WATER & WASTEWATER MASTERPLAN

UPDATE

September 10, 2020

SAM MIGUEL COMMUNITY SERVICES DISTRICT

Prepared by:

Monsoon Consultants
San Luis Obispo, CA
www.monsoonconsultants.com

REGISTERED PROFESSIONAL ENGINEER
BLAINE T. REELY
Lic. No. 46806
Expires 6/30/21
CIVIL
STATE OF CALIFORNIA
09-10-2020

P.O. Box 180 1150 Mission Street San Miguel, CA 93451
Tel. 805-467-3388 Fax 805-467-9212

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1.0 OVERVIEW

The San Miguel Community Services District (SMCSD) owns and operates the public water and wastewater systems which serve the community of San Miguel. The District boundary includes approximately 1,940 acres and in 2020 served a total population of approximately 2,821. The community's water needs are supplied by three (3) public water supply wells. Two (2) of these wells are within the main part of the community which is located on the western side of the Salinas River. The third well is located on the eastern side of the Salinas River and is currently operated on a limited basis because the arsenic levels in the water supplied by this well exceed the State limit. The majority of the properties within the SMCSD, which are located on the west side of the Salinas River, are served by sanitary sewer. Wastewater flows from these properties are conveyed to the existing Machado Wastewater Treatment Facility, which is owned and operated by the SMCSD and located on the northern end of the District's service area. The properties that are located within the District's boundaries on the east side of the Salinas River are served by on-site wastewater treatment systems (i.e. septic systems).

In March 2020, the SMCSD Board of Directors directed Monsoon Consultants, who serves as the District Engineer, to proceed with updating the Water and Wastewater Masterplans. The most recent update to the Water and Wastewater Masterplan was in 2017. Prior to 2017, the Water Masterplan and Wastewater Masterplan were two separate documents, updated in 2002 and 2005, respectively. Preparation of the Water and Wastewater Masterplan is intended to assist the District in prioritizing both present and future wastewater system needs and set forth a mechanism for addressing those needs. Present needs addressed in the Water and Wastewater Masterplan will include the "three R's": Repair, Rehabilitation, and Replacement. Future needs will address those capital improvements required to support the anticipated future growth of San Miguel. The master planning process will also tie the needs assessment, both existing and future, to the budgeting process.

2.0 DEMOGRAPHICS

The unincorporated community of San Miguel, as defined by the Urban Reserve Line (URL), is home to approximately 2,821 residents and is located in the Salinas River Valley in the central coast region of California, approximately seven miles north of the City of Paso Robles. The community lies near the confluence of the Estrella and Salinas Rivers, adjacent to the site of the historic Mission San Miguel Archangel.

San Miguel's urban area, which is identified by its Urban Reserve Line (URL) on the County's official maps, includes all areas between Highway 101 and the Salinas River, between the northbound Mission Street off ramp and 20th Street. A portion of the urban area extends west of the highway to include the area along Cemetery Road south of 10th Street to the cemetery. East of the river, the urban area includes the Power Road area and the western portion of the San Lawrence Terrace tract.

The 2013 San Miguel Community Plan includes a proposal to expand the URL to encompass an approximately 50-acre portion of the former landing strip property located between Indian Valley Road

and the Salinas River. This Plan also expands the URL to include roughly 110 acres located north of 20th Street, generally between Mission Street and the Salinas River. This area is intended to remain in agricultural use as a "holding zone" until access problems are resolved and the appropriate amount and type of urban development is determined through a future amendment to the Community Plan.

San Miguel's population, based on the 2010 U.S. Census, was 2,336. This represents an increase of 64.5 percent from 2000, and a compounded annual growth rate (CAGR) of 5.1 percent. The growth in San Miguel between 2000 and 2010 can largely be attributed to the development of two residential projects on the north end of the community. In the previous decade between 1990 and 2000, San Miguel's population grew much more slowly, with an increase of 26.4 percent (2.4 percent CAGR). In comparison, San Luis Obispo County's population as a whole increased by 13.5 percent between 2000 and 2010 and 14 percent between 1990 and 2000.

In the 2013 San Miguel Community Plan, San Miguel's annual growth rate was projected to be about 1.8 percent (CAGR) from 2010 through 2035, resulting in a future population of approximately 3,660. The Table presented below shows the Community Plan population projections for San Miguel. Based on the Community Plan, the projected development in the URL could result in the addition of 417 dwelling units between 2010 and 2035. The projected population is based on 3.17 persons per household.

Year	Total Population	Percent Increase[1]	Annual Growth Rate (CAGR)[2]
1990	1,123	----	----
2000	1,420	26%	2.4%
2010[3]	2,336	65%	5.1%
2035	3,658	57%	1.8%

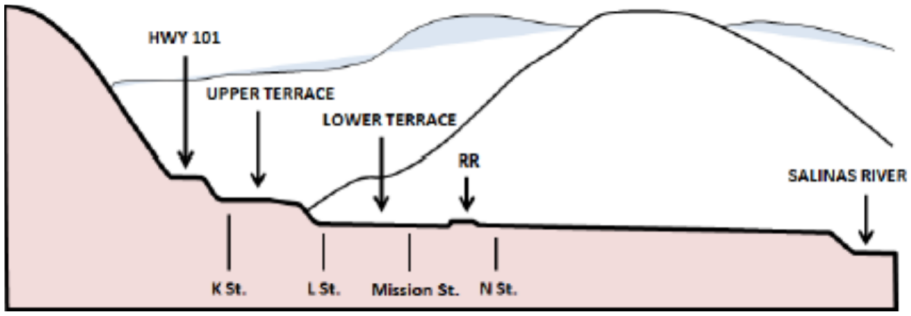
Notes:
1. The percentage increase in population during the 10-year period ending at the year indicated in that row.
2. The compounded annual growth rate during the 10-year period ending at the year indicated in that row.
3. The 2010 Population has been adjusted from the information provided by the 2010 Census because the Census Designated Place (CDP) for San Miguel is slightly different than the San Miguel URL.

To develop updated population estimates from those determined in the 2013 Community Plan, a supplemental analysis was performed by Monsoon, in collaboration with District staff, based on the development probability of parcels that could be serviced by District water and/or wastewater utilities in the future. Based on the results of this analysis, the District could be servicing a population of 5,331 by 2035 and 6,574 by 2050. After 2050, San Miguel could expand to a population of 11,793, however, the SMCSD is not planning infrastructure improvements in anticipation of this post-2050 growth. Additional information about the future development projection analysis can be found in Section 4.0, and supporting tables and exhibits can be found in Appendix A.

San Miguel's layout and land use patterns are largely influenced by geography, land ownership, and transportation corridors. The community of San Miguel is situated on two terraces overlooking the

Salinas River, near where it is joined by the Estrella River. San Miguel is crossed by several parallel features that define its boundaries and influence the land use pattern. The community is defined on the west by Highway 101 and the steep hillside along the highway's western edge. The Salinas River runs along San Miguel's eastern side, although the community's Urban Reserve Line extends east of the river to include the old landing strip site and a portion of the San Lawrence Terrace development. The Union Pacific railroad tracks run through the middle of town, almost equidistant from the highway and the river.

A graphical depiction is presented below which illustrates the topographic profile of San Miguel, which consists of two terraces connected by a steep slope. The upper terrace extends from Highway 101 to a point east of the alley between K and L Streets. The lower terrace extends from L Street to the Salinas River. The upper terrace has views of the hills east of the river.



The older, more fully developed part of town lies between the highway and the railroad. This part of San Miguel is laid out as a grid of blocks measuring 400 feet in the north/south direction and 320 feet in the east/west direction. A north/south alley divides each block into 150-foot deep parcels.

East of the railroad tracks, only the land fronting N Street from 11th Street to 15th Street was originally subdivided in the same manner as the older part of town between the highway and the railroad property. Prior to 2003, the remainder of the land located between N Street and the river was without a formal network of streets and lots. Newer subdivisions have incrementally provided lot patterns and street segments on a piecemeal basis that one day will be connected as other larger intervening lots develop.

East of N Street and south of 11th Street, a new subdivision was recently developed that includes 60 new households. A subdivision east of N Street and along 12th Street is currently under construction and will include 33 total households. The west side of N street remains undeveloped, in part because the right-of-way needed by the railroad leaves an even shallower developable strip than on the west side of the tracks.

On the south end of town are the key landmarks of historic San Miguel. The Mission San Miguel Archangel and the Rios Caledonia Adobe, which once served as a stagecoach stop, bring a high number of annual tourist visits. Proceeding north on Mission Street from these historical sites, industrial uses can be seen on the east side of the street next to the railroad tracks, while single family residences blend with businesses on the west side.

Mission Street is San Miguel's main street and primary commercial corridor. Most businesses are clustered between 11th and 14th Streets, which is the area generally considered to be the downtown core. Some buildings in this area date back to the Victorian Age. Most development involves traditional one-story retail buildings built to the sidewalk. The community continues to see Mission Street as a focal point and an opportunity to draw visitors and tourists to the downtown area from the mission and the adjacent Rios Caledonia Adobe.

Mission Street has buildings primarily on the west side of the street, but development on that side of the street has dwindled during the past 30 or 40 years, as some buildings in poor condition have been removed and not replaced. With a few exceptions, the east frontage of Mission Street is vacant. The railroad has sold several shallow parcels fronting on Mission Street to other private owners, but these have remained undeveloped.

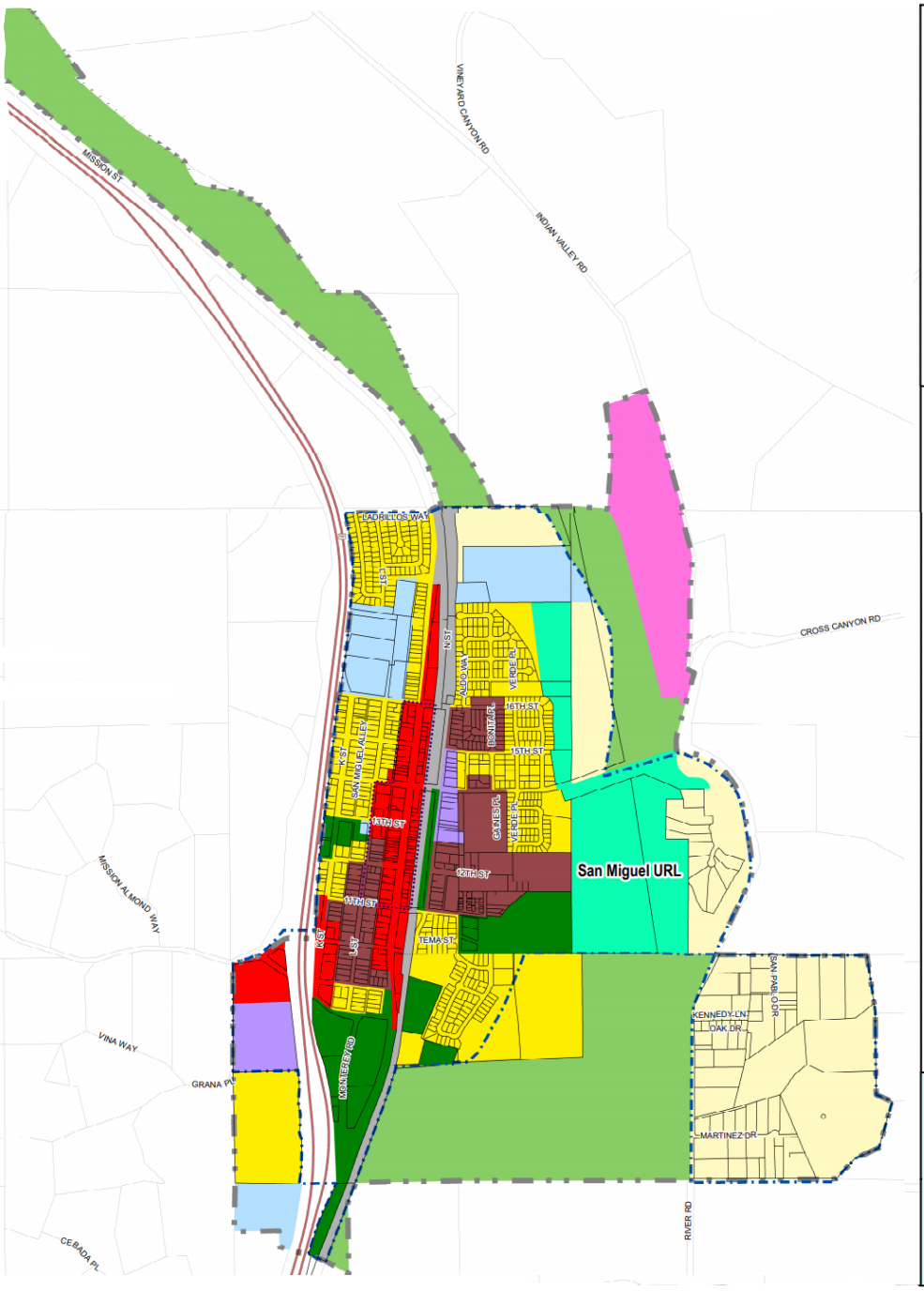
East of the Salinas River, most of the development includes single family residences that are confined to the San Lawrence Terrace (SLT) area to the southeast of downtown. A small residential development project is currently under construction to the northwest of the SLT.

3.0 LAND USE

The San Miguel CSD Service Area covers approximately 1,530 acres. The table below shows a summary of the different land use types within San Miguel and the approximate acreage for each land use type. Where residential uses are allowed, the table identifies the average number of dwellings allowed in terms of dwelling units per acre, the number of units that existed in 2013, the number of potential new units that could be added based on the acreage of each land use type, and population estimates. Non-residential uses are characterized in terms of potential floor area expressed in square footage.

Table 3-A: San Miguel Land Uses									
Land Use Category	2013 Baseline Conditions		2035 Plan Horizon				(Beyond 2035) Future Capacity		
	Residential Units	Commercial (1000 sq.ft)	Acreage	Residential Units	Commerical (1000 sq. ft.)	Population	Avg. Potential Density	Residential Units	Commerical (1000 sq.ft.)
Residential Land Use Categories									
RMF Residential Multi-Family	265	--	67.45	312	--	991	12.6 units/ac.	853	--
RSF Residential Single Family	384	--	183.11	674	--	2,135	3.8 units/ac.	708	--
RS Residential Suburban	88	--	95.13	122	--	388	1.4 units/ac.	133	--
Commerical Land Use Categories									
CR Commerical Retail	--	63	26.19	46	148	144	3.3 units/ac.	97	394
CS Commerical Service	--	12	34.17	--	59	--	--	--	255
IND Industrial	--	0	18.79	--	3	--	--	--	3
Other Land Use Categories									
AG Agriculture	--	--	102.73	--	--	--	--	--	--
OS Open Space	--	--	81.49	--	--	--	--	--	--
PF Public Facilities	--	--	26.4	--	--	--	--	--	--
REC Recreation	--	--	32.78	--	--	--	--	--	--
Totals	737	75	671.24	1,154	210	3,658		1,791	652

The Land Use Plan map presented below depicts a variety and balanced arrangement of proposed land uses that will serve the needs of the community as it develops in the future. The map illustrates where the land use areas are located, but it is not intended to show the exact boundaries of proposed land use categories (zones). Instead, the map shows generalized land use patterns that provide the basis for the more specific land use categories that are shown on the Official Maps of the Land Use Element. Those land use categories determine where the requirements and standards of the San Luis Obispo County Land Use Ordinance apply.



COUNTY of SAN LUIS OBISPO

DEPARTMENT OF PLANNING AND BUILDING

0 0.15 0.3 0.6

Miles

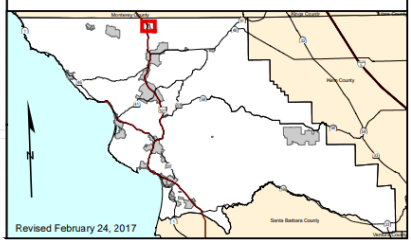
SAN MIGUEL URBAN RESERVE LINE
LAND USE CATEGORIES

LEGEND

- Coastal Zone Boundary
- Planning Area Boundary
- Planning Sub Area Boundary
- Central Business District
- San Miguel Urban Reserve Line
- San Miguel Urban Service Line

Land Use Category

- Agriculture
- Commercial Retail
- Commercial Service
- Industrial
- Multi-Land Use Category
- Office Professional
- Open Space
- Public Facility
- Recreation
- Rural Lands
- Residential Multi Family
- Residential Rural
- Residential Suburban
- Residential Single Family



Revised February 24, 2017

MONSOON CONSULTANTS
CIVIL ENGINEERING / HYDROLOGY
P.O. BOX 151 SAN LUIS OBISPO, CA 93406
BREELY@MONSOONCONSULTANTS.COM (805) 476 6168

LAND USE MAP

2020.03.002 SMCSD MASTER PLAN UPDATE

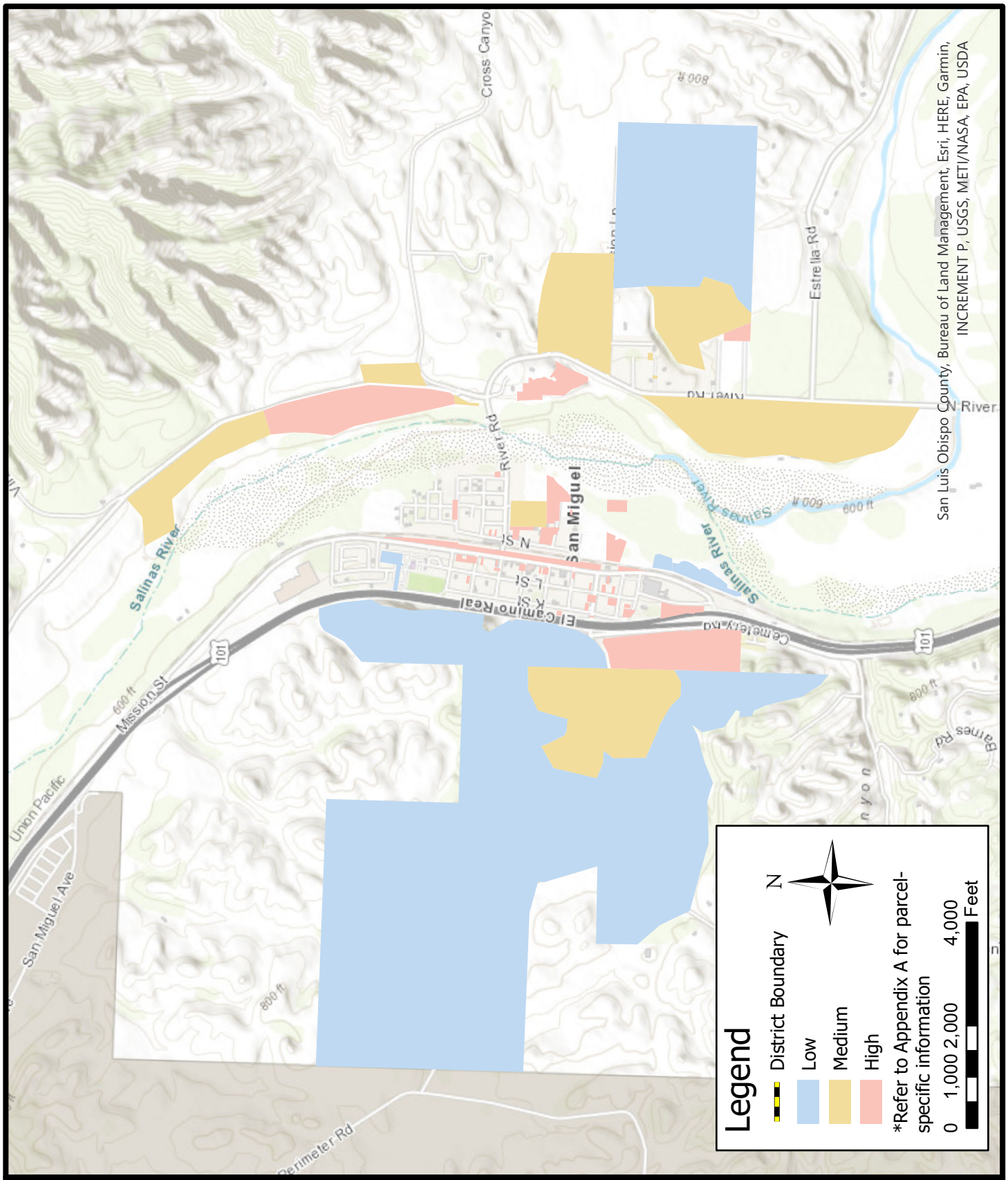
San Miguel Community Services District

4.0 POTENTIAL DEVELOPMENT

The Study Area considered during the update of the Water and Wastewater Masterplan includes all areas within the existing San Miguel Community Services District (SMCSD) boundary, as well as areas immediately outside the SMCSD boundary that were deemed as reasonable for future development and could be served by water and sanitary sewer utilities. Those potential expansion areas outside of the current SMCSD boundary were delineated through collaboration with SMCSD staff and Monsoon staff. The potential expansion areas were separated into areas with high, medium, and low probabilities of expansion. High-probability expansion areas are expected to become developed by 2035. Medium-probability expansion areas are expected to be developed by 2050. Low-probability expansion areas are not anticipated to develop until after 2050, and the SMCSD is not planning infrastructure improvements in anticipation of this post-2050 growth. The following exhibit depicts the high-, medium-, and low-probability expansion areas. A more comprehensive summary of the relevant data and assumptions that were used in establishing the potential development scenarios are included as Appendix A to this report.

For each expansion area, the development density was determined based on land use designations and the requirements described in the San Luis Obispo County Land Use Ordinance. Under the high-probability scenario, an additional 717 Equivalent Dwelling Units (EDUs) would be developed by 2035. Under the medium-probability scenario, 355 additional EDUs would be developed by 2050. Past 2050, under the low-probability scenario, San Miguel could experience the development of 1491 additional EDUs.

Current regulations around Accessory Dwelling Units (ADUs) are in the process of being revised and rewritten. The SMCSD acknowledges that changes to these regulations are likely to occur, but at the time that this document was written, there was insufficient information to create reasonable ADU development projections.



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CIVIL ENGINEERING / HYDROLOGY
P.O. BOX 151 SAN LUIS OBISPO, CA 93406
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AREAS OF POTENTIAL DEVELOPMENT

2020.03.002 SMCSD MASTER PLAN UPDATE

San Miguel Community Services District

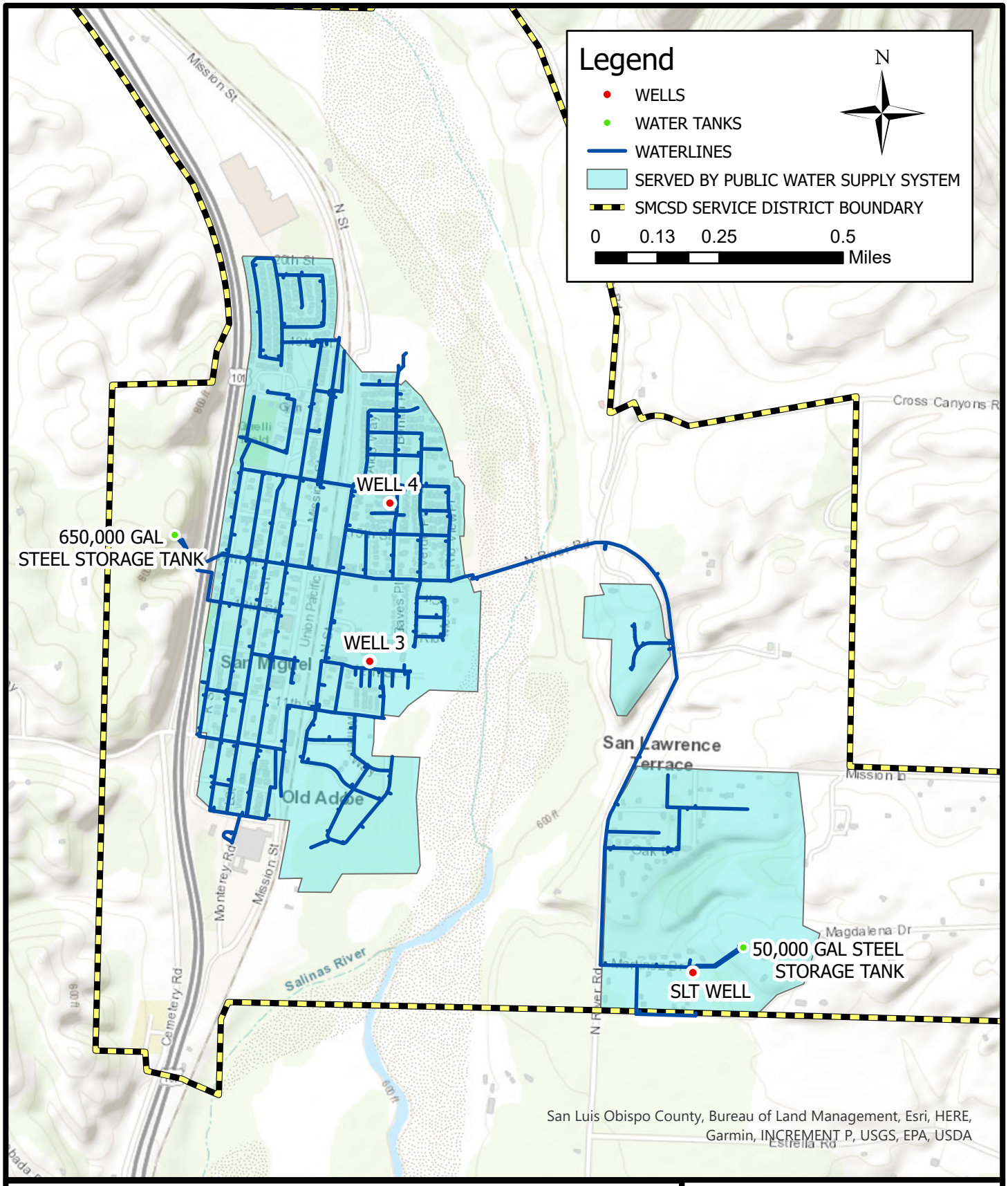
Development in each expansion area will require varying conditions of approval, depending on the water and sanitary sewer services required. For development to occur in the high- and medium-probability expansion areas shown, the following conditions of approval must be met:

- Downtown San Miguel, between Highway 101 and the Salinas River, north of San Luis Obispo Road: No conditions of approval. Sufficient water and sanitary sewer infrastructure already exist in this area.
- Downtown San Miguel, between Highway 101 and the Salinas River, south of San Luis Obispo Road: Extension of water and sanitary sewer lines to the new development.
- West of Highway 101: The high-probability area would require the extension of water and sanitary sewer lines to the new development, as well as a lift station and force main to connect the new sanitary sewer lines to the existing system. The medium-probability area has the same requirements as the high-probability area, with the addition of a new drinking water reservoir and booster pump station to provide adequate water pressures to the new development.
- East of Salinas River, north of River Road, west of Indian Valley Road: Extension of water and sanitary sewer lines to the new development. Installation of a booster pump station and drinking water storage tank to provide adequate water pressures to the new development. Installation of a sanitary sewer lift station and force main to convey wastewater flows across the River Road bridge.
- East of Salinas River, south of the River Road bridge: Extension of water and sanitary sewer lines to new development. Installation of a new drinking water storage tank and booster pump station to provide adequate water pressures to the new development. Installation of a sanitary sewer lift station to connect the new development to a conveyance pipeline along River Road. Installation of a sanitary sewer lift station and force main to convey wastewater flows across the River Road bridge. With the extension of sanitary sewer lines to the new development areas, sanitary sewer lines will likely also be extended to existing parcels within the SLT area that currently have onsite wastewater treatment systems (OWTS).

5.0 WATER SYSTEM ANALYSIS

5.1 EXISTING INFRASTRUCTURE

A summary of the major components that comprise the SMCSD public water supply system is presented in the following sections of this report. A graphical depiction of the general service areas and facility locations is included in the following water service area map. At the present time, the entire SMCSD water system service area is located within a single pressure zone (Main Zone). This represents a change from historical conditions, when the SMCSD water system was comprised of two (2) independent pressure zones (i.e. the Main Zone and the San Lawrence Terrace Zone). These zones were combined when the 650,000-gal steel storage tank, which is located on the west side of U.S. 101, was completed



SMCSD WATER SERVICE AREA

2020.03.002 - SMCSD MASTER PLAN UPDATES

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MONSOON CONSULTANTS
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P.O. BOX 151 SAN LUIS OBISPO, CA 93406
BREELY@MONSOONCONSULTANTS.COM (805) 476 6168

and brought online in 2008. Prior to 2008, the two zones were separated by a closed valve in River Road, near the location of the SLT Booster Station. Although the SLT Booster Station is no longer in regular service, it is still functional and equipped with two (2) 80 GPM pumps.

5.1.1 WATER SUPPLY WELL FACILITIES

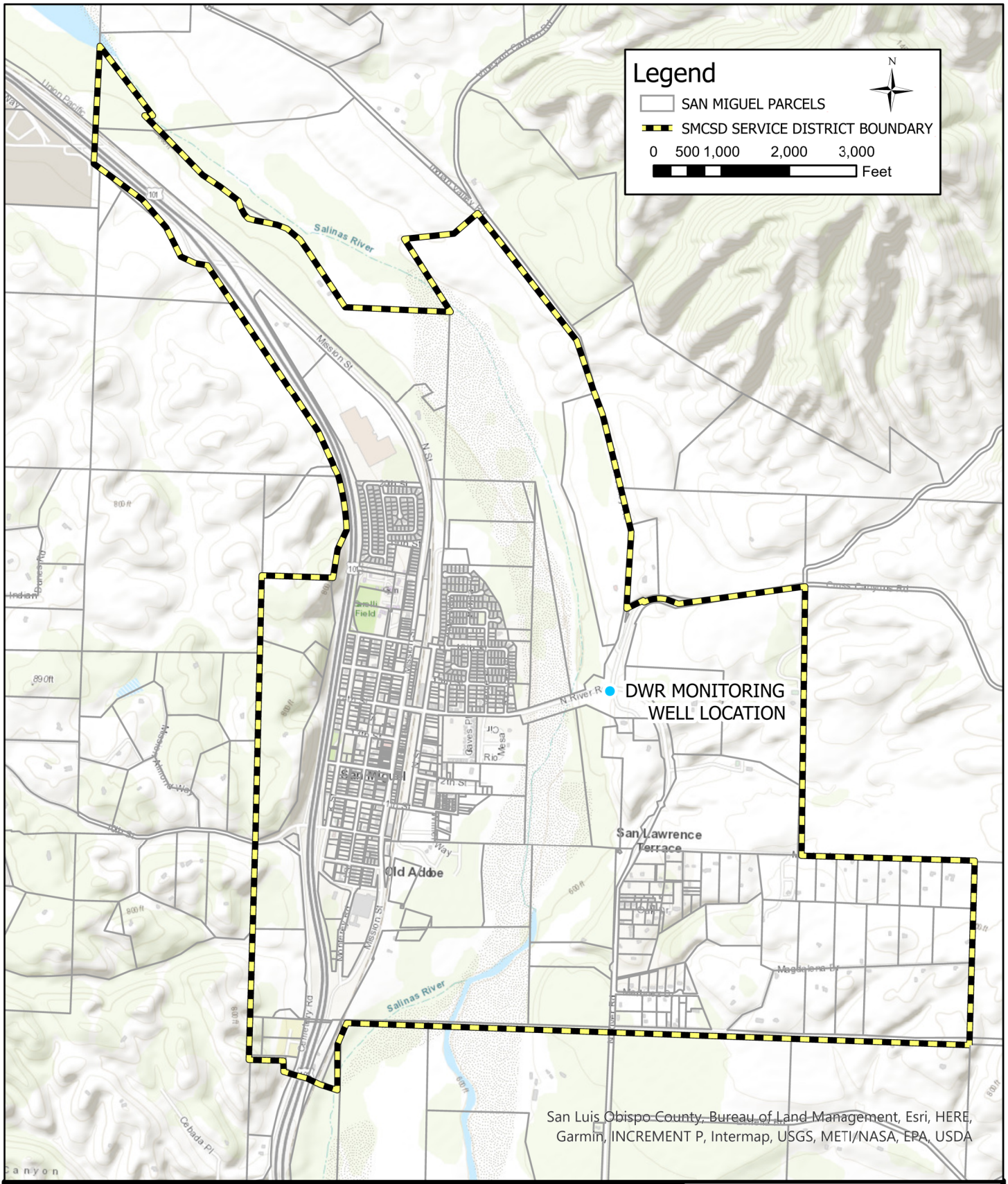
The SMCSD currently derives its water supply from three water supply wells. These wells are designated as follows:

- Well No. 3, which is located off 12th Street
- Well No. 4, which is located off Bonita Place
- San Lawrence Terrace (SLT) Well, which is located off Martinez Drive

Each of these wells produces groundwater from the Paso Robles Formation (QT_p) which is a significant water bearing unit within the Paso Robles Groundwater Basin. The Paso Robles Formation is a Plio-Pleistocene, predominantly non-marine geologic unit comprised of relatively thin, often discontinuous sand and gravel layers interbedded with thicker layers of silt and clay. It was deposited in alluvial fan, flood plain, and lake depositional environments. The formation is typically unconsolidated and generally poorly sorted. It is not usually intensely deformed, except locally near fault zones. The sand and gravel beds within the unit have a high percentage of Monterey shale gravel and generally have moderately lower permeability compared to the shallow, unconsolidated alluvial sand and gravel beds. The formation is typically sufficiently thick such that water wells generally produce several hundred gallons per minute (GPM).

San Miguel is at the northern edge of the Estrella area of the Paso Robles Groundwater Basin, where the depth to the base of permeable sediments reaches approximately 2,400 feet below sea level, with a saturated thickness of close to 3,000 feet. Water wells in the Estrella area are typically less than 600 feet deep. Limited specific capacity data from wells in the region suggest a range of less than 2 GPM/ft to as high as 6 GPM/ft. Wells exhibiting the lower specific capacity values are mostly located west of Highway 101. Well yields in the San Miguel area generally range from less than 100 GPM to several hundred GPM.

There is evidence that the groundwater levels in the SMCSD area have been declining over recent years, although it is noted that a rise in groundwater levels occurred between 2015-2019, which corresponds to a period of increased rainfall. The following graph depicts the historic trends in the groundwater levels within the Paso Robles Groundwater Basin in the vicinity of the District. The cluster of monitoring wells from which the data was taken is located at the intersection of River Road and Power Road, on the east side of the Salinas River. The location of the subject monitoring wells is presented below.



DWR MONITORING WELL LOCATION

2020.03.002 - SMCSD MASTER PLAN UPDATES

San Miguel Community Services District Figure

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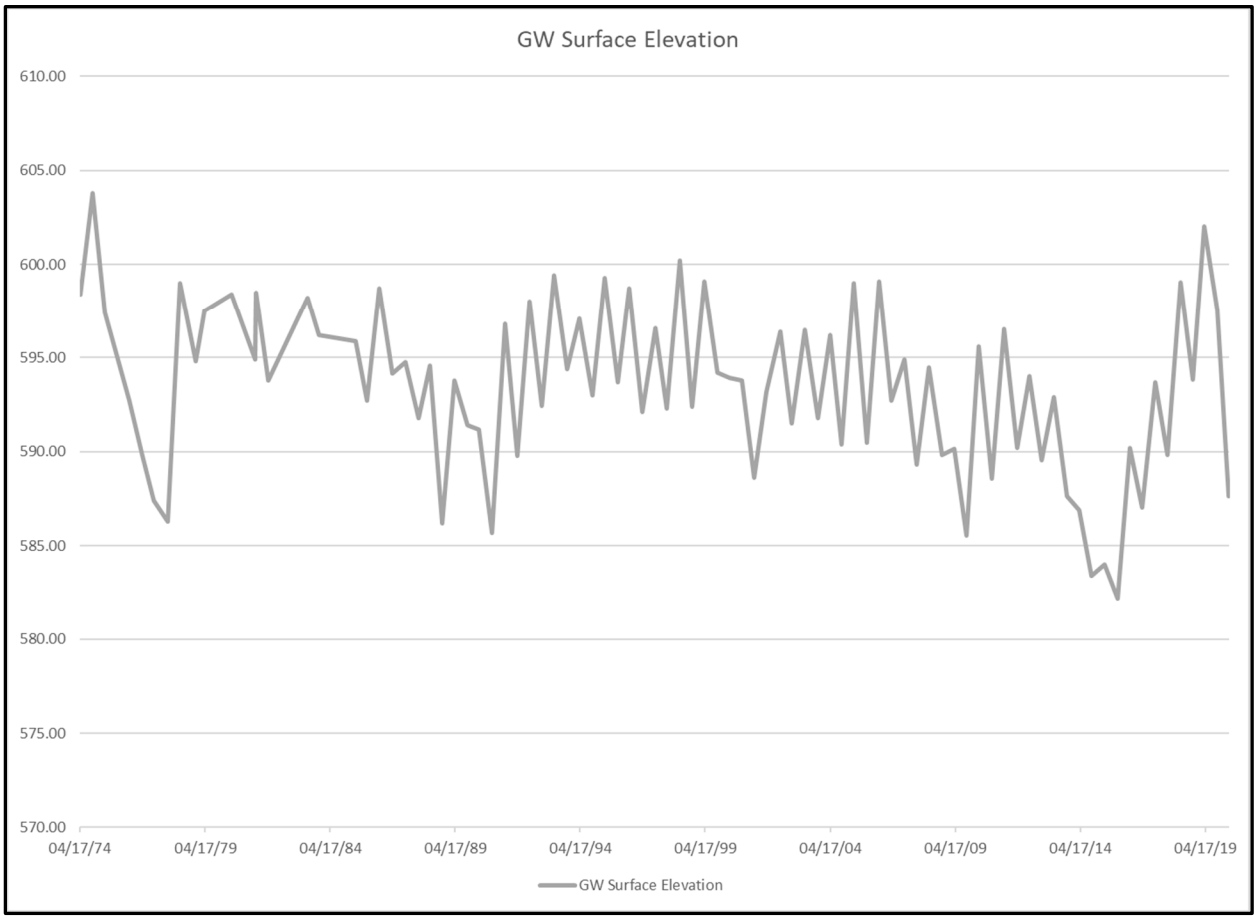
A graphical depiction of the trends in drawdown in the groundwater basin is presented below. The period of record is from April 1974 through April 2020. Water levels are measured by SLO County each April and October. Based on a review of the historic data it appears that there is generally an increase in the groundwater table elevation after the winter rainy season, with the magnitude of recovery ranging from 1 – 13 feet. There also appears to have been a long-term declining trend in the groundwater table over the period of record until October 2015. Groundwater levels increased sharply from October 2015 to April 2019 then showed a decline from April 2019 to April 2020. Declining groundwater levels in the groundwater basin could potentially cause the production capacity of the SMCSD water supply wells to decrease.



An analysis was performed of the historic pumping records for each of the SMCSD water supply wells to estimate the current probable annual production yield. Utilizing the monthly pumping records for the period between January 2017 and December 2019, the average historical annual production for each of the wells was determined and summarized in the table below. The average combined annual production from the three wells is 303 AFY. Based on well production capacities provided by District staff, the total combined pumping capacity is 1270 GPM. Under the assumption that all wells are pumping for 12 hours per day, 365 days per year, the maximum combined production capacity is 1024 AFY.

WELL	CAPACITY[1] GPM	HISTORICAL PRODUCTION[2] AFY	MAXIMUM PRODUCTION[3] AFY
WELL NO. 3	450	108	363
WELL NO. 4	500	192	403
SLT WELL	320	3	258
TOTAL	1270	303	1024

Notes:
1. Well capacity information was provided by the District staff.
2. Historical Production is the average annual amount of water the wells produced from 2017-2019 for Well No. 3 & SLT Well, and from 2018-2019 for Well No. 4 (Well No. 4 water meter was replaced in late 2017).
3. Maximum production is the amount of water the well could produce if pumped at capacity 12-hours per day per year.

The water produced from the three water supply wells shows some water quality concerns. A water quality discussion is included in Section 5.2 of this report.

5.1.2 WATER TREATMENT FACILITIES

The only water treatment that the SMCSD performs is disinfection at each of the three (3) well sites. The SMCSD injects liquid sodium hypochlorite solution into the supply prior to discharge into the water distribution system. The SMCSD continues to monitor the water quality in its supply wells. As concentrations of contaminants approach and exceed EPA Safe Drinking Water Standards and groundwater objectives, the District may consider adding additional treatment processes. Refer to Section 5.2 for additional information.

5.1.3 WATER DISTRIBUTION FACILITIES

The SMCSD water distribution system includes 86,132 feet (16.3 miles) of transmission and distribution system pipes ranging in size from 2-inches to 16-inches in diameter. Approximately 7 percent (5,676 LF) of these mains are 4-inches in diameter or smaller. Approximately 25 percent of the system was constructed before 1960. Approximately 8% of the system is asbestos cement pipe (ACP).

In addition to the transmission and distribution pipelines, the SMCSD water distribution system includes numerous appurtenances which include valves, fire hydrants, and sampling stations. The complete system inventory is summarized below.

Item	Description	Qty	Length (LF)
Fire Hydrants	Fire Hydrant	126	--
	Wharf Head	7	--
Sampling Stations	--	31	--
Water Valves	ARV	24	--
	WV	274	--
	Blow off	16	--
	WV - FH	126	--
Water Lines	3" AC	5	762
	6" AC	20	5976
	8" Blending	2	568
	2" CI	1	498
	4" CI	14	4718
	6" CI	47	13266
	6" CI (AIP)	1	1236
	8" CI (AIP)	2	959
	16" CML & C	1	750
	12" DI	1	1465
	1" PVC	1	43
	2" PVC	2	633
	3" PVC	3	542
	4" PVC	7	958
	6" PVC	78	13805
	8" PVC	198	37397
	10" PVC	8	2246
	12" PVC	3	309

5.1.4 WATER STORAGE FACILITIES

There are two (2) potable water storage facilities within the SMCSD water system, providing a total of 700,000 gallons of storage. The San Miguel tank is located on a hill on the west side of Highway 101. This welded steel tank was constructed in 2008 and has a storage capacity of 650,000 gallons. The overflow elevation of the tank is 782.5. The San Lawrence Terrace (SLT) is located on a hill on the east side of the Salinas River. This welded steel tank has a storage capacity of 50,000 gallons. The overflow elevation of the tank is also 782.5. Because these two tanks have identical overflow elevation, they float with the pressure of the Main pressure zone.

To evaluate the capacity of the SMCSD to adequately serve the future growth that is likely to occur within the District's service area, storage requirements were determined for three (3) scenarios. These include the following:

- Existing conditions
- High probability of growth (through 2035)
- Medium probability of growth (through 2050)

There are three (3) components to water storage in a public water supply system. These include the following:

- Operational Storage
- Fire Storage
- Emergency Storage

Operational Storage

Operational storage is the amount of water needed to equalize the daily supply and demand. Without this storage, water production facilities large enough to meet the instantaneous peak demands of the system would be required. With adequate operational storage, the well pumps can operate at the daily average rate while storage facilities meet the hourly peaks. This operating methodology prevents the construction of unnecessary water supply wells and the use of additional well pumps at times when electrical rates are the highest. Based on the typical daily water use patterns of similar communities in the central coast of California to San Miguel, the American Water Works Association (AWWA) recommends operational storage of approximately 25 percent of the ADD for the given service zone or up to 15 percent of the maximum day demand (MDD). Applying a criterion of 25 percent of the ADD, the minimum required operational storage is determined by multiplying the estimated ADD for each scenario by 25%. A summary of the estimated operational storage requirements for the SMCSD water system are presented below.

	OPERATIONAL STORAGE REQUIREMENTS (GAL)		
SCENARIO	**EXISTING CONDITIONS**	**2035 BUILD-OUT**	**2050 BUILD-OUT**
ADD	67,500	130,000	160,000
SUMMER ADD	95,000	180,000	222,500

Fire Storage

Fire storage is the volume of water needed to control an anticipated fire in a building or group of buildings. The determination of this storage is based upon a recommended flow rate, fire duration, and a minimum residual pressure as established by the agency with local jurisdiction. The agencies that establish the relationships between land use and fire requirements include the Uniform Fire Code (UFC) and the Insurance Services Office (ISO). The services of ISO are advisory only and are used to establish insurance ratings for cities and communities across the nation. The flow rate and duration of fire flow varies greatly with the type of development with UFC values ranging from 1,500 to 15,000 GPM for different building types and sizes. Based on input from the SMCSD Fire Chief, it was determined that the

critical fire flow demand would be associated with a fire event at the existing mill. The existing mill is an old wooden structure located at the northwest corner of N Street and 14th Street. The designated fire flow requirement for this facility is 4,500 GPM for four (4) hours. The corresponding fire storage requirement is 1.08 million gallons.

Emergency Storage

Emergency storage is intended to provide for conditions such as extended power outages, pump failures, and similar problems. Most water planners accept that during emergencies, supply per capita may be reduced to minimum levels. With the minimum water supply, an emergency storage volume of 50 gpcd for three days is accepted as a reasonable value. A summary of the estimated emergency storage requirements for the SMCSD water system are presented below.

	EMERGENCY STORAGE REQUIREMENTS (GAL)		
SCENARIO	EXISTING CONDITIONS	3-YR BUILD-OUT	LONG TERM BUILD-OUT
50 gpcd x 3 days	423,150	799,650	986,100

5.2 WATER QUALITY

An analysis was performed on the three water supply wells within the SMCSD to determine whether there are any water quality concerns. A full report of all constituents tested in the three wells is included as Appendix B to this report. Significant results from this analysis are summarized below:

- The water quality in the SLT Well has been impacted by the presence of arsenic, which is associated with the aquifer bedrock within which the well has been completed. Arsenic levels have regularly exceeded the maximum contaminant level (MCL) of 10 ppb, with a maximum observed arsenic level of 16 ppb. The SMCSD completed the installation of the new water transmission pipeline in 2018, which provides for a direct connection to the existing San Lawrence Terrace (SLT) steel storage tank. This pipeline allows the water produced from the SLT Well to be blended with water produced from Well Nos. 3 & 4 before being introduced into the distribution system.
- Water samples in Well Nos. 3 and 4 have periodically exceeded the gross alpha particle MCL of 15 pCi/L.
- Total Dissolved Solids (TDS) concentrations appear to be increasing over time. No measurements have exceeded the MCL of 1,000 mg/L. However, several measurements, particularly in Well No. 3, have exceeded the TDS concentration groundwater objective of 750 mg/L, specified in Table 3-6 of the Water Quality Control Plan for the Central Coast Basin (Basin Plan).
- Sulfate concentrations appear to be increasing over time. No measurements have exceeded the MCL of 500 mg/L. However, several measurements, particularly in Well No. 3, have exceeded

the Sulfate concentration groundwater objective of 175 mg/L, specified in Table 3-6 of the Water Quality Control Plan for the Central Coast Basin (Basin Plan).

5.3 WATER DEMAND ANALYSIS

5.3.1 OVERVIEW OF DEMAND SCENARIOS

The design requirements for the water distribution system relate primarily to the flow and pressures delivered by the system to the residences. Pressures below 20 psi are not acceptable in a municipal water system. Ideally, normal operating static pressures will be within the range of 40 to 80 psi. This is the range that most people find comfortable and will serve most fire sprinkler systems. Pressures higher than 80 psi are acceptable within the distribution system but should be reduced to 80 psi at the service connection to prevent water hammer effects or leakage through rapidly weakening washers and seats. The water system demand scenarios examined in conjunction with this study include average daily demand (ADD), summer average daily demand (SADD), maximum day demand (MDD), peak hour demand (PHD), and fire flow. The historic and future demands are summarized in the following sections of this report.

When discussing water system demand scenarios, it is important to define some of the terminology commonly used to describe and analyze water system demands.

- Average Daily Demand (ADD): This flow condition represents the most common hydraulic condition that is anticipated to occur within the water distribution system. The ADD is estimated based on an analysis of historic water production and usage data over the entire year.
- Summer Average Daily Demand (SADD): The ADD during the summer months is also often computed because the average demand tends to be higher during the warmer months when the humidity is lower and the demand for landscape irrigation and other outdoor water uses tends to be higher. The SADD is estimated using an average of the historic maximum month data.
- Maximum Day Demand (MDD): The MDD condition in the central coast of California typically occurs during the warmest summer months when the temperatures are high and the humidity levels are low. The MDD is estimated based on an analysis of the historic daily water production data. In most cases, a peaking factor of 2.0 can be applied to the ADD to reasonably estimate the MDD.
- Peak Hour Demand (PHD): The PHD is a condition that occurs on a transient basis and is utilized in hydraulic simulations to identify system deficiencies at the maximum domestic use conditions. In most cases, a peaking factor of 3.5 can be applied to the ADD to reasonably estimate the PHD.

  Fire Flow: Residential, commercial, and downtown fire flow requirements were established based on International Fire Code (IFC) requirements and discussions and coordination with the San Miguel Fire Department. The scenarios considered are summarized in the Table below. It was assumed that maximum day demand was occurring concurrently with the fire flow. All reservoirs were assumed to be full when the hydraulic simulations were performed.

LOCATION	SURFACE AREA (FT^2)	IBC CLASSIFICATION[a]	FIRE FLOW (GPM)[b]	FLOW DURATION (HRS)
Residential (including Multi-Family)	Varies	N/A	1,500	1
San Miguel Joint Union School Gym	19,000	Type IIIA	1,000[c]	2
Mission San Miguel	77,000	Type I	3,000	3
Dollar General	9,000	Type IIB	1,000[c]	2
Grain Mill	23,000	Type IV	4,500	4

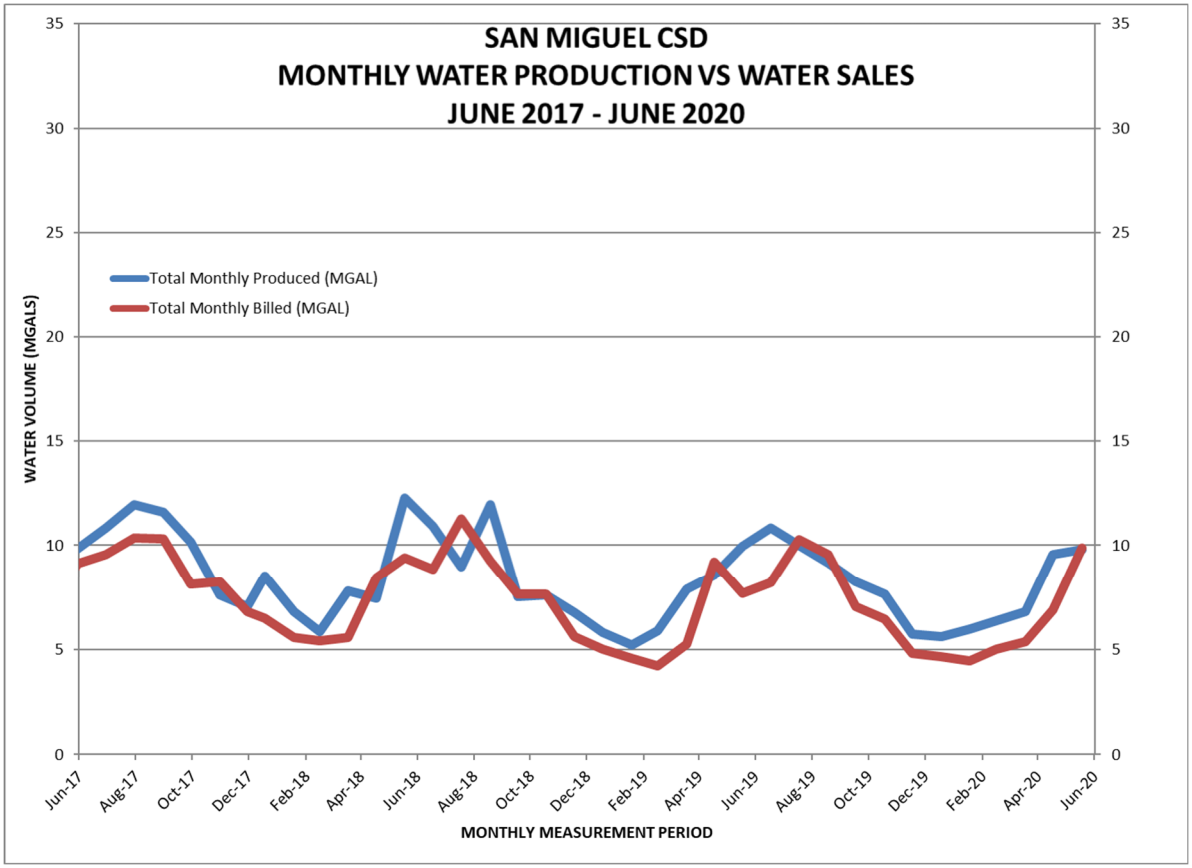
[a]Types of construction are based on the International Building Code.

[b]Measured at 20 psi residual pressure.

[c]Has an Automatic Sprinkler System. Based on Table B105.2 if the 2018 International Fire Code, the designated fire flow is 25% of the value in Table B105.1(2), but not less than 1,000 GPM.

5.3.2 HISTORIC WATER DEMANDS

For the purposes of determining the appropriate water system demands for existing and future conditions, an analysis was performed on the SMCSD historic water production and usage data. Given that there has been a moderate level of residential housing growth within the SMCSD service area within the past several years, the period of historic water demand and water usage was limited to the period between June 2017 and June 2020. During this period, the monthly volume of groundwater produced from all District wells ranged from a high of 12.25 MGAL in June 2018 to a low of 5.20 MGAL in February 2019. A graphical depiction of the monthly water production vs metered sales data is presented below.



A comparison was made of the total volume of water produced during the referenced time frame and the total volume of water that was delivered to SMCSD customers through metered sales. The results of the analysis indicate that during this period, approximately 12 percent of total water production occurred as unbilled use, which is generally referred to as "non-revenue water." Non-revenue water should be minimized where possible since it requires the SMCSD resources to produce but does not generate revenue. From July 2019 to June 2020, the SMCSD produced approximately 13.2 MGAL of non-revenue water.

Based on a review of the data from the past several years, it was determined that the water demand conditions increased significantly in late 2016, then showed no significant changes through June 2020. From discussion with SMCSD staff, it was determined that the 2016 increase in demand coincided with the completion of several new residential housing developments. In 2018, the SMCSD implemented a rate increase. Water usage has flattened since that time, which is believed to be related to the higher cost of water to the customer. In March 2020, the SMCSD was providing service to 900 water connections. For the purposes of estimating existing demands on the water distribution system, daily flow data from the period of July 2017 through June 2020 were used. The corresponding water demand design parameters (defined in a previous section) for existing conditions are summarized below.

WATER DEMAND SCENARIO	EXISTING CONDITIONS FLOW (MGAL/DAY)
Average Daily Demand (ADD)	0.27
Summer Average Daily Demand (SADD)	0.38
Maximum Daily Demand (MDD)	0.55
Peak Hour Demand (PHD)	0.96
Estimated Population Served	2821
Estimated Number of Water Meter Connections	900

5.3.3 FUTURE WATER DEMAND SCENARIOS

To evaluate the capacity of the SMCSD to adequately serve the future growth that is likely to occur within the District's service area, an analysis was performed to estimate the future water demands on the water system. For the purposes of this analysis, two (2) future water demand scenarios were analyzed. These include the following:

- High growth probability conditions (through 2035)
- Medium growth probability conditions (through 2050)

A description of the potential development scenarios is included in Section 4.0 of this document. Assuming that future per capita water usage patterns will remain unchanged from existing water usage patterns, then the projected water design parameters for the high-probability (2035) growth scenario will be similar to those summarized below.

WATER DEMAND SCENARIO	2035 BUILD-OUT FLOW (MGAL/DAY)
Average Daily Demand (ADD)	0.52
Summer Average Daily Demand (SADD)	0.72
Maximum Daily Demand (MDD)	1.04
Peak Hour Demand (PHD)	1.82
Estimated Population Served	5331
Estimated Number of Water Meter Connections	1647

The projected water demand design parameters for the medium-probability (2050) growth scenario will be similar to those summarized below.

WATER DEMAND SCENARIO	2050 BUILD-OUT FLOW (MGAL/DAY)
Average Daily Demand (ADD)	0.64
Summer Average Daily Demand (SADD)	0.89
Maximum Daily Demand (MDD)	1.28
Peak Hour Demand (PHD)	2.24
Estimated Population Served	6574
Estimated Number of Water Meter Connections	2002

5.4 WATER SYSTEM HYDRAULIC ANALYSIS

5.4.1 MODEL DEVELOPMENT

A computer model of the existing SMCSD water distribution system was created for the purposes of analyzing the water systems performance characteristics under various demand scenarios and to assist in the identification of system deficiencies. Those deficiencies that were identified provided the basis for the recommended capital improvements for the SMCSD water system that are described in subsequent sections of this report.

The water distribution system hydraulic model that was developed was created using the EPANET software, which was developed by the U.S. Environmental Protection Agency (USEPA). EPANET was developed to perform extended-period simulations of hydraulic and water-quality behavior within pressurized pipe networks. The model incorporates the Hazen-Williams formula as the basis for computing head loss and flow velocities within the pressure pipe network. For the purposes of hydraulic model development, the water distribution system is discretized into individual pipe segments which are connected by nodes. In general, the connecting nodes represent existing valves and fire hydrants. Additional components that comprise the model include water supply wells, storage tanks, and pump stations.

The configuration of the water distribution system which was used for simulation was developed from the GIS databases which were prepared by the Wallace Group in conjunction with the creation of the Water Utility Atlas in July 2020. This information was augmented with information obtained from improvement plans which have been submitted to the SMCSD for proposed future developments.

The following five (5) distinct hydraulic demand scenarios were analyzed. The flow data that were utilized for each of these demand scenarios is described in a previous section of this report.

WATER DEMAND SCENARIO
Average Daily Demand (ADD)
Summer Average Daily Demand (SADD)
Maximum Day Demand (MDD)
Peak Hour Demand (PHD)
Fire Demand

The hydraulic criteria which were utilized to evaluate the ability of the SMCSD water distribution system to meet user demands under the stated demand scenarios are summarized below. The basis for the stated criteria includes both recommendations from the AWWA and California Code of Regulations Title 22 requirements:

- Water Supply: The source of supply should adequately meet customer needs. The water supply wells should be capable of meeting MDD with the highest-capacity source out of service. The water supply system should be capable of replenishing the required fire storage over 72 hours during MDD conditions.
- Piping Systems: Pipe systems are considered deficient, or limiting, if any of the following conditions are met:
    - Velocities exceed 5 fps during ADD, MDD, and PHD conditions
    - Velocities exceeding 10 fps during fire flow conditions plus MDD
    - Head losses exceed 10 ft per 1000 ft (ft/Kft)

      Note: A velocity of 10 fps is acceptable only if the head loss criteria are met. Pipelines in which these conditions occur may prevent the system from providing adequate flow and/or pressure. These conditions may be improved by modifications in pipe sizing and/or flow routing.
- Minimum Pressures: The distribution system shall be operated in a manner to assure that the minimum operating pressure in the water main at the user service line connection throughout the distribution system is always above 20 psi. Each addition to the distribution system that expands the existing system service connections by more than 20 percent or that may otherwise adversely affect the distribution system pressure shall be designed to provide a minimum operating pressure throughout the new distribution system of not less than 40 psi at all times excluding fire flow. Negative pressures indicate that the system is unable to provide

the required flow to meet demand at that location and could potentially result in an introduction of contaminants to the water distribution system.

- System Storage: The available storage capacity within the water distribution system must meet the requirements for the following: Operational Storage; Emergency Storage; and Fire Demand Storage. The requirements for each of these storage scenarios are described in a previous section of this report.

5.4.2 HYDRAULIC MODELING RESULTS

As described in previous sections of the report, hydraulic modeling was performed to assess the capacity of the existing water distribution system to adequately deliver acceptable water supply during the following demand scenarios:

- Average Daily Demand (ADD)
- Summer Average Day Demand (SADD)
- Maximum Daily Demand (MDD)
- Peak Hour Demand (PHD)
- Fire Flow Demands

ADD Results

The ADD scenario resulted in pressures that exceeded the minimum pressure requirements of 20 psi at all nodes within the system. During the ADD scenario, the lowest pressure (20.8 psi) occurred at the node to the far east of Oak Drive. Well No. 3 turned on approximately four times and operated for approximately 10 hours per day. The SLT Well was not needed to meet minimum pressure requirements. Well No. 4 was assumed to be out of service for this analysis.

Summer ADD Results

The SADD scenario resulted in pressures that exceeded the minimum pressure requirements of 20 psi at all nodes within the system. During the SADD scenario, the lowest pressure (20.6 psi) occurred at the node to the far east of Oak Drive. Well No. 3 turned on approximately four times and operated for approximately 15 hours per day. The SLT Well was not needed to meet minimum pressure requirements. Well No. 4 was assumed to be out of service for this analysis.

MDD Results

The MDD scenario resulted in pressures that exceeded the minimum pressure requirements of 20 psi at all nodes within the system. During the MDD scenario, the lowest pressure (20.6 psi) occurred at the node to the far east of Oak Drive. Well No. 3 turned on at 3:00am and operated for the remainder of the maximum day. The SLT Well was not needed to meet minimum pressure requirements. Well No. 4 was assumed to be out of service for this analysis.

PHD Results

The PHD scenario resulted pressures that exceeded the minimum pressure requirements of 20 psi at all nodes within the system. During the PHD scenario, the lowest pressure (20.3 psi) occurred during the peak hour at the node to the far east of Oak Drive. The system was capable of meeting pressures during the peak hour using water tank storage and only Well No. 3 online.

Fire Flow Results

Fire flow simulations were performed under the MDD hydraulic demand scenario. The results of the fire scenarios are as follows:

- Residential: During all residential fire flow scenarios, pressures at nodes east of Oak Drive dropped below 20 psi for the entire duration of the fire.
    - A fire flow at hydrant 5-25, on the corner of 12th and N Street in a Residential Multi-Family zone, causes pressures to drop to 19 psi on the roads south of the fire, entering the new Tract 2527 development. The District is in the construction phase for the upgrade and replacement of the waterline network on 10th and 11th Street near their respective intersections with Mission Street. These upgrades include replacing the existing 6-inch cast iron and asbestos cement pipelines with 8-inch PVC lines. Additionally, a new connection spanning along 11th St from Mission St to the alleyway and a horizontal directional drilling section under the United Pacific Railroad are planned for construction. Based on the findings from a fire flow analysis performed in December 2018, the 10th and 11th Street waterline replacements would increase the SMCSD water network's capacity to operate during large fire scenarios. The results of this study can be found in Appendix C.
    - A fire flow at hydrant 11-03, on Martinez Drive in a Residential Suburban zone, causes pressures to drop below 20 psi along Martinez Drive, Magdalina Drive, and east of Oak Drive. After 45 minutes, the distribution system can no longer meet the fire demand as negative pressures were observed in the entire portion of the distribution system east of the Salinas River.
- San Miguel Joint Union School Gym: During the school fire scenario, the fire hydrant (FH 3-33) was unable to provide the required fire flow of 1000 GPM for two (2) hours, as pressures dropped below 20 psi for the entire duration of the fire, reaching as low as 2.5 psi at the end of the second hour. The maximum fire flow at FH 3-33 is 809 GPM two (2) hours.
- Mission San Miguel: During the Mission fire scenario, pressures at several nodes south of 10th Street and west of Mission Street dropped below 20 psi for the entire duration of the fire.
- Dollar General: During the Dollar General fire scenario, pressures exceeded the minimum pressure requirements of 20 psi at all nodes within the system.
- Grain Mill: A fire at the Grain Mill causes system pressures to the east of the Salinas River to immediately drop below 20 psi. After three (3) hours, both of the water tanks are emptied, and the system cannot provide the required 4500 GPM flow.

Following a fire that completely empties both water storage tanks, the water tanks refill after approximately 48 hours during MDD conditions with Well No. 4 offline, fulfilling the requirement that the fire storage be replenished within 72 hours after the fire.

5.5 WATER SYSTEM ADEQUACY ASSESSMENT

5.5.1 OVERVIEW

An assessment was developed regarding the adequacy of the existing SMCSD water supply, treatment, and distribution system to meet the existing and future demands of the District's customer base. This adequacy assessment is based on a combination of factors. The most important of these factors include direct input from SMCSD utility operations staff who have an intimate understanding of how the existing system is configured and performs under a variety of operational scenarios. It is the operations staff who have the institutional knowledge regarding maintenance requirements and repair history of the system, as well as the experience gained from the day to day duties required to operate and maintain the system. Input from the operations staff was supplemented with extensive reviews of "As-Built" drawings and construction documentation; previously prepared engineering and related technical reports and documents; personal site inspections; and the results of the hydraulic modelling of the water distribution system. Collectively, all of these sources information were considered in the development of the findings regarding water system adequacy which are summarized in the following sections of this report.

5.5.2 WATER SUPPLY WELL FACILITIES

The combined production capacity when all three (3) existing water supply wells are in service is more than adequate to meet the existing and future demands of the SMCSD. In 2020, the combined production capacity was approximately 1270 GPM (1.83 MGD). Under the current (i.e. existing conditions) MDD scenario, the combined capacity exceeds this demand by approximately 1.5 MGD. Under medium-probability development (2050) MDD conditions, the combined capacity exceeds this demand by approximately 1.2 MGD. This excess production capacity is significantly reduced should the largest production well (Well No. 4) be unavailable. Under these conditions, the combined production capacity of Well No. 3 and the SLT Well is 770 GPM (1.11 MGD), which exceeds the existing MDD of 0.55 MGD by approximately 0.6 MGD. To meet the MDD with Well No. 4 offline, Well No. 3 would be required to operate for approximately 21 hours of the day and would not require the SLT Well to operate.

The three (3) water supply wells show water quality concerns. The operation of the SLT Well at the rates required to meet existing and future demand scenarios would likely result in the arsenic levels within the distribution system exceeding the MCL. In the groundwater supplied by Well Nos. 3 and 4, the concentration of radioactive constituents periodically exceeds the MCL.

5.5.3 WATER TREATMENT FACILITIES

Under existing conditions, the only water treatment that the SMCSD performs is disinfection at each of the three (3) well sites. The SMCSD injects liquid sodium hypochlorite solution into the supply prior to discharge into the water distribution system. As described in a previous section of this report, the SMCSD continues to monitor the water quality in its supply wells, with specific attention being paid to arsenic levels in the SLT Well and radioactive constituents in the groundwater supplied by Well Nos. 3 & 4.

5.5.4 WATER DISTRIBUTION SYSTEM FACILITIES

The hydraulic capacity of the existing water distribution system is generally adequate to meet system requirements during ADD, SADD, MDD, and PHD scenarios. During all fire flow scenarios, the distribution system is not capable of maintaining the minimum pressure of 20 psi in pipelines to the east of Oak Drive. During a fire at the Grain Mill, San Miguel Joint Union School, Mission San Miguel, or at a residence on the east side of the Salinas River, the distribution system is not capable of supplying the required fire flows. The distribution system is capable of replenishing the entire storage tank volume within 72 hours during MDD. An analysis was performed in May 2020 to determine the adequacy of all the fire hydrants within the SMCSD water distribution system. Based on this analysis, several fire hydrants have a flow capacity of less than 1000 GPM. The full fire hydrant flow report is included as Appendix D to this report.

As described in Section 5.1.3 of this report, the SMCSD water distribution system includes 86,132 feet (16.3 miles) of transmission and distribution system pipes ranging in size from 2-inches to 16-inches in diameter. Approximately 7 percent (5,676 LF) of these mains are 4-inches in diameter or smaller. These small diameter pipelines are considered inadequate and should be considered for replacement. Approximately 25 percent of the system was constructed before 1960. Approximately 8% of the system is asbestos cement pipe (ACP).

The majority of the smaller diameter pipes have been in the ground for greater than 50 years and represent significant maintenance problems currently and will require an increasingly significant cost burden for repair and maintenance in the future. Consideration should be given to implementing a water main replacement program which will provide for the replacement of these older & smaller diameter water mains, including the associated valves and appurtenances, with new PVC or HDPE pipes and valves/appurtenances. The replacement program can be implemented over a multi-year period to allow for the capital improvement costs to be budgeted as funds are available to the SMCSD. Additionally, some of these projects may be eligible for grant funding assistance under both state and federal programs.

5.5.5 WATER STORAGE FACILITIES

The SMCSD water system currently includes two (2) steel water storage tanks with a combined capacity of 700,000 gallons. This volume of storage is adequate to meet both existing and future development scenarios for operational storage, but is not adequate to meet fire or emergency storage requirements.

Based on assessment of fire demand scenarios, there is insufficient storage to support a fire suppression scenario where the existing "Mill" is involved a significant event. In this scenario, the SMCSD fire department anticipates that a continuous fire demand of 4500 GPM would need to be sustained for up to four hours. Assuming the system storage is at maximum capacity at the start of this event, then the water supply for fire suppression would be completely depleted in approximately 3 hours.

The current storage volume is not adequate for meeting the emergency storage requirement for either the 2035 or 2050 build-out scenarios. To meet this requirement, the District will need to add additional storage to the system when the population surpasses 4,660.

Regarding the condition of these tanks, the 650,000-gallon steel storage "main" tank was constructed in 2009 and is in excellent condition although consideration should be given to scheduling an inspection and cleaning of the tank. From a maintenance perspective, this tank should be programmed for recoating within the next 10-15 years. The 50,000-gallon SLT steel storage tank is of unknown age and is in marginal condition. This tank exhibits evidence of age and localized corrosion. This tank should be considered for replacement within the next 5 years.

5.6 RECOMMENDED WATER SYSTEM CAPITAL IMPROVEMENTS

5.6.1 OVERVIEW

The following sections provide a summary of the recommended SMCSD Water System Capital Improvements Program, with a brief description of the proposed projects and a preliminary cost estimate for each proposed improvement. The exhibits that follow the sections below show the location of each proposed project. The existing water system is adequate to meet current demands in the system, with the exception of the fire flows described previously. The recommended projects are required to meet future conditions and anticipated growth within the CSD Boundary. In addition, some of the recommended capital improvements are included to address system inadequacies and/or issues that are related to operation and maintenance considerations rather that system capacity.

5.6.2 CURRENTLY PLANNED PROJECTS

The following is a brief summary of capital improvement projects which are currently underway or have been approved by the SMCSD Board of Directors.

Water Meter Replacement

The SMCSD currently has implemented a program of water meter replacement whereby the complete inventory of meters is replaced on a 10-year cycle. It is recommended that this program be continued. Given that the number of water meters will gradually increase with time as the SMCSD service area is fully developed, the estimated cost to continue this program will continue to increase annually. The estimated project costs are summarized in Section 5.6.4 of this report.

Potential funding opportunities that exist for this project include the following programs:

- State Water Resources Control Board (SWRCB) Safe and Affordable Drinking Water Program

5.6.3 FUTURE PROJECTS

The following is a brief summary of capital improvement projects which are recommended for inclusion the future SMCSD Capital Improvement Plans (CIP) to be approved by the SMCSD Board of Directors.

4-inch C.I. Waterline Replacement Project (Alley Between "L" & "K" Streets)

The existing 4-inch cast iron water main, which is located in the alley between "L" Street and "K" Street, is recommended for replacement between 16th Street and San Luis Obispo Road. This segment of water main is approximately 3652 feet in length and contains 14 valves which should also be replaced. It is recommended that a new 8-inch PVC or HDPE pipe be installed as the replacement main. When completed, the flow and pressure conditions will be significantly improved for approximately 50 existing residential properties. Fire flows and pressures will also be enhanced along this corridor. Additional benefits will include a significant reduction in the cost of operation and maintenance of this section of water main. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program

4-inch C.I. and 3-inch A.C. Waterline Replacement Project (Alley Between "L" & Mission Streets)

There are two (2) existing water mains which are located in the alley between "L" Street and Mission Street which are recommended for replacement between 10th Street and San Luis Obispo Road. This segment of water main is approximately 765 feet in length and contains 8 valves which should also be replaced. It is recommended that a new 8-inch PVC or HDPE pipe be installed as the replacement main. When completed, the flow and pressure conditions will be significantly improved for approximately 20 existing residential properties. Fire flows and pressures will also be enhanced along this corridor. Additional benefits will include a significant reduction in the cost of operation and maintenance of this section of water main. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Safe and Affordable Drinking Water Program

- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program

4-inch C.I. Waterline Replacement Project (Alley East of "N" Street)

The existing 4-inch cast iron water main, which is located in the alley east of "N" Street between 11th Street and 12th Street, is recommended for replacement. This segment of water main is approximately 523 feet in length and contains 3 valves which should also be replaced. It is recommended that a new 8-inch PVC or HDPE pipe be installed as the replacement main. When completed, the flow and pressure conditions will be significantly improved for approximately 6 existing residential properties. Fire flows and pressures will also be enhanced along this corridor. Additional benefits will include a significant reduction in the cost of operation and maintenance of this section of water main. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program

New Water Supply Well

Although there is sufficient water production capacity with all three SMCSD water supply wells in service to meet water demands under existing conditions, the disruption of service to any of these wells could result in the inability of the District to meet future customer water requirements. A disruption of service can potentially occur due to mechanical failures; continuing lowering of the local groundwater levels in the aquifer; failure of the well casing and screen systems, and/or further water quality degradation. It is recommended that the SMCSD proceed with a hydrogeologic investigation and well siting study to evaluate the feasibility of developing a new water supply well. Following the outcome of the initial investigations, the District should proceed with the final design and construction of a new water supply well. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Prop 84, Sect 75022 – Drinking Water Infrastructure
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

Water Treatment System for Existing SLT Water Supply Well

As described in a previous section of this report, the SMCSD continues to monitor the water quality in its supply wells, with specific attention being paid to arsenic levels in the SLT Well. The concentration of arsenic is elevated and periodically exceeds the existing EPA Safe Drinking Water Standard. It is recommended that the SMCSD proceed with a wellhead treatment systems feasibility and alternatives study to evaluate the feasibility of installing an arsenic treatment facility at the SLT Well. Following the outcome of the initial investigations, the District should proceed with the final design and construction of a new treatment facility at the SLT Well. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Clean Water State Revolving Fund Program
- SWRCB Prop 84, Sect 75022 – Drinking Water Infrastructure
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

Water Treatment Systems for Water Supply Well Nos. 3 & 4

As described in a previous section of this report, the SMCSD continues to monitor the water quality in water supply Well Nos. 3 & 4 for gross alpha particle concentrations. Concentrations of gross alpha particles in the two wells are elevated and periodically exceed the existing EPA Safe Drinking Water Standard. It is recommended that the SMCSD proceed with a wellhead treatment systems feasibility and alternatives study to evaluate the feasibility of installing water treatment facilities at Well Nos. 3 & 4. Following the outcome of the initial investigations, the District should proceed with the final design and construction of new treatment facilities at Well Nos. 3 & 4. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Urgent Drinking Water Needs (AB 72 and 74)
- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Clean Water State Revolving Fund Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

SLT Pressure System including Booster & Fire Pumping Facilities

As described in a previous section of this report, the water distribution pipeline pressure in portions of the San Lawrence Terrace service area were determined to be low, and in some cases below 20 psi. Specifically, the water mains located in the immediate vicinity of the SLT 50,000-gallon storage tank and those water mains that serve the larger parcels on Mission Lane experience low pressures during most of the water demand scenario simulations. Based on discussions with SMCSD Fire Department staff, the available flow and pressure throughout much of the SLT area during fire suppression activities has been extremely low and problematic. The installation of a local booster and fire pump system would result in significant increases to both pressure and flow to the water distribution system in this area. The booster pumps and associated fire pumps could be configured with variable speed drives and programmed to maintain specified pressures under both normal demand and fire flow scenarios. The installation of a local booster and fire pump system would be required to meet minimum pressure requirements, should development occur on Tract 2723. It is recommended that the SMCSD proceed with feasibility and preliminary design study to evaluate the feasibility of installing a SLT booster and fire pump station. Following the outcome of the initial investigations, the District should proceed with the final design and construction of new SLT booster/fire pumping facility. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

SLT Storage Tank Replacement

The existing 50,000-gallon SLT steel storage tank is of unknown age and is in marginal condition. This tank exhibits evidence of age and localized corrosion. The SLT tank is also deficient in storage capacity and should be replaced with a tank of substantially increased capacity. Although the main and the SLT pressure zones are combined, the SLT tank should be able to supply a proportionate amount of storage to meet the demands (i.e. both domestic and fire) of the surrounding area. It is recommended that the existing 50,000-gallon tank be replaced with a new tank with a minimum of 200,000 gallons storage. It is recommended that the SMCSD proceed with investigations and preliminary design study to evaluate the feasibility of replacing the existing tank. Pending the outcome of the initial investigations, the District should proceed with the final design and construction of a new SLT storage tank. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Clean Water State Revolving Fund Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements

- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

New San Miguel Storage Tank

The site of the 650,000-gallon San Miguel tank has space reserved for an additional 650,000-gallon storage tank to be constructed. As the population of San Miguel increases, it is recommended that the SMCSD proceed with investigations and preliminary design study to assess the need for the additional storage tank. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

San Miguel Tank Access Road Improvement

The access road to the San Miguel tank is in marginal condition. It is recommended that the SMCSD proceed with the planning and preliminary design for the reconstruction of the access road. Following the outcome of the preliminary design, the District should proceed with the final design and construction of the access road. The estimated project costs are summarized in the following section of this report.

No external potential funding opportunities that were identified for this project.

SLT Waterline Replacement Project (Entire SLT Area)

The water distribution system in the SLT area experiences chronic low pressure issues, and pipelines in this area are recommended for replacement. Additionally, many of the pipelines in this area are made of asbestos cement (AC), which has been linked to health issues for those that consume water that flows through AC pipelines. It is recommended that the approximately 5100 feet of waterlines in the SLT area be replaced with new PVC or HDPE pipelines. It is recommended that the SMCSD proceed with investigations and preliminary design study for the replacement of the pipelines in the SLT area. Following the outcome of the preliminary design study, the District should proceed with the final design and construction of the SLT waterlines. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Clean Water State Revolving Fund Program
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements

- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

SLT Broken Waterline Replacement Project (Between SLT Tank and Oak Drive)

The 1236-foot, 6-inch diameter AC pipeline between the SLT tank and Oak Drive is broken and abandoned in place and is recommended for replacement. It is recommended that a new PVC or HDPE be installed as the replacement main. Replacement of this water main could result in flow and pressure improvements to the water distribution system in the SLT area, particularly near Oak Drive. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Safe and Affordable Drinking Water Program
- SWRCB Clean Water State Revolving Fund Program
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Prop 1, Chap. 5, Sect 79724 - Safe Drinking Water Infrastructure Improvements
- Community Development Block Grant (CDBG) Program

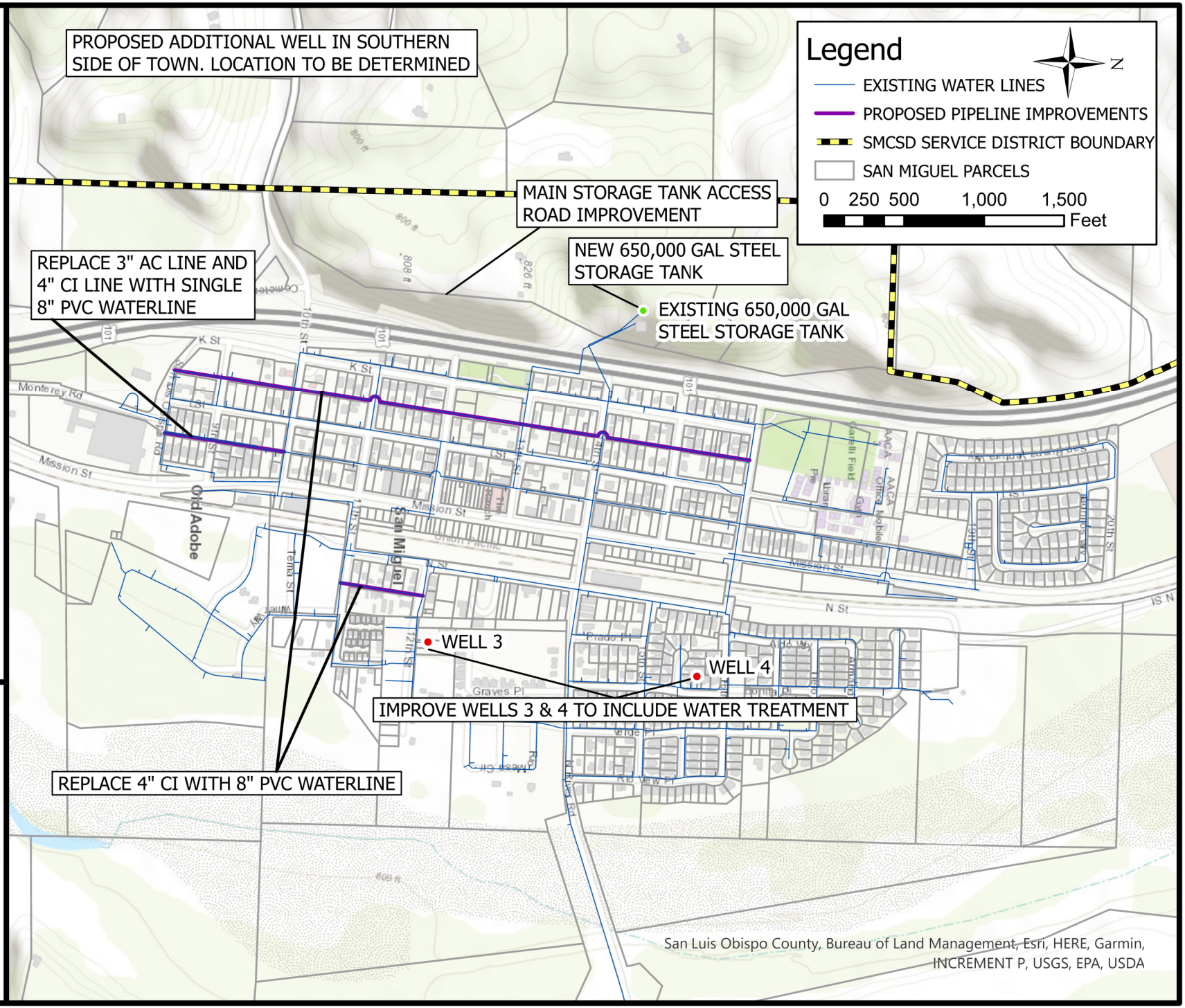
5.6.4 ESTIMATED PROJECT COSTS

The capital improvement program (CIP) costs which are summarized in the following table were developed based on engineering judgment, confirmed bid prices for similar work in the Central Coast area, consultation with vendors and contractors, established budgetary unit prices for the work, and other reliable sources.

WATER CIP PLAN

2020.03.002 SMCSD MASTER PLAN UPDATES

San Miguel Community Services District



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P.O. BOX 151 SAN LUIS OBISPO, CA 93406

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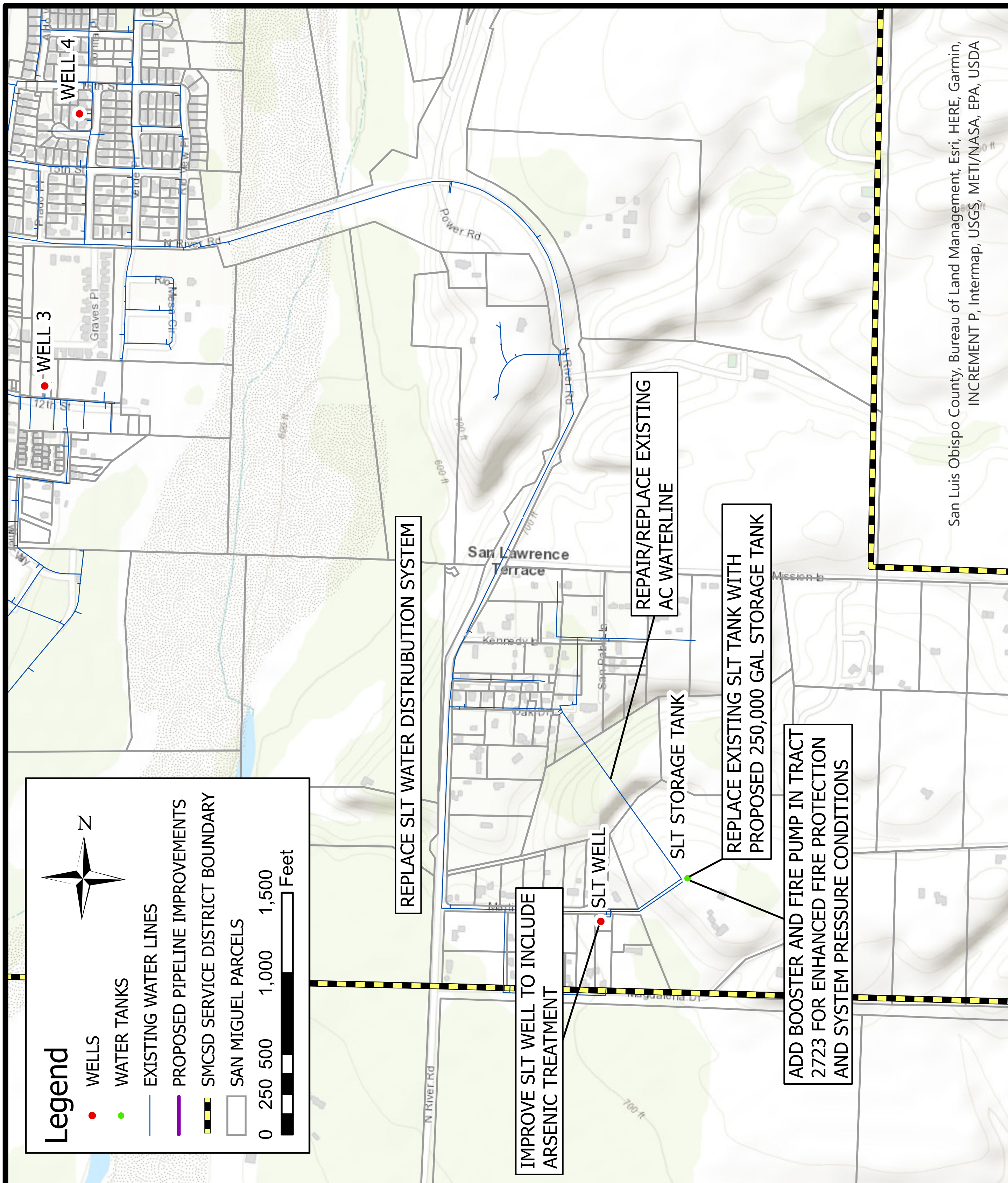

WATER CIP PLAN SLT

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SAN MIGUEL COMMUNITY SERVICES DISTRICT
WATER SYSTEM
RECOMMENDED CAPITAL IMPROVEMENTS
AUGUST 2020

		ESTIMATED COSTS (2020 USD)				
PROJECT #	PROJECT ID	PLANNING STUDIES / PRE-DESIGN INVESTIGATIONS	FINAL DESIGN / ENGINEERING / CONSTRUCTION DOCUMENTATION / ENVIRONMENTAL CLEARANCE / PERMITTING	LAND ACQUISITION	CONSTRUCTION / TESTING / INSPECTION	TOTAL ESTIMATED PROJECT COSTS (2017 USD)
1	SLT AC Waterline Replacement (Existing 6-in AC currently broken & out of service)	$15,125	$23,375	N/A	$275,000	$313,500
2	4 inch C.I. Waterline Replacement Project (Alley Between “L” & “K” Streets)	$29,508	$45,603	N/A	$536,500	$611,610
3	4 inch C.I. and 3 inch A.C. Waterline Replacement Project (Alley Between “L” & Mission Streets - 10th St to SLO Street)	$1,500	$10,107	N/A	$118,900	$130,507
4	4 inch C.I. Waterline Replacement Project (Alley East of “N” Street)	$4,386	$6,779	N/A	$79,750	$90,915
5	New Water Supply Well	$29,219	$45,156	$150,000	$531,250	$755,625
6	Radionuclide Water Treatment Systems for Existing Water Supply Well Nos. 3 & 4	$214,500	$331,500	N/A	$3,900,000	$4,446,000
7	Arsenic Water Treatment Systems for Existing SLT Water Supply Well	$115,500	$178,500	N/A	$2,100,000	$2,394,000
8	SLT Pressure System including Booster & Fire Pumping Facilities	$37,881	$58,544	$150,000	$688,750	$935,175
9	Replace SLT Water Districbution Pipeline System (approx. 5100 LF)	$40,673	$62,858	N/A	$739,500	$843,030
10	SLT Storage Tank Replacement (Replace w/ 300,000 (min) Gallon Steel Tank)	$48,125	$74,375	$150,000	$875,000	$1,147,500
11	New 650,000 Gallon (West Side) Steel Storage Tank	$89,375	$138,125	N/A	$1,625,000	$1,852,500
12	Water Meter Replacement (Annual Cost to be Expended Each Year)	N/A	N/A	N/A	$15,000	$15,000
13	Westside Water Storage Tank Access Road Reconstruction / Rehabilitation	N/A	$8,750	N/A	$250,000	$258,750
				TOTAL ESTIMATED PROJECTED CIP COSTS		$13,794,112

5.6.5 RECOMMENDED PROJECT SEQUENCING

The timing for implementation of the recommended Capital Improvement Program for SMCSD water system improvements will be largely dictated by the availability of funds and future changes in the performance of the existing system infrastructure. Revisions to existing water quality regulations may also have a significant impact on future project sequencing. For the purposes of this report, each of the recommended capital improvement projects has been assigned a priority. Each project was assigned one of the following priority levels:

- Priority A: Project should be initiated in Year 1 – 3
- Priority B: Project should be initiated in Year 4 – 6
- Priority C: Project should be initiated in Years 7+

A graphical depiction of the recommended project priorities is presented in the following Table. It is noted that for those projects which are anticipated to occur over multiple years (i.e. water meter replacement), the project has been assigned a priority which is related to when the initial work should be started.

5.6.6 DEVELOPMENT IMPACT FEES

Impact fees for future development are typically calculated based on the percentage increase in population included in the San Miguel CSD. There are approximately 900 existing water meters that serve SMCSD customers or are installed in a residence/business that is ready for occupancy at the time of this report. It is estimated that by 2035, the total number of water meters that will be served by the District will be approximately 1647. At 2050 development conditions, the number of water meters is expected to increase to approximately 2002. This represents a 122 percent increase in additional demand on District water system, assuming that the majority of the future water connections are residential with similar water usage patterns to the existing customers. The projected demands on the SMCSD water system could increase significantly over these projections in the event that large commercial/industrial/agricultural water users connect to the system. In 2018, the District retained the services of Bartle Wells Associates to prepare a water & sewer rate study to determine the required connection and user fees that should be applied for new meter connections. The rate study can be found on the SMCSD website here: https://www.sanmiguelcsd.org/rate-study-2018-final.

SAN MIGUEL COMMUNITY SERVICES DISTRICT
WATER SYSTEM
RECOMMENDED CAPITAL IMPOVEMENT PRIORITIES
AUGUST 2020

PROJECT #	PROJECT ID	PLANNING STUDIES / PRE-DESIGN INVESTIGATIONS	PRIORITY	FINAL DESIGN / ENGINEERING / CONSTRUCTION DOCUMENTATION / ENVIRONMENTAL CLEARANCE / PERMITTING	PRIORITY	LAND ACQUISITION	PRIORITY	CONSTRUCTION / TESTING / INSPECTION	PRIORITY
1	SLT AC Waterline Replacement (Existing 6-in AC currently broken & out of service)	$15,125	A	$23,375	A	N/A		$275,000	A
2	4 inch C.I. Waterline Replacement Project (Alley Between "L" & "K" Streets)	$29,508	A	$45,603	A	N/A		$536,500	B
3	4 inch C.I. and 3 inch A.C. Waterline Replacement Project (Alley Between "L" & Mission Streets - 10th St to SLO Street)	$1,500	A	$10,107	A	N/A		$118,900	A
4	4 inch C.I. Waterline Replacement Project (Alley East of "N" Street)	$4,386	B	$6,779	B	N/A		$79,750	B
5	New Water Supply Well	$29,219	A	$45,156	B	$150,000		$531,250	B
6	Radionuclide Water Treatment Systems for Existing Water Supply Well Nos. 3 & 4	$214,500	C	$331,500	C	N/A		$3,900,000	C
7	Arsenic Water Treatment Systems for Existing SLT Water Supply Well	$115,500	A	$178,500	A	N/A		$2,100,000	A
8	SLT Pressure System including Booster & Fire Pumping Facilities	$37,881	B	$58,544	B	$150,000	C	$688,750	C
9	Replace SLT Water Districbution Pipeline System (approx. 5100 LF)	$40,673	B	$62,858	B	N/A		$739,500	C
10	SLT Storage Tank Replacement (Replace w/ 300,000 (min) Gallon Steel Tank)	$48,125	A	$74,375	A	$150,000	B	$875,000	B
11	New 650,000 Gallon (West Side) Steel Storage Tank	$89,375	B	$138,125	B	N/A		$1,625,000	C
12	Water Meter Replacement (Annual Cost to be Expended Each Year)	N/A		N/A		N/A		$15,000	A
13	Westside Water Storage Tank Access Road Reconstruction / Rehabilitation	N/A		$8,750	B	N/A		$250,000	B

PROJECT PRIORITY COLOR CODE
PRIORITY A - YEAR 1-5
PRIORITY B - YEAR 6-10
PRIORITY C - YEAR 10+

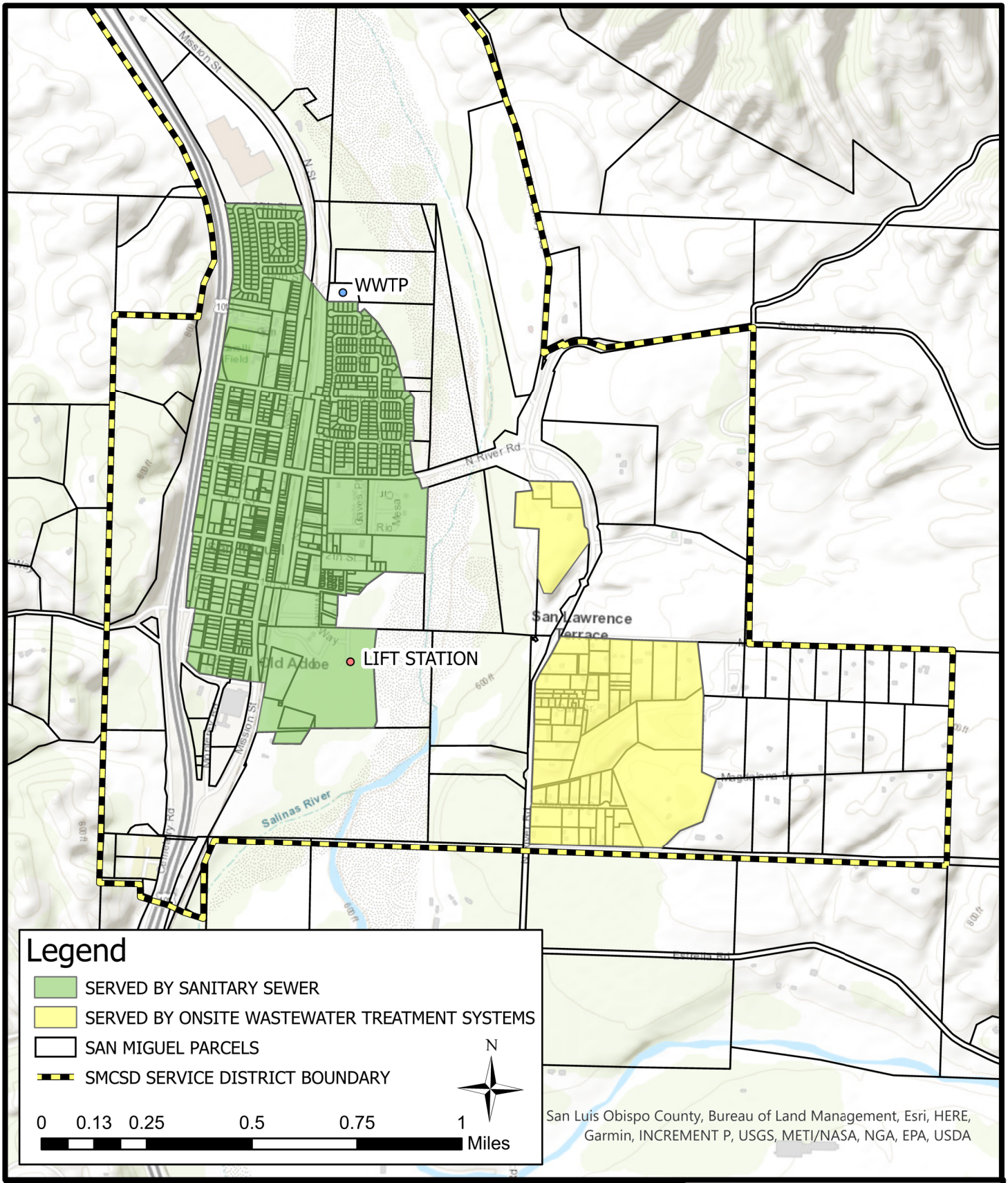
6.0 WASTEWATER SYSTEM ANALYSIS

6.1 EXISTING INFRASTRUCTURE

6.1.1 OVERVIEW

A summary of the major components that comprise the SMCSD wastewater collection and treatment system is presented in the following sections of this report. A graphical depiction of the general service areas and facility locations is included in the following wastewater service area map. As is depicted in the wastewater service area map, only the main area of the San Miguel community (i.e. that portion of the SMCSD service area that is located on the west side of the Salinas River) is currently served by sanitary sewer collection infrastructure. The parcels within the SMCSD service area which is located on the east side of the Salinas River are currently served by on-site wastewater treatment systems (OWTS).

In the main zone (i.e. west side of the Salinas River), there are currently six (6) onsite wastewater treatment systems (OWTS), on the east side of the Salinas River, in an area designated the San Lawrence Terrace (SLT), there are a total of 65 OWTS. There are provisions to accommodate a carrier pipe for a new sanitary sewer in the River Road bridge crossing of the Salinas River, should the need arise in the future. As for the six (6) OWTS systems in the main zone, it is planned that these will be served by the existing sanitary sewer collection system in the future.



SMCSD SANITARY SEWER SERVICE AREA

2020.03.002 - SMCSD MASTER PLAN UPDATES

San Miguel Community Services District Figure

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6.1.2 SANITARY SEWER COLLECTION SYSTEM

The SMCSD sanitary sewer collection system includes 46,959 feet (8.9 miles) of collection system pipes ranging in size from 4-inches to 16-inches in diameter. Approximately 60 percent (28,265 LF) of these pipes are vitrified clay pipe (VCP). The majority of these VCP pipe segments were constructed before 1960. The remaining 40 percent of the collection system pipelines are constructed of either PVC or HDPE and were constructed within the previous 50 years. The majority of these pipelines flow under gravity conditions with the exception of a small segment of pressure pipe which serves as a discharge for the newly constructed Tract 2527 Lift Station.

In addition to the gravity and pressure pipelines, the SMCSD sanitary sewer collection system includes numerous appurtenances which include manholes and clean-outs. The complete system inventory is summarized below.

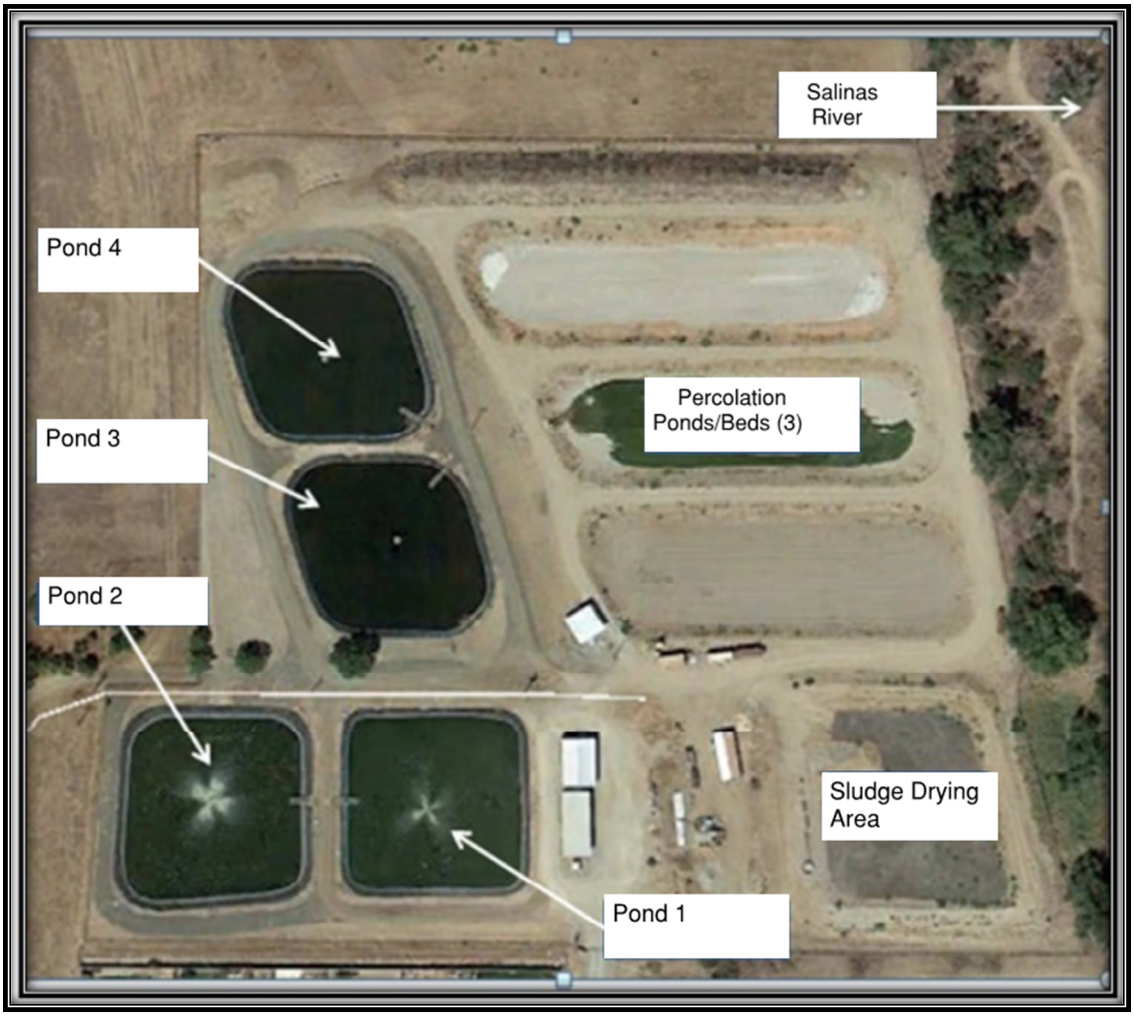
System	Item	Description	Qty	Length (LF)
Sewer System	Sewer Lines	16" HDPE	2	146
		12" PVC	5	1357
		10" PVC	5	728
		8" PVC	75	14745
		6" PVC	2	284
		4" PVC	1	205
		4" PVC-FM	5	1229
		16" VC	1	60
		12" VC	12	2984
		10" VC	3	929
		8" VC	71	23422
		6" VC	6	870
	Manholes	--	140	--
	Cleanouts	--	39	--
	WWTP Lift Station	--	1	--
	Tract 2527 Lift Station	--	1	--

6.1.3 SEWAGE LIFT STATION FACILITIES

Until 2017, there were no sewage lift stations installed in the SMCSD sanitary sewer collection system. With the development of Tract 2527, there was a requirement that the developers install a new sewage lift station to provide sanitary sewer service to the 60 new residential properties. This lift station became operational in late 2017.

6.1.4 WASTEWATER TREATMENT PLANT

The existing wastewater treatment plant (WWTP) underwent a significant upgrade in the late 1990s, bringing its current and permitted capacity to 200,000 GPD (0.2 MGD). The current WWTP comprises four partially mixed aerated lagoons in series (though the first two lagoons are piped to also operate in parallel) and three (3) percolation ponds. A graphical depiction of the WWTP is presented below.



The major elements which comprise the SMCSD WWTP are summarized as follows:

- Headworks: At this time, there is not a headworks associated with this plant, only influent pumping/metering of wastewater. Raw wastewater is pumped from the influent wet well/lift station to the first aerated treatment pond.

- Aerated Treatment Ponds, Stage 1: There are two 0.94 MG aerated aerobic ponds, equipped with 25 and 20 horsepower ponds, respectively. These are completely mixed aerated lagoons. Thus, the floating aerators keep all solids in suspension while maintaining dissolved oxygen

levels. Solids do not appreciably deposit in Ponds 1 and 2, but instead settle out predominantly in Pond 3. Floatable plastics and debris must be raked out of these ponds by hand.

- Aerated Treatment Ponds, Stage 2: There is a single 0.87 MG Stage 2 Pond, with a 7.5 HP aerator. This pond and floating aerator maintains dissolved oxygen levels in the pond, while allowing solids to settle to the bottom of the pond. Solids settle to the bottom of the pond, and organic matter in the sludge slowly decomposes anaerobically. This pond is generally referred to as a facultative pond, with an upper aerobic zone and lower anaerobic zone.

- Aerated Treatment Ponds, Stage 3: There is a single 0.87 MG pond equipped with a 7.5 HP aerator. This is the final (fourth) pond that also maintains dissolved oxygen levels in the upper zone. Very little sludge settles in this pond, and this pond would be considered a final polishing pond prior to discharge to the percolation ponds/beds.

- Percolation Ponds: There are three percolation ponds totaling 1.7 acres in area. The two northernmost ponds were re-conditioned in 2008. At that time, both ponds had silted up considerably, and were not effectively percolating effluent. Both ponds were dried out and ripped, and the upper several feet of material was removed and replaced with clean sand. In addition, the percolation ponds were deep-ripped in several locations to allow for better connectivity to the underlying more permeable soils. The third and southernmost pond was not re-worked at that time, but continues to serve as a percolation pond.

- Biosolids disposal: Although some biosolids accumulate in each of the aerated treatment ponds, the majority accumulates in Pond 3. When deemed appropriate by the WWTP operations staff, the biosolids are pumped from Pond 3 to the existing sludge drying basin. After drying and stabilization, the biosolids are transported to a local landfill for disposal.

Additionally, the existing facility components, coupled with their current design parameter capacities, are provided in the following table.

Parameter, units	Value
FLOWS	
Average Daily Flow (ADF) MGD	0.15
Maximum Day Dry Weather Flow (MDDWF), MGD	0.19
Peak Hourly Flow (PHF), MGD	0.53
WASTE STRENGTH AND LOADING	
Influent BOD_5, mg/L (design) [lbs/day]	300 [500]
Influent TSS, mg/L (design) [lbs/day]	250 [417]
INFLUENT LIFT STATION	
Pump Type	Submersible
No. of Pumps	2
Pump Horsepower (HP), each	7.5
Capacity, Each Pump, GPM	300
Total Dynamic Head, TDH, feet	17
TREATMENT PONDS	
Stage 1 (2 ponds):	
Surface Area, Acres, each	0.44
Depth, Feet, each	12
Volume, Million Gallons, each	0.94
Hydraulic Retention Time, Days, each	4.7
Aerator Horsepower, HP	25, 20
Stage 2:	
Surface Area, Acres	0.41
Depth, Feet	10
Volume, Million Gallons	0.87
Hydraulic Retention Time, Days	4.4
Aerator Horsepower, HP	7.5
Stage 3:	
Surface Area, Acres	0.41
Depth, Feet	10
Volume, Million Gallons	0.87
Hydraulic Retention Time, Days	4.4
Aerator Horsepower, HP	7.5
EFFLUENT PERCOLATION/DISPOSAL	
Pond 1:	26,500 (0.61)
Surface Area, SF (acres)	
Pond 2:	24,200 (0.56)
Surface Area, SF (acres)	
Pond 3:	23,200 (0.53)
Surface Area, SF (acres)	

The SMCSD is nearing the treatment capacity of the existing WWTP. The SMCSD currently treats an average of approximately 150,000 GPD, with occasional daily flow volumes which exceed the treatment

capacity of the WWTP. The SMCSD acknowledges that the existing WWTP is reaching capacity and requires an expansion and upgrade.

In June 2018, the Central Coast Regional Water Quality Control Board (CCRWQCB) issued a letter to the SMCSD in which they informed the SMCSD that they should proceed immediately with the planning and engineering for the expansion of the existing WWTP. In the referenced letter, the CCRWQCB stated that because the existing WWTP has been chronically out of compliance with permit limits for total dissolved solids, chloride, and sodium, the SMCSD should consider including salt and nitrogen removal capability in the expansion plans.

In addition to the expanded and enhanced treatment capacity that the SMCSD needs to achieve as a consequence of continued population growth within the SMCSD boundaries, the SMCSD Board of Directors also understands that the expansion and upgrade of the WWTP must also be accomplished in a manner which is compatible with the requirements of the Sustainable Groundwater Management Act (SGMA). For these reasons, the SMCSD is evaluating treatment alternatives to provide recycled effluent which meets the requirements for agricultural irrigation.

The SMCSD purchased approximately 18 acres of unimproved land to the north and east of the current Wastewater Treatment Facility for future expansion purposes. A detailed description of the planned upgrade/expansion of the WWTP is included in Section 6.6.2.

6.2 WASTEWATER DISCHARGE REQUIREMENTS

6.2.1 EXISTING PERMIT CONDITIONS

The SMCSD wastewater treatment facilities are regulated by Region 3 (Central Coast Region) Regional Water Quality Control Board (Regional Board) Order No. 99-046. At the time that the Waste Discharge Requirements (WDRs) were issued, they were issued to the San Miguel Sanitary District, which was dissolved in the early 2000s, and subsequently the District resumed all wastewater responsibilities in the SMCSD service area. The existing facility was upgraded during this time frame, to include the full expansion described in Finding No. 5 of the WDRs, which included the construction of the second of two 940,000-gallon aerated lagoons. The permitted treatment capacity is 200,000 gpd (0.2 mgd) on a maximum month basis. The current requirements of the WDRs are summarized as follows:

- Permitted treatment capacity, mgd 0.2 (max. month)
- Effluent limitations:

	Avg. last 6 samples	Maximum
TDS, mg/L	825	900
Chloride, mg/L	180	200
Sulfate, mg/L	175	200
Sodium, mg/L	150	170

- The treatment ponds must maintain a minimum 2.0 feet freeboard at all times, and must maintain dissolved oxygen of 1.0 mg/L minimum at all times.
- Effluent pH shall range between 6.5 and 8.4 at all times.
- Discharge shall not cause nitrate concentrations in downgradient GW to exceed 5 mg/L (as N).
- Discharge shall not cause “significant” increase in TDS.

Under the current WDRs, the SMCSD is not required to sample influent or effluent organic waste strength parameters (total suspended solids (TSS), biochemical oxygen demand (BOD_5)). However, the District must submit quarterly monitoring reports, and also must submit an annual report summarizing the past year's effluent and disposal area monitoring.

6.2.2 FUTURE PERMIT REQUIREMENTS

The Regional Board has drafted a new General Waste Discharge Requirements Order No. R3-2020-0020 (General Permit), which will take effect on September 25, 2020. The District is in the process of upgrading and expanding the municipal WWTP and will be required to submit an application to the Regional Board to obtain coverage under the General Permit. The new WWTP will include the installation of a headworks facility; nitrogen removal; tertiary disinfection; and recycling/reclamation. The new WWTP must comply with the General Permit, included for reference as Appendix E (draft version) to this document. WWTP specifications described in the General Permit are summarized in the following paragraphs.

The new WWTP must comply with the setbacks specified in Table 2 of the General Permit unless an approved variance is obtained from the Central Coast Water Board Executive Officer.

Residual sludge and solid waste must be disposed of in a manner approved by the Central Coast Water Board Executive Officer and consistent with the Consolidated Requirements for Treatment, Storage, Processing, or Disposal of Solid Waste (California Code of Regulations, Title 27, Division 2). Use and disposal of biosolids must comply with the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, Title 40, Part 503).

The new WWTP will be required to comply with the secondary effluent limitations specified in Table 5 of the General Permit, included here for reference:

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	Not Applicable
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	Not Applicable
Settleable Solids	mL/L	0.1	0.3	0.5
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

In addition to the secondary effluent limitations, the General Permit states that discharge will be required to meet groundwater objectives specified in Table 3-6 of the Water Quality Control Plan for the Central Coast Basin (Basin Plan). The median groundwater objectives for the Paso Robles Area, San Miguel are as follows:

- TDS: 750 mg/L
- Chlorine: 100 mg/L
- Sulfate: 175 mg/L
- Boron: 0.5 mg/L
- Sodium: 105 mg/L
- Nitrogen: 10 mg/L

The General Permit also states that tertiary treated non-potable wastewater that will be discharged to land for the purpose of reuse must comply with the effluent limitations specified in California Code of Regulations, Title 22, Division 4, Chapter 3.

In accordance with the General Permit, the District will be required to submit the following technical reports in accordance with the schedule specified in the Monitoring and Reporting Program (MRP). The MRP prescribes the required components of each plan. The District must implement each required plan.

- Pretreatment Program Plan (only if directed by the Central Coast Water Board Executive Officer)
- Operations and Maintenance Manual, containing:
    - Sampling and Analysis Plan
    - Sludge Management Plan
    - Land Application Area Management Plan
    - Spill Prevention and Emergency Response Plan
- Climate Change Adaptation Plan
- Salt and Nutrient Management Plan

6.3 WASTEWATER FLOW ANALYSIS

6.3.1 OVERVIEW OF FLOW SCENARIOS

The design requirements for the wastewater collection and treatment system relate primarily to the volume of flow which is conveyed though the collection system of gravity and pressure pipelines and through the various treatment processes at the WWTP. Flows in the sanitary sewer collection system which result in significant surcharge conditions can result in sewage back-ups into connected structures and/or overflows and bypasses of the wastewater system. The wastewater system flow scenarios examined in conjunction with this study include average daily flow (ADF), maximum day dry weather flow (MDDWF), maximum day wet weather flow (MDWWF), and peak hour wet weather flow (PHWWF). These flow scenarios, for selected development conditions, are summarized in a subsequent section of this report.

When discussing wastewater system flow scenarios, it is important to define some of the terminology commonly used to describe and analyze water system demands.

- *Average Daily Flow (ADF)* is the average daily wastewater flow over the course of a year and is generally obtained by averaging the mean monthly flows conveyed to the WWTP through the course of a year.

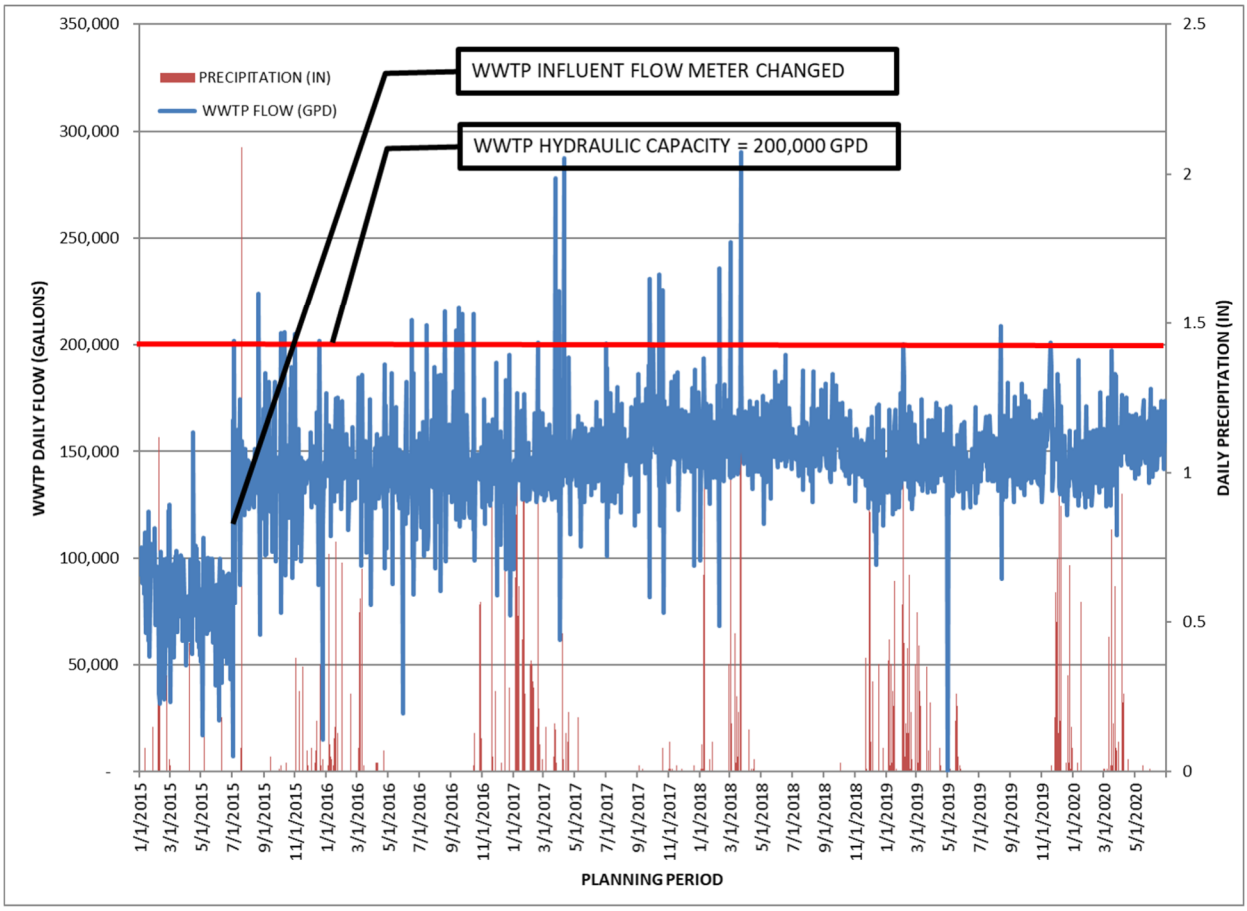
- *Maximum Day Dry Weather Flow (MDDWF)* reflects the maximum flow rate during the peak month of summer. This condition reflects the seasonal variation in dry weather flow.

- *Maximum Day Wet Weather Flow (MDWWF)* reflects the maximum flow rate during the peak month of winter. This condition reflects the seasonal variation in wet weather flow.

- *Peak Hour Wet Weather Flow (PHWWF)* is the maximum flow rate that occurs in a single hour during wet weather (a significant rainstorm event). Since the District does not record hourly flow rates, this factor must be derived from standard engineering methodology and judgment. This flow condition will govern the design of the sewage collection system and represents the maximum flow rate that the system must convey.

6.3.2 HISTORIC WASTEWATER FLOWS

For the purposes of determining the appropriate wastewater system flows for existing and future conditions, an analysis was performed on the SMCSD historic wastewater system flow data. The available flow data is derived from an analysis of the daily flow records from the WWTP influent lift station. A graphical depiction of the daily wastewater flows is presented below. The available flow data indicate that the highest flows to the WWTP occurred in 2017. Since 2017, flows have declined slightly, which is believed to be related to the water and sewer rate increase that was implemented in 2018.



Based on a review of the data for the referenced planning period, it was determined that several of the high and low flow measurements are anomalous and likely in error. This is evidenced by flow measurements on subsequent days that vary by more than 100%, during times when there was no rainfall or any other reason to expect dramatic flow variations. In order to develop appropriate design flows for the wastewater collection facilities, accepted engineering methods and previous engineering experience on similar sized systems in the central coast of California were applied to arrive at reasonable flow values for the specified flow scenarios with consideration given to the daily flow record, the size of the collection system and the population being served. The corresponding wastewater flow design parameters for the existing conditions are summarized below.

WASTEWATER FLOW SCENARIO	EXISTING CONDITIONS FLOW (MGAL/DAY)
Average Daily Flow (ADF)	0.150
Maximum Day Dry Weather Flow (MDDWF)	0.188
Maximum Day Wet Weather Flow (MDWWF)	0.225
Peak Hour Wet Weather Flow (PHWWF)	0.525
Estimated Population Served	2621
Estimated Number of Sewer Connections	782

Under existing conditions, the corresponding flow contributions on a per connection basis are summarized below.

WASTEWATER FLOW SCENARIO	EXISTING CONDITIONS FLOW PER CONNECTION (GPD)
Average Daily Flow (ADF)	192
Maximum Day Dry Weather Flow (MDDWF)	240
Maximum Day Wet Weather Flow (MDWWF)	288
Peak Hour Wet Weather Flow (PHWWF)	671

6.3.3 FUTURE WASTEWATER FLOW SCENARIOS

For the purposes of estimating the treatment capacity requirements of the SMCSD WWTP to adequately serve the future growth that is likely to occur within the SMCSD's service area, an analysis was performed to estimate the future wastewater flows. For the purposes of this analysis, flow projections were developed using current flow volumes and anticipated community growth information based on current and future land use information discussed in previous sections of this Masterplan Update and from the following sources:

- Sphere of Influence Update for San Miguel Community Services District (November 2013)
- Information provided by San Miguel Community Services District Staff
- Information provided by EJ Gallo Staff (Courtside Cellars)

In conjunction with this study, discussions with the EJ Gallo Corporation were held to explore the feasibility of SMCSD receiving and treating process wastewater flows from their Courtside Cellars wine processing facility. The wine processing facility is located northwest of the SMCSD WWTP site on an adjacent parcel of land and under current conditions processes between 30,000-60,000 GPD of wastewater. The Courtside Cellars process wastewater treatment system currently consists of two (2) primary partial-mix aerated ponds which flow into a settling pond before discharging into percolation ponds for effluent disposal. The potential benefits of consolidating the wastewater flows from the Courtside Cellars with SMCSD wastewater flow include increasing the supply of reclaimed water for irrigation of agricultural properties in the vicinity of the SMCSD and/or to provide increased supplies for groundwater aquifer recharge. Both benefits are compatible with the goals of the SMCSD to achieve groundwater sustainability.

Utilizing data that was derived from the above sources, estimates were made for existing and future WWTP flow conditions for the following years: 2020, 2025, 2035, 2050. The 2025 flow condition assumes that the only additional development includes the high-probability parcels between Highway 101 and the Salinas River, and that no properties east of the Salinas River have been connected to the sanitary sewer system. The 2035 and 2050 flow conditions are based on the high- and medium-probability development scenarios described in Section 4.0. The 2040 flow condition was estimated through linear interpolation between the 2035 and 2050 scenarios. The reference planning periods were

selected for the design of a modular WWTP, and under the assumption that the design/service life of the expanded & renovated WWTP will not exceed 30-years. Further, with the advent of new technologies and regulatory requirements that will occur over this span of time, it is probable that a new WWTP facility will need to be constructed by 2050. A summary of the future WWTP flow projections is included in the following table.

Flow Condition	Peaking Factor	Existing Flow (MGD)	Projected Flow (MGD)			
			2025	2035	2040	2050
Average Daily Flow (ADF)	--	0.150	0.258	0.346	0.372	0.427
Maximum Day Dry Weather Flow (MDDWF)	1.25	0.188	0.323	0.433	0.465	0.534
Maximum Day Wet Weather Flow (MDWWF)	1.5	0.225	0.387	0.520	0.558	0.641
Peak Hour Wet Weather Flow (PHWWF)	3.5	0.525	0.903	1.213	1.301	1.495
Estimated Population Served	--	2620	3970	5330	5720	6570
Estimated Number of Sewer Connections	--	782	1170	1480	1600	1840
Annual Discharge (AC-FT)	--	170	290	390	420	480
Annual Discharge (AC-FT) w/ Gallo Wastewater	--	210	330	430	460	520
	[1] Projected ADF, population increase, and sewer connections are based on this SMCSD Water & Wastewater Masterplan Update.					
	[2] It should be noted that the peaking factor for computing the MDWWF for future conditions was reduced from 4.0 to 3.5. Scenarios after 2035 include flows from existing properties in the SLT, which currently utilize onsite wastewater treatment systems.					
	[3] The current per capita wastewater flow is approximately 57 gpd/c. The projected system flow is based upon a value of 65 gpd/c.					
	[4] The projected treatment system design life expectancy is estimated to be 30 years.					

6.3.4 STORM WATER INFILTRATION AND INFLOW

The infiltration and inflow (I/I) of storm water into a sewer system can result in peak flows that far exceed dry weather conditions. For the purposes of this report, these terms are defined as follows:

- *Infiltration* is the water entering a sewer system and service connections from groundwater, through such means as defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include inflow and is relatively constant over a period of days, weeks, or even months as high groundwater conditions persist.

- *Inflow* is the water discharged into a sewer system and service connections from such sources as roof drains, cellar, yard and area drains, foundation drains, cooling water discharges, drains

from springs and swampy areas, manhole covers, cross connections from storm sewers, catch basins, storm water, surface runoff, or drainage. Inflow does not include infiltration. Inflow varies rapidly with rainfall condition, with flows rising and falling within minutes or hours of a severe storm event.

Because the depth to the groundwater table throughout the SMCSD wastewater collection system service area is significantly deeper than the deepest pipeline in the collection system, it is very unlikely that groundwater infiltration contributes any significant flow to the wastewater collection system.

Based on a review of the wastewater flow records and discussions with SMCSD staff, there is evidence that there are inflow contributions into the collection system. These inflow contributions are included in the MWWDF and PHWWF flow values described above. As the existing collection system is expanded to accommodate future growth, the I/I related flow should not increase significantly because new sewer construction methods and materials have very low I/I rates. The WWTP is designed to accommodate these transient flow events. However, the District should take appropriate measures to minimize I/I in the wastewater collection system to prevent I/I from becoming a problem.

6.4 WASTEWATER SYSTEM HYDRAULIC ANALYSIS

The computer model of the SMCSD sanitary sewer collection system was created in 2017 and has not been updated from the 2017 Water and Wastewater Masterplan update. The 2017 analysis was considered to be an adequate representation of 2020 conditions.

6.4.1 MODEL DEVELOPMENT

A computer model of the SMCSD sanitary sewer collection system was created for the purposes of analyzing the collection systems performance characteristics under various flow scenarios and to assist in the identification of system deficiencies. Any deficiencies that were identified provided the basis for the recommended capital improvements for the SMCSD sanitary sewer collection system that are described in subsequent sections of this report.

The sanitary sewer collection system hydraulic model was developed using the SewerCAD software, which was developed by Bentley Systems. SewerCAD was developed to analyze pressure or free surface flow conditions using a gradually varied, standard-step algorithm for solving complex composite profiles and subcritical, critical, and supercritical conditions. The steady-state simulation permitted the analysis of the collection system under extreme flow conditions. The extended period simulations (EPS) permitted the analysis of the collection system performance over time. Results of the EPS, for the previously described flow scenarios, were utilized to identify locations where surcharging sections occur.

The configuration of the sanitary sewer collection system which was used for simulation was developed from the GIS databases which were prepared by the Wallace Group in conjunction with the creation of the Sewer Utility Atlas in September 2015. This information was augmented with information obtained from improvement plans which have been submitted to the SMCSD for proposed future developments.

The following four (4) distinct flow scenarios were analyzed. The flow data that was utilized for each of these scenarios is described in a previous section of this report.

WASTEWATER FLOW SCENARIO
Average Daily Flow (ADF)
Maximum Day Dry Weather Flow (MDDWF)
Maximum Day Wet Weather Flow (MDWWF)
Peak Hour Wet Weather Flow (PHWWF)

The hydraulic criterion which were utilized to evaluate the ability of the SMCSD sanitary sewer collection system to meet user loading under the stated flow scenarios are summarized below. The basis for the stated criterion includes both recommendations from the AWWA and State of California requirements.

- Minimum Pipe Size: Pipes shall be sized to handle peak flows with the pipe flowing half full for sewers up to 15-inches in diameter. Larger sanitary sewers shall be designed to flow three-quarters full. In all future developments, the normal minimum sewer main size shall be 8-inches inside diameter.
- Minimum Velocity: Sanitary sewer grades shall be designed to provide a minimum velocity of 2 fps when flowing at MDDWF conditions. The minimum velocity requirement is necessary to prevent the deposition of solids. The following table indicates the slopes which will provide that velocity, and these shall be used as the minimum standard for design.

MINIMUM PIPE DIAMETER (IN)	SLOPE (FT/FT)
6	0.0050
8	0.0035
10	0.0025
12	0.0020
15	0.0015
18	0.0012
House Service Line	0.0200

- Maximum Velocity: Unless special provisions for erosion protection have been provided, and approved by the SMCSD, design velocities for sanitary sewers shall not exceed 10 fps at peak MDDWF conditions. The maximum design discharge shall not exceed the flow at critical slope and velocity. Sanitary sewers should not be designed for flow conditions at critical slope and velocity.
- Depth: In all future developments, the normal design depth of a sanitary sewer system shall be such as to obtain a cover of 36-inches above the top of pipe for the house service lateral at the property line.

6.4.2 HYDRAULIC MODELING RESULTS

As described in previous sections of the report, hydraulic modeling was performed to assess the capacity of the existing sanitary sewer collection system adequately convey the wastewater produced from all connected SMCSD customers during the following flow scenarios.

- Average Daily Flow (ADF)
- Maximum Day Dry Weather Flow (MDDWF)
- Maximum Day Wet Weather Flow (MDWWF)
- Peak Hour Wet Weather Flow (PHWWF)

Based on the results of the hydraulic modeling of the existing sanitary sewer collection system, it was determined that the capacity of the existing system, which is located on the west side of the Salinas River, is generally adequate and is capable of meeting all sanitary sewer flows under the specified flow conditions.

It should be noted that no simulations of flow scenarios were performed to evaluate the potential for connecting those existing (or any future) customers that reside on the east side of the Salinas River to the existing sanitary sewer collection system.

Although the existing sanitary sewer collection system has adequate hydraulic capacity to accommodate the existing system scenarios, there are improvements/modifications to the overall wastewater collection and treatment system that should be implemented. These improvements/ modifications are described in subsequent sections of this report.

6.5 WASTEWATER SYSTEM ADEQUACY ASSESSMENT

6.5.1 OVERVIEW

An assessment was developed regarding the adequacy of the existing SMCSD wastewater collection and treatment system to meet the existing and future demands of the District's customer base. This adequacy assessment is based on a combination of factors. The most important of these factors include direct input from SMCSD utility operations staff that have an intimate understanding of how the existing system is configured and performs under a variety of operational scenarios. It is the operations staff who has the institutional knowledge regarding maintenance requirements and repair history of the system, as well as the experience gained from the day to day duties required to operate and maintain the system. Input from the operations staff was supplemented with extensive reviews of "As-Built" drawings and construction documentation; previously prepared engineering and related technical reports and documents; personal site inspections; and the results of the hydraulic modelling of the wastewater collection system. Collectively, all of these sources information were considered in the development of the findings regarding water system adequacy which are summarized in the following sections of this report.

6.5.2 SANITARY SEWER COLLECTION SYSTEM

As described in a previous section of this report, the SMCSD sanitary sewer collection system includes 46,959 feet (8.9 miles) of collection system pipes ranging in size from 4-inches to 16-inches in diameter. Due to the generally flat topography within some of the older areas of the San Miguel community, the typical slope of the gravity sanitary sewer pipes in these areas is very flat. Approximately 60 percent (28,265 LF) of these pipes are vitrified clay pipe. The majority of these VCP pipe segments were constructed before 1960. In those older areas where the vitrified clay pipes exist, there are approximately ninety (90) manholes, lamp holes and cleanouts.

These older VCP pipes and manhole structures represent significant maintenance problems currently and will require an increasingly significant cost burden for repair and maintenance in the future. The majority of these smaller diameter pipes have been in the ground for greater than 50 years and represent significant maintenance problems currently and will require an increasingly significant cost burden for repair and maintenance in the future. Consideration should be given to implementing a sanitary sewer and manhole rehabilitation program which will provide for the installation of a cured-in-place polymer (CIPP) liner of these older VCP gravity sanitary sewers and the rehabilitation of those older manholes that display evidence of structural deterioration. The rehabilitation program can be implemented over a multi-year period to allow for the capital improvement costs to be budgeted as funds are available to the SMCSD. Additionally, some of these projects may be eligible for grant funding assistance under both state and federal programs.

Although the hydraulic capacity of the existing sanitary sewer collection system is adequate, the SMCSD should consider at some point in the future constructing a diversion structure which will allow flows from the west side trunk line to be partially conveyed to the east side trunk line. With this diversion structure in place, the risk of system back up and or overflow/bypass can be minimized in the event that either of the trunk lines becomes blocked or failure occurs. To accomplish this, a diversion structure can be built in the intersection of 16th Street and Bonita Place to divert flow from the west side trunk line into the east side trunk line during peak flow conditions. Alternatively, should a blockage and backup occur in the east side trunk line, the surcharges flow can be diverted into the west trunk line.

6.5.3 SEWAGE LIFT STATION FACILITIES

As described in a previous section of this report, until 2017, there were no sewage lift stations installed in the SMCSD sanitary sewer collection system. With the development of Tract 2527, a new sewage lift station was installed to provide sanitary sewer service to the 60 new residential properties. This lift station became operational in July 2017. No deficiencies have been identified regarding this facility.

6.5.4 WASTEWATER TREATMENT PLANT

In June 2018, the Central Coast Regional Water Quality Control Board (CCRWQCB) issued a letter to the SMCSD in which they informed the SMCSD that they should proceed immediately with the planning and engineering for the expansion of the existing WWTP. In the referenced letter, the CCRWQCB stated that because the existing WWTP has been chronically out of compliance with permit limits for total dissolved

solids, chloride, and sodium, the SMCSD should include salt and nitrogen removal capability in the expansion plans.

In addition to the expanded and enhanced treatment capacity that the SMCSD needs to achieve compliance with the proposed (DRAFT) Waterboard Waste Discharge Requirements (WDR No. R3-2020-0020) and as a consequence of continued population growth within the SMCSD boundaries, the SMCSD Board of Directors also understands that the expansion and upgrade of the WWTP must also be accomplished in a manner which is compatible with the requirements of the Sustainable Groundwater Management Act (SGMA), including the Paso Robles Groundwater Sustainability Plan (GSP), which was adopted in November 2019. For these reasons, the SMCSD is planning to install treatment facilities to provide recycled effluent which meets the Title 22 requirements for agricultural irrigation.

6.6 RECOMMENDED WASTEWATER SYSTEM CAPITAL IMPROVEMENTS

6.6.1 OVERVIEW

The following sections provide a summary the recommended SMCSD Wastewater System Capital Improvements Program, with a brief description of the proposed projects and a preliminary cost estimate for each proposed improvement. The existing wastewater treatment plant is not consistently meeting system flow and effluent requirements.

A major project that is included is the upgrade and expansion of the DISTRICT's Wastewater Treatment Plant (WWTP) and the construction of a new recycled water ("purple pipe") distribution system. This upgrade will eventually provide the DISTRICT with the capacity to produce and convey a supply of high-quality effluent that will meets California Title 22 requirements for non-contact irrigation of vineyards and / or indirect recharge to the groundwater aquifer for potable use, with an ultimate maximum day dry weather flow capacity of 0.50 Million Gallons per Day (MGD).

The recommended projects are required to meet existing and future conditions and anticipated growth within the SMCSD Boundary. In addition, some of the recommended capital improvements are included to address system inadequacies and/or issues that are related to operation and maintenance considerations rather that system capacity. The exhibit that follows the sections below shows the location of each proposed project.

6.6.2 CURRENTLY PLANNED PROJECTS

The following is a brief summary of capital improvement projects which are currently underway or have been approved by the SMCSD Board of Directors.

Wastewater Treatment Plant Upgrade/Expansion

The SMCSD is currently in the process of planning and designing the expansion/renovation of the District's wastewater treatment plant (WWTP). The goal of this project is to design a WWTP that meets all existing and anticipated regulatory requirements and the needs of the SMCSD customers over the next 30-years. The plant should be expanded to accommodate flows through 2050. As part of this

process, the SMCSD identified and evaluated multiple alternatives to determine what improvements to the WWTP are the most appropriate for the immediate and long-term needs of the District. Each alternative was evaluated based on technical feasibility and cost:benefit characteristics. Through this effort, the District defined the project description which will be sufficient for preparation of an EIR, including recommended capacity of plant and the required footprint. In addition, the determination of the recommended treatment processes will occur. At minimum, the planning and design engineering program will address the following elements of the WWTP:

- Addition of a Headworks Facility which incorporates screening/grit removal. The function of the headworks is to remove inorganics such as sticks, stones, grit, and sand from the wastewater stream to protect and reduce wear on the downstream process equipment.

- Conversion of existing primary treatment ponds to influent equalization basins with submerged fine and coarse bubble aeration systems to provide a nominal level of primary treatment and odor control.

- Renovation/replacement of the Influent Lift Station to include the replacement of the wet well structure, influent pumps, piping, valves, metering, electrical and controls system.

- Installation of a Membrane Bioreactor (MBR) for nitrate removal.

- Installation of in-vessel UV disinfection to bring the treated effluent to Title 22 standards.

- Incorporation of additional processes/facilities for water recycling/reclamation, including storage ponds and recycled water pumping station and distribution pipelines.

- Addition of aerobic digesters and sludge dewatering for biosolids handling. After drying and stabilization, biosolids will be sent to a nearby landfill.

- Installation of additional groundwater quality monitoring wells.

- Upgrade of the overall WWTP electrical and controls systems. Expansion the existing SCADA system within the plant to provide for enhanced control and monitoring/data collection/data archiving & reporting.

The District is in the process of completing a Preliminary Engineering Report for the Upgrade/Expansion of the WWTP, which will include a full, detailed analysis of the WWTP upgrade/expansion. The estimated project costs are summarized in a subsequent section of this report.

Potential funding opportunities that exist for this project include the following programs:

- USDA Rural Water & Waste Disposal Loan & Grant Program
- DWR Sustainable Groundwater Management (SGM) Implementation Grant Program
- SWRCB Water Recycling Funding Program
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Clean Water State Revolving Fund Program

- Community Development Block Grant (CDBG) Program

6.6.3 FUTURE PROJECTS

The following is a brief summary of capital improvement projects which are recommended for inclusion the future SMCSD Capital Improvement Plans (CIP) to be approved by the SMCSD Board of Directors.

UPRR Property Acquisition for WWTP Expansion

As described in previous sections of this report, the SMCSD is in the process of planning and designing the upgrade/expansion of the WWTP. The District is considering purchasing two parcels (APNs 021-051-020 and 021-051-022), which are currently owned by the Union Pacific Railroad. APN 021-051-020 is located immediately west of the existing and expansion WWTP properties. APN 021-051-022 is located directly south of APN 021-051-020 and connects to 16th Street at the southerly end of the parcel. Acquisition of these two parcels will provide the District with approximately 6.8 additional acres of land outside of the 100-year floodplain for future WWTP expansion. The estimated property acquisition costs are summarized in the following section of this report.

No external funding opportunities were identified for this project.

16th Street Sanitary Sewer Diversion Structure

As described in a previous section of the report, the SMCSD should construct a diversion structure which will allow sanitary sewer collection system flows from the west side trunk line to be partially conveyed to the east side trunk line. With this diversion structure in place, the risk of system backup and/or overflow/bypass can be minimized in the event that either of the trunk lines becomes blocked or failure occurs. To accomplish this, a diversion structure can be built in the intersection of 16th Street and Bonita Place to divert flow from the west side trunk line into the east side trunk line during peak flow conditions. Alternatively, should a blockage and backup occur in the east side trunk line, the surcharges flow can be diverted into the west trunk line. It is recommended that the SMCSD proceed with the design and preparation of construction documents for the 16th Street Diversion Structure. Pending the availability of funding, the District should proceed with the construction of new 16th Street Diversion Structure. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Clean Water State Revolving Fund Program

Multi-Year Sanitary Sewer Lining & Manhole Rehabilitation Program

As described in a previous section of the report, there exists approximately 28,265 LF of vitrified clay pipes (VCP) in the SMCSD sanitary sewer collection system. The majority of these VCP segments were constructed before 1960. In those older areas where the vitrified clay pipes exist, there are approximately ninety (90) manholes, lamp holes and cleanouts. It is recommended that the SMCSD

implement a multi-year program to install cured-in-place polymer (CIPP) liners in these pipes to extend the service life and reduce future maintenance and repair costs. In conjunction with the lining of the VCPs, the program should include the rehabilitation of the 90 (approx.) manholes that are connected to these VCPs. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Household Drinking Water and Wastewater Needs Program
- SWRCB Drinking Water and Wastewater System Repair Program
- SWRCB Clean Water State Revolving Fund Program
- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

Addition of Reclaimed Water Treatment Processes and Purple Pipeline to the Upgraded WWTP

With the passing of the Sustainable Groundwater Management Act (SGMA) by the State of California, the SMCSD elected to form a Groundwater Sustainability Agency (GSA). Under the requirements of SGMA, the SMCSD GSA has the obligation that it will be sustainable with regard to groundwater use and management by the year 2040. The SMCSD GSA adopted the Paso Basin Groundwater Sustainability Plan (GSP) on November 21, 2019.

The Paso Basin GSP identifies SMCSD Recycled Water Delivery as a preferred project for achieving groundwater sustainability within the Paso Robles Groundwater Basin. This project involves the upgrade of the SMCSD WWTP to meet California Code of Regulations (CCR) Title 22 criteria for disinfected secondary recycled water for irrigation use by vineyards. The SMCSD has been in discussions with several of the larger vineyard owners which are near the SMCSD WWTP that have expressed a strong interest in the possibility of utilizing recycled effluent to make up a portion of their annual crop irrigation demands. The project could provide at least 200 AFY of additional water supplies, with that amount increasing to greater than 500 AFY by 2050. The treated effluent would be conveyed to the vineyards through “purple pipelines.” This treated effluent supply will directly offset the use of fresh groundwater, thereby decreasing the amount of groundwater being pumped from the Paso Robles Groundwater Basin, not only by the SMCSD but also by adjacent vineyard operations. Alternatively, the recycled water supply can potentially be used to recharge the Salinas River underflow system and subsequently recovered by the District for potable water use by recovery from shallow alluvial wells. The SMCSD has retained the services of Dudek to provide CEQA/NEPA documentation for the proposed purple pipeline project. This work is scheduled for completion in early 2021. A graphical depiction of the proposed recycled water transmission and distribution system is included below. The estimated project costs are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- DWR Sustainable Groundwater Management (SGM) Implementation Grant Program
- SWRCB Water Recycling Funding Program
- SWRCB Clean Water State Revolving Fund Program

- Community Development Block Grant (CDBG) Program
- USDA Rural Water and Waste Disposal Loan and Grant Program

Feasibility Study of Expansion of Sanitary Sewer Collection System to Serve SLT Area

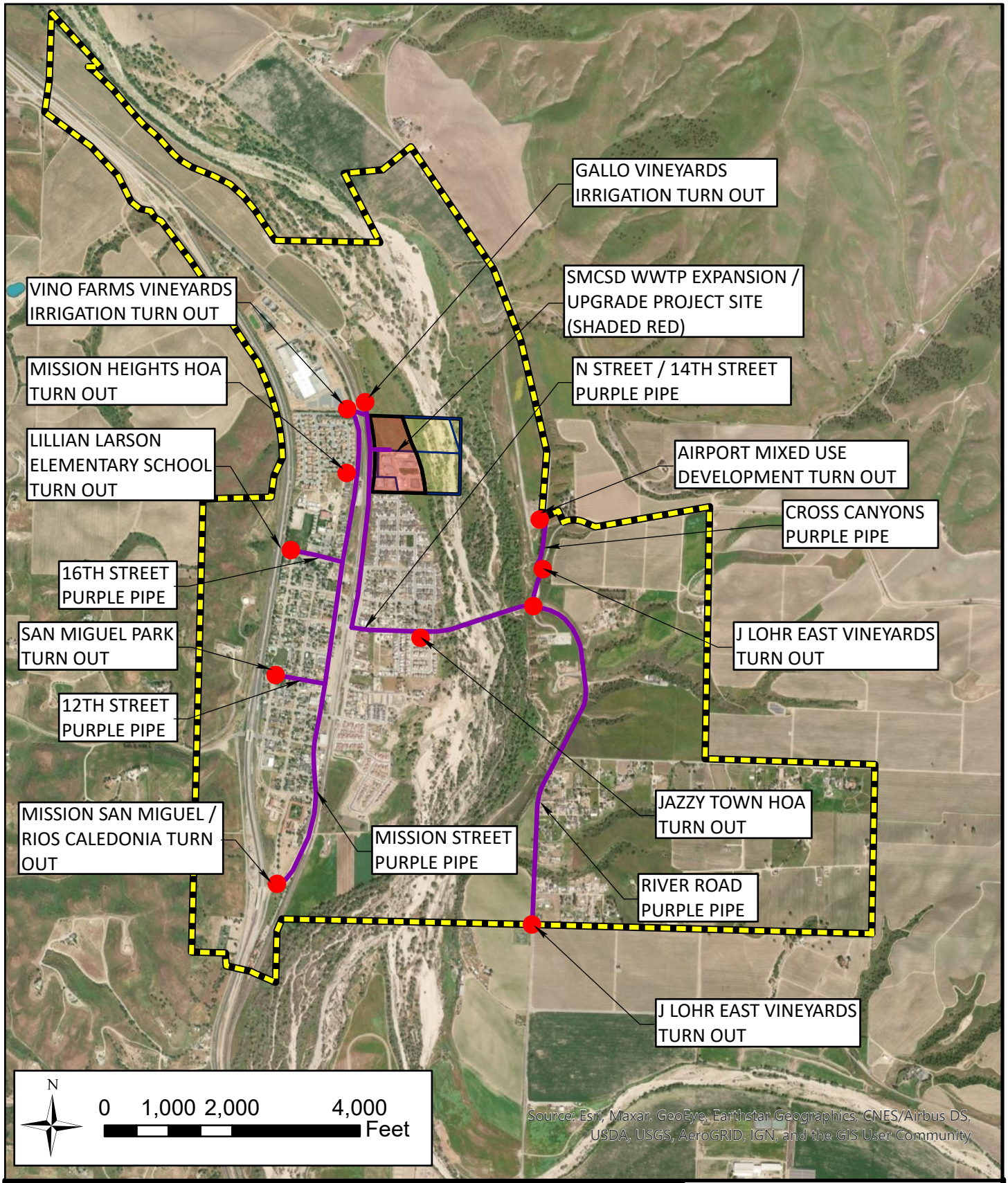
With the extension of sanitary sewer lines to new development areas, sanitary sewer lines will likely also be extended to existing parcels within the SLT area that currently have onsite wastewater treatment systems (OWTS). In anticipation of new development in the SLT area, it is recommended that the SMCSD perform an engineering feasibility study of the expansion of the existing sanitary sewer collection system to serve the existing developments in the SLT area. The estimated project costs for the completion of this study are summarized in the following section of this report.

Potential funding opportunities that exist for this project include the following programs:

- SWRCB Household Drinking Water and Wastewater Needs Program
- SWRCB Clean Water State Revolving Fund Program
- Community Development Block Grant (CDBG) Program

6.6.4 ESTIMATED PROJECT COSTS

The capital improvement program (CIP) costs which are summarized in the following table were developed based on engineering judgment, confirmed bid prices for similar work in the Central Coast area, consultation with vendors and contractors, established budgetary unit prices for the work, and other reliable sources.



PROPOSED NEW INFRASTRUCTURE PLAN

WWTP UPGRADE / RECYCLED WATER SYSTEM

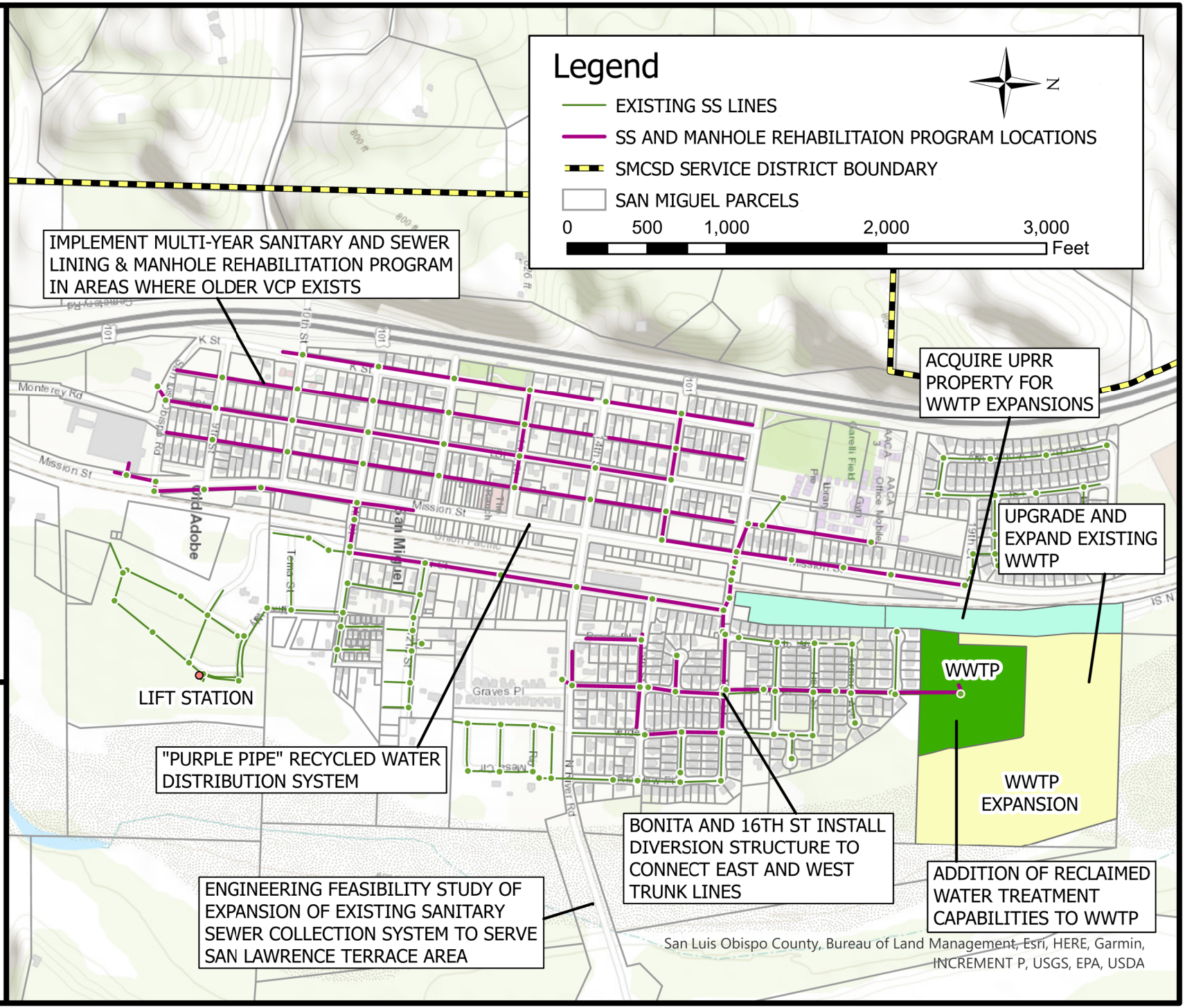
SAN MIGUEL COMMUNITY SERVICES DISTRICT

MONSOON CONSULTANTS
CIVIL ENGINEERING / HYDROLOGY
P.O. BOX 151 SAN LUIS OBISPO, CA 93406
BREELY@MONSOONCONSULTANTS.COM (805) 476 6168

SEWER CIP PLAN

2020.03.002 SMCSD MASTER PLAN UPDATES

San Miguel Community Services District



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SAN MIGUEL COMMUNITY SERVICES DISTRICT
WASTEWATER SYSTEM
RECOMMENDED CAPITAL IMPROVEMENTS
AUGUST 2020

		ESTIMATED COSTS (2020 USD)				
PROJECT #	**PROJECT ID**	**PLANNING STUDIES / PRE-DESIGN INVESTIGATIONS**	**FINAL DESIGN / ENGINEERING / CONSTRUCTION DOCUMENTATION / ENVIRONMENTAL CLEARANCE / PERMITTING**	**LAND ACQUISITION**	**CONSTRUCTION / TESTING / INSPECTION**	**TOTAL ESTIMATED PROJECT COSTS (2017 USD)**
1	SLT Sanitary Sewer Collection System (including Lift Station & Force Main)	$96,250	$233,750	N/A	$2,750,000	$3,080,000
2	16th Street Sanitary Sewer Diversion Structure	N/A	$3,000	N/A	$22,000	$25,000
3	Multi-Year Sanitary Sewer Lining & Manhole Rehabilitation Program	$47,460	$166,110	N/A	$4,746,000	$4,959,570
4	Wastewater Treatment Plant Land Acquisition for Future Expansion (UPRR)	$6,500	N/A	$100,000	N/A	$106,500
5	Wastewater Treatment Plant Upgrade / Expansion (Title 22 Recycled Water Effluent Quality)	N/A	$824,500	N/A	$9,700,000	$10,524,500
6	Recycled Water "Purple Pipe" Pumping, Transmission & Distribution System	$82,250	$199,750	N/A	$2,350,000	$2,632,000
				TOTAL ESTIMATED PROJECTED CIP COSTS		$21,327,570

6.6.5 RECOMMENDED PROJECT SEQUENCING

The timing for implementation of the recommended Capital Improvement Program for SMCSD water system improvements will be largely dictated by the availability of funds and future changes in the performance of the existing system infrastructure. Revisions to existing water quality regulations may also have a significant impact on future project sequencing. For the purposes of this report, each of the recommended capital improvement projects has been assigned a priority. Each project was assigned one of the following priority levels:

- Priority A: Project should be initiated in Year 1 – 3
- Priority B: Project should be initiated in Year 4 – 6
- Priority C: Project should be initiated in Years 7+

A graphical depiction of the recommended project priorities is presented in the following Table. It is noted that for those projects which are anticipated to occur over multiple years (i.e. lining of VCP pipes & manhole rehabilitation), the project has been assigned a priority which is related to when the initial work should be started.

6.6.6 DEVELOPMENT IMPACT FEES

Impact fees for future development are typically calculated based on the percentage increase in population included in the San Miguel CSD. In March 2020, the SMCSD was providing service to 782 wastewater connections (14 business, 742 single family residential, 25 multi-family residential). By 2050, the number of sewer connections is expected to increase to approximately 1,840. This represents an increase of 135 percent in additional demand on the District sanitary sewer system, assuming that the majority of the future sewer connections are residential with similar wastewater flow patterns to the existing customers. The SMCSD may also accommodate inflows from Courtside Cellars, which would increase the loading on the WWTP. The projected demands on the SMCSD wastewater system could increase significantly over these projections in the event that other large commercial, industrial, and/or agricultural wastewater dischargers connect to the system. The connection and user fees that are applied to existing and future sanitary sewer connections are based on the findings of the water & sewer rate study completed by Bartle Wells Associates in 2018. The rate study can be found on the SMCSD website here: https://www.sanmiguelcsd.org/rate-study-2018-final.

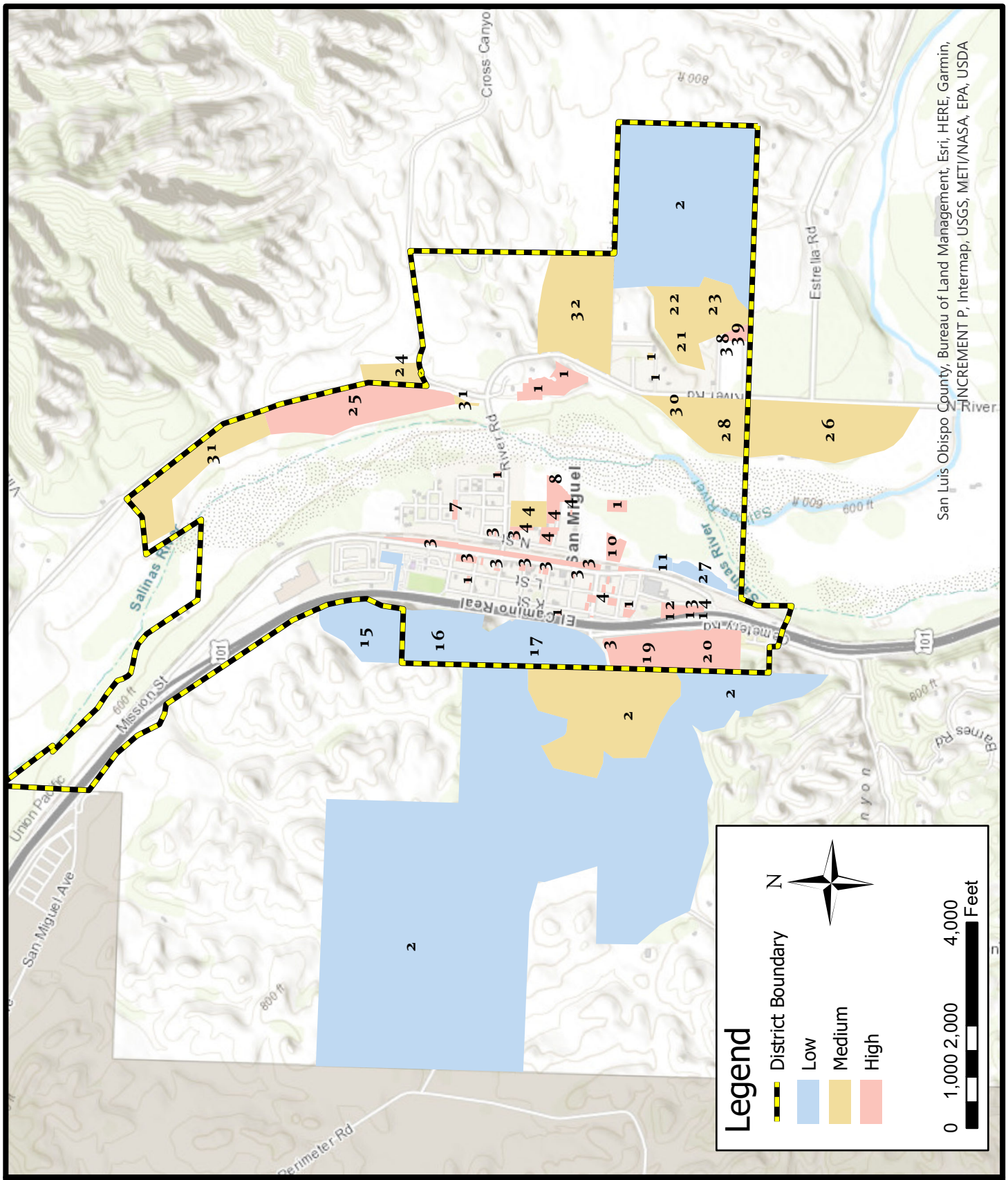
SAN MIGUEL COMMUNITY SERVICES DISTRICT
WASTEWATER SYSTEM
RECOMMENDED CAPITAL IMPOVEMENT PRIORITIES
AUGUST 2020

PROJECT #	PROJECT ID	PLANNING STUDIES / PRE-DESIGN INVESTIGATIONS	PRIORITY	FINAL DESIGN / ENGINEERING / CONSTRUCTION DOCUMENTATION / ENVIRONMENTAL CLEARANCE / PERMITTING	PRIORITY	LAND ACQUISITION	PRIORITY	CONSTRUCTION / TESTING / INSPECTION	PRIORITY
1	SLT Sanitary Sewer Collection System (including Lift Station & Force Main)	$96,250	C	$233,750	C	N/A		$2,750,000	C
2	16th Street Sanitary Sewer Diversion Structure	N/A	A	$3,000	A	N/A		$22,000	A
3	Multi-Year Sanitary Sewer Lining & Manhole Rehabilitation Program	$47,460	C	$166,110	C	N/A		$4,746,000	C
4	Wastewater Treatment Plant Land Acquisition for Future Expansion (UPRR)	$6,500	A	N/A		$100,000	A	N/A	
5	Wastewater Treatment Plant Upgrade / Expansion (Title 22 Recycled Water Effluent Quality)	N/A	A	$824,500	A	N/A		$9,700,000	A
6	Recycled Water "Purple Pipe" Pumping, Transmission & Distribution System	$82,250	B	$199,750	B	N/A		$2,350,000	B

PROJECT PRIORITY COLOR CODE
PRIORITY A - YEAR 1-5
PRIORITY B - YEAR 6-10
PRIORITY C - YEAR 10+

APPENDIX A

SMCSD POTENTIAL GROWTH ANALYSIS



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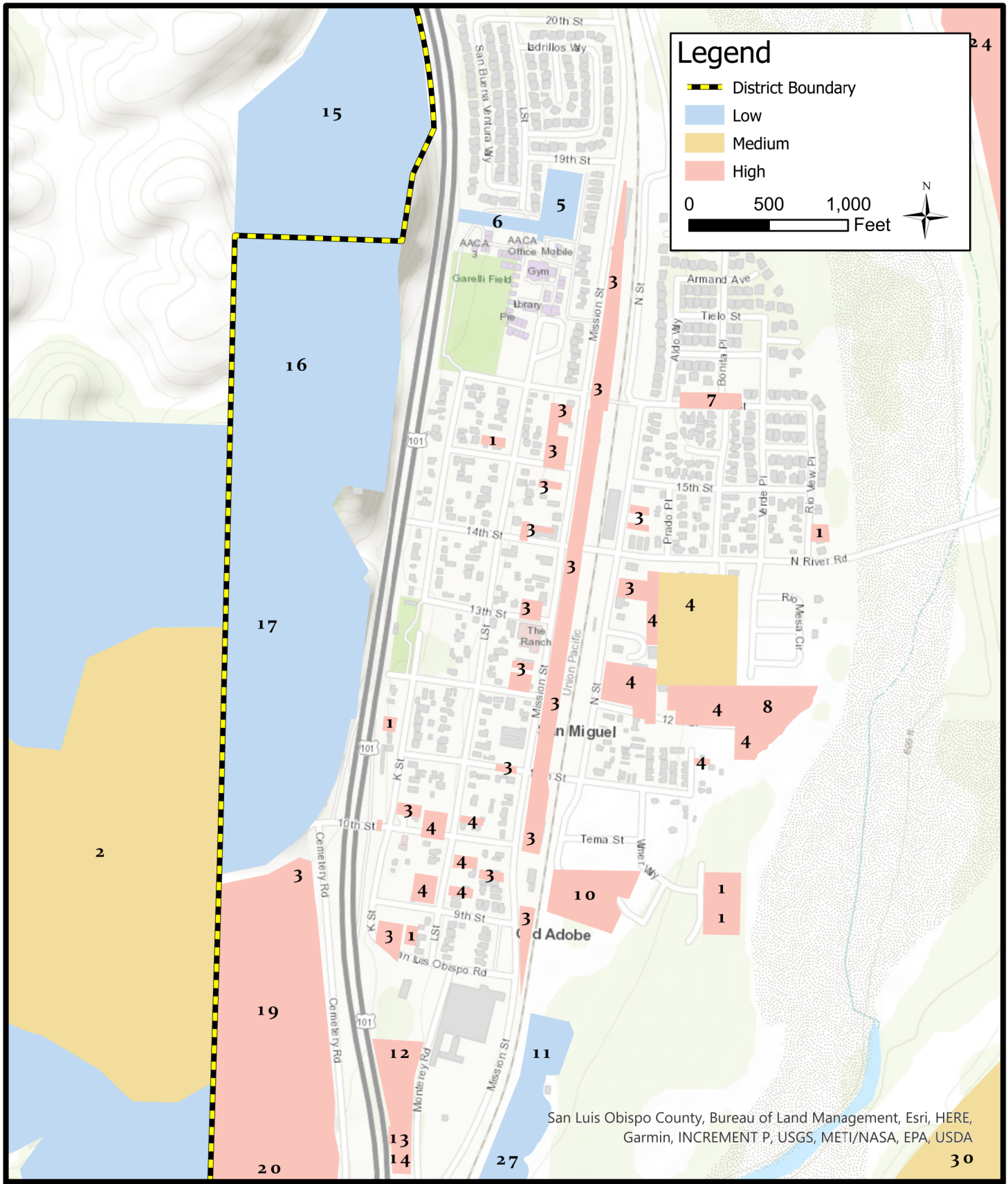
AREAS OF POTENTIAL DEVELOPMENT

2020.03.002 SMCSD MASTER PLAN UPDATE

San Miguel Community Services District



AREAS OF POTENTIAL DEVELOPMENT - DOWNTOWN

2020.03.002 - SMCSD MASTER PLAN UPDATE

San Miguel Community Services District

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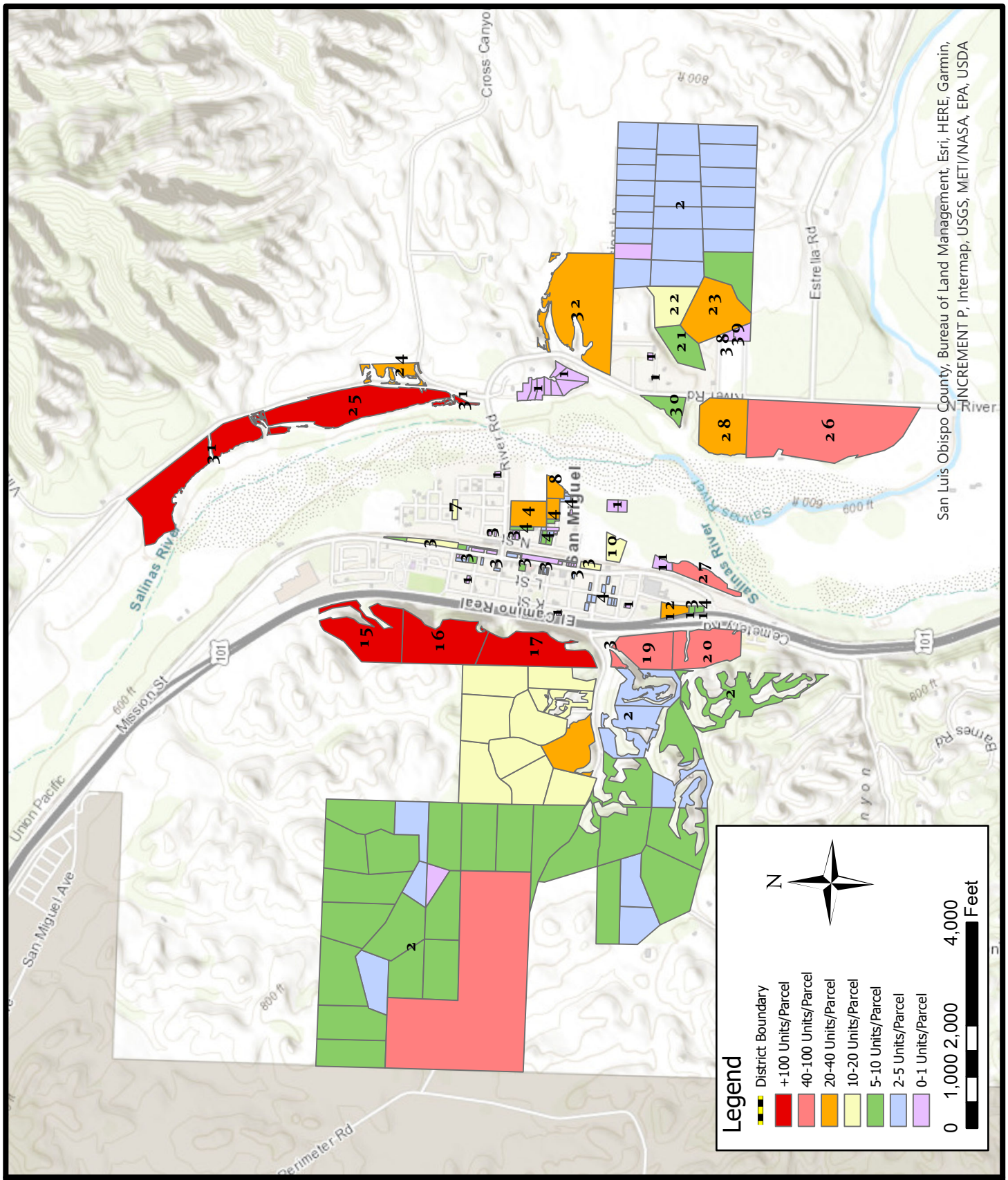

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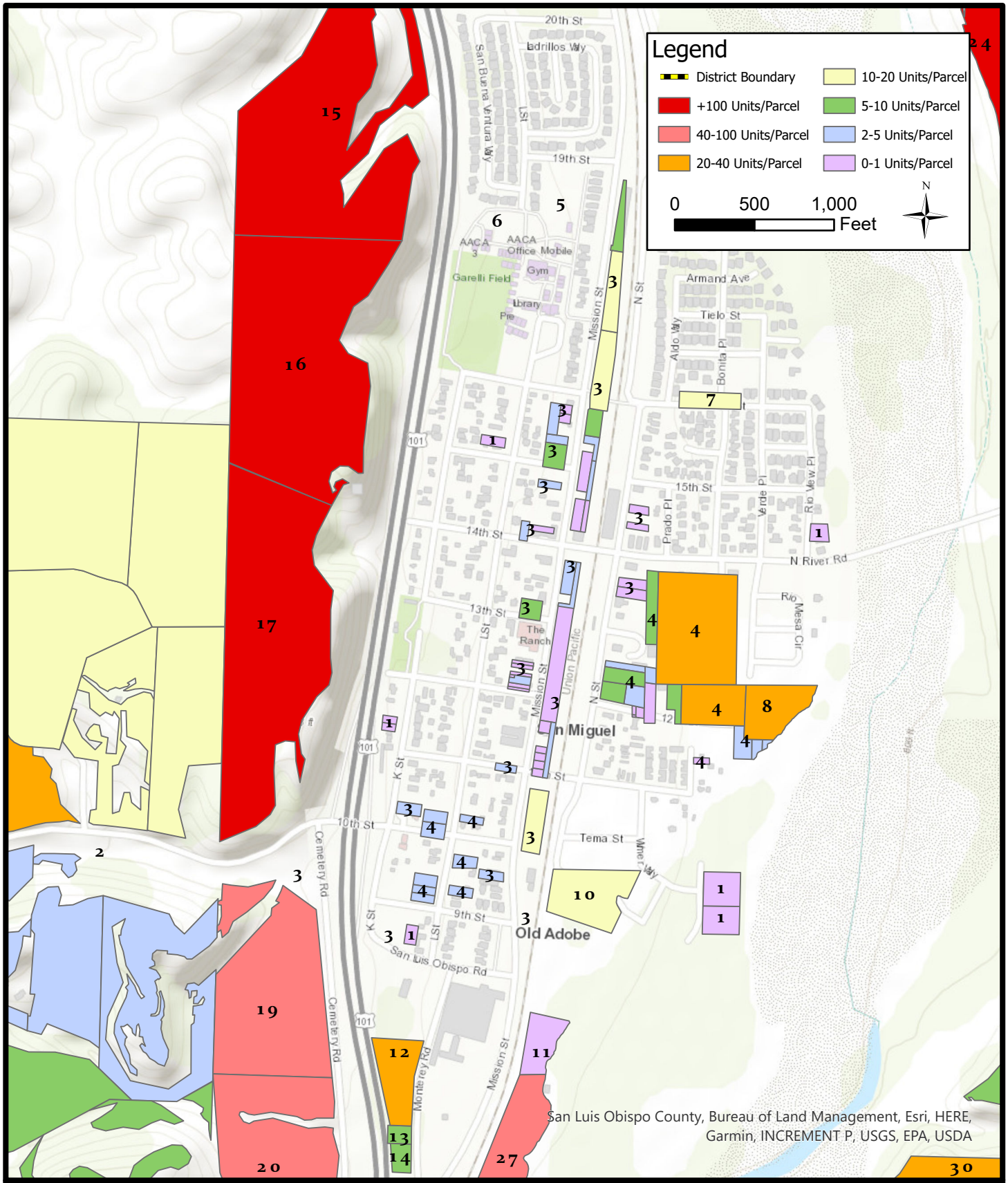
POTENTIAL GROWTH DENSITY

2020.03.002 SMCSD MASTERPLAN UPDATE

San Miguel Community Services District



POTENTIAL GROWTH DENSITY - DOWNTOWN

2020.03.002 - SMCSD MASTERPLAN UPDATE

San Miguel Community Services District

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HIGH-PROBABILITY DEVELOPMENT IN SAN MIGUEL (THROUGH 2035)

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
7	021-151-043	0.92	RMF	Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer	
3	021-131-023	0.15	CR		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer	
3	021-131-016	0.12	CR		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-131-022	0.3	CR		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer	
3	021-131-018	0.18	CR		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
1	021-122-024	0.2	RSF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-171-009	0.17	CR		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer	
3	021-171-013	0.11	CR		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer	
3	021-171-008	0.18	CR		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
3	021-181-009	0.15	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-181-011	0.16	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-231-035	0.23	CS		1.0	0		Town	3.5	High	District	Sewer	
3	021-231-036	0.34	CS		1.0	0		Town	3.5	High	District	Sewer	
4	021-231-005	0.66	RMF		8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer	
4	021-231-016	0.19	RMF		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
4	021-231-008	0.23	RMF		2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer	
4	021-231-022	0.52	RMF	Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer	
4	021-231-024	0.48	RMF		6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer	
4	021-231-041	0.3	RMF	Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer	
4	021-231-028	0.03	RMF		0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer	
4	021-231-033	0.01	RMF		0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer	
4	021-231-032	0.04	RMF		0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer	
4	021-231-017	0.13	RMF		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
4	021-241-018	0.41	RMF		5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer	
4	021-241-028	2.33	RMF	Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer	
8	021-241-020	2.662828	RMF	High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer	
4	021-241-031	0.19	RMF		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
4	021-241-030	0.18	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer	
4	021-241-032	0.39	RMF		4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer	
4	021-401-004	0.1	RMF		1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer	
10	021-362-001	4.38	RSF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer	
3	021-211-012	0.42	CR		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer	
3	021-261-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-261-014	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-016	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-017	0.02	CR		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer	
3	021-261-018	0.16	CR		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer	
3	021-261-019	0.09	CR		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-261-020	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
1	021-271-011	0.1	RSF		1.0	0		Town	3.5	High	District	Sewer	
1	021-271-012	0.1	RSF		1.0	0		Town	3.5	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-281-014	0.17	CR		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer	
3	021-302-016	0.27	CR		0.0	0		Town	0.0	High	District	Sewer	
4	021-302-010	0.3	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-302-008	0.38	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
3	021-301-004	0.08	CR		0.0	0		Town	0.0	High	District	Sewer	
4	021-311-003	0.18	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-013	0.28	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-014	0.2	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-322-015	0.29	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-331-001	0.28	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
4	021-331-034	0.19	RMF		2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer	
3	021-331-019	0.28	CR		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer	
3	021-323-004	0.68	CR	Com	0.0	0		Town	0.0	High	District	Sewer	
1	021-323-001	0.23	RSF		1.0	0		Town	3.5	High	District	Sewer	
12	021-371-002	1.72	REC	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer	
13	021-371-003	0.23	REC	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer	
14	021-371-005	0.28	REC	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer	
1	027-272-008	1.01	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-001	1.83	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-002	1.69	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-003	1.02	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-004	1.03	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-005	1.15	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-006	1.36	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
1	027-272-007	2.44	RS		1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer	
3	021-391-002	0.68	CR	Com	0.0	0		West 101	0.0	High	District	Sewer	
19	021-391-001	16.3452	CR/CS	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	55.9	0	3.42 Units/Ac	West 101	195.7	High	District	Sewer	
20	021-371-001	19.95499	RSF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	68.2	0	3.42 Units/Ac	West 101	238.9	High	District	Sewer	
3	021-131-011	0.55	CR		6.9	0	12.5 Units/Ac	Terrace	24.1	High	Well	Septic	
1	021-195-002	0.3	RSF		1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
24	027-420-017	38.50119	MUC	Single/Multi, 220 Res Units, 3/4 Ac Comm, Water, SS, R/C, (Terrace P/S), Lift Station	220.0	0	4.3 Units/Ac	Terrace	770.0	High	Well	Septic	
3	021-072-002	0.5	CR	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer	
3	021-092-002	1.28	CR	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-112-002	1.1	CR	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer	
3	021-141-024	0.43	CR		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer	
3	021-141-021	0.2	CR		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer	
3	021-141-007	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-008	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-009	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-010	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-011	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-014	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-015	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-141-016	0.07	CR		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer	
3	021-141-019	0.15	CR		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer	
3	021-141-020	0.19	CR		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer	
3	021-221-001	0.36	CR		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer	
3	021-221-021	0.28	CR		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer	
3	021-221-022	0.13	CR	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-023	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-024	0.13	CR	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-025	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-026	0.1	CR	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer	
3	021-221-027	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-028	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-029	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-030	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-031	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-032	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-033	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-034	0.12	CR	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer	
3	021-221-035	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-036	0.09	CR	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer	
3	021-221-037	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-038	0.06	CR	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer	
3	021-221-039	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-040	0.08	CR	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-010	0.13	CR		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer	
3	021-221-016	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-015	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-014	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	
3	021-221-013	0.08	CR		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer	

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS	Notes
3	021-221-018	0.25	CR		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer	
3	021-312-001	1.08	CR	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer	
3	021-351-002	0.46	CR		0.0	0		Town	0.0	High	District	Sewer	
3	021-351-003	0.23	CR		0.0	0		Town	0.0	High	District	Sewer	
38	027-251-029	0.98	RS	Unit in Progress	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
39	027-251-030	2.07	RS	Planned Unit	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic	
1	021-361-001	0.96	RSF		1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer	
1	021-361-002	1.01	RSF		1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer	
		123.9842		Totals	717.0	Units			2509.6	People			

Density Units		
Com/Res:	12.5	Units/Acre
PSHA:	3.42	Units/Acre
Rural:	0.5	Units/Acre
Airport:	4.3	Units/Acre
Hearst:	23.25	Units/Acre

MEDIUM-PROBABILITY DEVELOPMENT IN SAN MIGUEL (THROUGH 2050)

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
4	021-241-001	8.07	RMF	Res	23.0	27	Possible 23 unit	Town	80.5	Medium	District	Sewer
1	027-221-030	0.46	RS	New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
1	027-241-045	0.16	RS	New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
21	027-221-045	10.33	RS	38 Units	8.1	0	0.78 Units/Acre	Terrace	28.2	Medium	Well	Septic
22	027-221-044	11.91	RS	38 Units	9.3	0	0.78 Units/Acre	Terrace	32.5	Medium	Well	Septic
23	027-251-017	26.31	RS	38 Units	20.5	0	0.78 Units/Acre	Terrace	71.8	Medium	Well	Septic
25	027-271-024	5.353394	AG	Similar to Airport Dev, Reduced acreage	22.0	1	4.3 Units/Ac	Terrace	77.1	Medium	Well	Septic
2	027-111-043	12.14076	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.5	Medium	Well	Septic
2	027-111-042	9.119403	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	2.6	1	0.4 Unit/Acre	West 101	9.3	Medium	Well	Septic
2	027-111-041	6.950357	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.8	1	0.4 Unit/Acre	West 101	6.2	Medium	Well	Septic
2	027-091-008	15.82067	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.3	1	0.4 Unit/Acre	West 101	18.6	Medium	Well	Septic
2	027-091-010	8.642613	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	2.5	1	0.4 Unit/Acre	West 101	8.6	Medium	Well	Septic
2	027-091-009	10.58564	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.2	1	0.4 Unit/Acre	West 101	11.3	Medium	Well	Septic
26	027-381-006	73.48018	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	37.2	1	0.52 Units/Ac	Riverbed	130.2	Medium	District	Sewer
28	027-381-007	22.4654	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	10.7	1	0.52 Units/Ac	Riverbed	37.4	Medium	District	Sewer
30	027-381-008	5.336831	AG	Med/High Density, W/SS/Recy LS, Reduced Acreage	1.8	1	0.52 Units/Ac	Riverbed	6.2	Medium	District	Sewer
31	027-420-016	41.06936	AG/PF/RS	Requires Rezoning, Water, SS, R/C, (Terrace P/S), Lift Station Req'd, Reduced Acreage	176.6	0	4.3 Units/Ac	Riverbed	618.1	Medium	District	Sewer
32	027-271-041	52.9723	AG	Terrace PZ, SS/LS/REC, Caglioro density, Unlikely, Not whole Acregae assume 0.5 units/ acre	26.5	1	0.52 Units/Ac	Terrace	92.9	Medium	Well	Septic
		321.1769		Totals	355.0	Units			1242.5	People		

LOW-PROBABILITY DEVELOPMENT IN SAN MIGUEL (AFTER 2050)

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
5	021-071-001	2.07	PF	School, Water usage/Classroom	0.0	0.0		Town	0.0	Low	District	Sewer
6	021-013-058	0.91	PF	School, Water usage/Classroom	0.0	0.0		Town	0.0	Low	District	Sewer
11	021-363-037	2.24	RSF	PSHH Density	1.0	0	1 Unit/Lot	Town	3.5	Low	District	Sewer
15	027-061-019	28.14121	AG	New Pres Zone, SS/Recyl., Lift Station	351.8	0	12.5 Units/Ac	West 101	1231.2	Low	District	Sewer
16	027-061-025	29.90229	RR	New Pres Zone, SS/Recyl., Lift Station	373.8	0	12.5 Units/Ac	West 101	1308.2	Low	District	Sewer
17	027-061-027	27.31184	RR	New Pres Zone, SS/Recyl., Lift Station	341.4	0	12.5 Units/Ac	West 101	1194.9	Low	District	Sewer
2	027-051-033	16.76	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.0	Low	Well	Septic
2	027-051-032	20.37	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.1	1	0.4 Unit/Acre	West 101	25.0	Low	Well	Septic
2	027-051-025	23.35	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-051-013	13.55	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.4	1	0.4 Unit/Acre	West 101	15.5	Low	Well	Septic
2	027-051-026	22.32	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.9	1	0.4 Unit/Acre	West 101	27.7	Low	Well	Septic
2	027-051-024	22.98	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.2	1	0.4 Unit/Acre	West 101	28.7	Low	Well	Septic
2	027-051-027	16.94	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.8	1	0.4 Unit/Acre	West 101	20.2	Low	Well	Septic
2	027-051-028	20.53	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.2	1	0.4 Unit/Acre	West 101	25.2	Low	Well	Septic
2	027-051-009	16.24	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.2	Low	Well	Septic
2	027-051-003	12.49	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-051-021	6.18	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.5	1	0.4 Unit/Acre	West 101	5.2	Low	Well	Septic
2	027-051-031	20.69	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.5	Low	Well	Septic
2	027-051-029	17.31	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.9	1	0.4 Unit/Acre	West 101	20.7	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-061-001	152.45	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	60.0	1	0.4 Unit/Acre	West 101	209.9	Low	Well	Septic
2	027-051-015	19.16	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.3	Low	Well	Septic
2	027-051-019	15.44	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.2	1	0.4 Unit/Acre	West 101	18.1	Low	Well	Septic
2	027-051-022	4.92	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	1.0	1	0.4 Unit/Acre	West 101	3.4	Low	Well	Septic
2	027-051-020	18.48	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-051-011	21.13	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.5	1	0.4 Unit/Acre	West 101	26.1	Low	Well	Septic
2	027-051-010	19.54	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-061-018	23.54	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.4	1	0.4 Unit/Acre	West 101	29.5	Low	Well	Septic
2	027-061-029	17.9743	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.2	1	0.4 Unit/Acre	West 101	21.7	Low	Well	Septic
2	027-111-026	16.41	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.6	1	0.4 Unit/Acre	West 101	19.5	Low	Well	Septic
2	027-111-045	21.47	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.6	1	0.4 Unit/Acre	West 101	26.6	Low	Well	Septic
2	027-111-029	10.79	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.3	1	0.4 Unit/Acre	West 101	11.6	Low	Well	Septic
2	027-111-023	10.22	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.1	1	0.4 Unit/Acre	West 101	10.8	Low	Well	Septic
2	027-111-028	16.86	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-111-027	26	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	9.4	1	0.4 Unit/Acre	West 101	32.9	Low	Well	Septic
2	027-111-031	19.35582	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.6	Low	Well	Septic
2	027-111-044	12.50492	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-111-039	20.78	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.6	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-121-013	23.35837	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-111-006	14.95006	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.0	1	0.4 Unit/Acre	West 101	17.4	Low	Well	Septic
2	027-091-001	12.24	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.6	Low	Well	Septic
2	027-091-006	16.85	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-081-007	13.35	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.3	1	0.4 Unit/Acre	West 101	15.2	Low	Well	Septic
2	027-081-003	12.95	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	4.2	1	0.4 Unit/Acre	West 101	14.6	Low	Well	Septic
2	027-081-008	18.49	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-081-006	19.6	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-081-004	16.3	AG	Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.3	Low	Well	Septic
27	021-361-008	6.425653	AG	Water/SS/REC, PSHA Density, Reduced Acreage	79.3	1	12.5 Units/Ac	Riverbed	277.6	Low	District	Sewer
2	027-221-047	8.39	AG	Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.2	Low	Well	Septic
2	027-231-005	4.37	AG	Low Prob, Low Density	0.7	1	0.4 Unit/Ac	Terrace	2.6	Low	Well	Septic
2	027-231-003	4.65	AG	Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.0	Low	Well	Septic
2	027-231-018	5.11	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.7	Low	Well	Septic
2	027-231-013	4.88	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.3	Low	Well	Septic
2	027-231-009	5.03	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.5	Low	Well	Septic
2	027-231-011	4.73	AG	Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.1	Low	Well	Septic
2	027-231-007	4.92	AG	Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.4	Low	Well	Septic
2	027-231-014	7.98	AG	Low Prob, Low Density	2.2	1	0.4 Unit/Ac	Terrace	7.7	Low	Well	Septic
2	027-231-016	11.44	AG	Low Prob, Low Density	3.6	1	0.4 Unit/Ac	Terrace	12.5	Low	Well	Septic
2	027-231-020	9.99	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-021	10.02	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-023	10.32	AG	Low Prob, Low Density	3.1	1	0.4 Unit/Ac	Terrace	10.9	Low	Well	Septic
2	027-231-022	12.03	AG	Low Prob, Low Density	3.8	1	0.4 Unit/Ac	Terrace	13.3	Low	Well	Septic
2	027-221-046	12.54	AG	Low Prob, Low Density	4.0	1	0.4 Unit/Ac	Terrace	14.1	Low	Well	Septic
2	027-251-013	15	AG	Low Prob, Low Density	5.0	1	0.4 Unit/Ac	Terrace	17.5	Low	Well	Septic

Summary of Future Development Potential												
ID	APN	Size (acres)	Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-261-005	10.09	AG	Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.6	Low	Well	Septic
2	027-261-004	9.84	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.3	Low	Well	Septic
2	027-261-011	8.61	AG	Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.6	Low	Well	Septic
2	027-261-010	10.67	AG	Low Prob, Low Density	3.3	1	0.4 Unit/Ac	Terrace	11.4	Low	Well	Septic
2	027-261-009	9.78	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.2	Low	Well	Septic
2	027-261-008	9.74	AG	Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.1	Low	Well	Septic
		1108.974		Totals	1491.2	Units			5219.4	People		

HIGH-PROBABILITY DEVELOPMENT IN DOWNTOWN SAN MIGUEL ONLY (THROUGH 2025)

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
7	021-151-043	0.92	RMF		Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer
3	021-131-023	0.15	CR	RMF		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-131-016	0.12	CR	RMF		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-131-022	0.3	CR	RMF		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
3	021-131-018	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
1	021-122-024	0.2	RSF	RMF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-171-009	0.17	CR	RMF		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-171-013	0.11	CR	RMF		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer
3	021-171-008	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
3	021-181-009	0.15	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-181-011	0.16	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-035	0.23	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-036	0.34	CS			1.0	0		Town	3.5	High	District	Sewer
4	021-231-005	0.66	RMF			8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer
4	021-241-001	8.07	RMF		Res	23.0	27	Possible 23 units	Town	80.5	High	District	Sewer
4	021-231-016	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-231-008	0.23	RMF			2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer
4	021-231-022	0.52	RMF		Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer
4	021-231-024	0.48	RMF			6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer
4	021-231-041	0.3	RMF		Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
4	021-231-028	0.03	RMF			0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer
4	021-231-033	0.01	RMF			0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer
4	021-231-032	0.04	RMF			0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer
4	021-231-017	0.13	RMF			1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
4	021-241-018	0.41	RMF			5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer
4	021-241-028	2.33	RMF		Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer
8	021-241-020	2.662828	RMF		High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer
4	021-241-031	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-241-030	0.18	RMF			2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
4	021-241-032	0.39	RMF			4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer
4	021-401-004	0.1	RMF			1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
10	021-362-001	4.38	RSF	RMF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer
3	021-211-012	0.42	CR	MUC		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer
3	021-261-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-261-014	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-016	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-017	0.02	CR	MUC		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer
3	021-261-018	0.16	CR	MUC		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer
3	021-261-019	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-020	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
1	021-271-011	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
1	021-271-012	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-281-014	0.17	CR	MUC		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-302-016	0.27	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-302-010	0.3	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-302-008	0.38	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-301-004	0.08	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-311-003	0.18	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-322-004	0.75	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-322-013	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-014	0.2	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-015	0.29	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-001	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-034	0.19	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-331-019	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-323-004	0.68	CR		Com	0.0	0		Town	0.0	High	District	Sewer
1	021-323-001	0.23	RSF			1.0	0		Town	3.5	High	District	Sewer
12	021-371-002	1.72	REC	RMF	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer
13	021-371-003	0.23	REC	RMF	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer
14	021-371-005	0.28	REC	RMF	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer
3	021-131-011	0.55	CR			6.9	0	12.5 Units/Ac	Town	24.1	High	Well	Septic
1	021-195-002	0.3	RSF			1.0	0	1 Unit/Lot	Town	3.5	High	Well	Septic
3	021-072-002	0.5	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer
3	021-092-002	1.28	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer
3	021-112-002	1.1	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer
3	021-141-024	0.43	CR	MUC		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer
3	021-141-021	0.2	CR	MUC		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer
3	021-141-007	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-008	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-009	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-010	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-011	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-016	0.07	CR	MUC		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer
3	021-141-019	0.15	CR	MUC		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-141-020	0.19	CR	MUC		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
3	021-221-001	0.36	CR	MUC		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer
3	021-221-021	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-221-022	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-023	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-221-024	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-025	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-026	0.1	CR	MUC	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
3	021-221-027	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-028	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-029	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-030	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-031	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-032	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-033	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-034	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-035	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-036	0.09	CR	MUC	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-221-037	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-038	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-039	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-040	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-010	0.13	CR	MUC		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-016	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-018	0.25	CR	MUC		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer
3	021-312-001	1.08	CR	MUC	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer
3	021-351-002	0.46	CR			0.0	0		Town	0.0	High	District	Sewer
3	021-351-003	0.23	CR			0.0	0		Town	0.0	High	District	Sewer
1	021-361-001	0.96	RSF			1.0	1.0	1 Unit/Lot	Riverbed	3.5	High	District	Sewer
1	021-361-002	1.01	RSF			1.0	1.0	1 Unit/Lot	Riverbed	3.5	High	District	Sewer
		42.74283			Totals	385.9	Units			1350.6	People		

Density Units	
Com/Res:	12.5 Units/Acre
PSHA:	3.42 Units/Acre
Rural:	0.5 Units/Acre
Airport:	4.3 Units/Acre
Hearst:	23.25 Units/Acre

SMCSD INFRASTRUCTURE CLASSIFICATION TABLE

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
5	021-071-001	2.07	PF		School, Water usage/Classroom	0.0	0		Town	0.0		District	Sewer
6	021-013-058	0.91	PF		School, Water usage/Classroom	0.0	0		Town	0.0		District	Sewer
7	021-151-043	0.92	RMF		Res	11.5	0	12.5 Units/Ac	Town	40.3	High	District	Sewer
3	021-131-023	0.15	CR	RMF		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-131-016	0.12	CR	RMF		1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-131-022	0.3	CR	RMF		3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
3	021-131-018	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
1	021-122-024	0.2	RSF	RMF		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-171-009	0.17	CR	RMF		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-171-013	0.11	CR	RMF		1.4	0	12.5 Units/Ac	Town	4.8	High	District	Sewer
3	021-171-008	0.18	CR	RMF		2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
3	021-181-009	0.15	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-181-011	0.16	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-035	0.23	CS			1.0	0		Town	3.5	High	District	Sewer
3	021-231-036	0.34	CS			1.0	0		Town	3.5	High	District	Sewer
4	021-231-005	0.66	RMF			8.3	0	12.5 Units/Ac	Town	28.9	High	District	Sewer
4	021-241-001	8.07	RMF		Res	23.0	27	Possible 23 units	Town	80.5	High	District	Sewer
4	021-231-016	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-231-008	0.23	RMF			2.9	0	12.5 Units/Ac	Town	10.1	High	District	Sewer
4	021-231-022	0.52	RMF		Same Density L/S	6.5	0	12.5 Units/Ac	Town	22.8	High	District	Sewer
4	021-231-024	0.48	RMF			6.0	0	12.5 Units/Ac	Town	21.0	High	District	Sewer
4	021-231-041	0.3	RMF		Same Density L/S	3.8	0	12.5 Units/Ac	Town	13.1	High	District	Sewer
4	021-231-028	0.03	RMF			0.4	0	12.5 Units/Ac	Town	1.3	High	District	Sewer
4	021-231-033	0.01	RMF			0.1	0	12.5 Units/Ac	Town	0.4	High	District	Sewer
4	021-231-032	0.04	RMF			0.5	0	12.5 Units/Ac	Town	1.8	High	District	Sewer
4	021-231-017	0.13	RMF			1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
4	021-241-018	0.41	RMF			5.1	0	12.5 Units/Ac	Town	17.9	High	District	Sewer
4	021-241-028	2.33	RMF		Same Density L/S	29.1	0	12.5 Units/Ac	Town	101.9	High	District	Sewer
8	021-241-020	2.662828	RMF		High Density (Out of Flood), Reduced acreage	31.3	2	12.5 Units/Ac	Town	109.5	High	District	Sewer
4	021-241-031	0.19	RMF			2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
4	021-241-030	0.18	RMF			2.3	0	12.5 Units/Ac	Town	7.9	High	District	Sewer
4	021-241-032	0.39	RMF			4.9	0	12.5 Units/Ac	Town	17.1	High	District	Sewer
4	021-401-004	0.1	RMF			1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
10	021-362-001	4.38	RSF	RMF	15 Units	15.0	0	3.42 Units/Ac	Town	52.4	High	District	Sewer
11	021-363-037	2.24	RSF	RMF	PSHH Density	1.0	0	1 Unit/Lot	Town	3.5	Low	District	Sewer
3	021-211-012	0.42	CR	MUC		5.3	0	12.5 Units/Ac	Town	18.4	High	District	Sewer
3	021-261-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-261-014	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-016	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer

Summary of Future Development Potential														
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-261-017	0.02	CR	MUC		0.3	0	12.5 Units/Ac	Town	0.9	High	District	Sewer
3	021-261-018	0.16	CR	MUC		2.0	0	12.5 Units/Ac	Town	7.0	High	District	Sewer
3	021-261-019	0.09	CR	MUC		1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-261-020	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
1	021-271-011	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
1	021-271-012	0.1	RSF			1.0	0		Town	3.5	High	District	Sewer
3	021-281-014	0.17	CR	MUC		2.1	0	12.5 Units/Ac	Town	7.4	High	District	Sewer
3	021-302-016	0.27	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-302-010	0.3	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-302-008	0.38	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-301-004	0.08	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-311-003	0.18	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-322-004	0.75	CR			0.0	0		Town	0.0	High	District	Sewer
4	021-322-013	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-014	0.2	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-322-015	0.29	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-001	0.28	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
4	021-331-034	0.19	RMF			2.0	0	2 Units/Lot	Town	7.0	High	District	Sewer
3	021-331-019	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-323-004	0.68	CR		Com	0.0	0		Town	0.0	High	District	Sewer
1	021-323-001	0.23	RSF			1.0	0		Town	3.5	High	District	Sewer
12	021-371-002	1.72	REC	RMF	W/SS/Res, LS, 40 Units Planned	40.0	0	23.25 Units/Ac	Town	140.0	High	District	Sewer
13	021-371-003	0.23	REC	RMF	W/SS/Res, LS	5.3	0	23.25 Units/Ac	Town	18.7	High	District	Sewer
14	021-371-005	0.28	REC	RMF	W/SS/Res, LS	6.5	0	23.25 Units/Ac	Town	22.8	High	District	Sewer
1	027-272-008	1.01	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-001	1.83	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-002	1.69	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-003	1.02	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-004	1.03	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-005	1.15	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-006	1.36	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
1	027-272-007	2.44	RS			1.0	0	1 Unit/Lot	Bluffs	3.5	High	District	Sewer
15	027-061-019	28.14121	AG	RMF	New Pres Zone, SS/Recyl., Lift Station	351.8	0	12.5 Units/Ac	West 101	1231.2	Low	District	Sewer
16	027-061-025	29.90229	RR	RMF	New Pres Zone, SS/Recyl., Lift Station	373.8	0	12.5 Units/Ac	West 101	1308.2	Low	District	Sewer
17	027-061-027	27.31184	RR	RMF	New Pres Zone, SS/Recyl., Lift Station	341.4	0	12.5 Units/Ac	West 101	1194.9	Low	District	Sewer
3	021-391-002	0.68	CR		Com	0.0	0		West 101	0.0	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
19	021-391-001	16.3452	CR/CS	RMF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	55.9	0	3.42 Units/Ac	West 101	195.7	High	District	Sewer
20	021-371-001	19.95499	RSF	RMF	Exist Tract 44, Assume max density & PSHH density, WAT/SS/LS/Recycl.	68.2	0	3.42 Units/Ac	West 101	238.9	High	District	Sewer
1	027-221-030	0.46	RS		New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
1	027-241-045	0.16	RS		New W/L, OWTS MN Size	0.0	0	1 Unit/Acre	Terrace	0.0	Medium	Well	Septic
21	027-221-045	10.33	RS	RMF	38 Units	8.1	0	0.78 Units/Acre	Terrace	28.2	Medium	Well	Septic
22	027-221-044	11.91	RS	RMF	38 Units	9.3	0	0.78 Units/Acre	Terrace	32.5	Medium	Well	Septic
23	027-251-017	26.31	RS	RMF	38 Units	20.5	0	0.78 Units/Acre	Terrace	71.8	Medium	Well	Septic
3	021-131-011	0.55	CR			6.9	0	12.5 Units/Ac	Terrace	24.1	High	Well	Septic
1	021-195-002	0.3	RSF			1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
24	027-420-017	38.50119	MUC	RMF	Single/Multi, 220 Res Units, 3/4 Ac Comm, Water, SS, R/C, (Terrace P/S), Lift Station	220.0	0	4.3 Units/Ac	Terrace	770.0	High	Well	Septic
25	027-271-024	5.353394	AG	RMF	Similar to Airport Dev, Reduced acreage	22.0	1	4.3 Units/Ac	Terrace	77.1	Medium	Well	Septic
3	021-072-002	0.5	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	6.3	0	12.5 Units/Ac	Town	21.9	High	District	Sewer
3	021-092-002	1.28	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	16.0	0	12.5 Units/Ac	Town	56.0	High	District	Sewer
3	021-112-002	1.1	CR	MUC	Check Elev, L/S May be Read, comm bottom, res top?	13.8	0	12.5 Units/Ac	Town	48.1	High	District	Sewer
3	021-141-024	0.43	CR	MUC		5.4	0	12.5 Units/Ac	Town	18.8	High	District	Sewer
3	021-141-021	0.2	CR	MUC		2.5	0	12.5 Units/Ac	Town	8.8	High	District	Sewer
3	021-141-007	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-008	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-009	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-010	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-011	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-141-016	0.07	CR	MUC		0.9	0	12.5 Units/Ac	Town	3.1	High	District	Sewer
3	021-141-019	0.15	CR	MUC		1.9	0	12.5 Units/Ac	Town	6.6	High	District	Sewer
3	021-141-020	0.19	CR	MUC		2.4	0	12.5 Units/Ac	Town	8.3	High	District	Sewer
3	021-221-001	0.36	CR	MUC		4.5	0	12.5 Units/Ac	Town	15.8	High	District	Sewer
3	021-221-021	0.28	CR	MUC		3.5	0	12.5 Units/Ac	Town	12.3	High	District	Sewer
3	021-221-022	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer

Summary of Future Development Potential														
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
3	021-221-023	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-024	0.13	CR	MUC	RES/Over Commercial	1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-025	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-026	0.1	CR	MUC	RES/Over Commercial	1.3	0	12.5 Units/Ac	Town	4.4	High	District	Sewer
3	021-221-027	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-028	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-029	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-030	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-031	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-032	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-033	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-034	0.12	CR	MUC	RES/Over Commercial	1.5	0	12.5 Units/Ac	Town	5.3	High	District	Sewer
3	021-221-035	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-036	0.09	CR	MUC	RES/Over Commercial	1.1	0	12.5 Units/Ac	Town	3.9	High	District	Sewer
3	021-221-037	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-038	0.06	CR	MUC	RES/Over Commercial	0.8	0	12.5 Units/Ac	Town	2.6	High	District	Sewer
3	021-221-039	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-040	0.08	CR	MUC	RES/Over Commercial	1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-010	0.13	CR	MUC		1.6	0	12.5 Units/Ac	Town	5.7	High	District	Sewer
3	021-221-016	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-015	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-014	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-013	0.08	CR	MUC		1.0	0	12.5 Units/Ac	Town	3.5	High	District	Sewer
3	021-221-018	0.25	CR	MUC		3.1	0	12.5 Units/Ac	Town	10.9	High	District	Sewer
3	021-312-001	1.08	CR	MUC	RES/Over Commercial	13.5	0	12.5 Units/Ac	Town	47.3	High	District	Sewer
3	021-351-002	0.46	CR			0.0	0		Town	0.0	High	District	Sewer
3	021-351-003	0.23	CR			0.0	0		Town	0.0	High	District	Sewer
2	027-051-033	16.76	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.0	Low	Well	Septic
2	027-051-032	20.37	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.1	1	0.4 Unit/Acre	West 101	25.0	Low	Well	Septic
2	027-051-025	23.35	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-051-013	13.55	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.4	1	0.4 Unit/Acre	West 101	15.5	Low	Well	Septic
2	027-051-026	22.32	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.9	1	0.4 Unit/Acre	West 101	27.7	Low	Well	Septic
2	027-051-024	22.98	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.2	1	0.4 Unit/Acre	West 101	28.7	Low	Well	Septic

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-051-027	16.94	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.8	1	0.4 Unit/Acre	West 101	20.2	Low	Well	Septic
2	027-051-028	20.53	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.2	1	0.4 Unit/Acre	West 101	25.2	Low	Well	Septic
2	027-051-009	16.24	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.2	Low	Well	Septic
2	027-051-003	12.49	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-051-021	6.18	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.5	1	0.4 Unit/Acre	West 101	5.2	Low	Well	Septic
2	027-051-031	20.69	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.5	Low	Well	Septic
2	027-051-029	17.31	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.9	1	0.4 Unit/Acre	West 101	20.7	Low	Well	Septic
2	027-061-001	152.45	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	60.0	1	0.4 Unit/Acre	West 101	209.9	Low	Well	Septic
2	027-051-015	19.16	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.3	Low	Well	Septic
2	027-051-019	15.44	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.2	1	0.4 Unit/Acre	West 101	18.1	Low	Well	Septic
2	027-051-022	4.92	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.0	1	0.4 Unit/Acre	West 101	3.4	Low	Well	Septic
2	027-051-020	18.48	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-051-011	21.13	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.5	1	0.4 Unit/Acre	West 101	26.1	Low	Well	Septic
2	027-051-010	19.54	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-061-018	23.54	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.4	1	0.4 Unit/Acre	West 101	29.5	Low	Well	Septic
2	027-061-029	17.9743	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.2	1	0.4 Unit/Acre	West 101	21.7	Low	Well	Septic
2	027-111-026	16.41	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.6	1	0.4 Unit/Acre	West 101	19.5	Low	Well	Septic
2	027-111-045	21.47	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.6	1	0.4 Unit/Acre	West 101	26.6	Low	Well	Septic
2	027-111-029	10.79	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.3	1	0.4 Unit/Acre	West 101	11.6	Low	Well	Septic
2	027-111-023	10.22	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.1	1	0.4 Unit/Acre	West 101	10.8	Low	Well	Septic

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
2	027-111-028	16.86	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-111-027	26	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	9.4	1	0.4 Unit/Acre	West 101	32.9	Low	Well	Septic
2	027-111-031	19.35582	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.7	1	0.4 Unit/Acre	West 101	23.6	Low	Well	Septic
2	027-111-044	12.50492	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.0	1	0.4 Unit/Acre	West 101	14.0	Low	Well	Septic
2	027-111-039	20.78	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	7.3	1	0.4 Unit/Acre	West 101	25.6	Low	Well	Septic
2	027-121-013	23.35837	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	8.3	1	0.4 Unit/Acre	West 101	29.2	Low	Well	Septic
2	027-111-043	12.14076	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.5	Medium	Well	Septic
2	027-111-042	9.119403	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	2.6	1	0.4 Unit/Acre	West 101	9.3	Medium	Well	Septic
2	027-111-041	6.950357	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	1.8	1	0.4 Unit/Acre	West 101	6.2	Medium	Well	Septic
2	027-111-006	14.95006	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.0	1	0.4 Unit/Acre	West 101	17.4	Low	Well	Septic
2	027-091-001	12.24	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.9	1	0.4 Unit/Acre	West 101	13.6	Low	Well	Septic
2	027-091-008	15.82067	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.3	1	0.4 Unit/Acre	West 101	18.6	Medium	Well	Septic
2	027-091-010	8.642613	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	2.5	1	0.4 Unit/Acre	West 101	8.6	Medium	Well	Septic
2	027-091-009	10.58564	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	3.2	1	0.4 Unit/Acre	West 101	11.3	Medium	Well	Septic
2	027-091-006	16.85	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.7	1	0.4 Unit/Acre	West 101	20.1	Low	Well	Septic
2	027-081-007	13.35	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.3	1	0.4 Unit/Acre	West 101	15.2	Low	Well	Septic
2	027-081-003	12.95	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	4.2	1	0.4 Unit/Acre	West 101	14.6	Low	Well	Septic
2	027-081-008	18.49	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.4	1	0.4 Unit/Acre	West 101	22.4	Low	Well	Septic
2	027-081-006	19.6	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	6.8	1	0.4 Unit/Acre	West 101	23.9	Low	Well	Septic
2	027-081-004	16.3	AG		Low Prob, Res Dev 1 acr subdivision, Water/SS	5.5	1	0.4 Unit/Acre	West 101	19.3	Low	Well	Septic

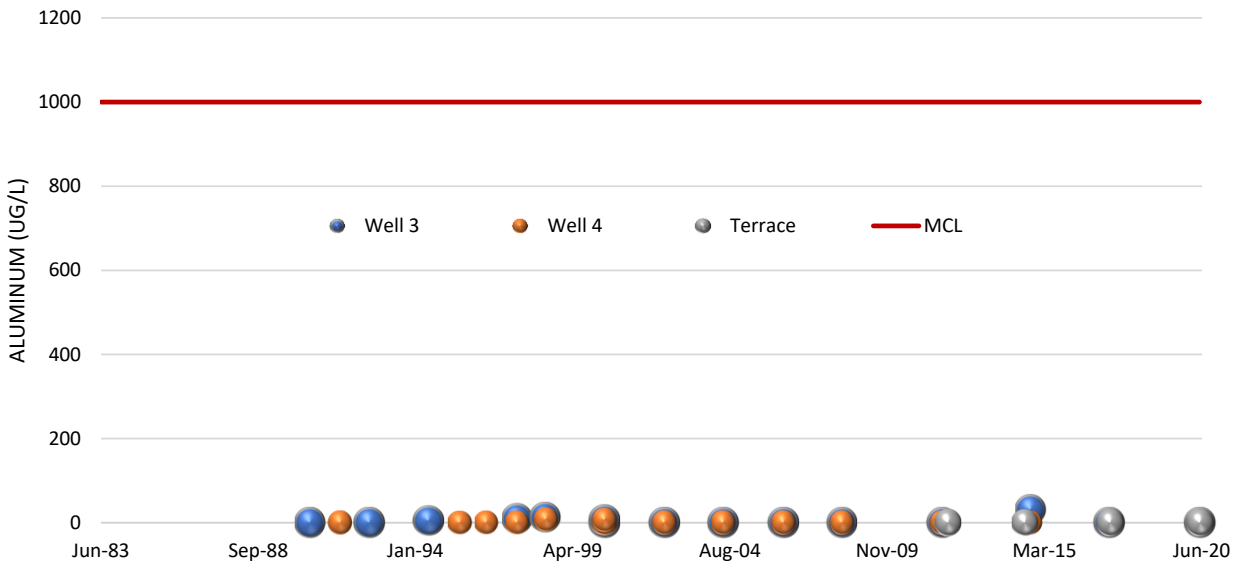
Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
26	027-381-006	73.48018	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	37.2	1	0.52 Units/Ac	Riverbed	130.2	Medium	District	Sewer
27	021-361-008	6.425653	AG	RMF	Water/SS/REC, PSHA Density, Reduced Acreage	79.3	1	12.5 Units/Ac	Riverbed	277.6	Low	District	Sewer
28	027-381-007	22.4654	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	10.7	1	0.52 Units/Ac	Riverbed	37.4	Medium	District	Sewer
30	027-381-008	5.336831	AG	RMF	Med/High Density, W/SS/Recy LS, Reduced Acreage	1.8	1	0.52 Units/Ac	Riverbed	6.2	Medium	District	Sewer
31	027-420-016	41.06936	AG/PF/RS	RMF	Requires Rezoning, Water, SS, R/C, (Terrace P/S), Lift Station Req'd, Reduced Acreage	176.6	0	4.3 Units/Ac	Riverbed	618.1	Medium	District	Sewer
32	027-271-041	52.9723	AG	RMF	Terrace PZ, SS/LS/REC, Caglioro density, Unlikely, Not whole Acregae assume 0.5 units/ acre	26.5	1	0.52 Units/Ac	Terrace	92.9	Medium	Well	Septic
2	027-221-047	8.39	AG		Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.2	Low	Well	Septic
2	027-231-005	4.37	AG		Low Prob, Low Density	0.7	1	0.4 Unit/Ac	Terrace	2.6	Low	Well	Septic
2	027-231-003	4.65	AG		Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.0	Low	Well	Septic
2	027-231-018	5.11	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.7	Low	Well	Septic
2	027-231-013	4.88	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.3	Low	Well	Septic
2	027-231-009	5.03	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.5	Low	Well	Septic
2	027-231-011	4.73	AG		Low Prob, Low Density	0.9	1	0.4 Unit/Ac	Terrace	3.1	Low	Well	Septic
2	027-231-007	4.92	AG		Low Prob, Low Density	1.0	1	0.4 Unit/Ac	Terrace	3.4	Low	Well	Septic
2	027-231-014	7.98	AG		Low Prob, Low Density	2.2	1	0.4 Unit/Ac	Terrace	7.7	Low	Well	Septic
2	027-231-016	11.44	AG		Low Prob, Low Density	3.6	1	0.4 Unit/Ac	Terrace	12.5	Low	Well	Septic
2	027-231-020	9.99	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-021	10.02	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.5	Low	Well	Septic
2	027-231-023	10.32	AG		Low Prob, Low Density	3.1	1	0.4 Unit/Ac	Terrace	10.9	Low	Well	Septic
2	027-231-022	12.03	AG		Low Prob, Low Density	3.8	1	0.4 Unit/Ac	Terrace	13.3	Low	Well	Septic
2	027-221-046	12.54	AG		Low Prob, Low Density	4.0	1	0.4 Unit/Ac	Terrace	14.1	Low	Well	Septic
38	027-251-029	0.98	RS		Unit in Progress	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
39	027-251-030	2.07	RS		Planned Unit	1.0	0	1 Unit/Lot	Terrace	3.5	High	Well	Septic
2	027-251-013	15	AG		Low Prob, Low Density	5.0	1	0.4 Unit/Ac	Terrace	17.5	Low	Well	Septic
2	027-261-005	10.09	AG		Low Prob, Low Density	3.0	1	0.4 Unit/Ac	Terrace	10.6	Low	Well	Septic
2	027-261-004	9.84	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.3	Low	Well	Septic
2	027-261-011	8.61	AG		Low Prob, Low Density	2.4	1	0.4 Unit/Ac	Terrace	8.6	Low	Well	Septic
2	027-261-010	10.67	AG		Low Prob, Low Density	3.3	1	0.4 Unit/Ac	Terrace	11.4	Low	Well	Septic
2	027-261-009	9.78	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.2	Low	Well	Septic
2	027-261-008	9.74	AG		Low Prob, Low Density	2.9	1	0.4 Unit/Ac	Terrace	10.1	Low	Well	Septic
1	021-361-001	0.96	RSF			1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer
1	021-361-002	1.01	RSF			1.0	1.0	1 Unit/Lot		3.5	High	District	Sewer

Summary of Future Development Potential													
ID	APN	Size (acres)	Zoning	Proposed Re-Zoning	Density Notes	Est # of EDU	Existing Units	Density	Location	Estimated additional residents	Probability	Water Supply	SS
		1557.866			Totals	2563.3	Units			8971.4	People		

APPENDIX B

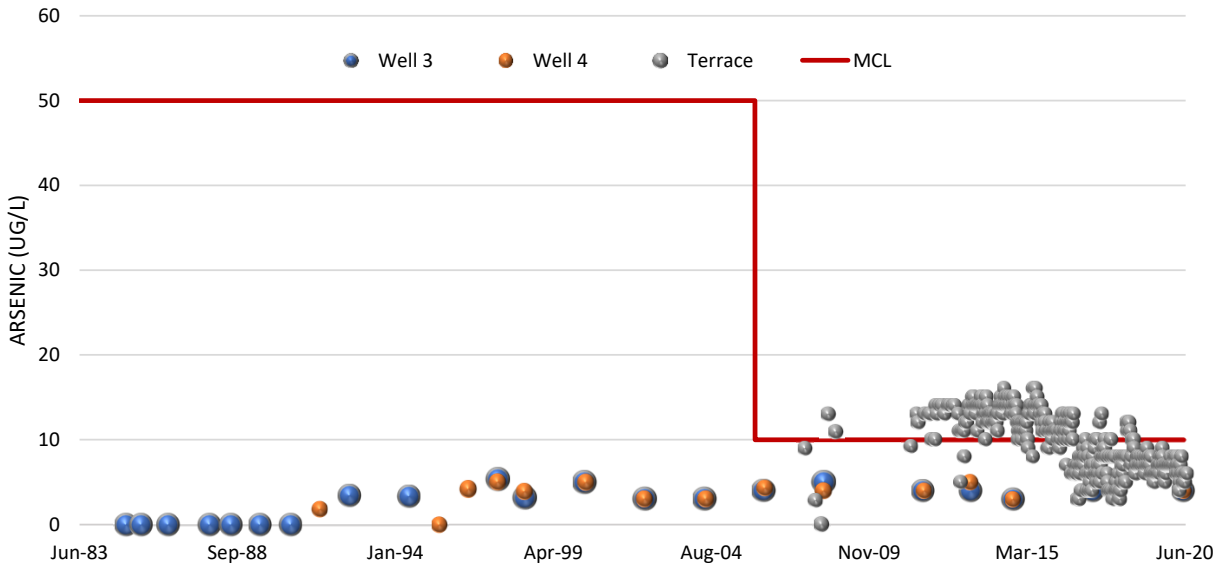
WATER QUALITY ANALYSIS

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
ALUMINUM



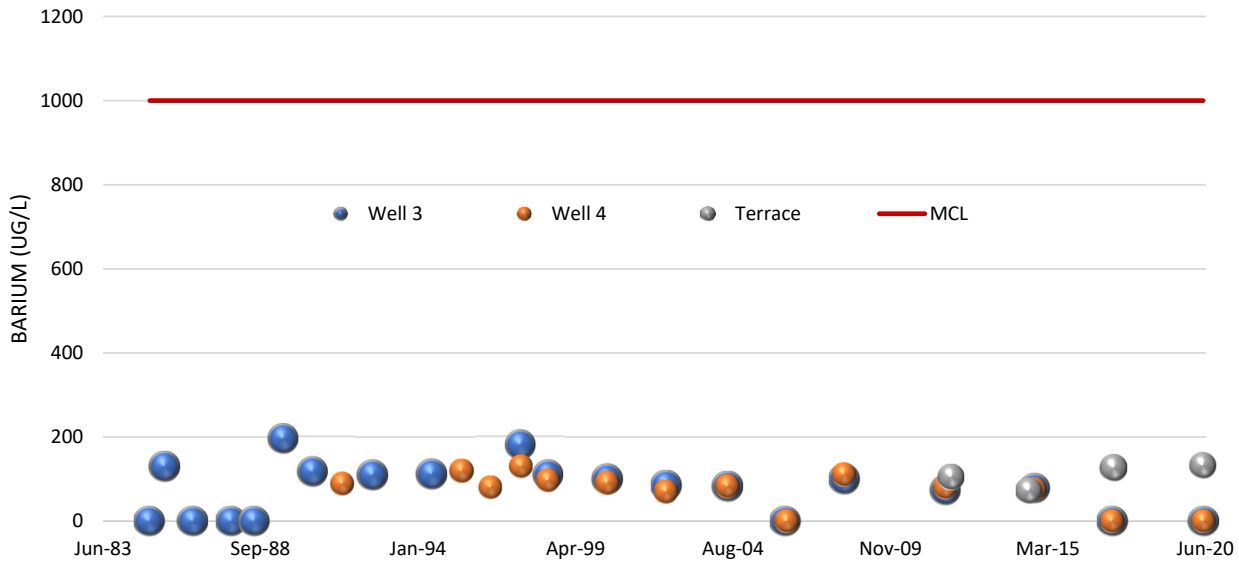
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
ARSENIC



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

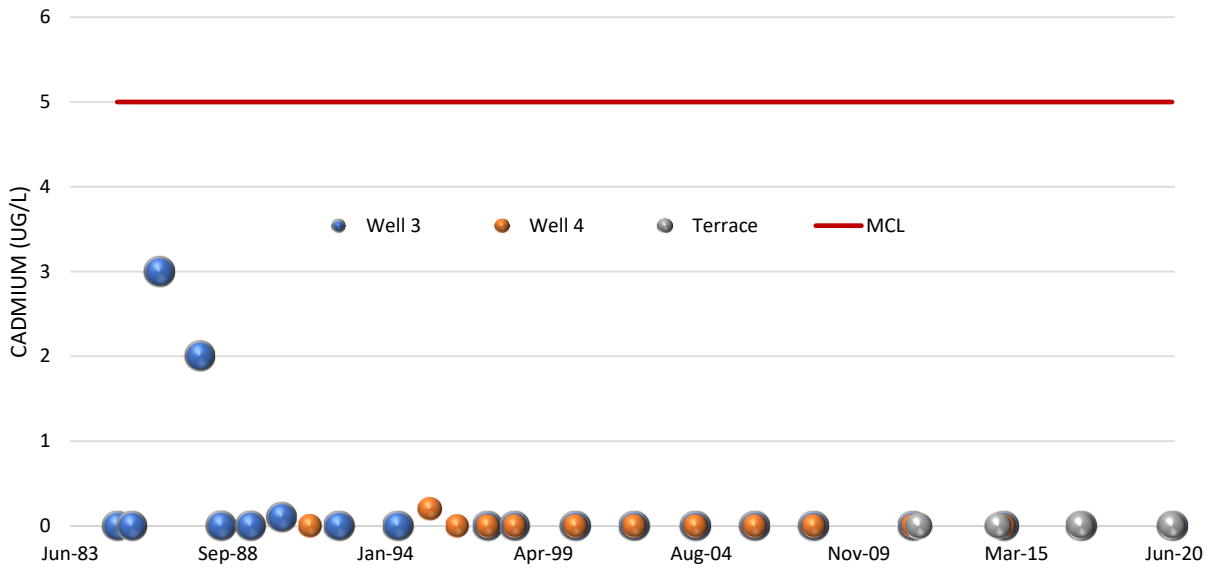
SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
BARIUM



SAMPLING EVENT

NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

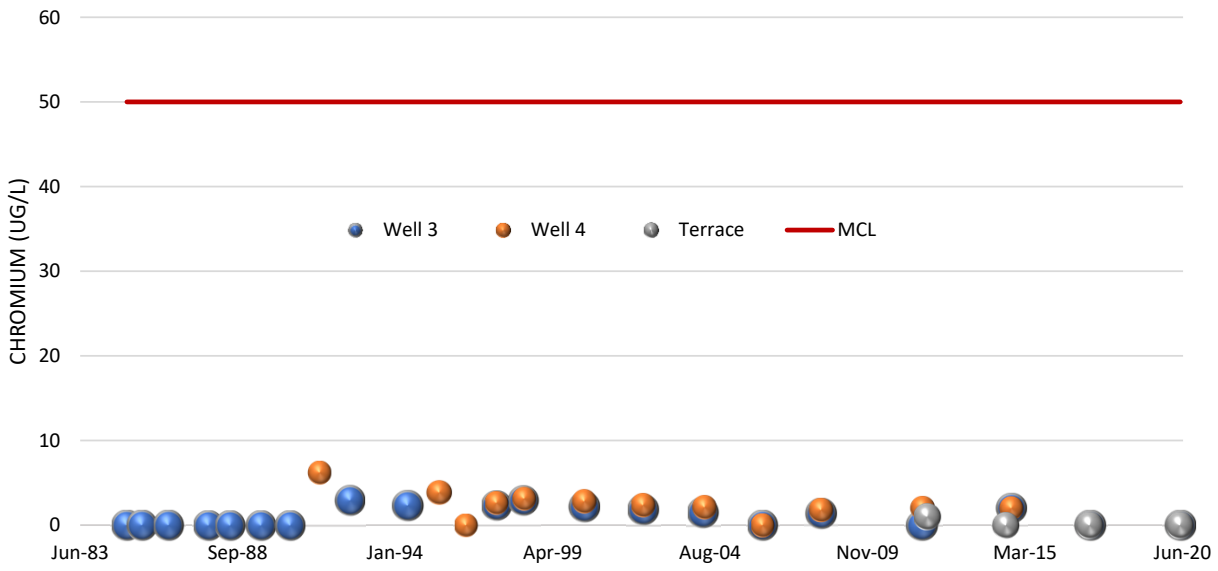
SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
CADMIUM



SAMPLING EVENT

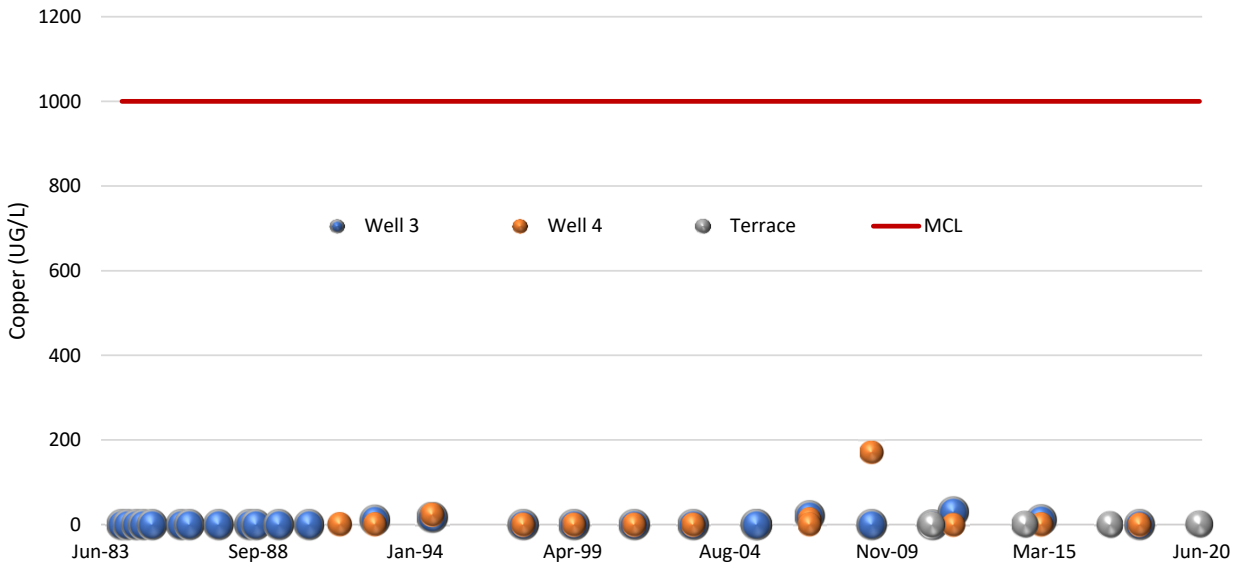
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
CHROMIUM



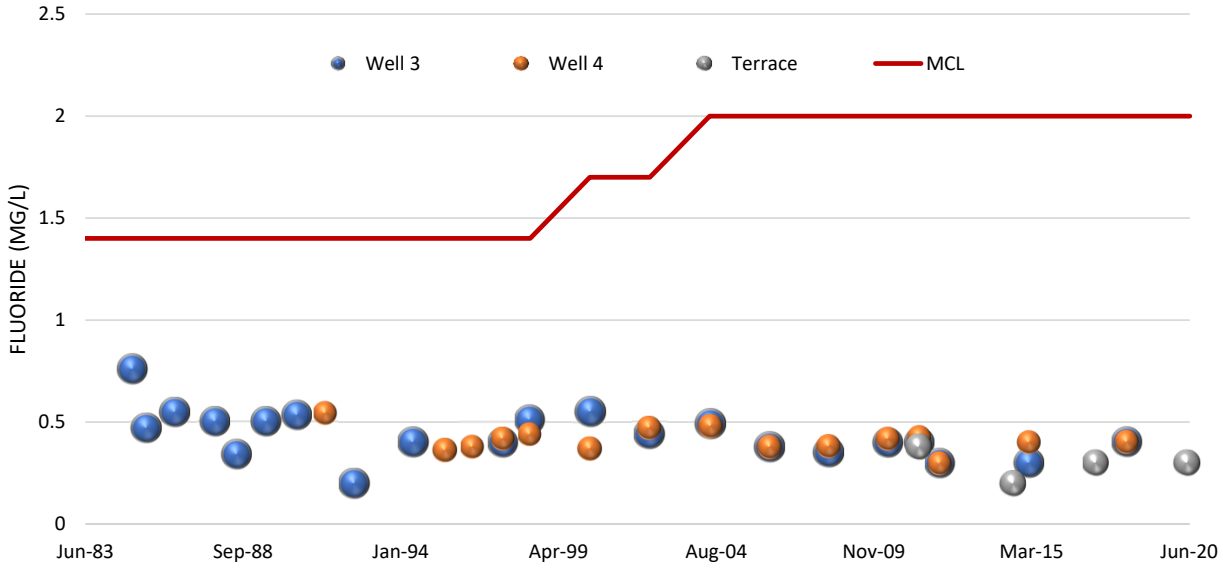
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
COPPER



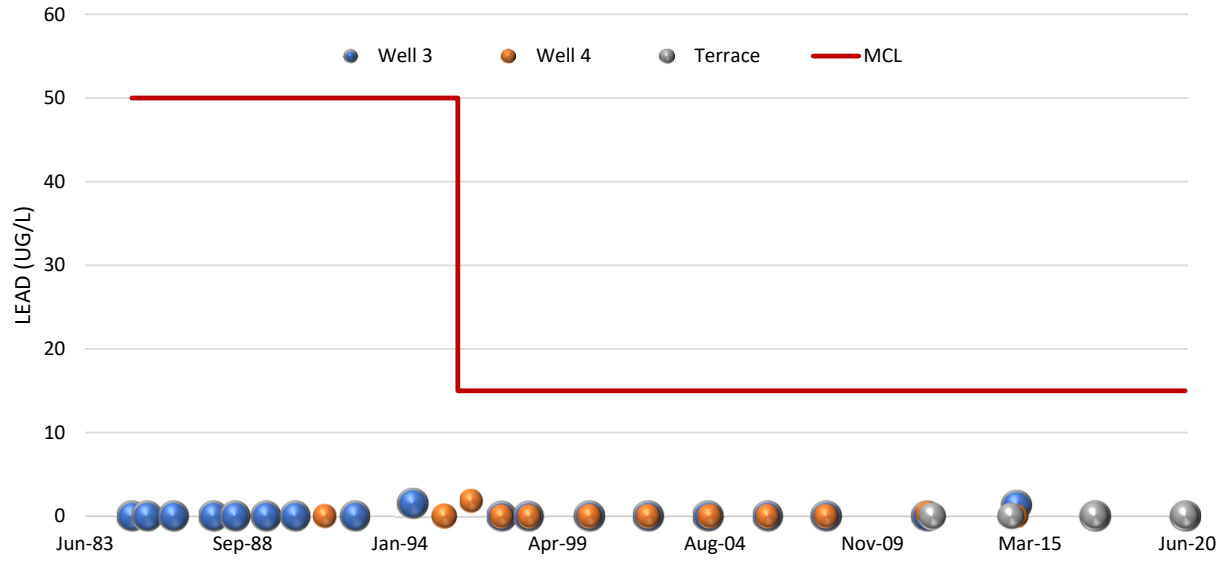
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
FLUORIDE



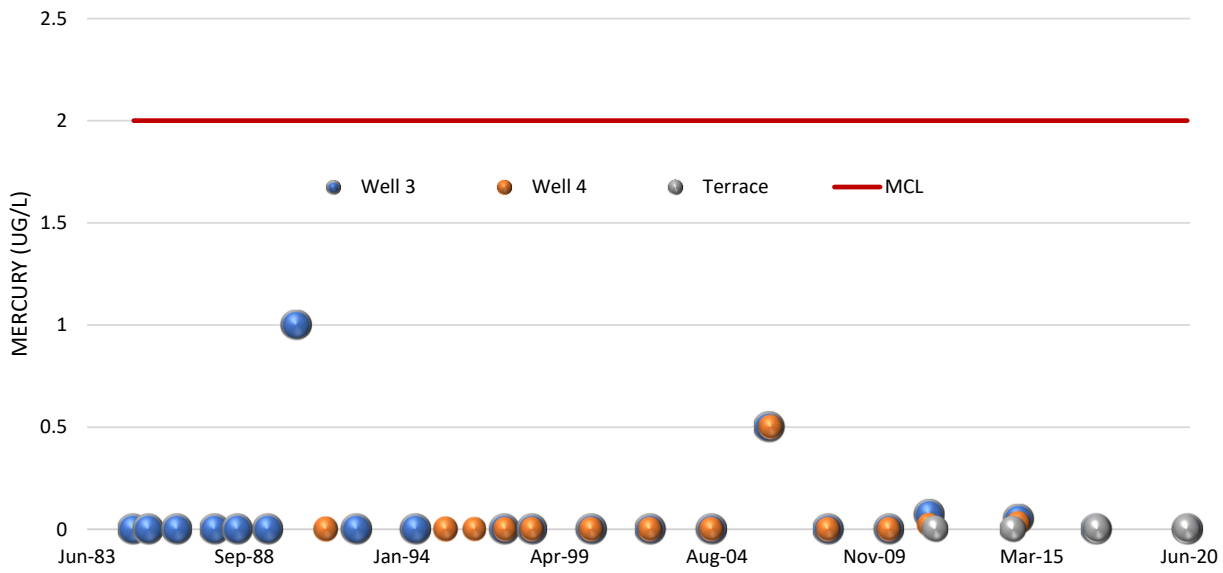
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
LEAD



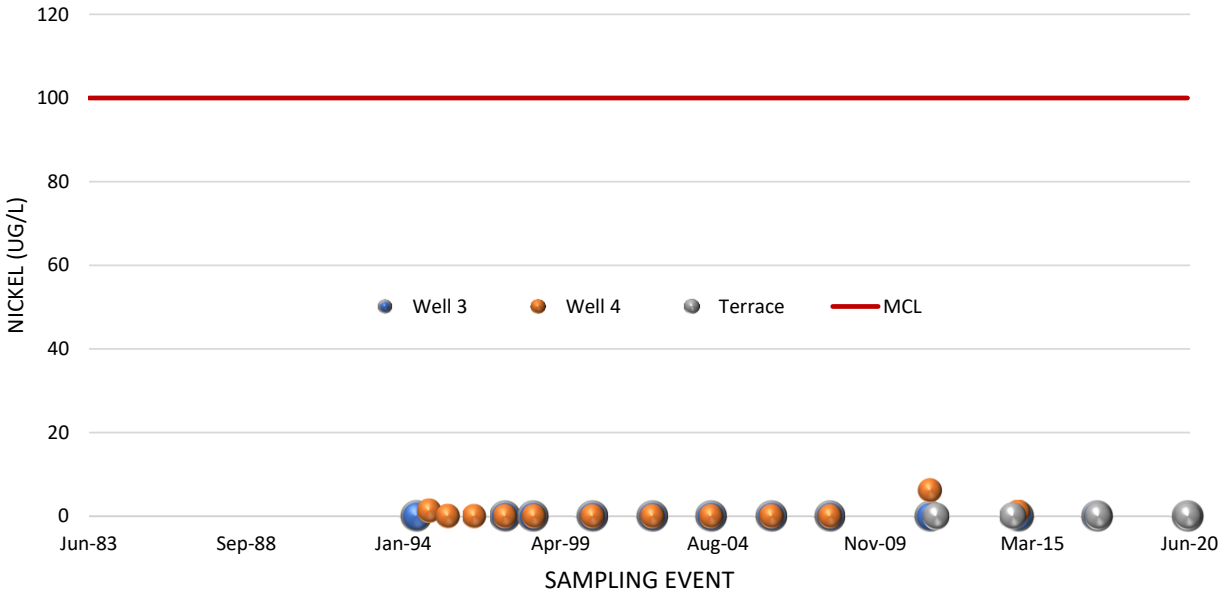
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
MERCURY



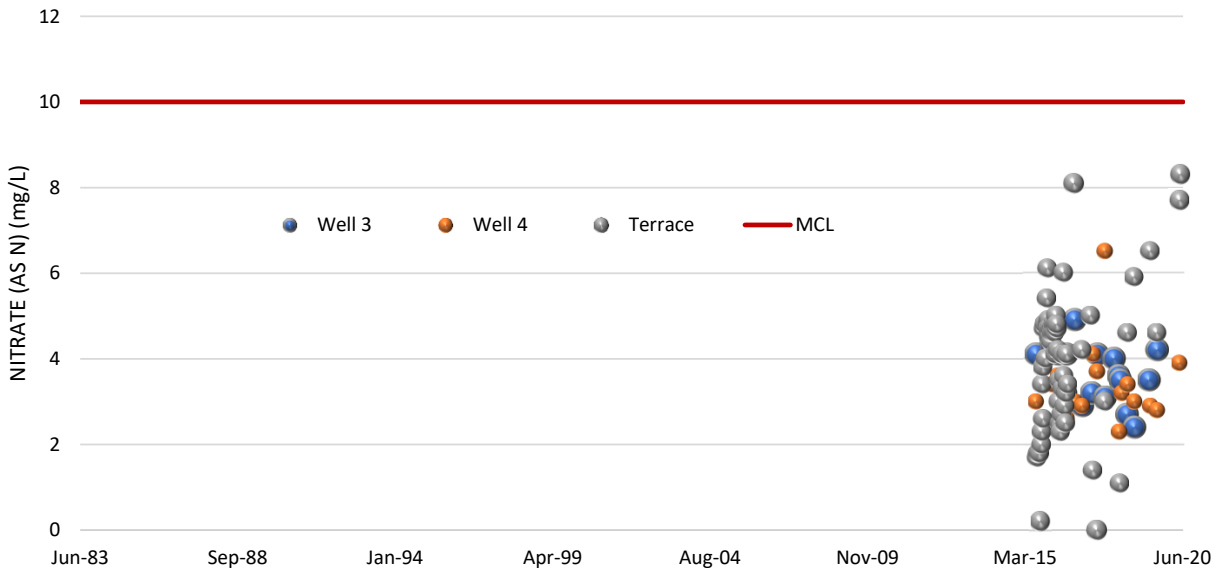
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
NICKEL



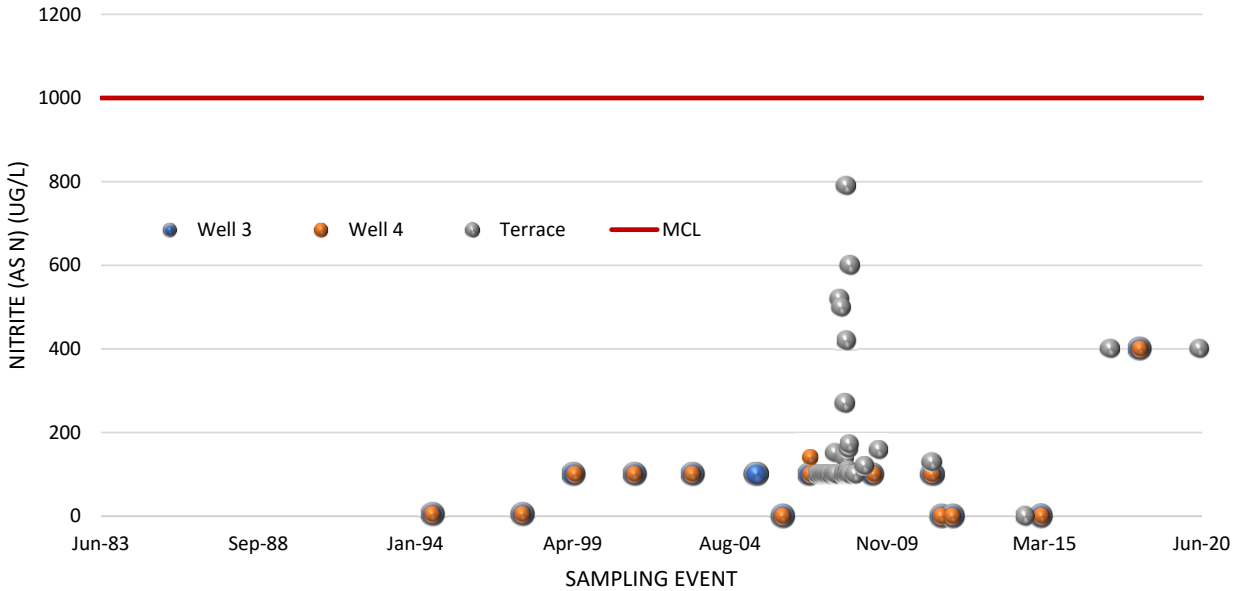
NOTE: ALL POINTS LESS THAN LABORATORY THRESHOLD, MARKED AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
NITRATE (AS N)



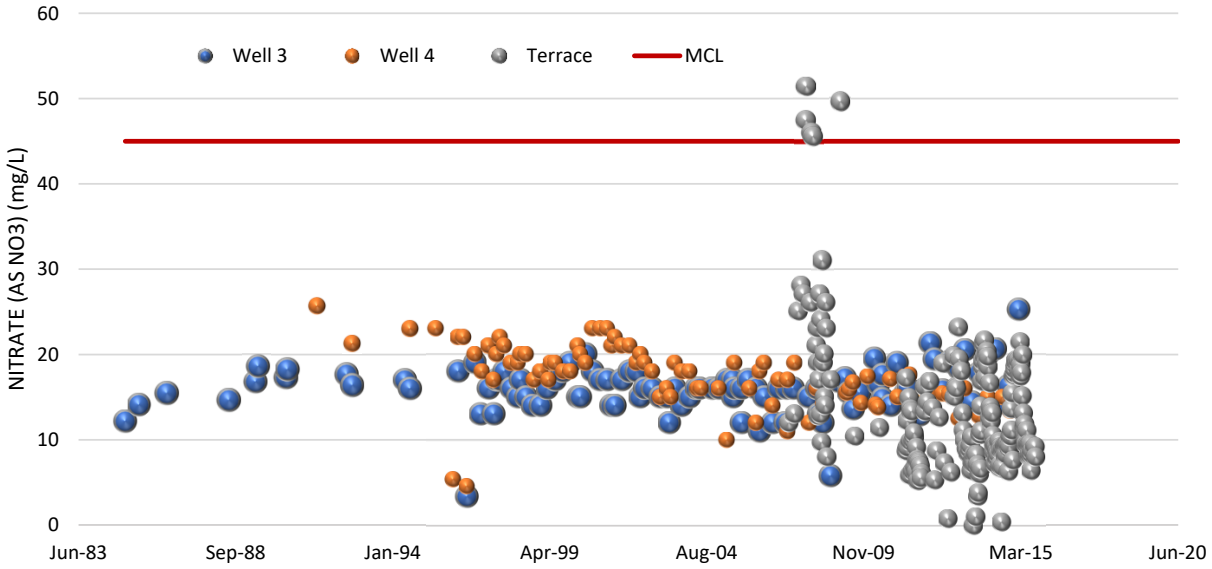
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
NITRITE (AS N)



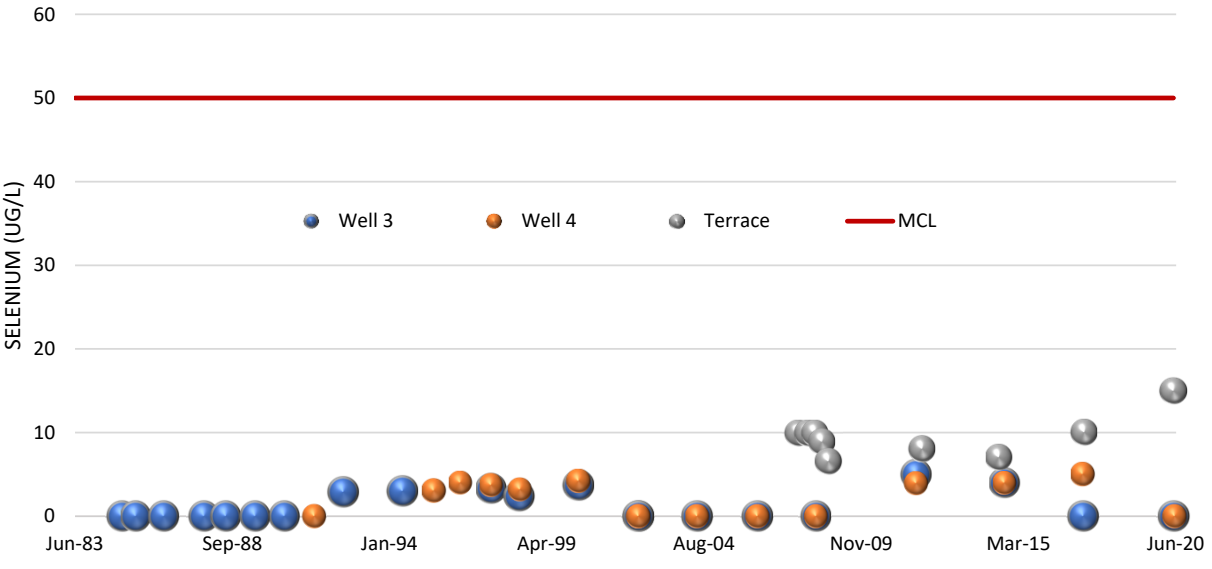
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
NITRATE (AS NO3)



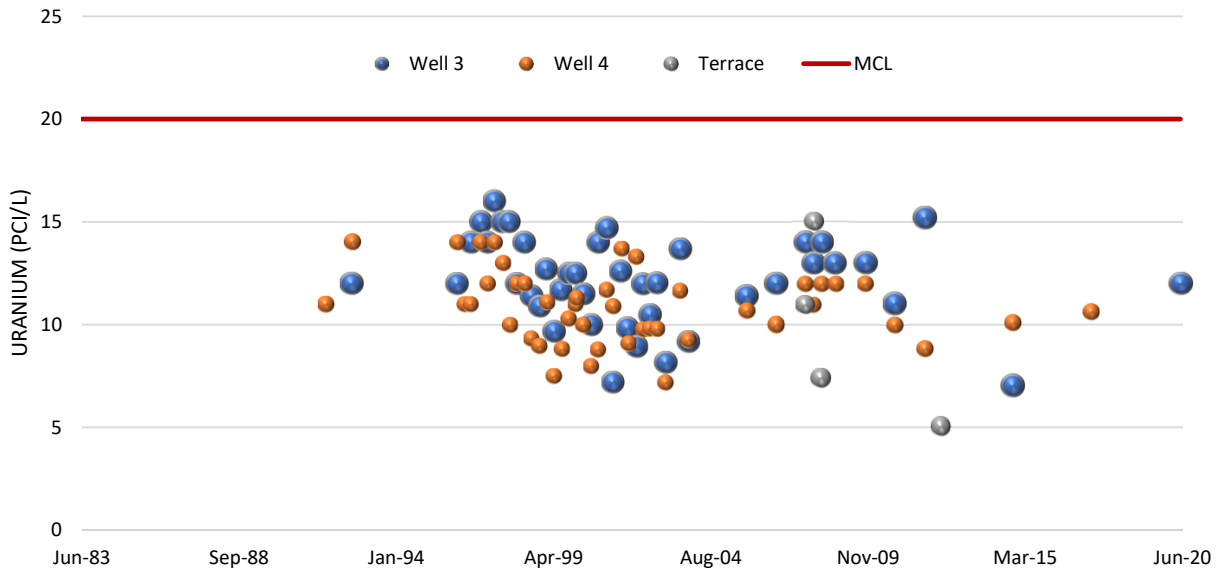
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
SELENIUM



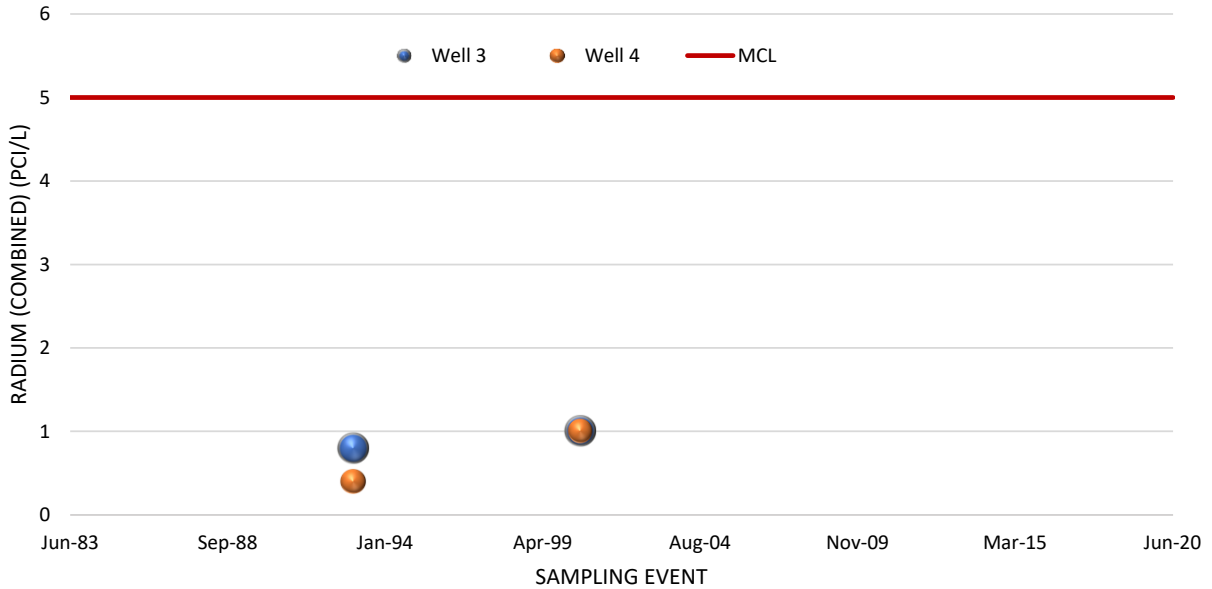
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
URANIUM



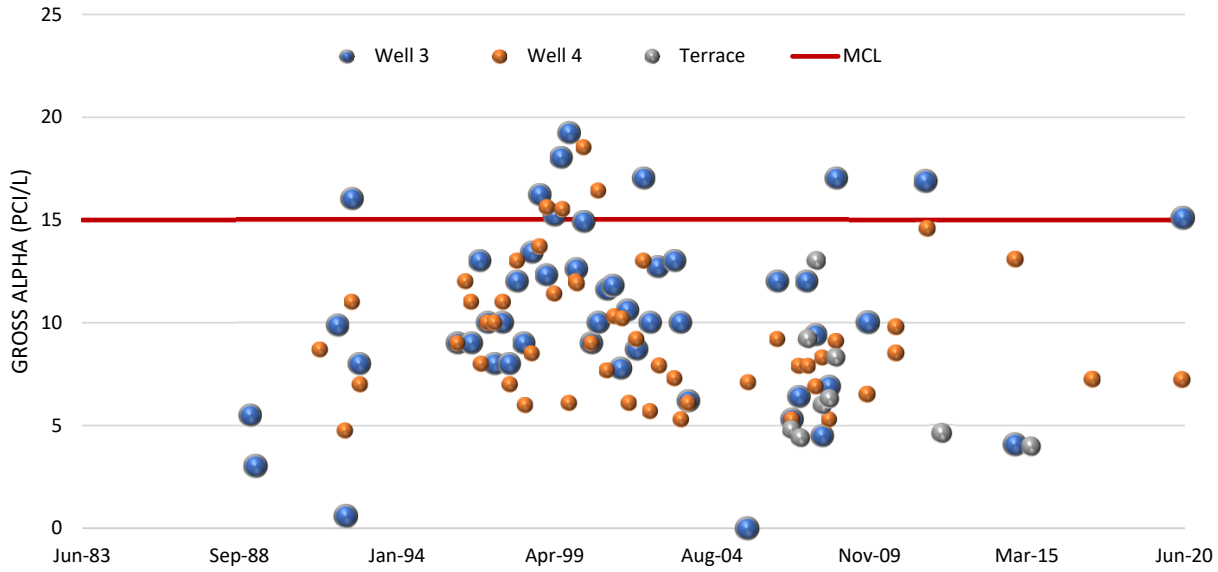
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
RADIUM (COMBINED)



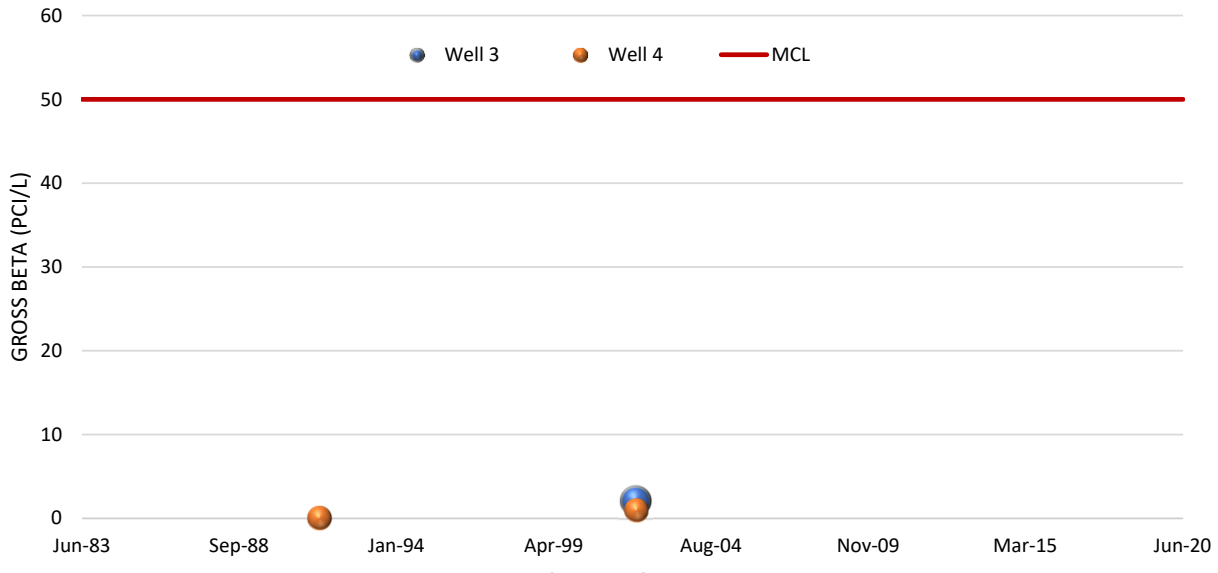
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
GROSS ALPHA



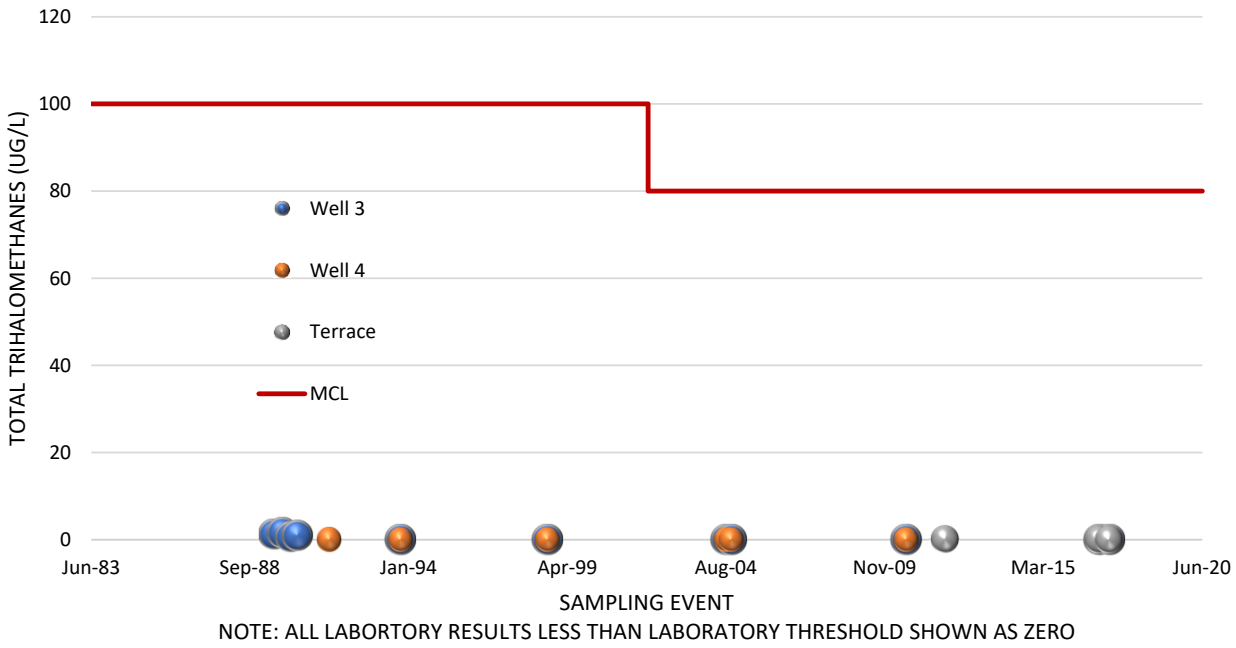
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
GROSS BETA



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
TOTAL TRIHALOMETHANES



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

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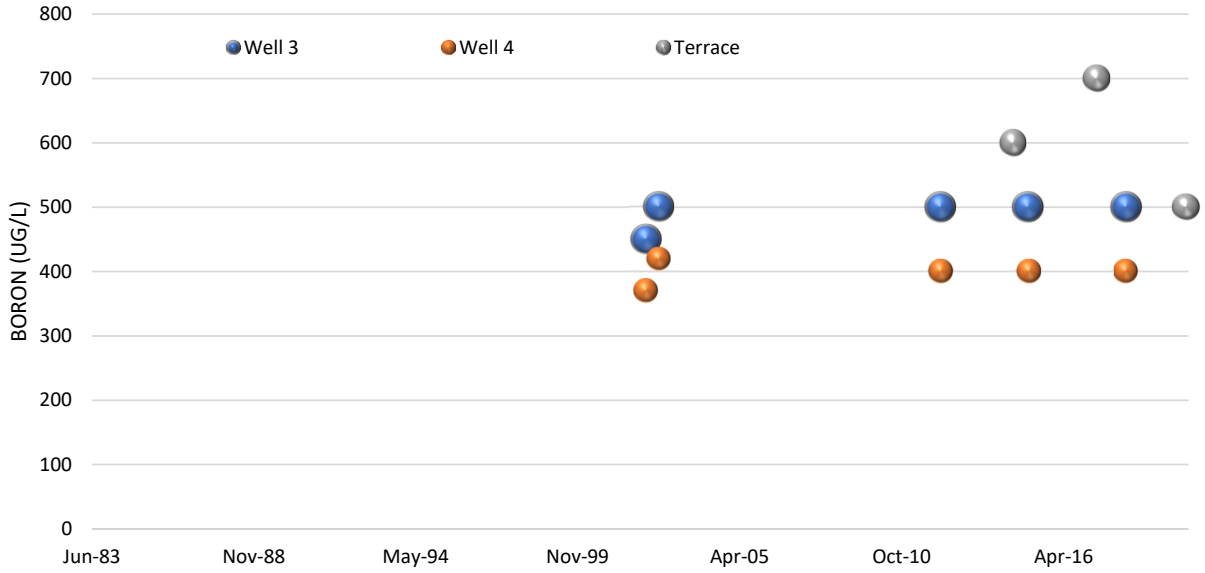
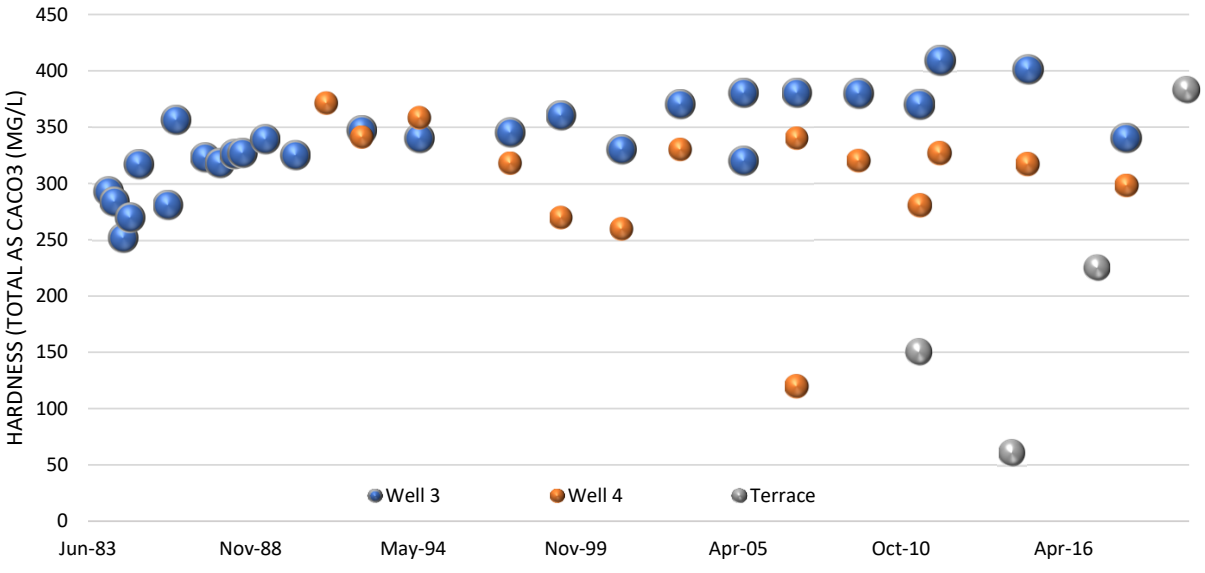
SUPPLY WELL QUALITY
BORON



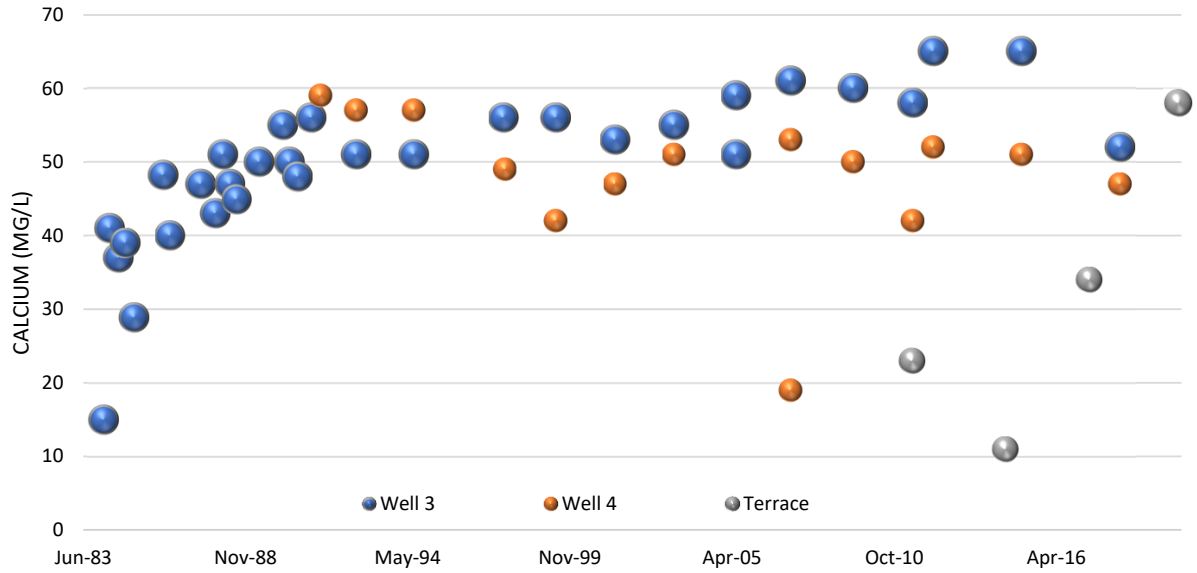
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
HARDNESS (TOTAL) AS CACO3



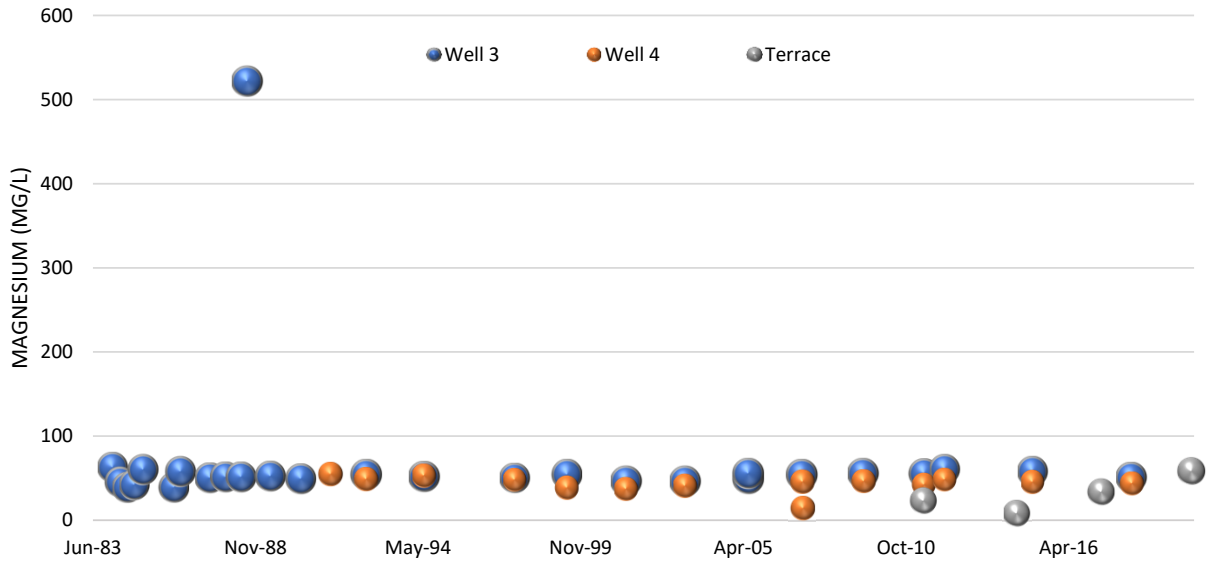
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
CALCIUM



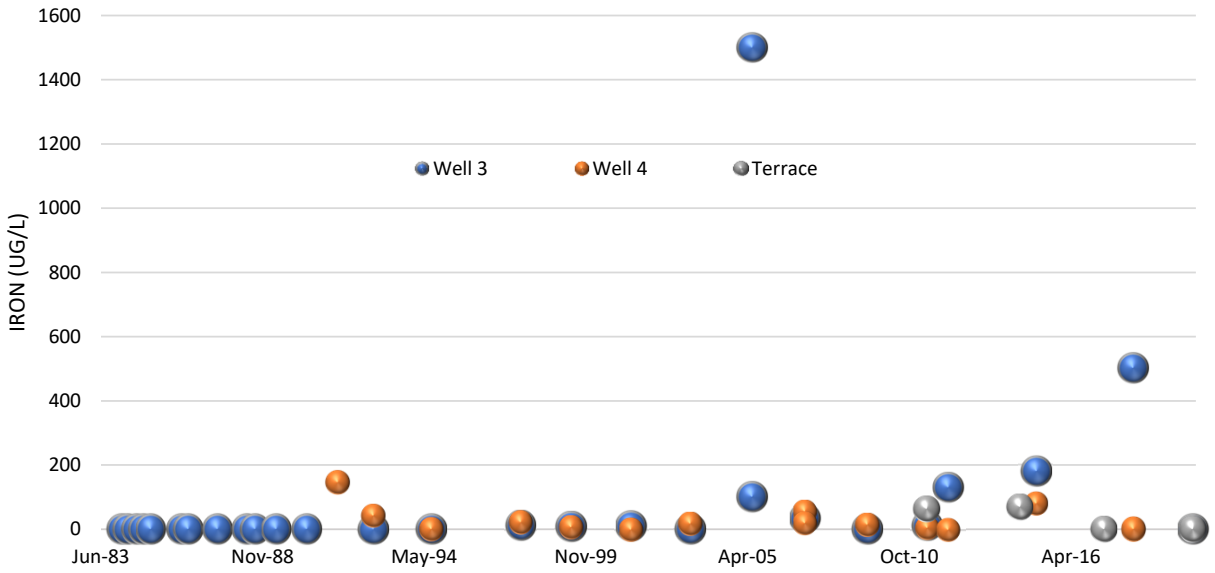
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
MAGNESIUM



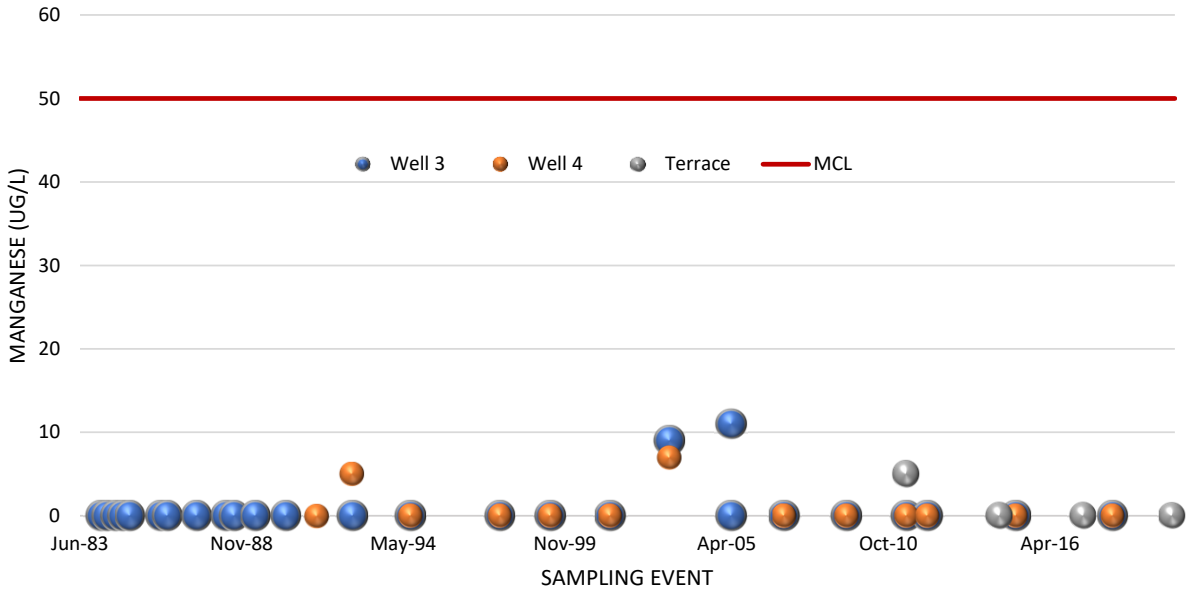
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
IRON



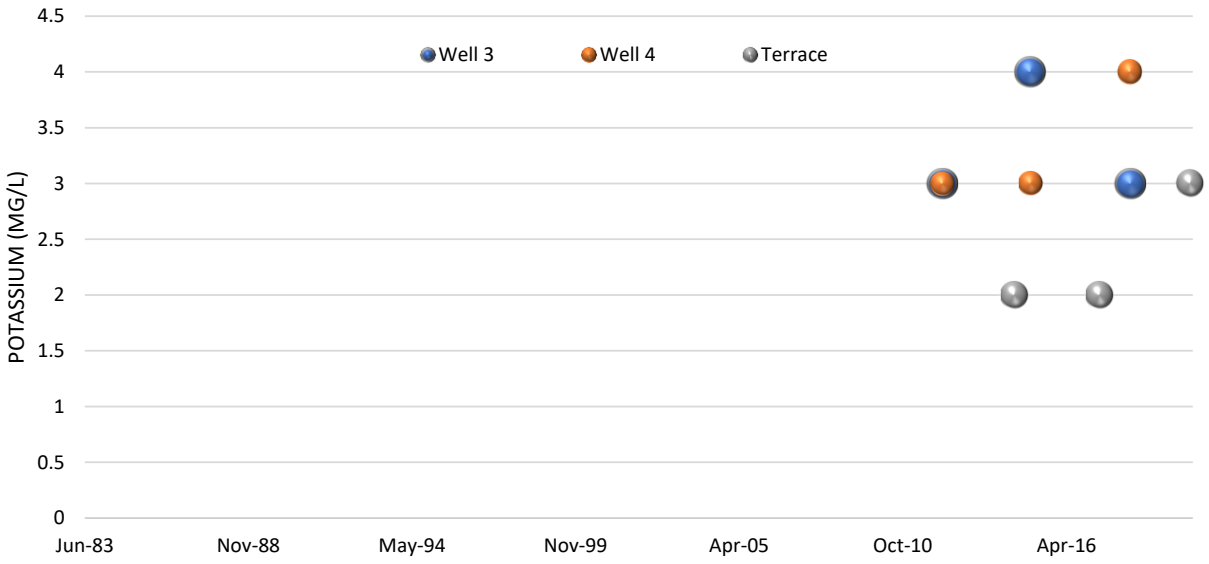
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
MANGANESE



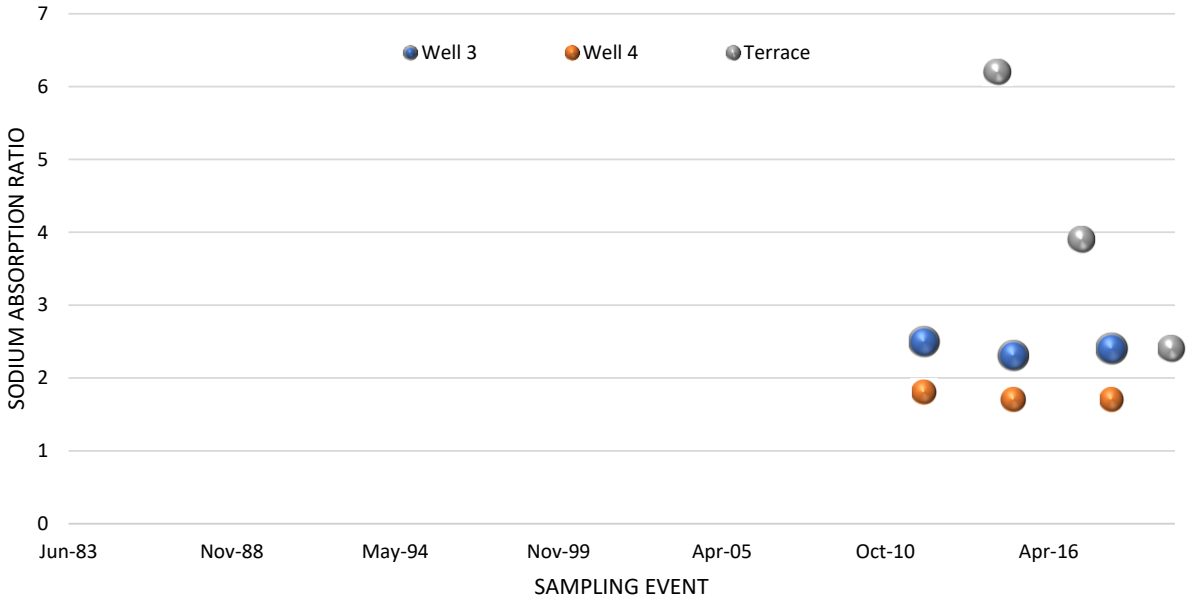
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
POTASSIUM

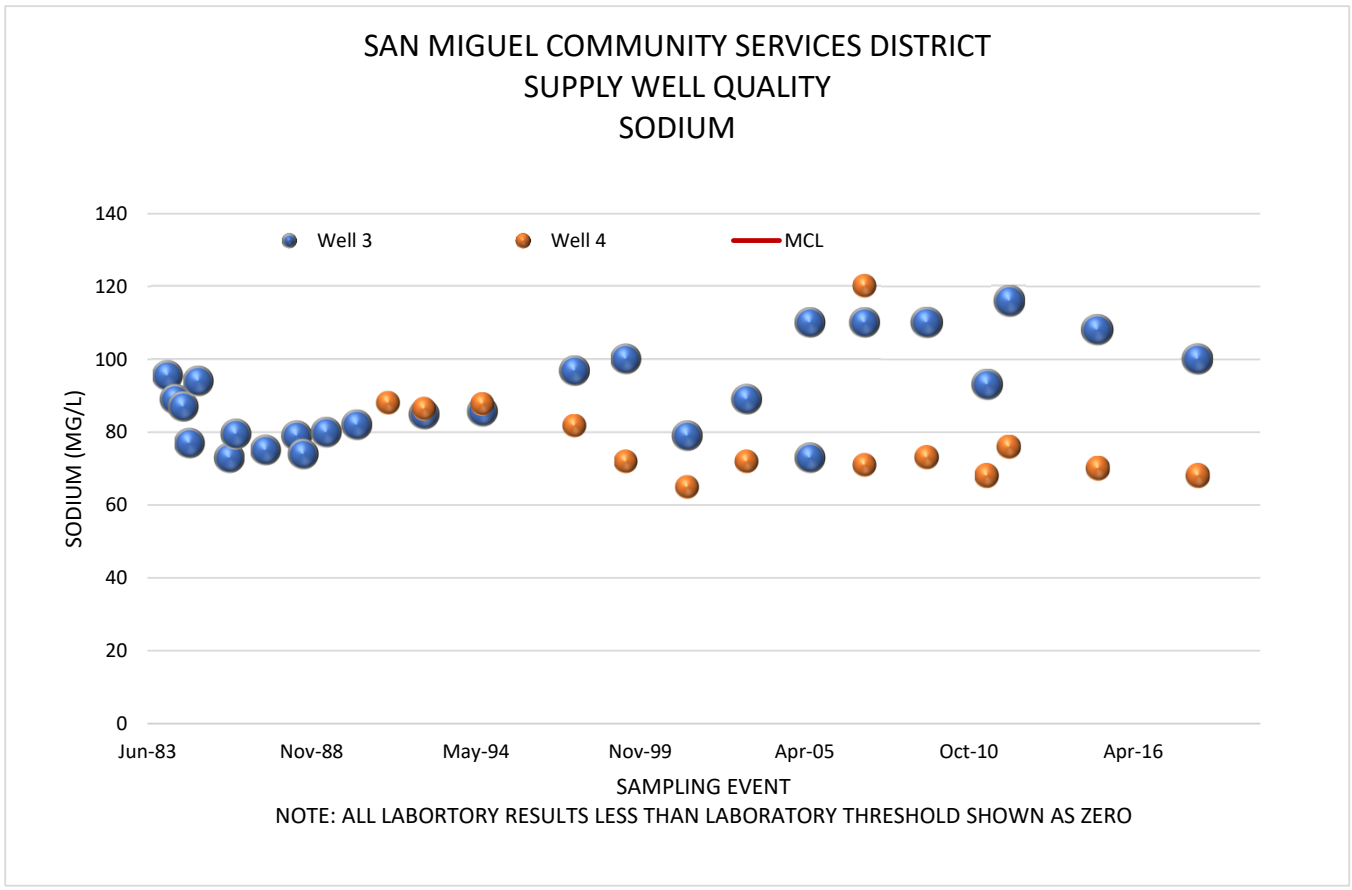


NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

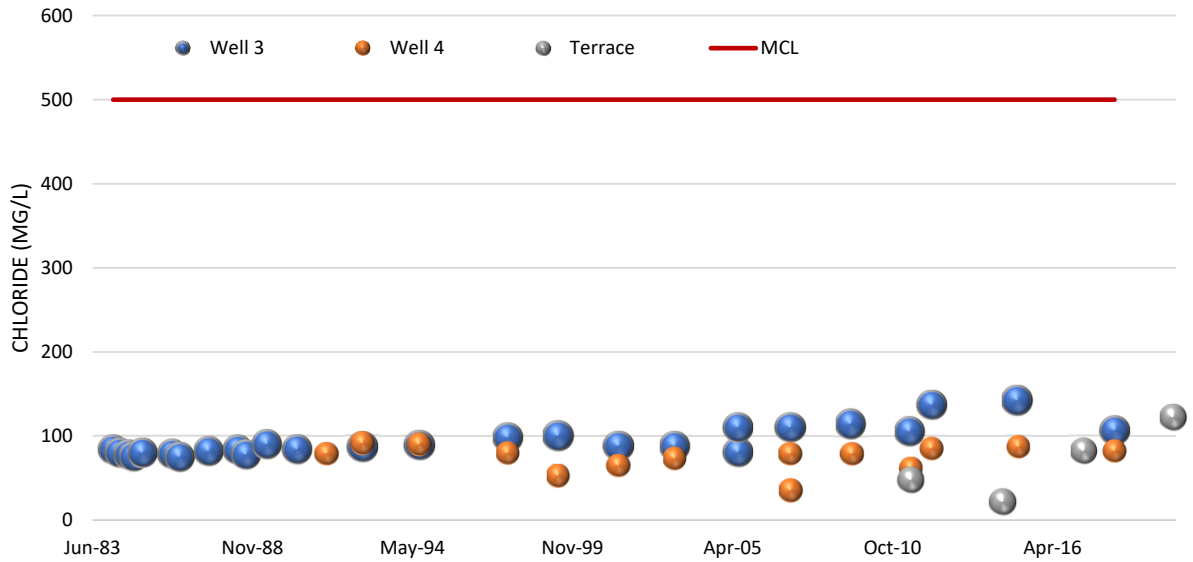
SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
SODIUM ABSORPTION RATIO



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

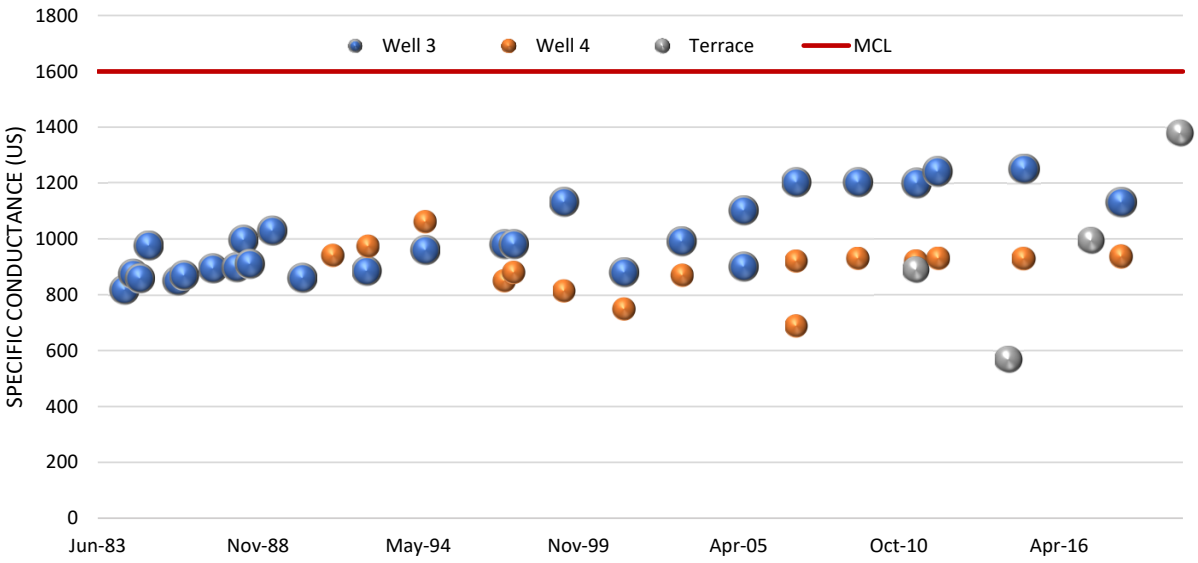

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
SODIUM
Well 3
Well 4
MCL
SODIUM (MG/L)
140
120
100
80
60
40
20
0
Jun-83
Nov-88
May-94
Nov-99
Apr-05
Oct-10
Apr-16
SAMPLING EVENT
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
CHLORIDE



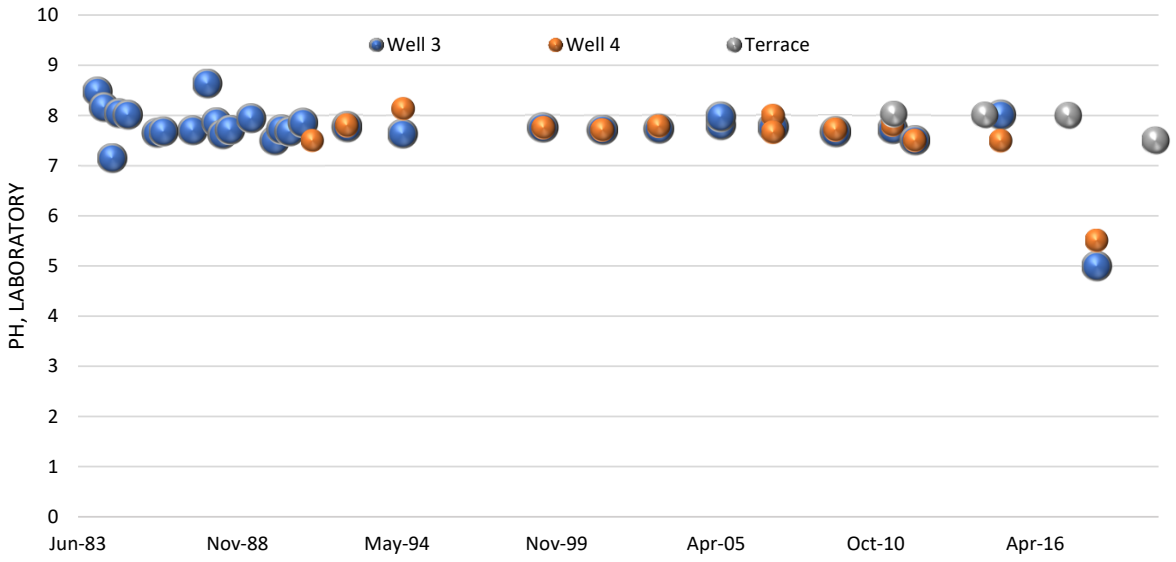
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
SPECIFIC CONDUCTANCE



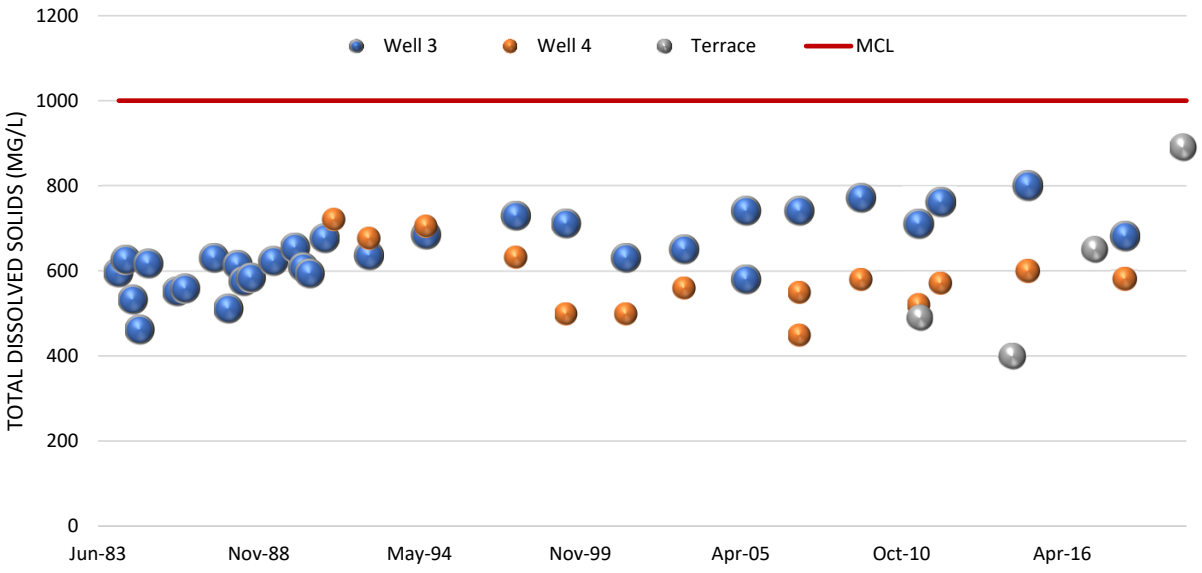
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
PH, LABORATORY



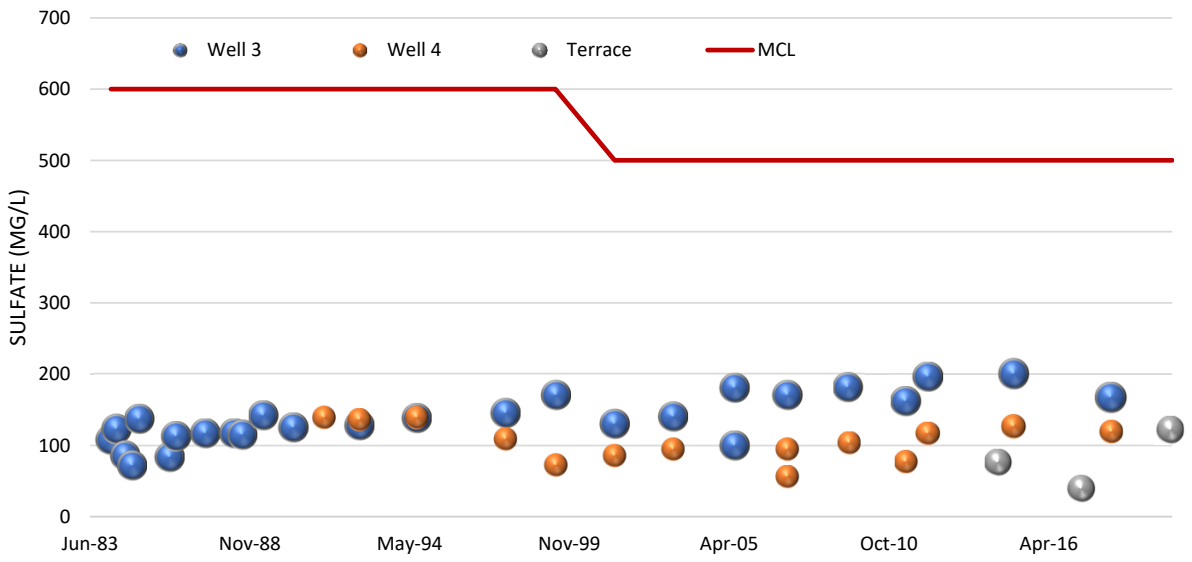
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
TOTAL DISSOLVED SOLIDS



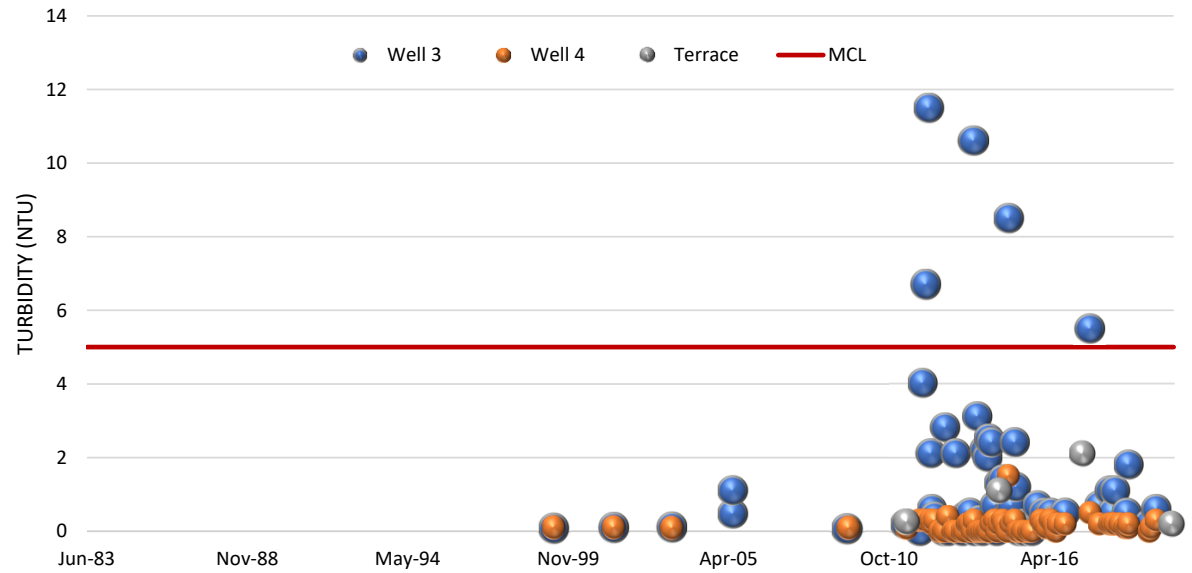
NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
SULFATE



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

SAN MIGUEL COMMUNITY SERVICES DISTRICT
SUPPLY WELL QUALITY
TURBIDITY



NOTE: ALL LABORTORY RESULTS LESS THAN LABORATORY THRESHOLD SHOWN AS ZERO

APPENDIX C

10TH AND 11TH STREET FIRE FLOW STUDY

MONSOON CONSULTANTS

P.O. Box 151 San Luis Obispo, California 93406 Tel 805-280-1051
breely@monsoonconsultants.com

December 20, 2018

Kelly Dodds
San Miguel Community Services District
1150 Mission St
San Miguel CA 93451

Re: Fire Flow Analysis of 10th and 11th Street Waterline Replacements for CDBG Grant Application

Dear Kelly Dodds,

This study evaluated the hydraulic capacity of the existing San Miguel Community Services District waterline network under various fire scenarios. This study focuses on the hydraulic impacts associated with the loss of the 10th and 11th Street waterlines from the master plan updates. Part of the 2017 SMCSD Master Plan updates is to upgrade and replace the waterline network on 10th and 11th Street near their respective intersections with Mission Street. These upgrades include replacing the existing 6 inch cast iron and asbestos cement pipelines with 8 inch PVC lines. Additionally, a new connection spanning along 11th St from Mission to the alleyway and a horizontal directional drilling section under the United Pacific Railroad are planned for construction.

Description of Model Methodology

Monsoon Consultants (Monsoon) utilized the EPANet hydraulic modeling program to set up the models. The initial model was built to accurately reflect the existing waterline pipe network for the San Miguel Community Services District and includes over 600 pipe segments, two water storage tanks, 3 wells, and peak hourly base demands throughout the network that were determined based on water usage data from the SMCSD. Certain pipe segments have accumulated residue buildup which significantly reduced their effective diameter and hence the pipe flow capacities were updated to reflect these conditions based on fire flow tests that the SMCSD conducted on the pipe network.

The second model reflects the current SMCSD pipe network with proposed 10th and 11th Street waterline improvements. By comparing the network pressures under various fire scenarios for both models, Monsoon determined the exact locations of failure and how the waterline improvements would help mitigate these locations of failure. In this study, a location of failure is defined as a point in the waterline network where the internal pressure drops to below 20 psi.

Simulation Scenarios

Monsoon conducted several different fire scenarios; both residential, commercial, and others. Monsoon found the 10th and 11th Street waterline replacements to benefit the overall pressure of the pipe network in all scenarios to varying extents. The larger fire scenarios resulted in drastic differences in number of failure locations between the models. The Grain Mill fire scenario, as delineated in the 2017 SMCSD Master Plan, in particular that saw the 10th and 11th Street waterline improvements reduce the number of points where the internal pressure dropped below 20 psi by 75%. Table 1 below lists the details for the fire scenario referred to in this study. The scenario below is set up to include average daily demand (ADD) conditions per the SMCSD Master Plan.

Table 1: Fire Scenario Description

SCENARIO	TOTAL DEMAND	DEMAND DISTRIBUTION	DEMAND LOCATION
GRAIN MILL	4500 GPM	900 GPM at 5 Hydrants	Central San Miguel near Mission St, Railroad, and 15th St

Simulation Results

The attached figures provide a visual depiction of the Grain Mill fire scenario as well as the locations of failure under the scenario that were mitigated following the hypothetical model with waterline replacements. Figure A shows the existing waterline network and all locations that the internal pipe pressure drops below 20 psi when subject to the Grain Mill fire scenario as red dots. Figure A tells us that nearly the entire waterline network experiences low pressure failure under the aforementioned simulation conditions. This figure can be compared to Figure B, which shows the waterline improvements and replacements along 10th and 11th Street. When the model with the replacements was placed under the same scenario, the number of low pressure points was reduced by nearly 75%, significantly improving the internal pressure of the entire network. The two figures attached provide a visual depiction of where the fire scenarios take place and how the waterline replacements would mitigate low pressure points across different parts of town. The table below provides a summary of the numerical values associated with our figures.

Table 2: Simulation Results Summary

	NUMBER OF POINTS BELOW 20PSI WITH 10TH AND 11TH ST WATERLINES OUT OF SERVICE	NUMBER OF POINTS BELOW 20PSI WITH 10TH AND 11TH ST WATERLINES IN SERVICE
GRAIN MILL	581	148

Findings and Recommendations

Based on the findings from this study, the 10th and 11th Street waterline replacements would increase the SMCSD water network's capacity to operate during large fire scenarios. The scenario analyzed in this study reflects a very significant fire event. Even under these conditions, the waterline replacements would significantly decrease the number of low pressure points. The waterline improvements theoretically also apply to other, less extreme fire scenarios and would not hinder the pipe network's capacity to serve San Miguel's demands under any scenario. This applies to regular daily demands and fire scenarios. For these reasons, Monsoon recommends implementing the 10th and 11th Street waterline improvements as soon as possible.

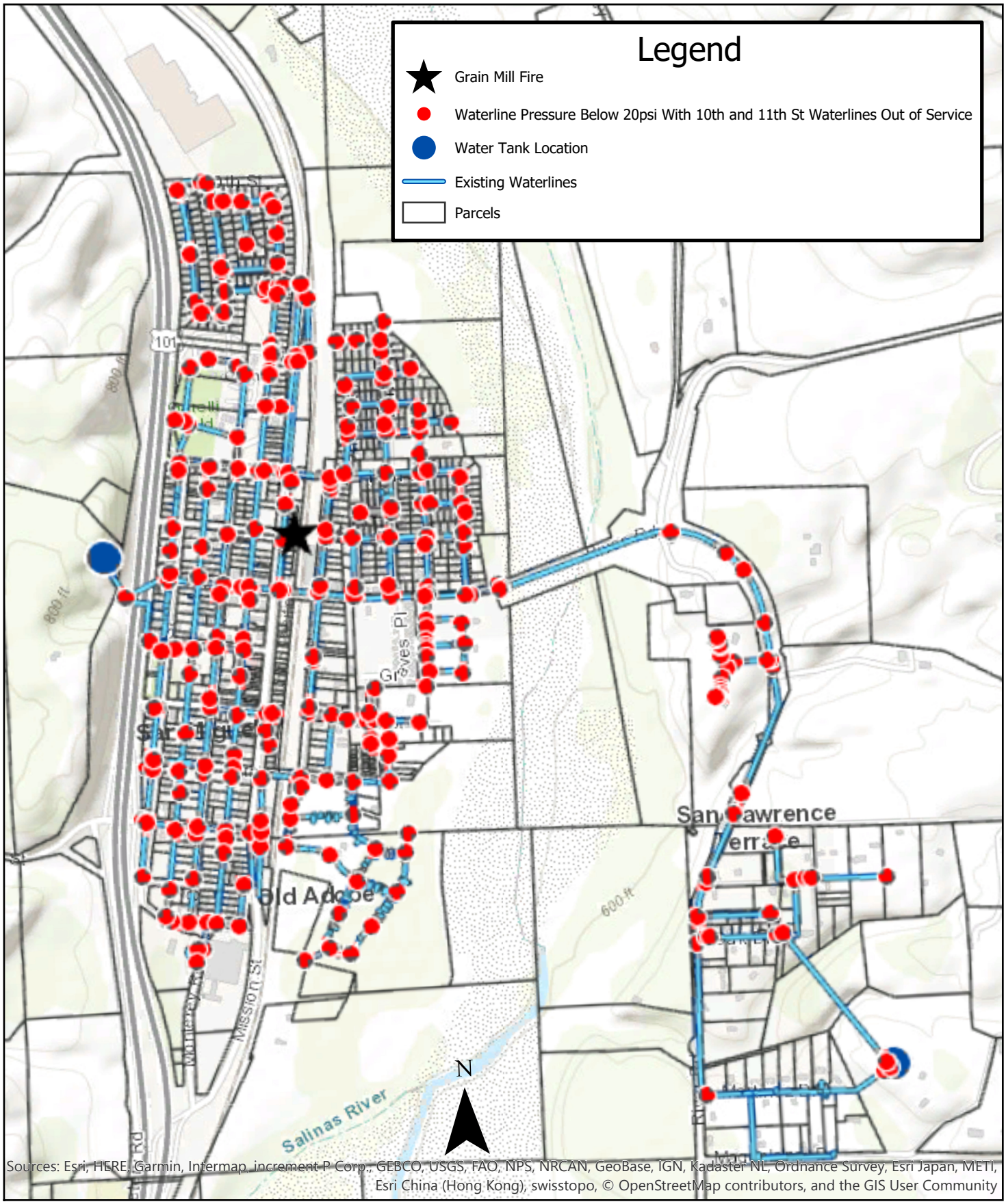
Monsoon's reasoning for this recommendation stems from the increased pipe diameters increasing the flow capacity of a central portion of the SMCSD waterline network. In addition, a new segment will connect two existing waterlines providing another flow channel. The wider pipe diameter of the railroad crossing would alleviate the pipe flow requirements in other regions of the network, hence reducing the risk of low internal pressures. Together, these waterline improvements have proven to be critical by the resounding decrease in points of failure after being implemented to the model. It is recommended by Monsoon that the 10th and 11th Street waterline replacements will help improve the SMCSD flow network and increase its ability to operate under various fire scenarios.

Sincerely,

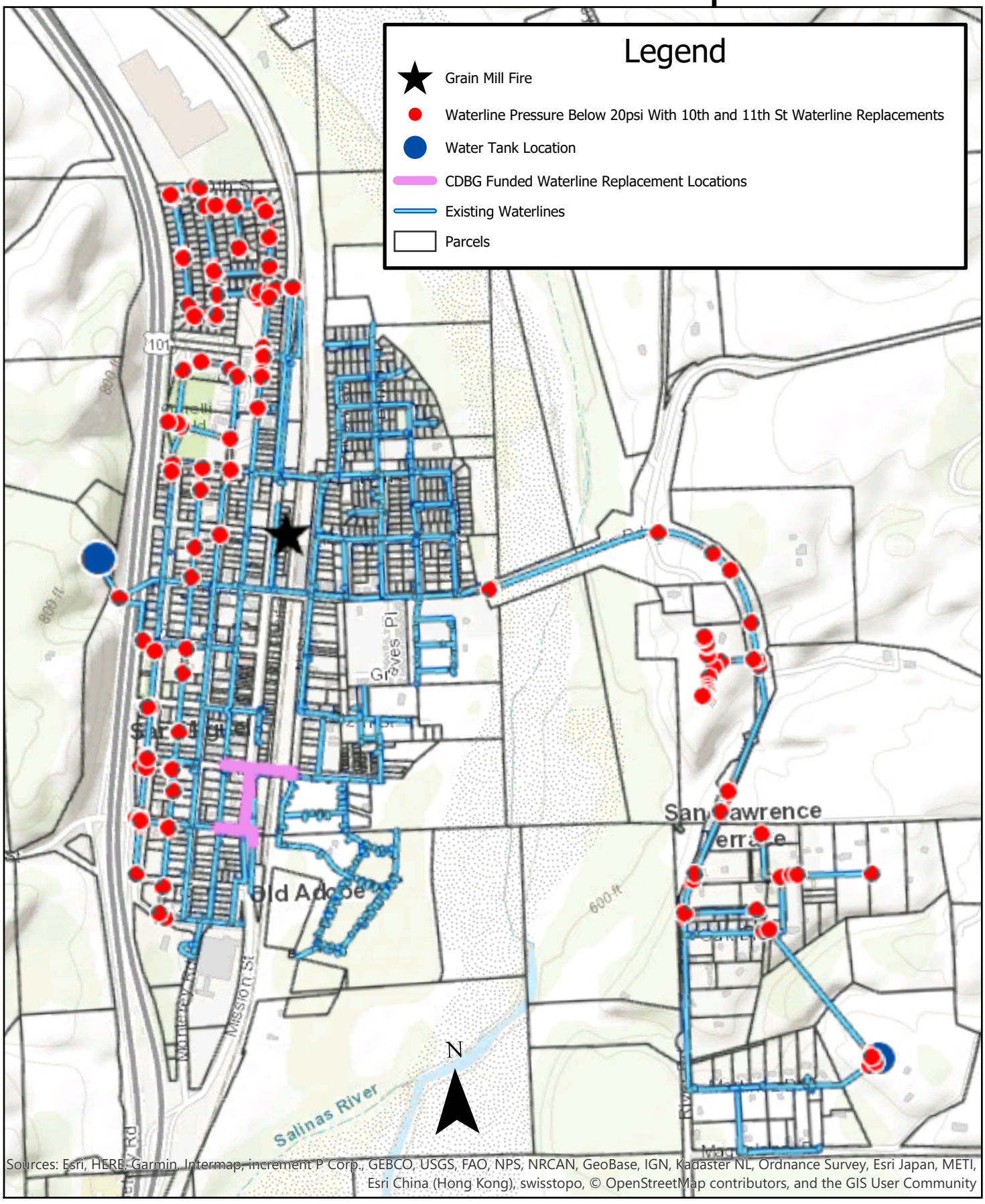
Blaine T. Reely, PhD, PE
President / CEO

ATTACHMENTS:
Figure A: Grain Mill Fire Scenario without Replacements
Figure B: Grain Mill Fire Scenario with Replacements

Grain Mill Fire Scenario Without Replacements



Grain Mill Fire Scenario With Replacements



APPENDIX D

FIRE HYDRANT FLOW ANALYSIS

MONSOON CONSULTANTS

994 Mill Street Suite 201 San Luis Obispo, CA 93401
(805) 476-6168 www.monsoonconsultants.com

Kelly Dodds, Director of Utilities
San Miguel Community Services District
1150 Mission Street
San Miguel, CA 93451

May 11, 2020

Re: EVALUATION OF SAN MIGUEL COMMUNITY SERVICES DISTRICT FIRE HYDRANT FLOWS

Dear Kelly:

Per your request, Monsoon Consultants (MONSOON) has performed a hydraulic analysis on the fire hydrants within the San Miguel water distribution system. A fire hydrant location map is included as Attachment 1. The goal of this analysis was to determine the maximum flow that is available from each fire hydrant while maintaining an overall water distribution system pressure of 20 PSI under Average Daily Demand (ADD) conditions.

To determine fire hydrant flows, an instantaneous flow analysis was run in EPANET. The model was calibrated against fire hydrant flow test data provided by Insurance Services Office, Inc. on March 3, 2020 (included as Attachment 2). Fire flows were applied to each fire hydrant node and increased until residual pressures in any part of the water distribution system dropped below 20 PSI. Simulations were run under the following conditions:

1. Instantaneous flow conditions. Under an extended duration scenario, flows would decrease over time as the water tanks empty.
2. The two (2) system water tanks were filled to the overflow elevation (2 feet below the top of the tank) with a water surface elevation of 780.5 feet.
3. The two water supply pumps to the west of the Salinas River (pumping from Well Nos. 3 & 4) were turned on, and the San Lawrence Terrace pump was turned off.
4. The two (2) booster pumps (one on 19th Street and the other on River Road) were not in use.

A table of the resulting maximum available fire flows for each fire hydrant is included as Attachment 3 to this document. It is important to note that the EPANET simulation was performed to evaluate overall water distribution system performance during specified fire flow scenarios. The resulting fire flows from this model are used only to estimate system pressures within the distribution system. Actual fire hydrant flows may differ somewhat from the predicted values. Several other observations were made from the results of the analysis:

1. Fire hydrants to the east of the Salinas River exhibited maximum flows of less than 1000 gallons per minute (GPM).
2. The 4-inch cast iron pipeline along the alley to the west of L Street was modeled with a diameter of 2.8 inches to account for buildup in the pipe, based on a previous fire flow analysis performed by MONSOON in November of 2018. In the current model, fire hydrants along this pipeline exhibited maximum flows of less than 1000 GPM.
3. In several scenarios, pressure at the fire hydrant dropped below 20 PSI before any of the surrounding pressures dropped below 20 PSI. For these scenarios, the maximum available fire flow was recorded as the flow when the fire hydrant pressure was 20 PSI.

Thank you for the opportunity to work with the San Miguel CSD. If you have any questions or wish to discuss the information presented herein, please do not hesitate to contact me.

Respectfully,

MONSOON CONSULTANTS

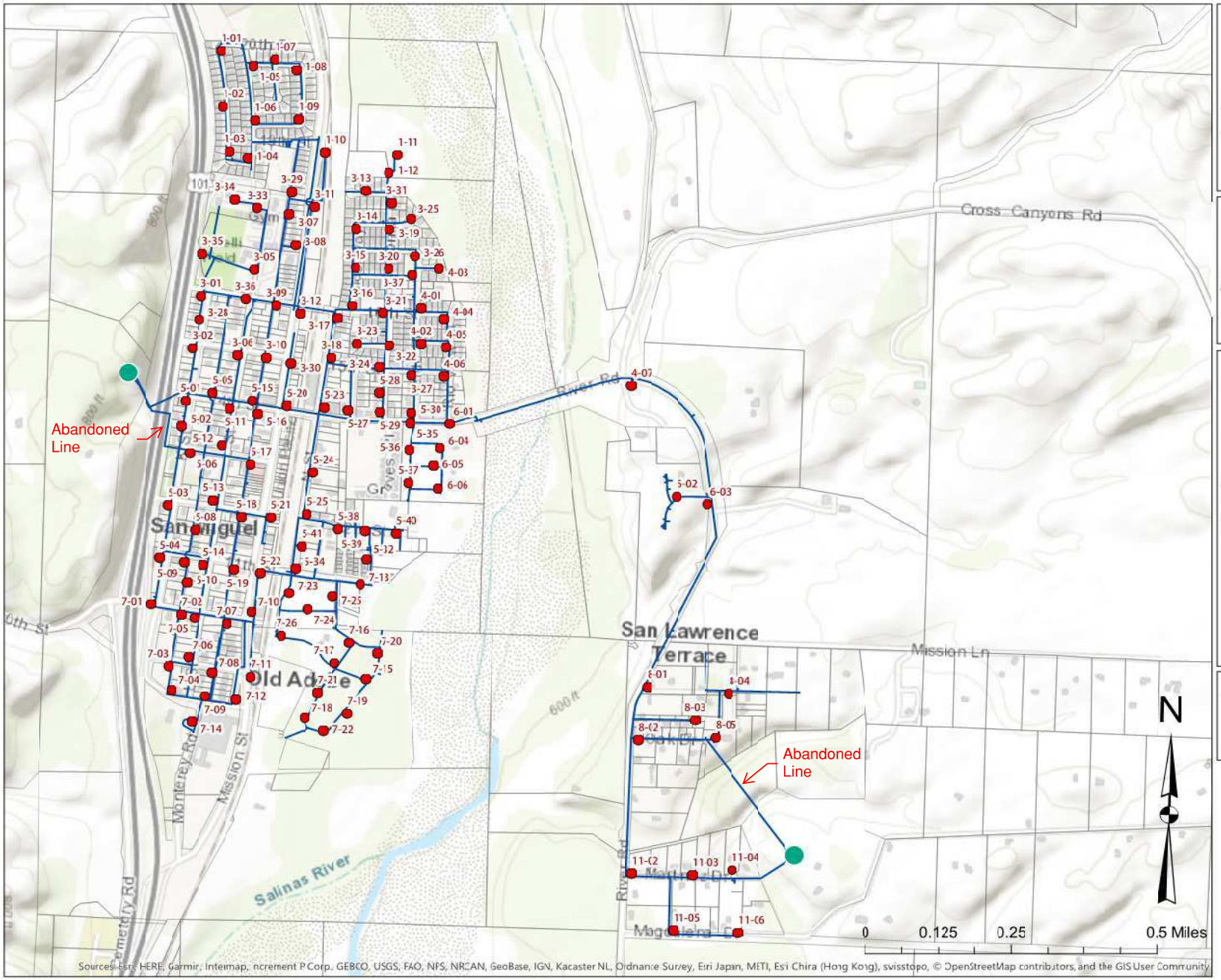
Blaine T. Reely

Blaine T. Reely, Ph.D., P.E.
President, Monsoon Consultants

May 11, 2020
Date

Attachments:
Attachment 1: SMCSD Fire Hydrant Identification Exhibit
Attachment 2: Insurance Services Office, Inc. Hydrant Flow Data Summary
Attachment 3: Table of SMCSD Simulated Fire Flows

SMCSD FIRE HYDRANT IDENTIFICATION EXHIBIT



MONSOON CONSULTANTS

CIVIL ENGINEERING / HYDROLOGY
P.O. Box 151 San Luis Obispo, CA 93406
treely@monsoonconsultant.com 805-476-6168

SAN MIGUEL COMMUNITY SERVICES DISTRICT

LEGEND

- Fire Hydrant
- Water Tank
- Waterlines
- Parcels

INSURANCE SERVICES OFFICE, INC.

HYDRANT FLOW DATA SUMMARY

Community San Miguel Fd

County California (S)(San Luis Obispo), State California (S) (64)

Witnessed by: Insurance Services Office Survey Date:

TEST NO.	TYPE DIST.*	TEST LOCATION	CONTROL HYDRANT	SERVICE	FLOW - GPM $Q=(29.83(C(d^2)p^{0.5}))$ INDIVIDUAL HYDRANTS			TOTAL	CONTROL HYDRANT PSI STATIC	CONTROL HYDRANT PSI RESID.	TEST HYDRANT PITO PSI	TEST HYDRANT ORIFICE SIZE	FLOW -AT 20 PSI NEEDED **	FLOW -AT 20 PSI AVAIL.	REMARKS***	MODEL TYPE	FLOW TEST DATE
1	Comm	Mission St & 14th St (5-20)	14th st and Mission Alley (5-16)	San Miguel CSD, Main	860				71	69	31	2.5	2500			Clow 960	3/3/20
2	Comm	Mission St & 12th St (5-21)	Lst and 12th st (5-13)	San Miguel CSD, Main	698				71	69	20	2.5	2250			Jones 460	3/3/20
3	Comm	On K St at 10th St (7-01)	On K st at 11th Street (5-04)	San Miguel CSD, Main	660				55	52	18	2.5	1000			Clow 960	3/3/20
4	Res	River Rd & OAK ln (8-02)	9898 River Road (8-01)	San Miguel CSD, Main	548				40	34	13	2.5	1000			Clow 960	3/3/20
5	Res	16th & Verde Pl (4-01)	Verde & Camino Del Sol (4-02)	San Miguel CSD, Main	1100				68	65	53	2.5	1000			Jones 460	3/3/20
6	Res	Ladrillos Way & L St (1-05)	L st & Pala Mission (1-06)	San Miguel CSD, Main	974				61	55	35	2.5	1000			Jones 460	3/3/20
															All hydrants wet barrel (1 - 4.5", 2 - 2.5")		

THE ABOVE LISTED NEEDED FIRE FLOWS ARE FOR PROPERTY INSURANCE PREMIUM CALCULATIONS ONLY AND ARE *NOT* INTENDED TO PREDICT THE MAXIMUM AMOUNT OF WATER REQUIRED FOR A LARGE SCALE FIRE CONDITION.

THE AVAILABLE FLOWS ONLY INDICATE THE CONDITIONS THAT EXISTED AT THE TIME AND AT THE LOCATION WHERE TESTS WERE WITNESSED.

***Comm = Commercial; Res = Residential.**

****Needed is the rate of flow for a specific duration for a full credit condition. Needed Fire Flows greater than 3,500 gpm are not considered in determining the classification of the city when using the Fire Suppression Rating Schedule.**

***** (A)-Limited by available hydrants to gpm shown. Available facilities limit flow to gpm shown plus consumption for the needed duration of (B)-2 hours, (C)-3 hours or (D)-4 hours.**

Monsoon Consultants EPANET model (5/11/2020)

San Miguel Community Services District Simulated Fire Hydrant Flows

Notes: System elevations were obtained from Google Earth.

All nodes that are referred to in X-XX format (ex: 1-01 or 11-01) are fire hydrants

Test No.	Description	Test Hydrant	Test Hydrant Static Pressure (PSI)	Lowest System Pressure Node ID (from EPANET)	Location	Lowest System Pressure (PSI)		Fire Hydrant Flow (GPM)	Remarks
						Static	Residual	Available	
1		1-01	55.73	1-01	20th St & San Buenaventura Way	55.73	20	2304	low pressure at FH before surrounding nodes drop below 20 PSI
2		1-02	55.3	1-02	On San Buenaventura Way	55.3	20	2284	low pressure at FH before surrounding nodes drop below 20 PSI
3		1-03	56.6	35	East of FH 8-04	22.09	20	2350	
4		1-04	57.03	35	East of FH 8-04	22.09	20	2350	
5		1-05	58.33	35	East of FH 8-04	22.09	20	2350	
6		1-06	57.9	35	East of FH 8-04	22.09	20	2350	
7		1-07	59.2	35	East of FH 8-04	22.09	20	2350	
8		1-08	59.2	35	East of FH 8-04	22.09	20	2350	
9		1-09	60.06	35	East of FH 8-04	22.09	20	2350	
10	Wharf Head	1-10	69.6	1-10	On Mission St @ 19th St	69.6	20	328	low pressure at FH before surrounding nodes drop below 20 PSI
11	WWTP	1-11	77.61	35	East of FH 8-04	22.09	20	1520	Model does not account for losses through backflow preventer
12	WWTP	1-12	73.71	35	East of FH 8-04	22.09	20	1520	Model does not account for losses through backflow preventer
13		1-13	62.23	35	East of FH 8-04	22.09	20	2350	
14		3-01	55.92	35	East of FH 8-04	22.09	20	3420	
15		3-02	55.82	35	East of FH 8-04	22.09	20	4365	
16	School	3-05	55.93	3-05	San Miguel Unified Schools	55.93	20	1102	Model does not account for losses through backflow preventer
17		3-06	57.33	35	East of FH 8-04	22.09	20	2705	
18		3-07	57.45	35	East of FH 8-04	22.09	20	2420	
19		3-08	69.56	3-08	17th St & Mission St	69.56	20	2177	low pressure at FH before surrounding nodes drop below 20 PSI
20		3-09	65.19	35	East of FH 8-04	22.09	20	2525	
21		3-10	69.98	35	East of FH 8-04	22.09	20	2445	
22		3-11	70.9	35	East of FH 8-04	22.09	20	2380	
23		3-12	70.94	35	East of FH 8-04	22.09	20	2300	
24		3-13	73.28	35	East of FH 8-04	22.09	20	1522	
25		3-14	72.41	35	East of FH 8-04	22.09	20	1522	
26		3-15	70.67	35	East of FH 8-04	22.09	20	1525	
27		3-16	71.52	35	East of FH 8-04	22.09	20	1555	
28		3-17	72.32	35	East of FH 8-04	22.09	20	1615	
29		3-18	70.15	35	East of FH 8-04	22.09	20	1600	
30		3-19	72.41	35	East of FH 8-04	22.09	20	1522	
31		3-20	71.98	35	East of FH 8-04	22.09	20	1522	
32		3-21	72	35	East of FH 8-04	22.09	20	1525	
33		3-22	72.43	35	East of FH 8-04	22.09	20	1505	
34		3-23	72.03	35	East of FH 8-04	22.09	20	1505	
35		3-24	71.57	35	East of FH 8-04	22.09	20	1500	
36		3-25	74.14	35	East of FH 8-04	22.09	20	1522	
37		3-26	71.98	35	East of FH 8-04	22.09	20	1520	
38		3-27	69.8	35	East of FH 8-04	22.09	20	1385	
39		3-28	56.31	35	East of FH 8-04	22.09	20	3780	
40		3-29	57.46	35	East of FH 8-04	22.09	20	2390	
41		3-30	70.65	35	East of FH 8-04	22.09	20	2085	
42		3-31	73.28	35	East of FH 8-04	22.09	20	1522	
43	School	3-33	56.37	3-33	San Miguel Unified Schools	56.37	20	813	low flow (<1000 GPM). Model does not account for losses through backflow preventer
44	School	3-34	56.8	3-34	San Miguel Unified Schools	56.8	20	746	low flow (<1000 GPM). Model does not account for losses through backflow preventer
45	School	3-35	55.07	3-35	San Miguel Unified Schools	55.07	20	1549	low pressure at FH before surrounding nodes drop below 20 PSI. Model does not account for losses through backflow preventer
46		3-36	57.32	35	East of FH 8-04	22.09	20	2825	
47		3-37	72.41	35	East of FH 8-04	22.09	20	1518	
48		4-01	71.98	35	East of FH 8-04	22.09	20	1475	
49		4-02	71.54	35	East of FH 8-04	22.09	20	1449	
50		4-03	71.55	35	East of FH 8-04	22.09	20	1520	
51		4-04	71.55	35	East of FH 8-04	22.09	20	1455	
52		4-05	71.11	35	East of FH 8-04	22.09	20	1425	
53		4-06	71.09	35	East of FH 8-04	22.09	20	1333	
54	Wharf Head	4-07	49.75	35	East of FH 8-04	22.09	20	675	low flow (<1000 GPM)
55		5-01	51.86	5-01	14th St & K St	51.86	20	4352	low pressure at FH before surrounding nodes drop below 20 PSI
56		5-02	51.97	5-02	On K St, between 13th & 14th St	51.97	20	3033	low pressure at FH before surrounding nodes drop below 20 PSI
57		5-03	54.28	5-03	On K St @ 12th St	54.28	20	2317	low pressure at FH before surrounding nodes drop below 20 PSI
58		5-04	53.46	5-04	11th St & K St	53.46	20	2687	low pressure at FH before surrounding nodes drop below 20 PSI
59		5-05	55.99	5-05	14th St & L St Alley	55.99	20	319	low flow (<1000 GPM). Low pressure at FH before surrounding nodes drop below 20 PSI
60		5-06	54.68	5-06	13th St & K St	54.68	20	3161	low pressure at FH before surrounding nodes drop below 20 PSI
61		5-08	54.29	5-08	On L St Alley, between 11th & 12th St	54.29	20	298	low flow (<1000 GPM). Low pressure at FH before surrounding nodes drop below 20 PSI
62		5-09	54.73	5-09	L St Alley & 11th St	54.73	20	317	low flow (<1000 GPM). Low pressure at FH before surrounding nodes drop below 20 PSI
63	Wharf Head	5-10	53.45	5-10	On L St Alley, between 10th & 11th St	53.45	20	351	low flow (<1000 GPM). Low pressure at FH before surrounding nodes drop below 20 PSI
64		5-11	61.67	35	East of FH 8-04	22.09	20	2775	
65		5-12	66.44	35	East of FH 8-04	22.09	20	2800	
66		5-13	66.45	35	East of FH 8-04	22.09	20	2800	
67		5-14	63.86	35	East of FH 8-04	22.09	20	2770	
68		5-15	69.55	35	East of FH 8-04	22.09	20	2450	
69		5-16	69.13	35	East of FH 8-04	22.09	20	2490	
70		5-17	68.22	35	East of FH 8-04	22.09	20	2715	
71		5-18	68.23	5-18	12th St & Mission Alley	68.23	20	2404	low pressure at FH before surrounding nodes drop below 20 PSI
72		5-19	66.51	5-19	11th St & Mission Alley	66.51	20	2375	low pressure at FH before surrounding nodes drop below 20 PSI
73		5-20	68.94	35	East of FH 8-04	22.09	20	2045	
74		5-21	69.05	35	East of FH 8-04	22.09	20	2800	
75		5-22	69.21	5-22	Mission St & 11th St	69.21	20	2486	low pressure at FH before surrounding nodes drop below 20 PSI
76		5-23	69.2	35	East of FH 8-04	22.09	20	1710	
77		5-24	69.8	35	East of FH 8-04	22.09	20	2130	
78		5-25	69.5	35	East of FH 8-04	22.09	20	2320	
79		5-27	69.69	35	East of FH 8-04	22.09	20	1560	
80	Wharf Head	5-28	69.78	35	East of FH 8-04	22.09	20	1450	
81		5-29	70.6	35	East of FH 8-04	22.09	20	1415	
82		5-30	70.17	35	East of FH 8-04	22.09	20	1283	
83		5-32	67.93	5-32	On Lubova Way	67.93	20	2343	low pressure at FH before surrounding nodes drop below 20 PSI
84		5-34	69.5	35	East of FH 8-04	22.09	20	2405	
85		5-35	70.58	35	East of FH 8-04	22.09	20	1268	

86		5-36	70.58	35	East of FH 8-04	22.09	20	1228	
87		5-37	70.15	35	East of FH 8-04	22.09	20	1228	
88		5-38	69.29	35	East of FH 8-04	22.09	20	2410	
89		5-39	69.74	35	East of FH 8-04	22.09	20	2415	
90		5-40	70.6	5-40	End of 12th St	70.6	20	2280	low pressure at FH before surrounding nodes drop below 20 PSI
91		5-41	69.07	35	East of FH 8-04	22.09	20	2375	
92		6-01	69.71	35	East of FH 8-04	22.09	20	1008	
93		6-02	31.87	35	East of FH 8-04	22.09	20	443	low flow (<1000 GPM)
94		6-03	41.83	35	East of FH 8-04	22.09	20	439	low flow (<1000 GPM)
95		6-04	69.28	35	East of FH 8-04	22.09	20	1228	
96		6-05	70.58	35	East of FH 8-04	22.09	20	1228	
97		6-06	70.15	35	East of FH 8-04	22.09	20	1228	
98		7-01	51.73	7-01	10th St & K St	51.73	20	2126	low pressure at FH before surrounding nodes drop below 20 PSI
99	Wharf Head	7-02	54.34	7-02	On L St Alley @ 10th St	54.34	20	943	low flow (<1000 GPM). low pressure at FH before surrounding nodes drop below 20 PSI
100		7-03	53.06	7-03	On L St Alley @ 9th St	53.06	20	770	low flow (<1000 GPM). low pressure at FH before surrounding nodes drop below 20 PSI
101		7-04	53.93	7-04	San Luis Obispo Rd & L St Alley	53.93	20	2054	low pressure at FH before surrounding nodes drop below 20 PSI
102		7-05	64.75	35	East of FH 8-04	22.09	20	2730	
103		7-06	61.72	35	East of FH 8-04	22.09	20	2720	
104		7-07	65.22	7-07	10th St & Mission St Alley	65.22	20	1287	low pressure at FH before surrounding nodes drop below 20 PSI
105		7-08	63.04	7-08	Mission St Alley @ 9th St	63.04	20	1107	low pressure at FH before surrounding nodes drop below 20 PSI
106		7-09	60.87	7-09	San Luis Obispo Rd & Mission St Alley	60.87	20	2605	low pressure at FH before surrounding nodes drop below 20 PSI
107		7-10	66.31	35	East of FH 8-04	22.09	20	2600	
108	Wharf Head	7-11	65.37				20		
109		7-12	63.93	7-12	San Luis Obispo Rd & Mission St	63.93	20	2454	low pressure at FH before surrounding nodes drop below 20 PSI
110		7-13	68.69	35	East of FH 8-04	22.09	20	2400	
111		7-14	59.57	7-14	Monterey Rd @ Pala Mission	59.57	20	2445	low pressure at FH before surrounding nodes drop below 20 PSI
112		7-15	77.31	35	East of FH 8-04	22.09	20	2405	
113		7-16	75.58	35	East of FH 8-04	22.09	20	2405	
114		7-17	76.44	35	East of FH 8-04	22.09	20	2405	
115		7-18	76.87	35	East of FH 8-04	22.09	20	2405	
116		7-19	76.44	35	East of FH 8-04	22.09	20	2405	
117		7-20	76.88	35	East of FH 8-04	22.09	20	2405	
118		7-21	76.01	35	East of FH 8-04	22.09	20	2405	
119		7-22	75.57	7-22	Catala Way & Soka Way	75.57	20	2374	low pressure at FH before surrounding nodes drop below 20 PSI
120		7-23	68.63	35	East of FH 8-04	22.09	20	2405	
121		7-24	69.08	35	East of FH 8-04	22.09	20	2405	
122		7-25	69.09	35	East of FH 8-04	22.09	20	2405	
123		7-26	69.51	35	East of FH 8-04	22.09	20	2405	
124		8-01	40.42	35	East of FH 8-04	22.09	20	353	low flow (<1000 GPM)
125		8-02	42.89	35	East of FH 8-04	22.09	20	284	low flow (<1000 GPM)
126		8-03	35.14	35	East of FH 8-04	22.09	20	321	low flow (<1000 GPM)
127		8-04	23.39	35	East of FH 8-04	22.09	20	153	low flow (<1000 GPM)
128		8-05	31.19	35	East of FH 8-04	22.09	20	187	low flow (<1000 GPM)
129		11-02	45.16	35	East of FH 8-04	22.09	20	447	low flow (<1000 GPM)
130		11-03	42.86	35	East of FH 8-04	22.09	20	561	low flow (<1000 GPM)
131		11-04	39.33	35	East of FH 8-04	22.09	20	683	low flow (<1000 GPM)
132		11-05	44.2	35	East of FH 8-04	22.09	20	515	low flow (<1000 GPM)
133		11-06	39.44	35	East of FH 8-04	22.09	20	515	low flow (<1000 GPM)

APPENDIX E

CCRWQCB GENERAL WASTE DISCHARGE REQUIREMENTS DRAFT

CENTRAL COAST REGIONAL WATER QUALITY CONTROL BOARD

895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

GENERAL WASTE DISCHARGE REQUIREMENTS
ORDER NO. R3-2020-0020
FOR
DISCHARGES FROM DOMESTIC WASTEWATER SYSTEMS
WITH FLOWS GREATER THAN 100,000 GALLONS PER DAY

Draft
June 18, 2020

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

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I. List of Frequently Used Acronyms and Abbreviations

Antidegradation Policy	State Water Board Resolution 68-16
Basin Plan (BP)	Water Quality Control Plan for the Central Coastal Basin
CFR	Code of Federal Regulations
CEQA	California Environmental Quality Act
CWC	California Water Code
DDW	State Water Resources Control Board, Division of Drinking Water
e.g.	Latin *exempli gratia* (for example)
General Permit	General Waste Discharge Requirements Order No. R3-2020-0020
MCL	Maximum contaminant level
mg/L	Milligrams per liter
MRP	Monitoring and Reporting Program
N	Nitrogen
NPDES	National Pollutant Discharge Elimination System
Central Coast Water Board	Central Coast Regional Water Quality Control Board
Recycled Water Policy	State Water Board's Policy for Water Quality Control for Recycled Water
RV	Recreational vehicle
State Water Board	State Water Resources Control Board
title 22	California Code of Regulations, title 22, division 4, chapter 3
USEPA	United States Environmental Protection Agency
WDRs	Waste Discharge Requirements
Wastewater System	Wastewater treatment and disposal system

II. Findings

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) finds that:

A. Background Information

1. California Water Code section 13260(a) requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer plant, that could affect the quality of the waters of the state, file a report of waste discharge to obtain coverage under waste discharge requirements (WDRs) or a waiver of WDRs. "Waste" is defined in California Water Code section 13050(d). A report of waste discharge is also referred to as an application.

2. Discharges to land from domestic wastewater treatment and disposal systems (Wastewater Systems) have certain common characteristics, such as similar constituents of concern, concentrations of constituents of concern, disposal techniques, flow ranges, and they use the same or similar treatment methods. These types of discharges are appropriately regulated under a general waste

discharge requirements permit[1]. Currently many of the Wastewater Systems in the central coast region are regulated through individual permits. Once effective, this General Waste Discharge Requirements Order No. R3-2020-0020 for Discharges from Domestic Wastewater Systems with Flows Greater Than 100,000 Gallons per Day (General Permit) will allow for enrollment of domestic Wastewater Systems and reduce the need for individual permits.

3. For the purposes of this General Permit, the term "Wastewater Systems" shall mean the collection system, treatment equipment, pumping stations, treatment ponds, biological treatment systems, chemical treatment systems, clarifiers, sand/media filters, disinfection systems, recycled water systems (including distribution systems), storage ponds, land application areas, disposal ponds, and other systems associated with the collection, treatment, storage, and disposal of wastewater.
4. Wastewater Systems with monthly average flow rates[2] of more than 100,000 gallons per day that discharge to land are eligible for coverage under this General Permit. Wastewater Systems are typically located at commercial or residential subdivisions, communities, cities, and correctional facilities. An owner and/or operator of a Wastewater System(s) is referred to as a Discharger(s) in this General Permit.
5. Wastewater Systems with monthly average flow rates of 100,000 gallons per day or less may be regulated by State Water Resources Control Board (State Water Board) Order WQ 2014-0153-DWQ. Wastewater Systems regulated by Order WQ 2014-0153-DWQ may continue that coverage unless otherwise directed by the Central Coast Water Board Executive Officer.
6. Domestic wastewater treatment may include ponds (e.g., facultative, aerobic, anaerobic), constructed wetlands, aerobic treatment systems (e.g., activated sludge, sequencing batch reactors, extended aeration, membrane biological reactors, etc.), biofiltration (e.g., attached growth system, trickling filters, etc.), filtration, clarification, settling, and disinfection systems. The level to which wastewater is treated must be based upon the receiving water quality at the wastewater disposal location.
7. Disposal/dispersal options for treated effluent may include land application, disposal ponds (evaporation/percolation ponds), spreading basins, non-potable water reuse[3] or another engineered alternative approved by the Executive Officer.
8. This General Permit allows the production and use of recycled water (as defined in California Water Code section 13050(n)) and requires all recycled water use to comply with the applicable requirements described in California Code of Regulations, title 22, division 4, chapter 3, (title 22). Compliance with title 22 water recycling criteria and title 17 sanitation requirements will be determined by the

[1] The terms "permit" and "waste discharge requirements" are used in this document and are referring to a set of requirements for a permitted discharge of wastewater.
[2] See Attachment A.
[3] Water reuse refers to water reclamation and water recycling for non-potable uses. See Attachment A.

State Water Board Division of Drinking Water (DDW), who are responsible for reviewing and approving title 22 Engineering Reports. This General Permit also allows for the application of treated wastewater to land that does not meet the definition of beneficial use[4] and is therefore not subject to the title 22 requirements.

9. The discussion in this General Permit of treatment, disposal/dispersal, and water reuse is not intended to limit the selection of alternatives available to the wastewater system designer.

10. This General Permit implements the Water Quality Control Plan for the Central Coastal Basin (Basin Plan)[5] and therefore requires Dischargers to comply with all applicable requirements in the Basin Plan, including any prohibitions and water quality objectives, governing the discharge of treated wastewater.

11. Wastewater and treated wastewater quality vary depending upon source water quality, the activities generating the wastewater, water conservation efforts, inflow and infiltration, and treatment technology. Some examples of typical domestic wastewater and treated wastewater characteristics are presented in Table 1. Peer reviewed published wastewater books and/or United States Environmental Protection Agency (USEPA) wastewater publications may also be used to characterize wastewater characteristics.

Table 1: Summary of Domestic Wastewater Characteristics

Constituent	Units [1]	Typical Domestic Wastewater	Septic Tank Influent	Septic Tank Effluent	Secondary Treatment Effluent
Biochemical Oxygen Demand	mg/L	200-290 [2]	155-286 [3]	140-200 [4]	30-45 [5]
Total Suspended Solids	mg/L	200-290 [2]	155-330 [3]	50-100 [4]	30-45 [5]
Ammonia (as N)	mg/L	6-18 [2]	4-13 [3]	40-75 [8]	0-65 [6]
Nitrite and Nitrate (as N)	mg/L	<1 [2]	<1 [3]	<1 [8]	0-65 [6]
Total Nitrogen	mg/L	35-100 [2]	26-75 [3]	40-100 [4]	5-35 [7]
Total Phosphorus (as P)	mg/L	6-12 [2]	6-12 [3]	5-15 [4]	0-10 [7]

[1] mg/L denotes milligrams per liter
[2] Table 4-3, USEPA Wastewater Treatment/Disposal for Small Communities, Manual, September 1992, EPA/625/R-92/005.
[3] Table 3-7, USEPA Onsite Wastewater Treatment System Manual, June 2005, EPA/625/R-00/008.
[4] Table 3-19, USEPA Onsite Wastewater Treatment Systems Manual, June 2005, EPA/625/R-00/008.
[5] 40 CFR section 133.102.
[6] Value highly variable depending upon treatment technology.

[4] See Attachment A.
[5] Please refer to the current Water Quality Control Plan for the Central Coastal Basin adopted by the Central Coast Water Board.
https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/

[7] USEPA Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants. https://www.epa.gov/nutrient-policy-data/case-studies-implementing-low-cost-modifications-improve-nutrient-reduction.

[8] Insignificant change expected in treatment.

12. Discharges from holding tanks (e.g., recreation vehicles [RV], portable toilets, airplane wastewater, etc.) may contain chemicals that can pollute water. Some commercially available products used to control holding tank/portable toilet odors may contain harmful chemicals such as formaldehyde, zinc, or phenol. The harmful chemicals can kill the bacteria in the Wastewater System and cause wastewater to be inadequately treated. Inadequately treated wastewater may cause additional problems such as disposal system failure, surfacing wastewater, and potential exposure and health risks.

13. The USEPA recommends *Escherichia coli* (E. coli) and enterococci bacteria, which exist in fecal material from humans and other warm-blooded animals, as the best indicators of health risk from water contact[6]. Because both bacteria are present in domestic wastewater, there is no need to monitor separately for them in wastewater effluent. The effectiveness of disinfection procedures is similar for both bacteria, therefore total coliform[7], which is a less expensive analysis, is appropriate to determine if wastewater effluent is effectively disinfected for bacteria. Total coliform monitoring is also required for recycled water use consistent with title 22.

14. Beneficial uses for groundwater are determined by the Central Coast Water Board and are listed in the Basin Plan. Beneficial uses for groundwater are municipal supply (MUN), industrial service supply (IND), and agricultural supply (AGR). Some beneficial uses only apply to certain geographic areas within the central coast region.

15. The Basin Plan establishes water quality objectives to protect beneficial uses. The objectives may be narrative, numerical, or both. This General Permit requires the Discharger to comply with those objectives in receiving waters.

B. Treated Wastewater Disposal/Dispersal

1. Treated wastewater disposal/dispersal occurs by different methods. Treated wastewater is often percolated from ponds, percolated from spreading basins, evaporated from ponds, or applied to the ground surface by spray, flood, or drip methods. The disposal method will depend upon the amount of wastewater generated, the quality of the wastewater, land availability, site characteristics, and the receiving water.

    i. Untreated wastewater discharged to an unlined pond for treatment, storage, or disposal (e.g., percolation pond) has the potential to degrade water quality to an unacceptable extent or result in nuisance odors.

    Reducing the volume of wastewater percolated from a treatment, storage, or evaporation pond by lining the pond with a synthetic or low permeability liner

[6] USEPA Internet page accessed June 10, 2014 http://water.epa.gov/type/rsl/monitoring/vms511.cfm

[7] *Escherichia coli* is a subset of fecal coliforms and fecal coliforms are a subset of total coliforms.

can control the percolation rate and reduce the potential threat to water quality from the percolated wastewater.

Discharging high quality, treated wastewater to an adequately designed percolation pond (e.g., adequately sized with appropriate percolation rates and sufficient separation to groundwater) will reduce the potential threat to surface water and groundwater quality from the percolated wastewater.

Overloading a wastewater pond with biochemical oxygen demand constituents can result in nuisance odor generation. Source control of biochemical oxygen demand constituents, additional pretreatment prior to discharge to the pond, or mechanical aeration of wastewater in the pond are typically used to prevent a pond from generating nuisance odors.

Burrowing animals can result in rapid failure of a containment berm. The population of such animals should be promptly controlled and repairs to the containment completed as soon as possible.

ii. When land application of treated wastewater is selected as a disposal method, adequate acreage must be available to allow application rates that will not create nuisance conditions (e.g., vectors, nuisance odors, offsite discharge, ponding, etc.), degrade water quality, or impact public health.

Crops are often grown and harvested from a land application area to take up wastewater constituents such as nitrogen and dissolved solids, as well as maintain roots which promote wastewater infiltration rates.

Hydraulic loading of a land application area must be controlled to prevent offsite wastewater discharge and impacts to either surface or groundwater.

2. Wastewater discharged to land near a surface waterbody has the potential to impact surface water quality via runoff, surfacing effluent or underflow to a gaining stream. Additional monitoring may be required by the Central Coast Water Board Executive Officer to determine if the discharge has degraded surface water quality.

3. Setbacks from wastewater treatment areas, disposal/dispersal areas, and/or land application areas from domestic wells, flowing and/or ephemeral streams, lakes/reservoirs, and property lines are required in this General Permit. Setbacks are included as a means of reducing potential impacts to water quality associated with wastewater constituents. Setbacks provide attenuation of wastewater constituents through physical, chemical, and biological processes. The setbacks required in this General Permit are based on the title 22 water recycling criteria, the California Well Standards, the California Plumbing Code, and commonly imposed setbacks by regulatory agencies.

C. Recycled Water

1. Use of recycled water in lieu of potable water is encouraged by the State Water Board. The State Water Board's Water Quality Control Policy for Recycled Water (Recycled Water Policy) states the following goals (in part):

i. Increase the use of recycled water.

ii. Reuse dry weather direct discharges of treated wastewater to enclosed bays, estuaries and coastal lagoons, and ocean waters that can be viably put to a beneficial use.

iii. Maximize the use of recycled water in areas where groundwater supplies are in a state of overdraft, to the extent that downstream water rights, instream flow requirements, and public trust resources are protected

2. The Recycled Water Policy calls on local water and wastewater entities together with other stakeholders who contribute salt and nutrients to a groundwater basin or sub-area, to fund and develop salt and nutrient management plans to comprehensively address all sources of salts and nutrients. The comprehensive salt and nutrient management plans should be implemented to manage salts and nutrients consistent with the Recycled Water Policy. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California ultimately has a salt and nutrient management plan. One way to address salt and nutrient issues is through the development of regional or sub-regional salt and nutrient management plans. Dischargers may be directed to perform or participate in salt and nutrient management plan planning activities as described in the Provisions of this General Permit.

D. Pretreatment Program for Publicly Owned Treatment Works

1. Under California Code of Regulations, title 23, section 2233, subdivision (a), WDRs for publicly owned treatment works treating or designed to treat an average dry weather flow of five million gallons per day or more of community wastewater must include provisions that that the discharger must have and enforce an adequate pretreatment program approved by the appropriate regional board. A regional board may determine that it is appropriate to require a local pretreatment program for publicly owned treatment works treating or designed to treat an average dry weather flow of less than five million gallons per day. A pretreatment program is a regulatory program administered by the discharger that implements national pretreatment standards. USEPA in accordance with section 307(b) and (c) of the Clean Water Act promulgate these standards. This General Permit incorporates General Pretreatment Regulations of Codified Federal Regulation, Code of Federal Regulations, title 40, part 403, as reference.

2. Pretreatment programs are necessary for some facilities to prevent the introduction of pollutants which will interfere with the operation of the treatment works, pass through the treatment system, reduce opportunities to recycle and reuse domestic wastewater and sludge, or expose publicly owned treatment works employees to hazardous chemicals.

E. Antidegradation Analysis

1. State Water Board Resolution No. 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy) requires the following:

i. Higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use

of the water, and will not result in water quality less than that prescribed in the policies.

ii. Any activity that produces a waste and discharges to existing high quality waters will be required to meet WDRs that will result in the best practicable treatment or control of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

2. The Antidegradation Policy requires maintenance of high quality of waters of the state unless limited degradation is consistent with the maximum benefit to the people of the state. When issuing a notice of applicability under this General Permit, the Central Coast Water Board Executive Officer must assure that Dischargers implement best practicable treatment or control as necessary to maintain the highest water quality consistent with the maximum benefit to the people of the state.

3. This General Permit allows discharges to numerous groundwater basins/sub-areas, each with its own chemical characteristics. To the extent a discharge covered under this General Permit may be to high quality waters, this General Permit authorizes limited degradation consistent with the Antidegradation Policy as described in the findings below.

4. This General Permit authorizes discharges of domestic wastewater from Wastewater Systems, which are centralized facilities. Limited degradation of groundwater by some waste constituents associated with domestic wastewater effluent, after effective source control, treatment, and control measures are implemented, pursuant to this General Permit, is consistent with the maximum benefit to the people of the state because the technology, energy use, water recycling, and waste management at centralized Wastewater Systems are far more efficient than at individual wastewater systems that would otherwise be used to treat domestic wastewater. The impacts of centralized Wastewater Systems on water quality are typically less than the cumulative impacts from individual wastewater systems, which tend to be concentrated by location.

5. Constituents of concern that have the potential to degrade groundwater include salts, nutrients, chemicals, and pathogens. In addition, excessive biochemical oxygen demand loading of treatment systems (e.g., pond systems, activated sludge systems, etc.) or land application areas may result in nuisance odors or anaerobic conditions, which are not favorable biological treatment conditions.

6. This General Permit includes effluent limitations and a process to determine how to apply these limits. Implementation of the applicable effluent limitations will result in the best practicable treatment or control for the wastewater constituents, and corresponding monitoring requirements specified in this General Permit will ensure the best practicable treatment or control is effective and confirms that water quality will be maintained at a level that is protective of beneficial uses.

7. This General Permit also includes technology-based effluent limitations for biochemical oxygen demand and total suspended solids to create conditions that support nitrogen reduction and the protection of beneficial uses.

8. Compliance with the General Permit, the notice of applicability, DDW requirements, and any mitigation measures will ensure compliance with the Basin Plan necessary to assure pollution or nuisance will not occur.

F. Title 27 Exemption

1. The wastewater treatment, storage, and disposal activities regulated by this General Permit are exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste* in California Code of Regulations, title 27, section 20005, et seq , which allows a conditional exemption from some or all of the provisions of title 27. The following exemptions apply:

    i. California Code of Regulations, title 27, section 20090(a), which exempts discharges of domestic sewage or treated effluent which are regulated by WDRs (e.g., this General Permit) issued pursuant to California Code of Regulations, title 23, division 3, chapter 9, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludge or solid waste from wastewater systems must be discharged only in accordance with the applicable State Water Board promulgated provisions of this division (California Code of Regulations, title 27, section 20090(a)).

    ii. California Code of Regulations, title 27, section 20090(b), which exempts discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or applied to the ground surface by spray, flood, or drip methods if the following conditions are met:

        a. The Central Coast Water Board has issued WDRs, reclamation requirements, or waived such issuance;

        b. The discharge is in compliance with the applicable water quality control plan; and

        c. The wastewater does not need to be managed according to California Code of Regulations, title 22, division 4.5, chapter 11, as a hazardous waste.

    iii. California Code of Regulations, title 27, section 20090(i), which exempts waste treatment in fully enclosed facilities, such as tanks, or in concrete lined facilities of limited areal extent, such as oil water separators designed, constructed, and operated according to American Petroleum Institute specifications.

G. California Environmental Quality Act

1. This General Permit is intended to cover both new and existing Wastewater Systems. Existing Wastewater Systems are those that were under construction or operating prior to the adoption date of this General Permit.

    i. The adoption of this General Permit for existing domestic Wastewater Systems is categorically exempt from the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations, title 14, section 15301 (ongoing or existing projects), section 15302 (replacement or reconstruction

of existing utility systems), and section 15303 (new construction or conversion of structures).

ii. Discharges from new domestic Wastewater Systems and expanded domestic Wastewater Systems may not be covered by this General Permit until after CEQA requirements have been satisfied. New or expanded systems are subject to further CEQA evaluation on a case-by-case basis by local agencies performing CEQA evaluations of proposed projects. The potential significant environmental impacts from discharges of domestic wastewater from new and expanded Wastewater Systems may be mitigated to less than significant impacts by compliance with this General Permit, the notice of applicability, and any mitigation measures adopted by local agencies.

H. Monitoring and Reporting Program

1. A general Monitoring and Reporting Program (MRP) is included as Attachment D and includes monitoring for Wastewater Systems, water supply, influent, effluent, recreational vehicle discharge, recycled water, land application area, solids disposal, groundwater and surface water. Required reporting includes electronic submittal of technical, quarterly, and annual reports.
2. The Central Coast Water Board is transitioning to using the GeoTracker database for waste discharge requirement MRPs. GeoTracker is the State Water Board's Internet-accessible database system used by the State Water Board, regional boards, and local agencies to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from underground storage tanks. This system consists of a relational database, on-line compliance reporting features, a geographical information system (GIS) interface and other features that are utilized by the State Water Board, regional boards, local agencies, regulated industry, and the public to input, manage, or access compliance and regulatory tracking data.
3. California Water Code section 13267(b)(1) states:

   In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region … shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.

4. California Water Code section 13268 states:

   (a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267, or failing or refusing to furnish a statement of compliance as required by subdivision (b) of section 13399.2, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with article 2.5 (commencing with section 13323) of chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs.

5. The technical and monitoring reports required by this General Permit, the notice of applicability, and the attached MRP are necessary to ensure compliance with this General Permit. The burden, including costs, of providing the technical reports required by this General Permit bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports and is consistent with the best interest of the state in maintaining water quality.
6. Failing to furnish the reports by the due date or falsifying information in the reports, are misdemeanors that may result in assessment of civil liabilities against the Discharger.
7. The Central Coast Water Board authorizes the Executive Officer to modify the attached MRP and to issue facility-specific MRPs to Dischargers tailored to the individual facility treatment and disposal systems consistent with the attached MRP framework and the Discharger's notice of applicability.

I. Other Regulatory Requirements

1. Dischargers that meet the criteria for coverage under State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, or updated order, are required to enroll in State Water Board Order No. 2006-0003-DWQ.
2. California Water Code section 13263(a) requires the Central Coast Water Board to consider the factors in section 13241 when adopting WDRs. Consistent with California Water Code section 13241, the Central Coast Water Board, in establishing the requirements contained in this General Permit, considered factors including, but not limited to, the following:
    i. Past, present, and probable future beneficial uses of water.
    ii. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
    iii. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
    iv. Economic considerations.
    v. The need for developing housing within the region(s).
    vi. The need to develop and use recycled water.
    vii. The need to support the human right to clean water.
    viii. The need to implement management strategies that adapt to climate change.
    ix. The need to support disadvantaged communities' access to wastewater treatment and disposal.
3. Human Right to Water - California Water Code section 106.3, subdivision (a) provides that "that every human being has the right to safe, clean, affordable, and

accessible water adequate for human consumption, cooking, and sanitation purposes."

Central Coast Water Board Resolution No. R3-2017-0004 recognizes the human right to water as a core value, affirms the realization of the human right to water and protecting human health as one of the Central Coast Water Board's top priorities, and also directs staff to conduct specific activities and prioritize regulatory programs to prevent and address discharges that could threaten human health by causing or contributing to pollution or contamination of drinking water sources.

This General Permit incorporates the human right to water resolution by containing requirements that will protect the drinking water beneficial use.

4. Climate Change – This General Permit addresses the threat of climate change, sea-level rise, flooding, and fire by including provisions that require the Dischargers to assess and implement mitigation and adaptation strategies as necessary (section VI.A.3).

   To address the threat of fire, this General Permit requires the submission of reports and planning documents consistent with the MRP that assess the potential risk to fire.

   The Discharger must submit a Climate Change Adaptation Plan to the Central Coast Water Board for Executive Officer review and approval. This plan must provide a clear, long-term plan for addressing flooding, fire, and other local hazards, as well as resource impacts, to public and private infrastructure within the Discharger's current service area and areas projected for annexation.

5. Disadvantaged Community Status – A disadvantaged community is a community with an annual median household income that is less than 80 percent of the statewide annual median household income. Data from the US Census American Community Survey Data from 2013 to 2017 identifies 12 cities and 36 Specific Census Tract or Block Group areas designated as disadvantaged communities in the central coast region.

6. California Water Code section 13263(i) states, *the state board or regional board may prescribe general waste discharge requirements for a category of discharges if the state board or that regional board finds or determines that all the following criteria apply to the discharges in that category:*

   i. *The discharges are produced by the same or similar operations.*

   ii. *The discharges involve the same or similar types of waste.*

   iii. *The discharges require the same or similar treatment standards.*

   iv. *The discharges are more appropriately regulated under general waste discharge requirements than individual waste discharge requirements.*

   Wastewater Systems that will be regulated under this General Permit are consistent with the criteria listed above, and therefore, a General Permit is appropriate. All discharges regulated under this General Permit will be from similar operations and will be consistent with the description of domestic wastewater treatment as defined in section II.A.6. Dischargers will use similar treatment and disposal methods (e.g., screening, settling, biological/chemical treatment,

clarification, and application to land). Individual WDRs are not necessary because the discharges are similar and discharge requirements would be similar if individual WDRs were issued.

7. The biochemical oxygen demand and total suspended solids effluent limitations contained in this General Permit are technology-based. USEPA has developed technology-based effluent limits for secondary treatment for use in National Pollutant Discharge Elimination System (NPDES) permits. However, pond treatment systems often cannot comply with the limits that apply to activated sludge treatment systems due to algae growth in the pond. In response, USEPA developed an equivalent to secondary treatment definition for alternative biological treatment technologies such as a trickling filter or wastewater treatment pond (Code of Federal Regulations, title 40, section 133.105). Although this General Permit only authorizes discharges to land, some of the secondary treatment standards are appropriate to demonstrate that wastewater is adequately treated.
8. Discharge to the waters of the state is a privilege, not a right, and authorization to discharge is conditional upon the discharges complying with provisions of division 7 of the California Water Code and any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. Compliance with this General Permit should ensure this and mitigate any potential adverse changes in water quality due to the discharge.
9. This General Permit does not preempt or supersede the authority of municipalities, flood control agencies, or other local agencies to prohibit, restrict, or control discharges of waste subject to their jurisdiction.
10. To avoid multiple permits simultaneously imposing similar requirements on the same discharge, when a Wastewater System currently regulated by an individual permit enrolls in this General Permit, the existing individual permit is terminated upon issuance of a notice of applicability.

J. Public Participation

1. On February 12, 2020, the Central Coast Water Board held a scoping meeting with Dischargers and interested persons to discuss the proposed development of a waste discharge requirement permit for the discharge of domestic wastewater with monthly average flow rates of greater than 100,000 gallons per day and solicited comments regarding the proposed General Permit development.
2. On June 18, 2020, the Central Coast Water Board notified facilities that currently have WDRs for domestic wastewater with design flows greater than 100,000 gallons per day and other interested persons of its intent to issue a general waste discharge requirements permit for the discharge of domestic wastewater flows of greater than 100,000 gallons per day and provided them with a copy of the proposed General Permit. The Central Coast Water Board has also provided them with an opportunity to submit written comments.
3. The Central Coast Water Board, in a public hearing held on September 25, 2020, has heard and considered all comments pertaining to the proposed discharge.

4. After considering all comments pertaining to this General Permit during a public hearing on September 25, 2020, this General Permit was found consistent with the above findings.
5. Any person aggrieved by this action of the Central Coast Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and title 23 California Code of Regulations sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this General Permit at the following address, except that if the thirtieth day following the date of this General Permit falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

   State Water Resources Control Board
   Office of Chief Counsel
   P.O. Box 100, 1001 I Street
   Sacramento, CA 95812-0100

   Or by email at waterqualitypetitions@waterboards.ca.gov

   For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

K. Application Process

1. Dischargers seeking coverage under this General Permit must submit an application (also referred to as a report of waste discharge) to the Central Coast Water Board. The application process is summarized in Attachment B. The Central Coast Water Board has procedures for electronic submittal of application documents. An application consists of:
   i. A completed Form 200, which is available at: http://www.waterboards.ca.gov/publications_forms/forms/docs/form200.pdf
   ii. An application fee that serves as the first annual fee. Fees are charged annually and are based on threat and complexity ratings, and the treatment technology employed. Threat and complexity ratings are defined in the fee schedule listed in California Code of Regulations, title 23, section 2200 and available at: https://www.waterboards.ca.gov/resources/fees/
   iii. A technical report that describes the wastewater generation, treatment, storage, and disposal. See Attachment C.
2. Upon review of the application, Central Coast Water Board staff will determine if coverage under this General Permit is appropriate. The Central Coast Water Board Executive Officer will issue a notice of applicability when coverage under this General Permit has been authorized. The notice of applicability will contain the necessary site-specific monitoring and reporting requirements.
3. Although a Discharger may be eligible for coverage under this General Permit, the Central Coast Water Board Executive Officer may determine that the discharge would be better regulated by a waiver of WDRs, individual WDRs, or different general WDRs.

IT IS HEREBY ORDERED that upon adoption of this General Permit, pursuant to California Water Code sections 13263, 13267, and 13523, the Discharger, its agents, successors, and assigns, to meet the provisions contained in division 7 of the California Water Code and regulations adopted hereunder, must comply with the requirements in this General Permit. It is further ordered that where a Wastewater System discharge is currently regulated by an individual permit, that permit is terminated upon the enrollment of the Wastewater System into this General Permit.

III. Prohibitions

1. The direct or indirect discharge of any wastewater to surface waters or surface water drainage courses is prohibited. CWC
2. Discharge of untreated or partially treated wastewater is prohibited. CWC
3. The treatment, storage, and/or disposal of waste in or at the Wastewater System must not cause or contribute to a condition of pollution, contamination, or nuisance as defined in California Water Code section 13050. CWC
4. The discharge of wastewater other than treated domestic[8] wastewater is prohibited.
5. Bypass or overflow of treated or untreated waste is prohibited.
6. The discharge of waste to land not owned, operated, or controlled[9] by the Discharger is prohibited. An exception to this prohibition is when recycled water is used as described in a title 22 Engineering Report conditionally accepted by DDW. DDW
7. Discharge to any areas other than those designated in the notice of applicability is prohibited.
8. The discharge of waste classified as hazardous (California Code of Regulations, title 23, section 2521(a)), or designated (California Water Code, section 13173) is prohibited. CWC
9. The Discharger's use of agricultural chemicals inconsistent with product labeling, storage instructions, or California Department of Pesticide Regulation requirements for pesticide[10] applications is prohibited.
10. The discharge of waste in violation of, or not consistent with, the Basin Plan is prohibited.
11. A physical connection between a recycled water system and a potable water system is prohibited.
12. The use of recycled water in a manner different than described in the DDW conditionally accepted title 22 Engineering Report is prohibited.
13. Transportation of undisinfected recycled water within a pipeline used to transport disinfected tertiary treated recycled water is prohibited. DDW

[8] See Attachment A.
[9] By property ownership or permanent easement.
[10] See Attachment A.

14. The use of recycled water for direct human consumption or for processing of food or drink intended for human consumption is prohibited. [DDW]
15. The use of equipment used to convey recycled water (e.g., tanks, piping, valves) also used for potable water supply, is prohibited.
16. The discharge may not contain substances in concentrations which are toxic to human, animal, aquatic, or plant life.
17. Cause a significant increase of mineral constituent concentrations in underlying groundwater, as determined by comparison of samples collected from wells located upgradient and downgradient of the disposal area.
18. Cause groundwater to contain taste or odor producing substances in concentrations that adversely affect beneficial uses. [BP]
19. Cause groundwater to exhibit an instantaneous pH of less than 6.5 or greater than 8.4. [BP]
20. Cause total nitrogen concentrations in underlying groundwater to exceed 10 mg/L or background concentrations, whichever is less.
21. Cause groundwater to contain concentrations of chemical substances or its by-products in amounts that adversely affect any designated beneficial uses. [BP]
22. Cause groundwater to contain concentrations of:
    i. Organic chemicals more than the MCLs for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 5.5, section 64444, Table 64444-A.
    ii. Inorganic chemicals more than the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 4, section 64431, Table 64431-A.
    iii. Inorganic chemicals (optimal fluoride levels) more than the maximum contaminant levels for primary drinking water standards specified in California Code of Regulations, title 22, division 4, chapter 15, article 4.1, section 64433.2, Table 64433.2-A.
    iv. Radionuclides more than the limits specified in California Code of Regulations, title 22, division 4, chapter 15, article 5, section 64443, Table 64443.

    This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. [BP]
23. Cause groundwater to contain concentrations of chemical constituents in amounts that adversely affect the agriculture beneficial use. Interpretation of adverse effect must be as derived from the University of California Agricultural Extension Service guidelines provided in Table 3-1 of the Basin Plan. No controllable water quality factor shall degrade the quality of any groundwater resource or adversely affect long-term soil productivity. The salts control aspects of groundwater management will account for effects from all sources. [BP]

IV. Specifications

A. All Wastewater Systems

1. The Discharger must not discharge wastewater more than the flow limit(s) specified in the notice of applicability.
2. Treatment and disposal/dispersal of wastewater and sludge/solids/biosolids must demonstrate best practicable treatment or control for domestic wastewater. Best practicable treatment or control must be demonstrated by compliance with all the following:
    i. Compliance with this General Permit, including but not limited to effluent limitations.
    ii. Compliance with the notice of applicability, which will specify the following (at a minimum):
        a. Site-specific flow or volume limit(s).
        b. Treatment and disposal methods provided in this General Permit.
        c. Disposal locations.
        d. Applicable effluent limitations as described in this General Permit.
        e. For Wastewater Systems with recycled water, requirements for operation of the Wastewater Systems and disinfection requirements provided by the DDW conditionally accepted title 22 Engineering Report.
        f. Water quality related mitigation measures from an approved site-specific CEQA document (if one is prepared).
    iii. Approved technical reports required by this General Permit.
3. The siting, design, construction, operation, maintenance, and monitoring of the Wastewater System must comply with the requirements of the notice of applicability, the Basin Plan and this General Permit.
4. Technical reports required as part of the application must be stamped by a California licensed or credentialed professional.[11]
5. For new or expanding Wastewater Systems within or nearby the boundaries of a centralized wastewater district or regional service area, the Discharger must demonstrate a good faith effort to connect to the centralized system and provide evidence that connection to the system was not approved.
6. The Central Coast Water Board Executive Officer may require additional investigations or monitoring to demonstrate beneficial uses of water are protected.
7. The Discharger must comply with any water quality related mitigation measures adopted in a CEQA document addressing the Wastewater Systems.
8. When producing or using recycled water, the Discharger must comply with the provisions of the DDW conditionally accepted title 22 Engineering Report.

[11] For example, Professional Engineer or Registered Environmental Health Specialist, etc. performing work pursuant to their area of expertise.

9. Owners and/or operators of a Wastewater System that accepts wastes from RVs or other waste systems that utilize holding tanks (e.g., portable toilets, airplane wastewater, etc.) must ensure that such wastes do not deleteriously affect the wastewater system or adversely affect beneficial uses of groundwater with holding tank additives that may contain, among other chemicals, formaldehyde, zinc, or phenol. Use of holding tank chemicals must be discouraged by the Wastewater System owner/operator.
10. Once any of the following plans (see section VI.A and the MRP) is approved, no material changes can be made without approval by the Central Coast Water Board Executive Officer. The Discharger must notify the Central Coast Water Board in writing at least 90 days in advance of any proposed material change in any of the plans.
    i. Pretreatment Program Plan.
    ii. Operations and Maintenance Manual.
    iii. Climate Change Adaptation Plan.
    iv. Salt and Nutrient Management Plan.
11. The Discharger must comply with the setbacks described in Table 2 unless an approved variance is obtained from the Central Coast Water Board Executive Officer. Setbacks provided in this General Permit are the distances of wastewater treatment areas, disposal/dispersal areas, or land application areas from domestic wells, streams (perennial or ephemeral), lakes/reservoirs, wetlands, and property lines.

    Some existing Wastewater Systems may not comply with the setbacks provided herein. The Central Coast Water Board Executive Officer may choose to enroll such existing, noncomplying Wastewater Systems in this General Permit after approving a variance.

    For new or expanded facilities where a Wastewater System will not comply with the setbacks included in the General Permit, these systems will need further evaluation of the setbacks and approval of a variance by the Central Coast Water Board Executive Officer is required.

    In some cases, more than one setback standard exists. For all existing, expanded, or new Wastewater Systems, the following procedures must be implemented when determining the appropriate setback.

    i. When the setback requirement comes from title 22, approval of a variance must be obtained from both DDW and the Central Coast Water Board Executive Officer.
    ii. When the setback comes from the California Well Standards, a reduced setback may be allowed based on site-specific conditions with approval from the Central Coast Water Board Executive Officer.
    iii. When the setback comes from the Basin Plan, the Central Coast Water Board Executive Officer may allow a reduced setback based upon site-specific conditions.

iv. When the setback comes from the California Plumbing Code, the Central Coast Water Board Executive Officer may not approve a reduced setback.

Approval of a variance for setbacks that are not referenced to a requirement listed above will be based on professional judgment and may be revised by the Central Coast Water Board Executive Officer based on site-specific conditions.

Table 2: Summary of Wastewater System Setbacks [1]

Equipment or Activity	Domestic Well	Flowing Stream [2]	Ephemeral Stream Drainage [3]	Property Line	Lake, Wetland, or Reservoir [5]
Aerobic Treatment Unit, Treatment System, or Collection System [6]	100 [12] 50 [4]	50 [4]	50	5 [4]	200 [17] 50 [4]
Seepage Pit	150 [12,4]	150 [4]	50	8 [4]	200 [17] 150 [4]
LAND APPLICATION AREA REQUIREMENTS					
Land Application Area (disinfected tertiary recycled water) [7, 10, 19]	50 [11]	25	50	25	200
Land Application Area (disinfected secondary-2.2 or secondary-23 recycled water) [8]	100 [14]	50	50	100 [18] 50 [13]	200
Land Application Area (undisinfected secondary recycled water [9], undisinfected secondary treated wastewater)	150 [15]	100	100	100 [18] 50 [13]	200
WASTEWATER TREATMENT, STORAGE, AND EVAPORATION PONDS					
Impoundment (disinfected tertiary recycled water) [7]	100 [16]	100	100	50	200
Impoundment (disinfected secondary-2.2 or secondary-23 recycled water) [8]	100 [14]	100	100	50	200

Equipment or Activity	Domestic Well	Flowing Stream [2]	Ephemeral Stream Drainage [3]	Property Line	Lake, Wetland, or Reservoir [5]
Impoundment (undisinfected secondary recycled water [9], undisinfected secondary treated wastewater)	150 [15]	150	150	50	200

[1] All units are in feet
[2] A flowing stream must be measured from the ordinary high-water mark established by fluctuations of water elevation and indicated by characteristics such as shelving, changes in soil character, vegetation type, presence of litter or debris, or other appropriate means.
[3] Ephemeral stream drainage denotes a surface water drainage feature that flows only after rain or snowmelt and does not have enough groundwater seepage (baseflow) to maintain a condition of flowing surface water. The drainage must be measured from a line that defines the limit of the ordinary high-water mark (described in “a” above). Irrigation canals are not considered ephemeral streams drainage features. The ephemeral stream must be a “losing stream” (discharging surface water to groundwater) at the proposed Wastewater System site.
[4] Setback established by California Plumbing Code, Table K-1.
[5] Lake, wetland, or reservoir boundary measured from the high-water line.
[6] Aerobic treatment unit, treatment system, or collection system addresses equipment located below ground or that impedes leak detection by routine visual inspection.
[7] Disinfected tertiary recycled water is defined in California Code of Regulations, title 22, section 60301.230.
[8] Disinfected secondary-2.2 recycled water is defined in California Code of Regulations, title 22, section 60301.220. Disinfected secondary-23 recycled water is defined in California Code of Regulations, title 22, section 60301.225.
[9] Undisinfected secondary recycled water is defined in California Code of Regulations, title 22, section 60301.900.
[10] Additional restrictions for spray irrigation of recycled water are contained in California Code of Regulations, title 22, section 60310(f).
[11] Setback established by California Code of Regulations, title 22, section 60310(a). A reduced setback is allowed as described in California Code of Regulations, title 22, section 60310(a) if all the conditions in the section are met and compliance is documented in the application and notice of applicability.
[12] California Well Standards, part II, section 8. Site-specific conditions may allow reduced setback or require an increased setback. See discussion in Well Standards.
[13] Setback for drip or flood application methods. Spray irrigation is subject to additional setbacks and restrictions (see footnote k).
[14] Setback established by California Code of Regulations, title 22, section 60310(c).
[15] Setback established by California Code of Regulations, title 22, section 60310(d).
[16] Setback established by California Code of Regulations, title 22, section 60310(b).
[17] Setback established by the Onsite Wastewater Treatment System Policy, section 7.5.5.
[18] Setback established by California Code of Regulations, title 22, section 60310(f).
[19] No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

B. Additional Specifications for Pond/Wetland Systems (Treatment, Storage, and Disposal)

1. All treatment, storage, and evaporation ponds must be lined[12] to protect groundwater and associated beneficial uses. Existing wastewater treatment, storage, or evaporation ponds constructed prior to the adoption date of this General Permit where the type of existing lining systems is unknown must be evaluated by a California licensed Professional Engineer or Professional Geologist for permeability and a report submitted to the Central Coast Water Board for Executive Officer approval within **one year** of the date of enrollment in this General Permit (issuance of the notice of applicability).

   Existing wastewater treatment, storage, or evaporation ponds, that do not have permeability of less than $1x10^{-6}$ centimeters per second constructed prior to the adoption date of this General Permit, must be evaluated by a California licensed Professional Engineer or Professional Geologist for permeability and a report submitted to the Central Coast Water Board for Executive Officer approval within **one year** of the date of enrollment in this General Permit. The Central Coast Water Board Executive Officer may require these ponds to be lined on a case by case basis depending on the threat to water quality.

2. Two feet of freeboard must always be maintained in ponds to provide adequate storage capacity and prevent wastewater spills. Freeboard must be measured vertically from the lowest elevation of the pond berm to the pond water surface. Wastewater ponds must contain permanent markers indicating depth and freeboard. If freeboard is less than two feet,[13] the Discharger must immediately implement the contingency plan contained in the spill prevention and emergency response plan.[14]

3. Pond systems must have capacity to accommodate wastewater, design seasonal precipitation, ancillary inflow and infiltration, and wind driven waves. Design seasonal precipitation must be based on the following precipitation criteria:

   i. If wastewater spills occur (e.g., breaches in the pond walls, flows spilling over the pond walls, etc.) at existing pond systems, the Central Coast Water Board Executive Officer may require pond upgrades consistent with the size specification defined below (section IV.B.3.ii).

   ii. For new or expanded pond systems, seasonal precipitation used in the pond sizing water balance calculations must be based on the following:

      a. The 100-year return annual total precipitation value distributed monthly in accordance with average (mean) precipitation values. The calculations must

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[12] Liner must have a permeability of less than $1x10^{-6}$ centimeters per second and may be constructed with synthetic materials, two feet of low permeably soils, or another engineered alternative. Discharger must provide documentation for Regional Board Executive Officer approval to confirm that a treatment, storage, or evaporation pond is sufficiently impermeable to prevent discharges of untreated or partially treated wastewater.

[13] Reference – Tchobanoglous, George (1979) "Wastewater Engineering: Treatment, Disposal, Reuse," Metcalf & Eddy, Inc.

[14] See section VI.A.2.iv.

demonstrate adequate capacity to maintain two feet of freeboard in the pond(s).

b. The Central Coast Water Board Executive Officer may allow a lower standard for the return annual total precipitation value, with approval of a technical report describing how operation of the Wastewater System will not result in wastewater spills. If the Discharger seeks relief from the 100-year return annual total precipitation value, the Discharger must certify that the spill prevention and emergency response plan is adequate to respond to forecast conditions using the 100-year return annual total precipitation value distributed monthly in accordance with average (mean) precipitation values. The calculations must demonstrate adequate capacity to maintain two feet of freeboard in the pond(s).

4. All ponds must be managed to mitigate breeding of mosquitoes including, but not limited to, the following:
   i. An erosion control program must be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface of the pond(s).
   ii. Weeds must be minimized through control of water depth, a shoreline synthetic liner, harvesting, or other suitable measures.
   iii. Vegetation and debris must be removed from the water surface.
   iv. Coordination with the local mosquito abatement or vector control district to supplement the measures described above in cases where other methods are infeasible.
5. A dissolved oxygen concentration of 1.0 mg/L must be maintained in the upper one foot of wastewater ponds to prevent nuisance odors.
6. Burrowing animals active in areas that may compromise the integrity of pond containment must be promptly controlled and repairs to the containment completed as soon as possible.
7. Prior to any removal, drying, treatment, or disposal of sludge for pond maintenance, the Discharger must implement and comply with the Central Coast Water Board Executive Officer approved sludge management plan.
8. Constructed wetlands must be graded to prevent the accumulation of stormwater in the wetland.

C. Land Application

1. Wastewater must not be applied to a land application area within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the land application area surface soil is saturated.
2. Spray irrigation with treated wastewater is prohibited when wind speed (including gusts) exceeds 30 miles per hour. Wind speed may be measured onsite or at a nearby weather station operated by a governmental organization. If the Discharger's land application areas are isolated from receptors, the Discharger

may request Executive Officer approval to spray irrigate when wind speeds exceed 30 miles per hour.

3. Land application of treated wastewater must be managed to prevent ponding, runoff, and erosion.
4. Discharge of wastewater (e.g., surface flow, spray drift, etc.) from a land application area is prohibited.
5. If undisinfected wastewater is applied to a land application area, stormwater runoff from the land application area is prohibited.
6. If stormwater can run off from a land application area (during the time of year wastewater is not applied), all applied wastewater must meet disinfection requirements at a level equivalent to disinfected secondary-23 recycled water (California Code of Regulations, title 22, section 60301.225). Land application of more highly treated water is acceptable. Alternatively, a Discharger may submit a technical report, for Central Coast Water Board Executive Officer approval, describing how the land application area will be operated to prevent pathogens from migrating off the land application area with stormwater.
7. If recycled water is applied, it must comply with the title 22 water recycling criteria, this General Permit, the notice of applicability, a conditionally accepted title 22 Engineering Report, and any DDW conditions.
8. Public contact with wastewater/recycled water must be precluded through use of fences, signs, and/or other appropriate means. All public use areas where recycled water is used must be posted with signs in English, Spanish, and include an international symbol (e.g., a drinking water glass with a slash through it), that are visible, in a size no less than 4 inches by 8 inches and include the following wording, “Recycled Water – Do Not Drink” (California Code of Regulations, title 22, section 60310(g)).
9. Land application of treated wastewater must meet setback requirements specified in Table 2.
10. Land application areas must be managed to mitigate breeding of mosquitoes including, but not limited to the following:
    i. There must be no standing water 48 hours after application of wastewater.
    ii. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes must not be used to store wastewater or recycled water.
    iii. The Discharger must coordinate with the local mosquito abatement or vector control district to supplement the measures described above in cases where other methods are infeasible.

D. Sludge/Solids/Biosolids Disposal

1. Sludge and solid waste must be removed from screens, sumps, tanks, and ponds as needed to ensure optimal plant operation.
2. Treatment and storage of sludge must be confined to the Wastewater System property and must be conducted in a manner that precludes runoff or infiltration of waste constituents into soil.

3. Any storage of residual sludge, solid waste, or biosolids at the Wastewater System must be temporary, and the waste must be controlled and contained in a manner that minimizes leachate formation and precludes runoff or infiltration of waste constituents into soils and groundwater.
4. Residual sludge and solid waste must be disposed of in a manner approved by the Central Coast Water Board Executive Officer and consistent with the Consolidated Requirements for Treatment, Storage, Processing, or Disposal of Solid Waste (California Code of Regulations, title 27 division 2). Removal for further treatment, disposal, or reuse at disposal sites operated in accordance with valid WDRs issued by the State Water Board or Central Coast Water Board will satisfy this specification.

   Use and disposal of biosolids must comply with the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, title 40, part 503).
5. Modifications to an approved sludge management plan deemed part of an emergency action must be noticed to the Central Coast Water Board Executive Officer within **five-days** of disposal with a rationale for the emergency modification.

E. Pretreatment Specifications

1. These Pretreatment Specifications apply to:
   i. Dischargers that own or operate Wastewater Systems considered publicly owned treatment works[15] treating or designed to treat an average dry weather flow of 5 million gallons per day or more of community wastewater.
   ii. Wastewater Systems that the Central Coast Water Board Executive Officer has determined a pretreatment program is necessary to prevent the introduction of pollutants which will interfere with the operation of the treatment works, pass through the treatment system, reduce opportunities to recycle and reuse domestic wastewater and sludge, or expose Wastewater System employees to hazardous chemicals.
2. The Discharger must:
   i. Submit a Pretreatment Program Plan to the Central Coast Water Board for Executive Officer review and approval. This plan must provide a clear, long-term plan for addressing the pretreatment requirements contained in Code of Federal Regulations, title 40, part 403. The Pretreatment Program Plan must be maintained at the wastewater treatment facility and must be presented to the Central Coast Water Board staff upon request or as required by the notice of applicability.
   ii. Comply with the pretreatment requirements contained in Code of Federal Regulations, title 40, part 403. The Discharger must implement and enforce its pretreatment program. The Discharger's pretreatment program is hereby made an enforceable condition of this General Permit. The Central Coast Water Board may initiate enforcement action against an industrial user for

[15] Publicly owned treatment works is defined in Code of Federal Regulations, title 40, part 403.3.

noncompliance with applicable standards and requirements as provided in the Clean Water Act. [CFR]

iii. Enforce the requirements promulgated under section 307(b), 307(c), 307(d), and 402(b) of the Clean Water Act. The Discharger must cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of its discharge. [CFR]

iv. Perform the pretreatment functions as required in Code of Federal Regulations, title 40, part 403.8(f), including but not limited to:

a. Implement the necessary legal authorities as provided in Code of Federal Regulations, title 40, part 103.8(f)(1);

b. Enforce the pretreatment requirements under Code of Federal Regulations, title 40, parts 403.5 and 403.6;

c. Implement the programmatic functions as provided in Code of Federal Regulations, title 40, part 403.8(f)(2); and

d. Provide the requisite funding and personnel to implement the pretreatment program as provided in Code of Federal Regulations, title 40, part 403.8(f)(3) CFR.

V. Limitations

A. Effluent Limitations

This General Permit establishes effluent limitations consistent with USEPA secondary treatment standards, the Basin Plan, and title 22 requirements (if title 22 is applicable).

Central Coast Water Board staff will identify the applicable Wastewater System specific effluent limitations and corresponding monitoring requirements for a Wastewater System in the notice of applicability.

The parameters used within this General Permit to determine Wastewater System specific effluent limitations includes, but is not limited to:

1. Treatment Technology: In the application, the Discharger must identify the treatment technology used at the Wastewater System. The Discharger is required to comply with the applicable secondary treatment effluent limitations specified in Tables 3, 4, and 5.
2. Raw Wastewater Characteristics: In the application, the Discharger must identify if the quality of wastewater entering the Wastewater System contains a significant amount of fats, oil, grease, phenol, formaldehyde, or zinc. The Discharger is required to comply with effluent limitations specified in Table 6 if it is determined the Wastewater System receives raw wastewater with significant amounts of these identified constituents.

   Types of waste streams that could contribute fats, oil, grease, phenol, formaldehyde, or zinc to a Wastewater System might include flows from oil pressing/bottling, meat processing, holding tanks (e.g., recreational vehicles, portable toilets, airplane wastewater), etc.

3. Underlying Groundwater Basin/Sub-Area: In the application, the Discharger must identify the groundwater basin/sub-area that underlies the Wastewater System disposal/dispersal area and is required to proceed with one of the two options presented below.

    i. Option 1: The Discharger elects to comply with effluent limitations specified in Table 7. The Discharger must demonstrate the quality of effluent discharged from the Wastewater System meets effluent limitations specified in Table 7. If the Discharger is unable to comply with the effluent limitations, the Discharger may be required to implement the groundwater monitoring program as described in Option 2.

    Table 7 present effluent limitations consistent with Basin Plan median water quality objectives, Basin plan agriculture water quality goals, USEPA Maximum Contaminant Levels (MCLs), and State of California's MCLs.

    How to use Table 7:

    a. If the Wastewater System discharges treated wastewater or non-potable treated recycled water to a designated basin, use the Basin Plan median water quality objectives as effluent limitations.

    b. If the Wastewater System discharges treated wastewater or non-potable treated recycled water into a non-designated groundwater basin (i.e., a groundwater basin not identified in Table 3-6 of the Basin Plan):

        - Use the MCLs and Basin Plan agriculture water quality goals shown in Table 7 as effluent limitations (in cases where there are two different numbers, the more stringent one applies), **or**;
        - A Discharger may request Executive Officer approval to use the median water quality objectives from an adjacent designated groundwater basin (Basin Plan Table 3-6) as effluent limitations.

    ii. Option 2: The Discharger elects not to treat the wastewater to the effluent limitations specified in Table 7. The Discharger will be required to implement a groundwater monitoring program.

4. Reclamation of Non-Potable Treated Wastewater: In the application, the Discharger must disclose whether they are a non-potable recycled water producer. If treated non-potable recycled water from the Wastewater System is discharged to land for the purposes of reuse, the Discharger must comply with the effluent limitations specified in Table 8. The requirements established in the DDW conditionally accepted title 22 Engineering Report and DDW conditional acceptance letter for the Wastewater System also apply. If the effluent limitations or requirements established in the conditionally accepted title 22 Engineering Report for the Wastewater System cannot be met, the Central Coast Water Board reserves the right to:

    i. Not permit the proposed discharge to land until effluent limitations can be achieved with proposed source control or treatment design, or

    ii. Require the Discharger to provide supplemental technical report(s) (e.g., modeling); conduct additional monitoring (i.e., groundwater monitoring, etc.);

or implement best management practices (i.e., land application area management plan, etc.) to confirm compliance with conditions and an requirements of this General Permit, to avoid unreasonably affecting present and anticipated beneficial uses, and to ensure that any change to water quality will be consistent with the maximum benefit of the people of the State.

Table 3. Secondary Treatment Effluent Limitations – Treatment Ponds

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L[1] [2]	45 [7]	65[7]	Not Applicable
Total Suspended Solids	mg/L	45[7]	65[7]	Not Applicable
Settleable Solids	mL/L[3]	0.3	Not Applicable	0.5
Total Nitrogen (as N)	mg/L	10	Not Applicable	20
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 4. Secondary Treatment Effluent Limitations - Trickling Filters

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	90[9]
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	90[10]
Settleable Solids	mL/L	0.3	Not Applicable	0.5
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 5. Secondary Treatment Effluent Limitations - Activated Sludge, Membrane Biological Reactor, Sequencing Batch Reactor, or Similar Systems

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Biochemical Oxygen Demand, 5-Day	mg/L	30[7,8]	45[7,8]	Not Applicable
Total Suspended Solids	mg/L	30[7,8]	45[7,8]	Not Applicable
Settleable Solids	mL/L	0.1	0.3	0.5

Constituent	Units	30-Day Average	7-Day Average	Sample Maximum
Total Nitrogen (as N)	mg/L	Not Applicable	Not Applicable	10
pH	Not Applicable	less than 6.5 or greater than 8.4[5]	Not Applicable	Not Applicable

See notes after Table 8.

Table 6: Effluent Limitations for Select Constituents for All Wastewater Systems

Constituent	Units	30-Day Average	Sample Maximum
Oil & Grease	mg/L	15[11]	25[11]
Phenol	µg/L[4]	0.1[5]	Not Applicable
Formaldehyde	µg/L	Not Applicable	100[12]
Zinc	mg/L	2.0[5]	Not Applicable

See notes after Table 8.

Table 7: Effluent Limitations Based on Basin Plan Median Water Quality Objectives, Basin Plan Agriculture Water Quality Goals, USEPA MCLs, and State of California's MCLs * - all Wastewater Systems

		Basin Plan Median Water Quality Objectives	MCL	Upper MCL	Agriculture Water Quality Goal
Constituent	**Units**	**25-Month Rolling Median**	**25-Month Rolling Median**	**Sample Maximum**	**25-Month Rolling Median**
Total Dissolved Solids	mg/L	Refer to Basin Plan Table 3-6	500[13]	1,000[13]	Not Applicable
Chloride	mg/L	Refer to Basin Plan Table 3-6	250[13]	500[13]	106[8],[5]
Sulfate	mg/L	Refer to Basin Plan Table 3-6	250[13]	500[15]	Not Applicable
Boron	mg/L	Refer to Basin Plan Table 3-6	Not Applicable	Not Applicable	0.5[14],[5]
Sodium	mg/L	Refer to Basin Plan Table 3-6	Not Applicable	Not Applicable	69[14],[5]
Nitrate (as N)	mg/L	Refer to Basin Plan Table 3-6	10[16]	Not Applicable	Not Applicable

See notes after Table 8.
* This table is also used as groundwater limitations for all types of wastewater systems (see section V.C).

Table 8: Effluent Limitations for Non-Potable Recycled Water Producers - All Wastewater Systems

Constituent	Unit	Regulatory Limitations
Total Coliform	MPN/100 mL[6]	title 22[17]
Turbidity	NTU	title 22[17]
Chlorine residual	mg/L	title 22[17]
Other constituents or operational requirements identified in a title 22 Engineering Report	Not Applicable	title 22[17]

[1] mg denotes milligrams.
[2] L denotes liter.
[3] mL denotes milliliters.
[4] µg denotes micrograms.
[5] Basin Plan. For pH, the effluent limitation values shown are a range, not an average or maximum.
[6] MPN denotes most probable number.
[7] USEPA Office of Wastewater Management, Water Permits Division, State and Regional Branch, EPA-833-K-10-001, September 2010.
[8] USEPA, Code of Federal Regulations, title 40, part 133.102, Secondary Treatment Standards, Technology-Based Effluent Limits.
[9] Four of five trickling filter Wastewater Systems in the central coast region have daily maximum biochemical oxygen demand effluent limits of 90 mg/L or less.
[10] Two of five trickling filter Wastewater Systems in the central coast region have daily maximum total suspended solids effluent limits of 90 mg/L or less.
[11] Industrial stormwater discharge requirements, Table 2 (Numeric Action Limit), NPDES No. CAS000001.
[12] California Notification Levels, http://www.waterboards.ca.gov:8080/WaterQualityGoal/
[13] California Division of Drinking Water secondary MCL. California Code of Regulations, Title 22 Division 4. Environmental Health Chapter 15. Domestic Water Quality and Monitoring Regulations Article 16. Secondary Drinking Water Standards.
[14] Water Quality for Agriculture, published by the Food and Agriculture Organization of the United Nations in 1985, contains criteria protective of various agricultural uses of water, including irrigation of various types of crops and stock watering.
[15] USEPA primary MCL.
[16] California Division of Drinking Water primary MCL.
[17] As specified in State Water Board's Division of Drinking Water title 22 conditional acceptance letter. Disinfection methods will vary between plants. Some customization of this table will occur in the notice of applicability based on the title 22 conditional acceptance letter.

B. Organic Loading Limitations

If a Wastewater System land applies treated wastewater or treated non-potable recycled water, Land Application Limitations listed in Table 9 apply. For operational and management requirements refer to section IV.C.

Table 9: Land Application – Organic Loading Rate Limitations

Constituent	Units	30-Day Average	Maximum
Biochemical Oxygen Demand, 5-Day	pounds/acre/day	100	300

C. Groundwater Limitations

Groundwater quality is affected by many factors. This General Permit considers these factors and is designed to minimize the influence of the discharge on groundwater. All discharges must protect water quality as described in the Basin Plan. For designated basins, use the Basin Plan median water quality objectives in Table 7 as groundwater limitations (Basin Plan Table 3-6). For non-designated basins, (i.e., a groundwater basin not identified in Table 3-6 of the Basin Plan):

1. Use the MCLs and Basin Plan agriculture water quality goals in Table 7 as groundwater limitations; or
2. A Discharger may request Executive Officer approval to use the median water quality objectives from an adjacent designated groundwater basin (Basin Plan Table 3-6) as groundwater limitations.

VI. Provisions

A. Technical Report Preparation Requirements

The Discharger must submit the following technical reports in accordance with the schedule specified in the MRP. The MRP prescribes the required components of each plan. The Discharger must implement each required plan.

1. **Pretreatment Program Plan -** If directed by the Central Coast Water Board Executive Officer, the Discharger must submit a Pretreatment Program Plan to the Central Coast Water Board for Executive Officer review and approval. See section IV.E.2.i.
2. **Operations and Maintenance Manual** -The Discharger must submit a written Operations and Maintenance Manual for Central Coast Water Board Executive Officer review and approval. The Operations and Maintenance Manual must be maintained at the wastewater treatment facility and must be presented to Central Coast Water Board staff upon request. In addition to the required components specified in the attached Standard Provisions and Reporting Requirements for Waste Discharge Requirements dated December 5, 2013 (Standard Provisions) A.12 and A.28, the Operations and Maintenance Manual must contain the following components:
    i. **Sampling and Analysis Plan -**The sampling and analysis plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability. If the Central Coast Water Board issues a revised MRP, the Discharger must update the sampling and analysis plan as needed to comply with the revised MRP.
    ii. **Sludge Management Plan -** The sludge management plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability.
    iii. **Land Application Area Management Plan -** The land application area management plan must be sufficient to assure compliance with the terms of this General Permit and the notice of applicability.
    iv. **Spill Prevention and Emergency Response Plan -** The spill prevention and emergency response plan must be sufficient to assure compliance with the

terms of this General Permit and the notice of applicability. The spill prevention and emergency response plan must describe operation and maintenance activities to prevent accidental releases of wastewater and to effectively respond to such releases and minimize the environmental impact.

3. **Climate Change Adaptation Plan -** The Discharger must submit a Climate Change Adaptation Plan[16] to the Central Coast Water Board Executive Officer for review and approval. The Climate Change Adaptation Plan must describe the Discharger's long-term approach for identifying and addressing climate change hazards and vulnerabilities for their Wastewater System, including all associated infrastructure (e.g., treatment facilities, conveyances to discharge points, and discharge facilities). The Climate Change Adaptation Plan must be maintained at the wastewater treatment facility.

    i. **Recycled Water Feasibility Plan –** For Dischargers with Wastewater System design flows over 1,000,000 gallons per day, the Climate Change Adaptation Plan must contain a recycled water feasibility plan for the production and reuse of non-potable recycled wastewater.

4. **Salt and Nutrient Management Plan** - If directed by the Central Coast Water Board Executive Officer pursuant to California Water Code section 13267, a Discharger must prepare and submit a Salt and Nutrient Management Plan, to ensure that the overall impact of treated wastewater and/or water recycling projects does not degrade groundwater resources.

    The Central Coast Water Board Executive Officer may direct the development and implementation of a Salt and Nutrient Management Plan when one of following occurs:

    i. Non-potable recycled water is produced. It is the intent of the Recycled Water Policy that every groundwater basin/sub-basin in California has a salt and nutrient management plan.

    ii. If a Discharger elects not to treat the wastewater to the effluent limitations specified in Table 7.

    iii. Effluent/Groundwater data from a Wastewater System demonstrates negative impacts or trends towards negative impacts to groundwater from a discharge.

    iv. Central Coast Water Board learns of a current or past discharge that has the potential to negatively impact ground or surface water.

B. General Provisions for All Wastewater Systems:

1. The Discharger must comply with all items of Standard Provisions and any updates to the Standard Provisions adopted by the Central Coast Water Board, unless exempted in writing by the Central Coast Water Board Executive Officer. The Central Coast Water Board will provide the Discharger notice of proposed updates

[16] In place of a static document, the Discharger may develop a living document and/or set of tools that fulfills the components outlined in section VI.A.3.

to the Standard Provisions in accordance with procedures for public participation. A copy of the 2013 Standard Provisions currently in effect is available electronically at the following link and is Attachment E of this General Permit:

https://www.waterboards.ca.gov/centralcoast/board_decisions/docs/wdr_standard_provisions_2013.pdf

2. Bypass (the intentional diversion of waste streams from any portion of a treatment system[17]) is prohibited. See Standard Provisions D.1.
3. Dischargers must review the Wastewater System's wastewater flow rate and organic loading rate annually and provide that review to the Central Coast Water Board Executive Officer. A Discharger whose wastewater flow rate or organic loading rate has been increasing, or is projected to increase, must estimate when the flow or loading rate will reach hydraulic and treatment capacities of its treatment, collection, and disposal systems. The projections must be made in **January each year**, based on the last three years average dry weather flow and loading rates, peak wet weather flow and loading rates, and total annual flow and loading rates, as appropriate. When any projection shows that capacity of any part of the Wastewater System may be exceeded in four years, the Discharger must notify the Executive Officer by March 1st.
4. The Wastewater System must be sited and designed to prevent flood or surface water from inundating wastewater ponds or otherwise rendering the Wastewater System inoperable. For design purposes, the most recent Federal Emergency Management Agency approved 100-year base flood elevations must be used.
5. The Discharger must ensure that all site operating personnel are familiar with the contents of the Wastewater System notice of applicability, this General Permit, the Operations and Maintenance Manual, and the conditionally accepted title 22 Engineering Report (for non-potable recycled water uses when applicable). The Discharger must at a minimum document training provided to all new site operating personnel and refresher training annually to ensure they meet this requirement. A copy of this General Permit, the notice of applicability, and technical reports required by this General Permit must be kept at the wastewater treatment facility for reference by operating personnel.
6. The Discharger must operate and maintain all Wastewater Systems in accordance with an Operations and Maintenance Manual for the Wastewater System that is subject to the approval of the Central Coast Water Board Executive Officer. The Operations and Maintenance Manual, including expected performance criteria, a process flow diagram, and a copy of as-built plans, must be kept onsite and periodically updated whenever there is a change in operational procedures or an expansion of the system. See Standard Provisions A.12 and A.28 and the MRP for additional requirements of the Operations and Maintenance Manual.
7. The Discharger must maintain in good working order, and operate as efficiently as possible, any Wastewater System, control system, or monitoring device installed to achieve compliance with this General Permit and the notice of applicability.

[17] This includes the use of unlined storage ponds.

8. The Discharger must take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with this General Permit.
9. The discharge must always remain within the disposal/dispersal area designated in the notice of applicability (except for activities allowed in a conditionally accepted title 22 Engineering Report).
10. Access to the Wastewater System must be limited to authorized persons.
11. This General Permit does not relieve the Discharger from responsibility to obtain other necessary local, state, or federal permits to construct Wastewater Systems necessary for compliance with this General Permit, nor does this General Permit prevent imposition of additional standards, requirements, or conditions by any other agency.
12. The prohibitions, specifications, limitations, and provisions of this General Permit are severable. If any provision of this General Permit is held invalid, the remainder of this General Permit shall not be affected.
13. The Discharger must take all reasonable steps to prevent any discharge in violation of this General Permit.
14. The Central Coast Water Board will review this General Permit periodically and will revise requirements when necessary.
15. Before making a material change in the character, location, or volume of discharge, the Discharger must notify the Central Coast Water Board Executive Officer. A material change includes, but is not limited to, any of the following:
    i. A change in area or depth used for waste disposal beyond that specified in the notice of applicability.
    ii. A significant change in disposal method, location, or volume (e.g., change from land application to percolation pond or increase in flow).
16. The Central Coast Water Board Executive Officer may require that updated permit application documents be submitted.
17. Wastewater System repairs and expansions must be made in accordance with the conditions of this General Permit, the notice of applicability, and the California Water Code.
18. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or offsite reuse of effluent, used to justify the capacity authorized herein and assure compliance with this General Permit, the Discharger must notify the Central Coast Water Board Executive Officer in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this General Permit and the notice of applicability.
19. Except for material determined to be confidential in accordance with California law, all reports prepared in accordance with terms of this General Permit will be available for public inspection by the Central Coast Water Board. Data on waste discharges, water quality, geology, and hydrogeology are not confidential.
20. For any electrically operated equipment at the Wastewater System, the failure of which would cause loss of control or containment of waste materials, or violation of

this General Permit, the Discharger must employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

21. In the event of any change in control or ownership of the Wastewater System or wastewater disposal/dispersal areas, the Discharger must notify the succeeding owner or operator of the existence of this General Permit by letter, a copy of which must be immediately forwarded to the Central Coast Water Board Executive Officer.

22. The Discharger must pay an annual fee to the State Water Board in accordance with the fee schedule for each fiscal year (California Code of Regulations, title 23, section 2200). Fees are based on threat to water quality and complexity ratings, will be determined based on information in the permit application, and are subject to revision by the State Water Board. Annual invoices are issued by the State Water Board for the state fiscal year (July 1 to June 30).

C. General Reporting Requirements:

1. The Discharger must report electronically via email and through the State Water Board's GeoTracker database or as otherwise specified in the MRP.

2. If the Discharger does not comply, or will be unable to comply, with a limit related to effluent quality, pond freeboard, flow rate, the conditionally accepted title 22 Engineering Report requirements, or has bypass or overflow, the Discharger must notify Central Coast Water Board staff by telephone. Current phone numbers for Central Coast Water Board offices may be found on the notice of applicability or on the Internet at:

   https://www.waterboards.ca.gov/centralcoast/

   Notification must occur as soon as the Discharger or its agents have knowledge of such noncompliance or potential for noncompliance, and the Discharger must confirm this notification in writing within five days. The written notification must state the date, time, nature, cause of noncompliance, immediate response action, and schedule for corrective actions.

3. In the event of a wastewater containment failure, the Discharger must immediately notify California Office of Emergency Services. Notification must be provided as soon as possible and when the notice can be provided without substantially impeding cleanup or other emergency measures (California Water Code, section 13271). A written report to the Central Coast Water Board Executive Officer must be submitted within 10 days of the failure describing the cause of the failure and how a recurrence will be prevented. Such a failure must be promptly corrected in accordance with the requirements of this General Permit.

4. Notification Requirements for the delivery of off-specification recycled water:

   i. In the event the Discharger of non-potable recycled water does not comply with the recycling specifications in section V.A.4, the Discharger must immediately notify, via telephone and email, the Central Coast Water Board and the applicable DDW District office. Within two weeks of the noncompliance, the Discharger must submit a written follow-up report to the Central Coast Water Board Executive Officer and DDW District Engineer,

including pertinent information explaining reasons for the noncompliance and steps being taken to prevent the problems from recurring.

ii. In the event the Discharger delivers recycled water not meeting the Uniform Statewide Recycling Criteria specification, the Discharger must immediately notify, via telephone and email, all enrollees of the State Water Board's Water Reclamation Requirements for Recycled Water Use (Order WQ 2016-0068-DDW) with potential to have received recycled water from the Wastewater System.

5. All reports submitted in response to this General Permit, including monitoring reports, must be signed in accordance with Standard Provisions section C.14 (Attachment E) using the current transmittal document provided by Central Coast Water Board staff. In addition:

   i. For an LLC, all reports must be signed by an LLC member or manager given signing authority by the operating agreement of the LLC if the wastewater discharge will occur on property owned by an LLC.

   ii. To be considered a duly authorized representative, all the following must be completed:

      a. The authorization is made in writing by a person described above or in Standard Provisions.

      b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated Wastewater System or activity, such as the position of plant manager, operator of a waste management unit, superintendent, or position of equivalent responsibility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

      c. The written authorization is submitted to the Central Coast Water Board.

6. All reports/documents and laboratory data must be submitted electronically as specified in the MRP and notice of applicability.

D. Monitoring Requirements

The Discharger must comply with the MRP issued with the notice of applicability, and any future revisions, as specified by the Central Coast Water Board Executive Officer. A general MRP is provided as Attachment D.

VII. Enforcement

A. Violations

Violations of these General Permit requirements may result in enforcement actions as authorized under the California Water Code.

B. Technical and Monitoring Reports

All technical and monitoring reports submitted pursuant to this General Permit are required pursuant to section 13267 of the California Water Code including the imposition of administrative civil liability pursuant to Water Code section 13350. Failure to submit reports in accordance with schedules established by this General Permit or attachments to this General Permit, or failure to submit a report of sufficient technical

quality to be acceptable to the Central Coast Water Board Executive Officer, may subject the Discharger to enforcement action pursuant to section 13268 of the California Water Code.

VIII. Effective Date of the General Permit

This General Permit takes effect upon Central Coast Water Board adoption.

I, Matthew T. Keeling, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the General Permit adopted by the California Regional Water Quality Control Board, Central Coast Region on September 25, 2020.

Matthew T. Keeling
Executive Officer

ECM/CIWQS =
GeoTracker No. =
ECM Subject Name = General WDRs for Large Domestic WWTP, Permit No. R3-2020-0020
R:\RB3\Shared\WDR\General WDRs for Large Domestic WWTP\General Order\For Public Comment\R3-2020-0020_June 16.docx

ATTACHMENT A
DEFINITIONS

7-day average
Calculated as the average concentration of the results for the last seven calendar days. If only one sample is collected within a seven-day period, then that one sample becomes the seven-day average value.

25-month rolling median
The median is the value separating the higher half from the lower half of a data sample. For a data set, it may be thought of as the "middle" value. A 25-month rolling median is determined by using the most recent twenty-five months of data.[18]

30-day average
The arithmetic mean of measurements recorded during a calendar month. If only one sample is collected in a calendar month, then that sample measurement is the 30-day average concentration.

Beneficial uses
The uses of water protected against degradation, such as: domestic, municipal, agricultural and industrial supply; hydropower generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or groundwater after Nov. 28, 1975 and potential beneficial uses are uses that would develop in the future through control measures.

Biosolids
Sludge that has undergone enough treatment and testing to qualify for reuse pursuant to the USEPA Part 503 Biosolids Rule (Code of Federal Regulations, title 40, part 503).

Day
The mean solar day of 24 hours beginning at mean midnight. All references to “day” in this General Permit are calendar days.

Constituents of emerging concern
Chemicals in personal care products; pharmaceuticals including antibiotics; antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products; inorganic constituents; and nanomaterials.

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[18] Steps for determining the 25-month rolling median:

a. Order 25-months of data from least to greatest. Put the smallest value first and arranging the values so that each following value is greater than the previous one.
b. Find the middle number.
    - If there is an odd number of values, locate the middle number. This is the median.
    - If there is an even number of values, find the two middle numbers. Average of the two middle numbers. This is the median.

Constituent
An informal term used to describe a detectable element or component or attribute of waste or effluent.

Contaminant
Any physical, chemical, biological, or radiological substance or matter in air, water, or soil.

Domestic wastewater
Wastewater from households, commercial establishments, and industries. Combined sewer/separate storm overflows are included in this category.

Flow weighted sample
A sample collected at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow. The duration of the sampling period will be specified in the MRP.

Land application area
The areas where wastewater is applied to land. Ponds are not considered land application areas.

Monthly average flow rate
The total discharge by volume during a calendar month divided by the number of days in the month that the wastewater system was discharging. This number must be reported in gallons per day or million gallons per day.

Pesticide
Any substance intended to control, destroy, repel, or otherwise mitigate a pest. The term pesticide is inclusive of all pest and disease management products, including insecticides, herbicides, fungicides, nematicides, rodenticides, algicides, etc.

Priority pollutant
A set of chemical pollutants USEPA regulates, and for which USEPA has developed analytical test methods. The current list of priority pollutants can be found at Code of Federal Regulations, title 40 part 423, Appendix A.

Pollutant
Something that pollutes. A substance introduced into the environment that has undesired effects, or adversely affects the usefulness of a resource.

Recycled water
Water that is used more than one time before it passes back into the natural hydrologic system and is suitable for a beneficial use.

Sample maximum
The highest measurement recorded for any grab or composite sample collected during a day in a calendar month.

Sludge
The solid, semisolid, and liquid residues removed during primary, secondary, or other wastewater treatment processes. Solid waste is the grit and screenings generated during preliminary treatment. Residual sludge is sludge that will not be subject to further treatment at the Wastewater System.

Time-weighted Sample
A sample collected at equal time intervals, with a maximum interval of one hour.

Title 22 Engineering Report
Report that describes how a project will comply with the Water Recycling Criteria contained in California Code of Regulations, title 22, sections 60301 through 60355, inclusive and compliance with title 17 for cross connection control.

ATTACHMENT B
PERMIT APPLICATION PROCESS SUMMARY

The Discharger must complete the following steps:

Step 1: Feasibility Analysis:

- Evaluate the feasibility of connecting the discharge to a regional collection system.
- If it isn't feasible to connect to regional system, prepare a conceptual wastewater plan and go to Step 2.

Step 2: Set up a Meeting with Central Coast Water Board Staff to Discuss the Following:

- Conceptual wastewater plan including wastewater plan for characterization, treatment, and disposal.
- Water balance precipitation value.
- Threat and complexity/application fee.
- Is a title 22 Engineering Report needed?
- Is groundwater monitoring needed?
- Is the Sanitary Sewer System General Permit applicable?
- What level of operator certification may be required?
- California Environmental Quality Act status.
- Application and monitoring report procedures.

Step 3: Submit Permit Application that Includes:

- Completed application (also referred to as a report of waste discharge) and Form 200 or notice of intent.
- Application fee payment.
- Technical report (prepared consistent with the guidance in Attachment C, or as directed by Central Coast Water Board staff).
- Title 22 Engineering Report (if recycling).

Step 4: Central Coast Water Board Permit Application Review:

- If the application is complete, a notice of applicability will be prepared.
- If the application is incomplete, Central Coast Water Board staff will notify the Discharger.

Step 5: Notice of Applicability for Enrollment in the General Permit Issued:

- The notice of applicability authorizes the wastewater discharge consistent with the General Permit, additional requirements included in the notice of applicability, and conditionally accepted title 22 Engineering Report (if applicable).
- The notice of applicability will specify compliance criteria, monitoring requirements, and reporting requirements. Electronic reporting will be required.

ATTACHMENT C
PERMIT APPLICATION FORMAT

The information presented in the permit application (also referred to as a report of waste discharge) is relied upon by staff to prepare the notice of applicability for coverage by this General Permit for Discharges from Domestic Wastewater Systems with monthly average flow rates greater than 100,000 gallons per day in the central coast region. The Discharger must ensure that the information presented in the application is accurate. Misstatements, errors, or omissions that exist in the application may be included in the notice of applicability and become enforceable.

Waste discharge requirement permits are generally updated at 10 or 15-year intervals depending on the waste's potential to impact water quality. The application must state realistic growth projections. Underestimating growth may result in additional or more frequent permitting requirements. Overestimating growth will result in the need for the Discharger to prepare more treatment, storage, and disposal capacity than might otherwise be immediately required.

Dischargers must submit an application that is consistent with the application format and instructions provided on the Central Coast Water Board webpage:

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/wastewater_permitting/