

## REPORT TO CITY COUNCIL

Approved by:

A handwritten signature in blue ink, appearing to read "Keith Helmuth".

Keith Helmuth, Department Director

A handwritten signature in blue ink, appearing to read "Arnaldo Rodriguez".

Arnaldo Rodriguez, City Manager

Council Meeting of: August 19, 2020

Agenda Number: D-1

### SUBJECT:

Avenue 13 Interceptor Sewer Rehabilitation Informational Report and Capital Improvement Program Budget Amendment

### RECOMMENDATION:

Adopt a Resolution Approving a Funding Amendment Appropriating \$400,000 in Sewer Funds to the FY 2020/21 Capital Projects Budget for the Avenue 13 Sewer Interceptor Rehabilitation Project, City Project SS-00014.

### SUMMARY:

Video inspections of the Avenue 13 (aka Pecan Ave.) sewer interceptor pipeline leading to the Wastewater Treatment Plant (WWTP) reveal significant degradation of the concrete pipeline. The purpose of the recommended action is to establish a project and budget for evaluation of methods for rehabilitation, costs, and funding sources and preparation of design and construction documents.

### DISCUSSION:

Nor-Cal Pipeline Services, under a subcontract with Akel Engineering Group, is performing CCTV, or video inspection, of approximately 50 percent of the City's sewer mains as part of the Sewer Condition Assessment. The focus of this first phase of the CCTV inspection is the higher risk pipelines. They are identified as those pipelines carrying large flows, located in arterial/collector streets, servicing critical areas of the city, or have questionable age or material characteristics. The Avenue 13 sewer interceptor was the final segment scheduled for video in the Phase 1 portion of the Sewer Condition Assessment.

In June, Nor-Cal encountered problems trying to CCTV the sewer interceptor in Avenue 13 in the vicinity of Granada Drive (refer to Attachment 2). Akel Engineering contacted Engineering staff with news that the video footage provided indicates significant corrosion of the concrete pipeline in the segment captured consistent with what was seen at the Wastewater Treatment Plant and Schnoor Avenue due to the high concentrations of hydrogen sulfide gases.

The problematic pipe is a 42-inch and 48-inch interceptor in Avenue 13 from Granada Drive to the Wastewater Water Treatment Plant, approximately 3 miles. Nor-Cal Pipeline Services is continuing to complete video inspection and identifying areas that need repair. Video inspections completed to date indicate the corrosion condition may be less severe further downstream along Avenue 13 leading to the WWTP. Although less severe, the evaluation from Stantec will provide more details and recommendation once the video inspection along the segment is completed.

Stantec, a subconsultant to Akel Engineering, has provided technical consultation on the issue and, at the moment does not believe the rehabilitation needs to occur immediately. However, it has been advised to consider rehabilitating or complete replacement of the corroded pipeline within a 2-year timeframe due to the extent of the degradation.

Stantec has provided preliminary options outlined below to consider in mitigating the problem. Potential options include:

- *Slip Lining* – Consists of the installation of a new smaller pipe inside the existing host pipe.
  - Pros – potentially lower cost than conventional remove and replace, less pavement removal, longer life expectancy, provides structural support, and does not involve removal of the existing pipe.
  - Cons – Longer construction period and reduced inner pipe diameter.
- *Cure in Place Pipe (CIPP)* – Consists of installation of a layer of liner on the inner walls of the existing pipe.
  - Pros – potentially lower cost than conventional remove and replace, almost no pavement removal required, provides structural support, minimal inner diameter reduction, faster construction period compared to slip lining and pipe busting, and does not involve removal of the existing pipe.
  - Cons - Shorter life expectancy and provides less structural support than slip lining and pipe bursting method.
- *Pipe Bursting* – Consists of inserting same or larger pipe inside an already existing pipeline.
  - Pros – larger size pipe can be installed, a brand new pipe is installed therefore obtaining a full lifespan of a new pipe, and does not involve removal of the existing pipe
  - Cons – requires more pavement removal, longer construction time, and higher cost than slip lining and CIPP.

- *Remove and Replace* – Consists of trench excavation by removing and replacing the pipeline.
  - Pros – Longer life expectancy and the ability to increase the size of the pipe. Shorter, more manageable sewer bypass operations.
  - Cons – Potentially most expensive option, requires removal of the existing pipe, longer construction period, and requires removal and replacement of existing asphalt concrete.
- *Parallel Pipeline* – Consists of constructing a new pipeline adjacent to the existing pipe. The existing pipeline can be rehabilitated for future use.
  - Pros- Provides flow relief to the existing pipe, can be used as bypass if repairs are needed along the older existing line. Consistent with City’s Sewer Master Plan indicating a future parallel line. Minimal sewer bypass required.
  - Cons – Potentially higher cost than slip lining, CIPP, and pipe bursting, existing degraded pipe will need to be rehabilitated in the future.

Until the extent of repair/replacement is known from the video inspection, the project’s costs are unknown. The costs may range from \$1,000,000 for spot repair only to \$12,000,000 for repair/replacement of the entire length.

The current user rates anticipated costs associated with depreciation of sewer infrastructure; however, the repairs at the WWTP impacted the sewer reserves and the potential degree of degradation of the Avenue 13 interceptor may exceed projected revenues for capital projects. Staff has begun to explore financing options for the construction of the improvements through grants or loans or combination thereof. Presently, the recommended preliminary engineering and project development budget of \$400,000 can be supported by the Sewer Funds.

The next steps include completion of the inspection of the interceptor pipeline from the intersection of Schnoor Avenue and Industrial Avenue downstream to the WWTP. Upon approval of the budget for preliminary engineering, staff will begin the process of obtaining a consultant to assist with determining the limits of work for the initial project, the method of repair, prepare design and construction contract documents, and continue to pursue financing options.

**FINANCIAL IMPACT:**

The costs for construction of the project are unknown at this time but expected to exceed several million dollars. An initial budget of \$400,000 for the project development phases is proposed to be funded from unallocated funds in the Sewer Funds.

There will be no impact to the City’s General Fund by approving this amendment.

**CONSISTENCY WITH THE VISION MADERA 2025 PLAN:**

*Strategy 101.6: Ensure infrastructure can sustain population growth in the development of the General Plan.*

**ALTERNATIVES:**

Alternatives to the recommended action include directing staff to:

1. Pursue grant funds for the preliminary phases. This was not recommended due to potential high risk of failure of the pipeline and the need to have a project shelf ready.
2. Consider defunding other projects with Sewer Capital Outlay funding already programmed and transfer said funds to the Avenue 13 Sewer Project. Defunding existing Sewer projects may represent a greater degradation and higher cost of repairs in the future.

**ATTACHMENTS:**

1. Budget Amendment Resolution
  - a. Exhibit A: Budget Amendment Sheet
2. Location Map

**ATTACHMENT 1**

**Budget Amendment Resolution**

**RESOLUTION NO. 20-**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MADERA,  
APPROVING FUNDING AMENDMENT APPROPRIATING  
\$400,000 TO THE CITY OF MADERA FISCAL YEAR (FY) 2020/21  
CAPITAL PROJECTS BUDGET FOR THE AVENUE 13 INTERCEPTOR  
SEWER MAIN REHABILITATION, CITY PROJECT NO. SS-00014**

**WHEREAS**, a Project to rehabilitate the interceptor sewer main in Avenue 13 near Granada Drive and westerly toward the WWTP, City Project No. SS-00014, hereinafter called “the Project”, is proposed to be included in the Fiscal Year (FY) 2020/21 Budget for Capital Projects; and

**WHEREAS**, funding for the Project in the amount of \$400,000 is proposed for the preliminary engineering and project development phases in the FY 20/21 Capital Projects Budget; and

**WHEREAS**, funds are available in the unprogrammed fund balance of the Sewer Funds.

**NOW, THEREFORE, THE COUNCIL OF THE CITY OF MADERA** hereby resolves, finds, determines and orders as follows:

1. The above recitals are true and correct.
2. The FY 2020/21 Capital Projects Budget is hereby amended to appropriate \$400,000 to the Fiscal Year 2020/21 Capital Project budget for the Avenue 3 Interceptor Sewer Main Rehabilitation, City Project No. SS-00014 in accordance with Exhibit A, which is incorporated by reference herein.
3. The City Clerk is authorized and directed to forward a copy of the resolution to the Director of Finance who is authorized to take such action as necessary to implement the terms of this resolution.
4. This resolution is effective immediately.

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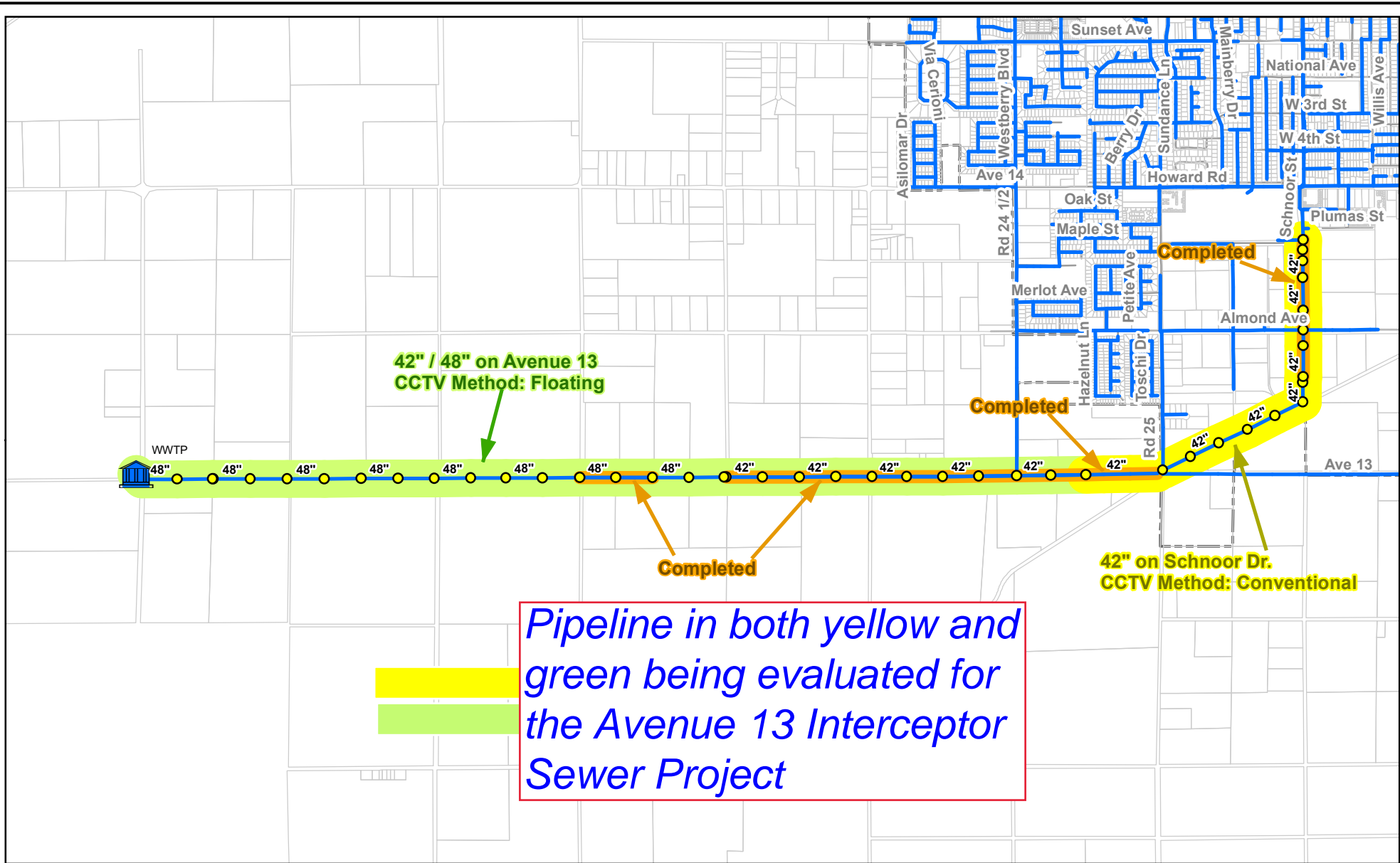
**EXHIBIT A**  
**CITY OF MADERA**  
**Resolution 20 -**

<b>ORG CODE</b>	<b>OBJECT CODE</b>	<b>PROJECT CODE</b>	<b>DESCRIPTION</b>	<b>NEW PROJECT APPROPRIATION</b>	
				<b>(+)</b>	<b>(-)</b>
20403420	8260		Transfer-Out CIP Sewer Capital Outlay		400,000.00
71000000	4360		Transfer-In CIP Sewer Capital Projects	400,000.00	
71000000	7050	SS-00014	Avenue 13 Trunk Sewer Rehabilitation New Project	400,000.00	
				<b><u>800,000.00</u></b>	<b><u>400,000.00</u></b>

**ATTACHMENT 2**

**Location Map**



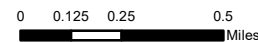


*Pipeline in both yellow and green being evaluated for the Avenue 13 Interceptor Sewer Project*

**Legend**

- Cleanout
- Junction
- Manhole
- Lift Station
- WWTP
- Pipes
- CCTV Completed
- Parcels
- Roads
- City Limits

**PRELIMINARY**



Updated: August 3, 2020

File Path: P:\xGIS\GIS\_Projects\Madera\Sewer161019-ConditionAssessmentMA\_Sewer\_Priority\_SewerLines\_080320.mxd

**Figure 1  
CCTV August 2020**

Sewer System Condition Assessment  
and Asset Management Plan  
City of Madera

