4.11.3 WASTEWATER SERVICE

INTRODUCTION

This section describes the existing and planned wastewater collection, conveyance, and treatment system in the City of Oxnard, and evaluates the operation of this system with development of the proposed RiverPark Project. Sewage flows from the proposed Specific Plan would be conveyed through the Central Trunk Sewer of the City's sewer system to the Oxnard Waste Water Treatment Plant. Sources of information for this section include the City of Oxnard Wastewater Collection System Master Plan and the RiverPark Specific Plan.

ENVIRONMENTAL SETTING

Sewage Collection and Conveyance Network

A sewage collection system, consisting of roughly 300 miles of trunk sewers and 16 sewage lift stations, conveys flows from seven major sewer trunk systems in the City to the Oxnard Waste Water Treatment Plant (OWWTP), located at the southern end of the City in the Ormond Beach area. The development and operation of this sewage system is outlined in the City's Wastewater Collection System Master Plan (2001), which outlines the general location and sizing of existing and planned sewage lines in the City. The existing and planned sewage collection and conveyance system as presented in the Master Plan is based upon known and calculated wastewater flows generated by existing and future development in the City, as allowed by the City's *2020 General Plan*. The Wastewater Collection System Master Plan Report divides the City into service areas. Trunk and collector lines are designed to serve uses within these defined areas. The maps in the Wastewater Collection System Master Plan provided detailed information on the location and size of individual lines within the City, including information on the location of manholes and other pertinent information.

As shown in Figure **4.11.3-1**, the Central Trunk System is the primary trunk sewer system in the northern portion of the City, and would convey wastewater from the proposed Specific Plan Area. The Central Trunk System consists of a network of trunk sewer lines primarily made of vitrified clay pipe with diameters ranging from 8 inches to 36 inches. As shown in **Figure 4.11.3-1**, at its northern end the Central Trunk Sewer splits into East and West Branches. The East Branch extends up Vineyard Avenue and the West Branch extends into the RiverPark Specific Plan Area. As shown, the East Branch currently extends to the northern edge of the El Rio West Neighborhood and provides service to this

neighborhood and other properties along Vineyard Avenue. The West Branch is a 21-inch sewer line that crosses under the Ventura Freeway and runs along El Rio Road to the eastern edge of the County El Rio Maintenance Yard. A 10-inch line connects the West Branch Sewer to an existing sewer lift station at the end of Town Center Drive. Sewer service to the two existing office buildings in the southwest corner of the Specific Plan Area is provided by sewer lines in Town Center Drive and Ventura Road that drain to the lift station.

The capacity of the Central Trunk System was determined in the City's Master Plan through use of a hydraulic model. Flow estimations were made by first determining and assessing the tributary areas of the Central Trunk System. Using the flow rates, design parameters of the sewer system, and pipeline data, the hydraulic model calculated Average Dry Weather (ADF) flow and Peak Wet Weather Flows (PWWF). The capacity of each pipeline was compared to the flow. If the model indicated the level of flow within a pipeline exceeded the established design parameters the pipeline was identified as deficient. If the depth over diameter was greater than 0.67 for 12-inch or greater diameter pipelines or 0.50 for 10-inch diameter pipelines, the pipeline was identified as deficient. A pipeline flowing at 100 percent full or greater was identified as surcharged. With existing ADF, the Central Trunk System contains neither deficiencies nor surcharged conditions. With existing PWWF, portions of the 36-inch diameter segments of the Central Trunk System are currently deficient.

Wastewater Treatment

Wastewater from the City of Oxnard, the City of Port Hueneme, the U.S. Navy Construction Battalion Station, the Point Mugu Naval Air Station and some limited adjacent areas is treated at the OWWTP. As a result of expansions completed in December, 1991, the OWWTP currently has an average dry weather flow (ADWF) capacity of 31.70 million gallons per day (mgd) and a peak wet weather flow (PWWF) capacity to 68.2 mgd. Total volume treated at the OWWTP was 21.75 mgd in the year 2000. A second expansion phase of the OWWTP, planned to coincide with the growth in the demand for treatment, would allow an ADWF of 39.6 mgd and a PWWF of 75.4 mgd. With this expansion, adequate future capacity in the treatment plant would be provided for the Oxnard Planning Area at the year 2020 build-out of the Oxnard 2020 General Plan. Based upon a conservative assumption of a five percent increase in flow per year, the ADWP will likely exceed the OWWTP's current maximum capacity of 31.7 mgd in the year 2008.[1]

1 Mark Norris, Wastewater Superintendent, Wastewater Division, City of Oxnard Utilities Department, letter to Edmund F. Sotelo, City Manager, City of Oxnard, August 18, 2000.

Figure 4.11.3-1

Central Trunk System

The OWWTP provides primary and secondary level treatment to incoming sewage effluent. Wastewater is treated in several stages. Primary treatments consist of effluent screening and pumping, and primary sedimentation. Secondary treatment consists of an activated sludge process, effluent disinfection, and solids stabilization with anaerobic digestion.[2] Treated effluent from the OWWTP is discharged into the Pacific Ocean via a 48-inch ocean outfall pipe that extends 8,684 feet from the plant into the ocean, at a depth of approximately 55 feet below sea level. The final section of the outfall pipe limits the actual capacity of the treatment system to 50 mgd. A flow equalization facility has been installed at the treatment plant to limit total outflows to this amount, even with the planned plant expansion and ultimate flows of 68.2 mgd.

PROJECT IMPACTS

Thresholds of Significance

The city of Oxnard considers the impact of a project on wastewater collection and treatment facilities to be significant if:

- Existing wastewater collection and conveyance lines do not have sufficient capacity to accommodate wastewater from the project.
- Projected wastewater flows would exceed the present capacity of the OWWTP.

Project Impacts

Proposed Improvements

The proposed RiverPark Specific Plan Sewer Master Plan is shown in **Figure 4.11.3-2**. The on-site collection and conveyance system and sewage lift station have been designed in compliance with City of Oxnard flow standards to handle the expected sewage generation of the project. The proposed sewer lines within the Specific Plan Area have been sized according to the specifications of the City of Oxnard based on a minimum flow velocity of 2 fps.

As shown in **Figure 4.11.3-2**, the proposed sewer improvements include a backbone sewer, an onsite sewer network, and a relocated pump station. The 18-inch diameter backbone sewer for the Specific Plan site runs in a northwest/southeast alignment roughly down the middle of the site. The backbone sewer line would connect with the existing 21-inch line that runs along the northerly Ventura Freeway frontage

2 Alderman, Swift & Lewis: *City of Oxnard Sewer Master Plan Report*, p. 58. Santa Ana, California: May 1979.

and would ultimately discharge into the Central Trunk Sewer. An on-site network of 8- and 10-inch diameter sewer lines and smaller laterals would extend along the streets within the Specific Plan Area to collect and convey wastewater to the backbone sewer. A new sewer lift station is proposed within RiverPark Area 'B' to lift sewage flows to meet the City's requirement for minimum scour velocities of 2 fps. The existing sewage lift station located at the eastern end of Town Center Drive, Pump Station 10, will be relocated to accommodate the planned street improvements.

RiverPark Project Wastewater Generation

The wastewater generation factors contained in the Oxnard Wastewater Collection System Master Plan were used to estimate the amount of wastewater that would be generated by the RiverPark Specific Plan at full build-out of all the allowed uses. As shown in **Table 4.11.3-1**, RiverPark would generate approximately 780,000 gallons per day of wastewater when fully built.

Table 4.11.3-1
Estimated Wastewater Generation

Land Use Classification	Units	Unit Flow Rate (gpad)	Basic Sanitary Flow (mgd)
Single Family Residential	174 acres	1,230	0.21
Multi-Family Residential	70 acres	4,525	0.32
Commercial *	191 acres	1,300	0.25
Open Space	266 acres	N / A	
Total	**701 acres**		**0.78**

Source: City of Oxnard Waste water Collection System Master Plan, January 2001, p. 2-7.
** includes schools and other public facilities.*

As proposed, occupancy of homes and / or commercial structures would begin in 2003 with full build-out dependent on market conditions, but expected by 2020.

Impacts to the Collection and Conveyance Network

All of the proposed sewage lines within the Specific Plan Area have been sized to accommodate the wastewater generated by the proposed uses. After collection in the onsite sewer system, wastewater will be conveyed in the Central Trunk Sewer to the Oxnard Wastewater Treatment Plant. Wastewater from the RiverPark Specific Plan Area will build in volume over time as the Specific Plan Area is built-out.

Figure 4.11.3-2

RiverPark Specific Plan Sewer Master Plan

The Oxnard Wastewater Collection System Master Plan includes projected Design Peak Wet Weather Flows (PWWF) for full build-out conditions. The City's Master Plan also contains analysis of the impact of these flows on the City's wastewater collection and conveyance network. Projected flows were calculated using a hydraulic model. For the Central Trunk Sewer, projections of future wastewater flows were made by first determining and assessing the tributary areas of the Central Trunk System. The tributary areas were then transferred on to the City of Oxnard's Geographic Information System (GIS), which contains current and future land use information based on the Oxnard 2020 General Plan, in order to determine their land use designations. Individual flows were determined by combining unit wastewater flow rates with land use projections. A pipeline was identified as deficient if the model indicated the level of flow within a pipeline exceeded the established design parameters. A pipeline flowing at 100 percent full or greater was identified as surcharged.

The projected PWWF for the Central Trunk Sewer reflects the build-out of all uses allowed by the 2020 General Plan. The projected flows for the Central Trunk Sewer also includes projected flows from the RiverPark Project. The Master Plan was being prepared concurrently with the planning of the RiverPark Project and the build-out model included the RiverPark Project for planning purposes. The build-out model also reflects providing service to other existing developed areas outside of the City but within the City's sphere of influence, including the El Rio Community. The El Rio Community is currently located outside of the incorporated City Limits of Oxnard but within the sphere of influence of Oxnard. Presently, private septic systems are used to treat sewage in El Rio. In August 1999 the Regional Water Quality Control Board adopted a resolution prohibiting all use of septic systems on properties less than 5 acres in size overlying the Oxnard Forebay by January 2008. Under this order, El Rio and other properties on septic systems are likely to connect to the City's sewer system by this date. In addition, the Master Plan includes flows from the Ventura County Juvenile Justice Center, currently under construction on Vineyard Avenue between the RiverPark Specific Plan Area and Central Avenue.

As shown in **Table 4.11.3-2**, the Master Plan modeling shows that the projected 2020 flows will significantly impact the capacity the Central Trunk Sewer. Major portions of the Central Trunk Sewer have insufficient capacity to convey the projected flows. The Master Plan identifies the improvements to the Central Trunk Sewer needed to accommodate projected flows. The City of Oxnard requires individual building projects to pay the City's sewer connection fees, which provides funds to the City to make the improvements identified in the Wastewater Collection System Master Plan. In addition, the City requires individual building projects to provide adequate capacity to convey sewage to a safe point of discharge. In this manner, the existing sewage collection and conveyance system would be upgraded as necessary to accommodate sewage created by development of the land uses allowed by the RiverPark Specific Plan. No significant impacts, therefore, will result from the RiverPark Specific Plan project.

Table 4.11.3-2
Oxnard Wastewater Master Plan 2020 Build-out Flow Projections - Central Trunk System

Flow Condition	Diameter (inches)	Length (feet)	Percent Capacity	Deficient?
Ultimate Peak Wet Weather	16	275	67	Borderline
	24	2,971	69-271	Yes, Surcharge
	27	1,252	73-88	Yes
	36	13,927	67-232	Yes, Surcharge

Source: City of Oxnard Wastewater Collection System Master Plan Report (2000).

2001 Master Plan Improvements

The Oxnard Wastewater Collection System Master Plan Report contains a three-phased Capital Improvement Program based on areas of known future development. The Master Plan identifies 35 capital improvements to mitigate hydraulic deficiencies for current and build-out conditions. Capital improvement projects were developed for three consecutive 5-year phases based on anticipated development. Phase 1 (2000 to 2005) projects are required to relive sewers with capacity deficiencies for current PWWF conditions or where development is expected to occur in the next 5 years. Phase 2 (2006 to 2010) projects are recommended to correct ultimate PWWF deficiencies occurring in the next 5 to 10 years and Phase 3 (2011 to 2020) projects will be required for to correct deficiencies for the last 10 to 20 year period.

Phase 1 improvements address the Central Trunk Sewer. Improvements to both the Eastern and Western Branch of the Central Trunk Sewer are planned, including upgrades to Sewage Lift Station Number 10, located within the RiverPark Specific Plan Area. Extension of the Eastern Branch of the Central Trunk Sewer north in Vineyard Avenue to Central Avenue is included in these Phase 1 Improvements. The RiverPark Specific Plan Sewer Master Plan includes the improvements to the Eastern Branch and Lift Station 10 included in the City's Wastewater Master Plan. Other improvements needed to create sufficient capacity in the other portions of the Central Trunk Sewer are included in Phases 2 and 3 of the City's Master Plan. The City will fund and implement the Capital Improvement Program through collection of the City's wastewater connection fees and construction of the phased improvements with these fees.

Wastewater Treatment

The OWWTP currently has an average dry weather flow (ADWF) capacity of 31.7 million gallons per day (mgd) and a peak wet weather flow (PWWF) capacity to 68.2 mgd. Total volumes treated at the

OWWTP in 2000 was 21.75 mgd. Currently, the plant has the capacity to treat an additional 9.95 mgd of wastewater. An expansion of the OWWTP, planned to coincide with the growth in the demand for treatment, would provide for treatment of an ADWF of 39.6 mgd and a PWWF of 75.4 mgd. With this expansion, adequate future capacity in the treatment plant would be provided for all projected growth in the City's Oxnard Planning Area. The Oxnard Wastewater Treatment Plant has the existing and planned capacity to treat the 0.78 mgd of additional wastewater that would be generated by the RiverPark Specific Plan. No significant impact on wastewater treatment capacity will result.

CUMULATIVE IMPACTS

The City's Wastewater Collection System Master Plan includes projections for the full build-out of the land uses allowed by the City's 2020 General Plan, other land uses in the City's Planning Area provided wastewater service by the City and the RiverPark Specific Plan Project. Facilities have been master planned to serve all of these uses. The City of Oxnard requires individual building projects to pay the City's sewer connection fees, which provides funds to the City to make the improvements identified in the Wastewater Collection System Master Plan. In addition, the City requires individual building projects to provide adequate capacity to convey sewage to a safe point of discharge. In this manner, the existing sewage collection and conveyance system would be upgraded as necessary to accommodate sewage created by projected growth in the City's Planning Area. No significant cumulative impacts will result.

A planned expansion of the OWWTP is planned to coincide with the growth in the demand for treatment, would allow an ADWF of 39.6 mgd and a PWWF of 75.4 mgd. With this expansion, adequate future capacity in the treatment plant would be provided for the Oxnard Planning Area at the year 2020 build-out of the Oxnard 2020 General Plan. With the construction of the planned improvements to the OWWTP, all wastewater generated by cumulative development could be accommodated by the plant, and no cumulative significant impacts will occur.

MITIGATION MEASURES

No mitigation measures are required as no significant impacts have been identified.

UNAVOIDABLE SIGNIFICANT IMPACTS

No unavoidable significant impacts to the City's wastewater collection, conveyance or treatment system will result from the proposed RiverPark Project.