CITY OF MANTECA
NORTH MANTECA TRUNK SEWER LINKS 51-53 AND 90-91
ENGINEERING REPORT FOR EDA FUNDING

Draft
August 2010

New trunk sewers are required to deliver wastewater to the Manteca Wastewater Quality Control Facility (WQCF) from proposed developments within the City of Manteca (City) service area. A North Manteca Trunk Sewer (NMTS) was identified in the 2007 Wastewater Collection System Master Plan Update to serve development around the perimeter of the community. Construction of lower reaches of the NMTS (sewer links 51-53 and 90-91) is the logical first phase of infrastructure to support development of residential, commercial, and industrial properties north of Yosemite Avenue, particularly the proposed CentrePoint project.

For the recommended sewer links, this engineering report provides a discussion of 1) background; 2) the recommended route; 3) methods of construction; 4) expected useful life of facility; 5) probable construction costs; 6) required permits; and 7) implementation schedule.

1.0 BACKGROUND

Information regarding the existing wastewater collection system, strategy for planned improvements, and economic benefits associated with the project are provided below.

1.1 Description of Existing Wastewater Collection System

The existing sewer collection system consists of 6-inch to 36-inch diameter gravity sewers, 6-inch to 18-inch diameter force mains, and eleven wastewater pump stations. The majority of the collection system serves the core of the City (Central Shed), approximately bound by State Route (SR) 120, Austin Road, Union Road, and Lathrop Road. Several subdivisions located on the perimeter or beyond the Central Shed have installed temporary wastewater pump stations. In the future, these service areas will connect to the gravity trunk sewers. Within the Central Shed, the majority of the collection system flows by gravity to the Union Road Pump Station (URPS). The URPS is located at the site of the former City wastewater treatment facility near the intersection of Union Road and Center Street. Downstream of the URPS, wastewater flows to the WQCF by gravity via a 36-inch diameter sewer (Union Road Outfall). This outfall has reached the end of its operational life and requires significant maintenance and repair. Long-term future use of the Union Road Outfall is considered problematic. A map of the existing sewer collection system depicting gravity sewers 6-inch and larger is provided as Figure 1.

1.2 Discussion of Overall Sewering Strategy for Future Development

The overall trunk sewer strategy consists of a combination trunk sewer gravity collection system with pump or lift stations located along the alignment to convey wastewater to an influent pump station located at the WQCF. Lift stations will be constructed as needed and will be phased out gradually as the gravity collection system is expanded. The overall trunk sewer strategy is composed of three major sections. The boundaries of these three major sections (also referred to as sheds) are shown in Figure 2. The NMTS and South Manteca Trunk Sewer (SMTS) will collect flow from areas where future growth is expected in the north and south sections of the City. The Central Manteca Trunk Sewer (CMTS) will connect the existing collection system to the NMTS resulting in the elimination of the URPS and the replacement of the Union Road Outfall. When necessary, pump stations/force mains will be constructed to convey wastewater to the trunk sewers.

1.3 Rationale for North Manteca Trunk Sewer

The primary objective for the NMTS is to ensure that the City collection system can adequately meet the demands of development goals adopted in the General Plan [1]. The NMTS will serve areas of future growth in the north quadrant of the City. By constructing the lower links of the NMTS, a maintenance-intensive/vulnerable outfall can be replaced and long-term pumping requirements can be optimized. minimized ?

1.4 Discussion of Economic Benefits of Project

Regional or City-wide

As mentioned previously, relying on aged infrastructure such as the Union Road Outfall to serve North Manteca development is problematic for long-term use. Sewer links 51-53 and 90-91 will serve as vital components of the wastewater conveyance system that will connect the existing collection system to the NMTS via the CMTS. Construction of sewer links 51-53 and 90-91 will create a feasible, long-term sewering strategy that will facilitate economic growth in the north areas of the city, including new developments such as the CentrePoint Intermodal Center.

The CentrePoint Intermodal Center will be an integrated logistics center adjacent to the Union Pacific Railroad used to sort, store, and distribute goods for shippers and receivers. The facility is planned to have a maximum square footage of approximately 3,178,000 and is zoned light industrial. The CentrePoint Intermodal Center is expected to generate 900 job positions [2].

Improve/Expand on Section 1.4 to note:

- NMTS benefits existing users by replacing a deteriorated pipe → save $$
- NMTS supports future growth in all ~~areas~~ north areas shown in figure 2.

[the more city-wide benefits, the better!]

2.0 DESCRIPTION OF ALIGNMENT FOR NORTH MANTECA TRUNK SEWER LINKS 51-53 AND 90-91

The sewer alignment for Links 51-53 and 90-91 is presented in Figure 3. The alignment includes approximately 4,300 ft of 60-inch diameter pipeline and ten manholes spaced at a maximum distance of 600 ft located within the City right-of-way. Links 51-53 are 60-inch diameter segments of the trunk sewer with Link 51 connecting to the influent pump station at the Manteca WQCF. From the influent pump station, the 60-inch trunk sewer is routed north until reaching the southerly side of Yosemite Avenue. Links 52 and 53 continue east along Yosemite Avenue until reaching the intersection of Yosemite Avenue and Airport Way.

Links 90-91 are also 60-inch diameter segments of the trunk sewer that begins at the intersection of Yosemite Avenue and Airport Way. From the connection to Link 53, Links 90 and 91 are routed north along Airport Way until reaching the future connection to Link 92 of the CMTS.

3.0 FEASIBILITY OF ALIGNMENT

There does not appear to be any fatal flaws associated with the proposed alignment. The alignment will be within the existing City right-of-way and a potential utility corridor has been identified.

Anticipated challenges to be addressed by the final design documents include the following:

1. Separation requirements
2. Avoiding conflicts with existing utilities
3. Traffic control
4. Dewatering

3.1 Separation Requirements

Separation requirements for water mains and non-potable pipelines are set forth by the California Department of Public Health (CDPH) and are in place to protect public drinking water supplies. The separation requirement states that a non-potable line, such as a sanitary sewer, parallel to a water main must be installed with a minimum of 10 ft horizontal clearance and 1 ft vertical clearance. Using special pipe material, as outlined in the requirements, the horizontal separation can be reduced to a minimum of 4 ft. Anything less than 4 ft horizontal separation requires special permission from the CDPH.

Pacific Gas and Electric Company (PG&E) recommends a minimum clearance of 5 ft horizontal from high pressure gas transmission mains. During pipeline installation. a minimum 1 ft undisturbed soil must be maintained around the gas transmission main from the edge of the trunk sewer trench.

Don't want to shock an EDA grant reviewer into thinking these permits are potential deal-breakers. Instead note these are standard permits to be obtained around the start of construction. (i.e. soften this section)

7.0 REVIEW OF REQUIRED PERMITS

The following permits must be obtained prior to construction:

1. Cal/OSHA Tunnel Classification for the bore and jack
2. City of Manteca encroachment permit
3. Construction Activity Permit from State of California Division of Occupational Safety and Health
4. Permit to comply with the California Regional Water Quality Control Board - Central Valley Region Order No. R5-2008-0081, NPDES No. CAG995001, Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters
5. City or San Joaquin County dewatering discharge permits
6. Notice of Intent to comply with the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity from the California Regional Water Quality Control Board - Central Valley Region

The above list is a partial compilation of the permits required. With the exception of the Cal/OSHA Tunnel Classification, all other permits will be obtained by the contractor.

For bore and jack construction, a mining permit from the California Division of Occupational Safety and Health (DOSH) is required when diesel engines are used underground in mines or tunnels. However, the Project may be exempt from this permit if the diesel engine is not underground at any point and the bore and jack pits are open-air. Correspondence would be transmitted to the DOSH Mining and Tunneling Unit during the design process to verify exemption from the mining permit.

8.0 IMPLEMENTATION SCHEDULE

A preliminary design and construction schedule for NMTS Links 51-53 and 90-91 is presented in Table 6.

Just focus on construction here

TABLE 6
NORTH MANTECA TRUNK SEWER LINKS 51-53 AND 90-91
~~PRELIMINARY DESIGN AND~~ CONSTRUCTION SCHEDULE

Task	Duration
Design	
Prepare 50% Construction Drawings	4 wks
City Review	2 wks
Prepare 90% Construction Drawings and Specifications	3 wks
City Review	2 wks
Prepare 100% Construction Drawings and Specifications	2 wks
Select Contractor for Construction	
Bidding Period	4 wks
Contractor Selection/Award	2 wks
Construction Improvements	30 wks

9.0 REFERENCES

[1] *City of Manteca General Plan 2023 Policy Document*, adopted October 6, 2003.

[2] *Draft Environmental Impact Report - Northwest Airport Way Master Plan*, Prepared by Michael Brandman Associates, August 2, 2010.

[3] *North Manteca Trunk Sewer Links 51-53 and 90-91 - Assessment of Design Constraints in Yosemite Avenue Technical Memorandum*, Prepared by Nolte Associates, Inc., September 2005.

[4] *City of Manteca Wastewater Collection System Master Plan Update*, adopted February 4, 2008.

[5] *City of Manteca Addendum to the 2006 Wastewater Collection System Master Plan Update*, Prepared by Nolte Associates, Inc., September 2008.