd	$310,000
D	15	Inadequate capacity[4]	Sunrise Dr	$95,000
D	16	Inadequate capacity[4]	Between Skyway Dr and Industrial Pky	$297,000
D	17	Inadequate capacity[4]	Between W Fesler St and W Mill St	$1,108,000

Notes:

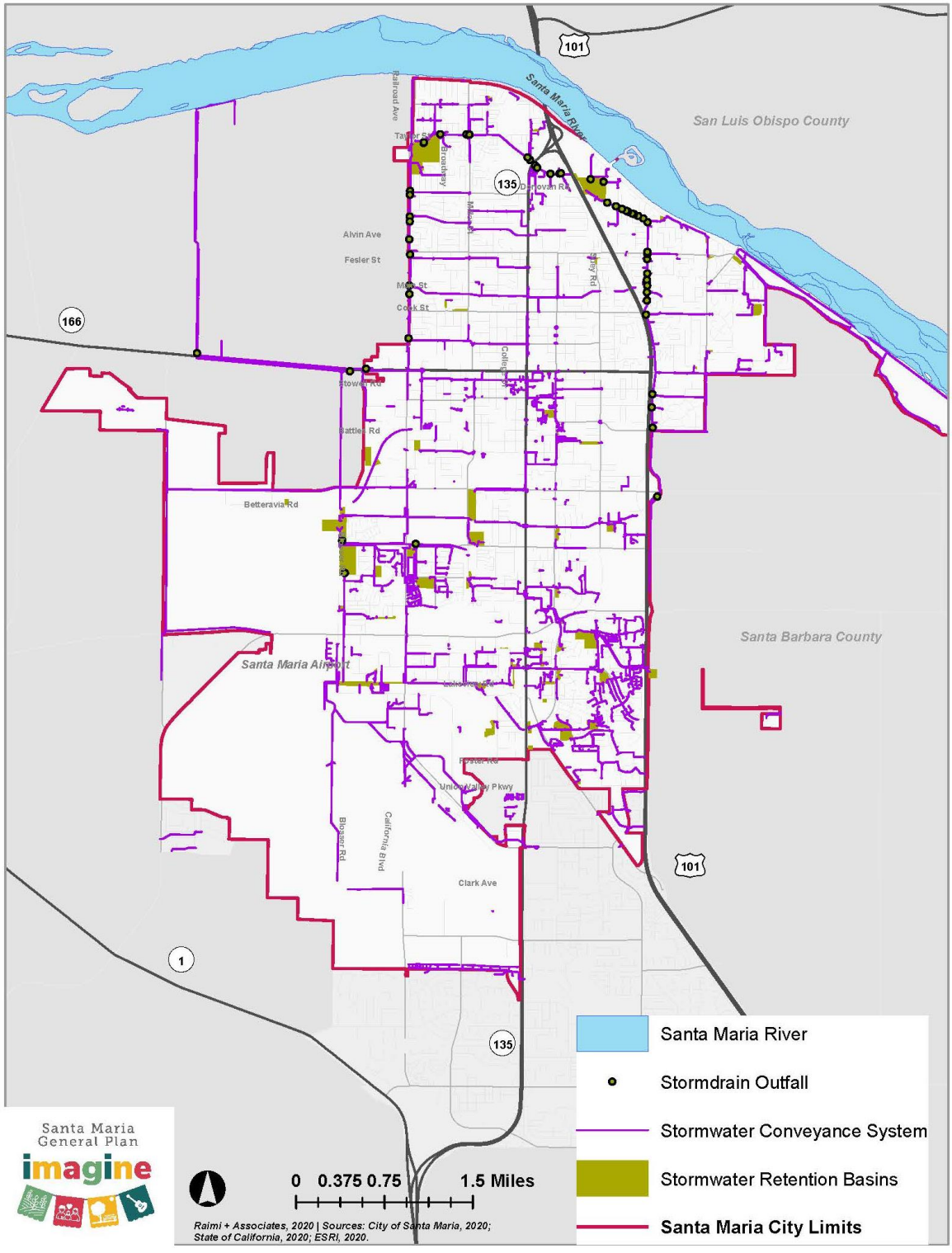
1. Diameter to be confirmed. If pipeline is less than 15" in diameter, then project is needed.
2. Inadequate capacity at 0 to 5 year scenario (from 2015).
3. Inadequate capacity at 5 to 10 year scenario (from 2015).
4. Inadequate capacity at buildout scenario (from 2015). Buildout scenario is expected to occur after 2035.

Source: City of Santa Maria Utilities Capacity Study Update (Table 6-1), 2015.

Stormwater

The City proactively manages stormwater within its City limits. Historically, the City has focused on the impacts of stormwater as it relates to flood control; however, in the last decade additional regulations have been adopted in the State of California which specifically address the discharge quality of stormwater from a City's stormwater conveyance system.[22] Figure 3 depicts the storm drainage system in and near the City.

Figure 3. Stormwater Facilities In and Near the City of Santa Maria



Existing Infrastructure

The City of Santa Maria and the Santa Barbara County Flood Control and Water Conservation District (SBCFCD) have instituted several programs to improve and increase groundwater recharge to the Santa Maria Basin. The City and SBCFCD jointly developed regional recharge basins west of Blosser Road and south of Stowell Road (the Getty Basin, Hobbs Basin (2) and Kovar Basins).

Groundwater Recharge Basins

These basins are designed to retain stormwater and allow that water to percolate into the groundwater basin. Groundwater recharge programs currently replenish the Basin by recharging more than 20,000 AF of water annually through the Santa Maria River, local retardation basins, and regional recharge basins.[23]

Flood Control Channels

The facilities owned and operated by the SBCFCD are key flood control facilities in the City. Even though these channels are manmade, built in dry land for flood control, and are not representative of relic or historic flows, they are currently listed as impaired waterbodies under the CWA Section 303(d) list. Once a water body has been added to the State's list of impaired waters it stays there until the State develops a Total Maximum Daily Load (TMDL) and the EPA approves it. Once a TMDL is developed, a water body is no longer on the 303(d) list, but it is still tracked until the water is fully restored. These flood control facilities are as follows and are listed in Table 14:

- Blosser Channel. The concrete lined portion of the Blosser Channel flows northward along the western side of the City and discharges via a culvert to an earthen portion, which discharges through the levee to the Santa Maria River. High flows from Blosser Channel flow via a spillway into the Blosser Basin, which is an exceptionally large flood control facility. Vegetation becomes established rapidly in the earthen portions and must be continually removed by the SBCFCD to protect against blockages and flooding.
- Bradley Channel. Bradley Channel, a concrete lined ditch, begins in the farm fields south of East Betteravia Road. This ditch runs north toward the Santa Maria River bordering the farm fields as it enters the residential neighborhoods north of East Jones Street. The flow source is almost entirely from heavily sediment-laden agriculture runoff. During storm events, it also receives some stormwater from City neighborhoods. Sediment is removed from the channel by the SBCFCD on a maintenance schedule. The earthen ditches upstream are sprayed with pesticides to control weeds. Sediment deposition and vegetation reduce volume capacity in the unlined ditches. As it enters the residential neighborhoods, the channel travels until it reaches the manmade lake at Jim May Park. This manmade lake operates as a settling basin for the Bradley Channel, which carries constant agricultural flows. The lake has no natural water source. It collects the agricultural flows, and in storm events, runoff from the surrounding neighborhoods combines with the agricultural flow. Flows from the Bradley Channel are directed under the US-101 freeway as the channel continues westward through the City where it eventually combines with the Blosser Channel flow and discharges through the levee to the Santa Maria River. High flows are partially diverted into the Blosser Basin.

- Main Street Channel. Stormwater from the central part of the City discharges to the Main Street Channel through a large underground storm drainpipe that flows west along the south side of West Main Street. The Main Street Channel collects agricultural runoff and flow from the City's MS4. The Main Street Channel, which is a degraded, unlined roadside ditch that runs west from the western City limits at Hanson Way parallel to West Main Street for approximately 1.5 miles. At that point, it flows under West Main Street through a culvert and enters a SBCFCD facility known as the Unit II Ditch. The Unit II Ditch continues north for approximately two miles where it discharges through the levee to the Santa Maria River. Overflow from the Getty, Hobbs, and Kovar basins also discharge into the Main Street Channel.

Table 14: Characteristics of Drainage Areas and Point of Discharge[24]

Drainage Area	Acreage	Percent Urban	Point of Discharge
Blosser	2,070	91%	Combines with Bradley drainage area flow and discharges to the Santa Maria River through the levee via a 5'X5' reinforced concrete box and to Blosser Basin during periods of high flow.
Santa Maria River	480	22%	Santa Maria River through the levee via 36" culvert near N Suey Rd.
Main	2,700	26%	Santa Maria River through the levee via two 6'X6' reinforced concrete boxes from the West Main Street Canal via the Unit II Ditch.
Bradley	8,650	16%	Combines with Blosser drainage area flow and discharges to the Santa Maria River through the levee via a 5'X5' reinforced concrete box and to Blosser Basin during periods of high flow.
Green Canyon	5,250	39%	Kovar/Getty Basins (recharge basins). Basins can be drained to Hobbs Basin if necessary to prevent flooding, which connects to the Santa Maria River through the Unit II Ditch.
Betteravia	5,225	78%	Betteravia Lakes at Mahoney Road (recharge, no outfall).

Source: Draft Santa Maria Integrated Plan (Table 1), 2016.

Detention and Retention Basins

A number of retention and detention basins for retaining or detaining flows have been developed within the City over the years. The retained water is captured through ground infiltration or lost to evaporation. The detained water is released into downstream channels and eventually into the Santa Maria River through one of the afore-mentioned outfalls in the event of high flows resulting from a significant storm event.

There are approximately 65 detention and retention basins distributed throughout the City varying in size from under an acre to 30 acres. These basins are owned and maintained by either the City, the County, or private parties. This network of basins has helped to restrict flows from flooding the City or consistently reaching the Santa Maria River, thereby reducing the discharge of pollutants to the Santa Maria River. The integration of basins in the City's stormwater system has prevented the greater part of drainages from the City from discharging to the River, although the frequency and volume of such discharges is unknown.[25]

System Evaluation

The City and SBCFD have collaborated to identify improvements that need to be made to the existing stormwater system to comply with stormwater quality regulations and provide capacity to meet existing storm water flow.

Planned Capital Improvement Projects

The City has the projects and budget allocated to conduct stormwater improvements shown in Table 15. Trash capture devices are expected to be installed in the 2020-24 planning period to meet MS4 permit requirements.

Table 16 shows that SBCFCD has the following CIP planned for the 2015-20 fiscal years within or adjacent to the City of Santa Maria. These projects are being planned and funded by SBCFCD and may require collaboration with the City to plan, design, and construct the projects.

Table 15: Stormwater Capital Improvement Projects by City of Santa Maria (2020-24)

Project	Deficiency	2020-21	2021-22	2022-23	2023-24	Total
TRASH CAPTURE DEVICES Purchase and installation of trash capture devices throughout the City's drainage system in accordance with State regulations. Full implementation to occur over the next 10 years.	Required to meet MS4 Permit	$125,000	$125,000	$125,000	$125,000	$500,000

Source: City of Santa Maria Capital Projects, 2020-24.

Table 16: Stormwater Capital Improvement Projects by SBCFCD (2015-20)

Project	Deficiency to be Addressed	2015-20
BLOSSER BASIN - Project consists of constructing a pipeline to drain the Blosser Basin. The Blosser Basin is currently drained and dried out by either percolation through its earthen bottom or by pumping water out of the Basin and into the Blosser Ditch, an earthen channel that takes drainage towards the Santa Maria River. Water introduced into the Blosser Ditch tends to promote vegetation that must be continually maintained. The constructed pipeline will take water from the Basin to the Santa Maria River without allowing the water to flow within the Blosser Ditch.	Limited drainage capabilities	$ 481,000
UNIT TWO CHANNEL IMPROVEMENTS - Project is intended to increase the hydraulic capacity of the Unit 2 (earthen lined) channel by realigning the channel to remove a sharp S curve "kink" and widening approximately 5000 linear feet of channel. The section of channel considered for widening varies in existing bottom width of 8' to 12' and is preliminarily planned to be increased to a bottom width of 16'. This project will require real property acquisition from, and coordination with, adjacent farmland property owners.	Inadequate hydraulic capacity	$1,297,000
WEST GREEN CANYON PHASE II - Project will construct a 60" - 72" pipe from Main Street to the Santa Maria River along the Unit II channel, a distance of approximately 2 miles. This project will tie into the existing West Green Canyon Phase I storm drain which drains into the Unit II channel. Currently during high flow events the West Green Canyon storm drain is closed by Flood Control due to the limited capacity of the Unit II channel. Extending the storm drain will allow the existing storm drain to stay open without overwhelming the capacity of the channel.	Limited capacity during high flow events	$6,709,000
WEST GREEN CANYON 72" EXTENSION - Project will complete the construction of a 72" diameter reinforced pipe culvert through the Santa Maria River levee at the Unit II channel.	Incomplete construction	$417,000
ORCUTT RB7 OUTLET WORKS - Project consists of acquiring permanent easements and constructing a storm drain under Blosser Road south of Foster Road. The new storm drain will be approximately 300 feet long and will discharge flow from a future retention basin (RB7) to be built by the Santa Maria Airport District. The existing drainage facilities are inadequate for the amount of stormwater runoff received. During storm events, excess stormwater runoff inundates Blosser Road and adjacent properties. Construction of this culvert will reduce flooding impacts.	Existing drainage facilities are inadequate and cause flooding	$208,000

Source: Santa Barbara County Flood Control and Water Conservation District CIP 2015-20, 2020.

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City of Santa Maria. "Stormwater Management Plan." 2010.

City of Santa Maria. "Wastewater Treatment Plan Phase II Expansion Preliminary Design Report." March 2007.

Endnotes

[1] City of Santa Maria. “2015 Urban Water Management Plan.” Santa Maria, May 2016.
[2] City of Santa Maria. "2012 Utilities Capacity Study." 2015.
[3] Laguna Sanitation District provides wastewater collection in the area outside City limits. Laguna Sanitation District’s collection system connects to the City’s wastewater collection system for conveyance of wastewater through the City’s collection system to the City’s wastewater treatment plant.
[4] City of Santa Maria. "2012 Utilities Capacity Study." 2015.
[5] City of Santa Maria. "Stormwater Management Plan." 2010.
[6] City of Santa Maria. "2020 Sewer System Management Plan Audit." 2020.
[7] City of Santa Maria. "Draft Integrated Management Plan." April 2016.
[8] California State Water Resources Control Board. Municipal Stormwater Program. Accessed September 2020. <https://www.waterboards.ca.gov/water_issues/programs/stormwater/municipal.html>.
[9] City of Santa Maria. "Storm Water Program Guidance Document for Municipal General Permit." 2013.
[10] California State Water Resources Control Board. Industrial Stormwater Program. Accessed September 2020. <https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html>.
[11] California State Water Resources Control Board. Construction Stormwater Program. Accessed Sept. 2020. <https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html>.
[12] As of September 2020.
[13] City of Santa Maria. “2015 Urban Water Management Plan.” Santa Maria, May 2016.
[14] Ibid.
[15] The Santa Maria Basin (Basin) is adjudicated, and therefore, already managed. The City’s rights to rely on Basin water resources for both pumping and storage are governed by a settlement agreement (“Stipulation”) signed by a majority of the parties *(Santa Maria Valley Water Conservation District vs. City of Santa Maria, et al., Case No. 770214*), commonly known as the “Santa Maria Groundwater Adjudication.” The Stipulation provides the City with quantifiable and certain water rights. Prior to the groundwater adjudication, these rights were not quantifiable. The Stipulation also establishes a framework for both permanent and temporary transfers of water rights within the Basin. Because the City has obtained quantifiable water rights, the City has greater flexibility in facilitating transfers and exchanges.
[16] City of Santa Maria. “2015 Urban Water Management Plan.” Santa Maria, May 2016.
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] City of Santa Maria. "2020 Sewer System Management Plan Audit." 2020.
[21] City of Santa Maria. "Wastewater Treatment Plan Phase II Expansion Preliminary Design Report." March 2007.
[22] City of Santa Maria. "Stormwater Management Plan." 2010.
[23] City of Santa Maria. "Storm Water Program Guidance Document for Municipal General Permit." 2013.
[24] City of Santa Maria. "Storm Water Program Guidance Document for Municipal General Permit." 2013.
[25] City of Santa Maria. "Draft Integrated Management Plan." April 2016.