



City of Grand Island

Tuesday, October 04, 2011

Study Session

Item -2

**Discussion of Agreement for Professional Engineering Services
Entitled "Wastewater Treatment Plant and Collection System
Rehabilitation"**

Staff Contact: Terry Brown, Manager of Engineering Services

Council Agenda Memo

From: Terry Brown, Manager of Engineering Services

Meeting: October 4, 2011

Subject: Discussion of Agreement for Professional Engineering Services entitled “Wastewater Treatment Plant and Collection System Rehabilitation”

Item #'s: 2

Presenter(s): Terry Brown, Manager of Engineering Services

Background

On May 23, 2011 a public advertisement was published in the Grand Island Daily Independent for Request for Qualifications for professional engineering firms' submission. The project, planned thru comprehensive, and cost of service planning to provide rehabilitation within the Wastewater collection and treatment facilities systems, based on the Wastewater rate study.

On June 7, 2011 three (3) professional engineering firms submitted performance and qualification submittals; Black & Veatch, Kansas City Missouri; CH2M Hill, Denver Colorado; and HDR Engineering, Omaha Nebraska.

On June 30, 2011 the selection committee received formal presentation by all responding engineering firms.

Discussion

The purpose of this study session presentation is to provide background on the need of the rehabilitation and the contractual process for this project.

The initial negotiated contractual agreement with Black & Veatch of Kansas City, Missouri will provide services in Project Management, Collection System Master Planning, and Conceptual Designs in Northeast Interceptor sewer, Collection System Rehabilitation, and Wastewater Treatment Rehabilitation.

In planning stages throughout a multi-year project other amendments to the initial agreement shall come forward to council. These future amendments are derived from

alternative evaluation, supplemental services, specific levels of preliminary design timing, final design, bidding services, construction administration, and resident inspection services. The consultant has proposed a sixty (60) week timeline for system planning, conceptual, and preliminary planning in the initial tasked outline agreement. The specifics of the contract will be discussed.

The following table outlines the estimated hours per task and the not to exceed fee.

Table 1

Task	Estimated Work	Not to Exceed Billing
	Hours	Dollars
Project Management	660	103,360
Collection System Master Planning	2,571	407,000
Conceptual Design - Northeast Interceptor Sewer	1,099	169,960
Conceptual Design - Collection System Rehabilitation	710	90,800
Preliminary Design - Collection System Rehabilitation	705	75,240
Conceptual Design - WWTP Improvements	515	87,460
Preliminary Design - WWTP Improvements	1,386	187,340
	<u>7,646</u>	<u>1,121,200</u>

The following is an overview of the project tasks for the Wastewater Treatment Plant and Collection System Rehabilitation.

Project Management

- Coordinate Project Meetings and Workshops
- Coordinate External Coordination Meetings with Permitting Agencies / Utilities
- Progress Reporting
- Trend Management
- Project Procedures

Collection System Master Planning

- Meeting
- Model Existing Sanitary Sewer System
- Capacity Planning Study
- Hydraulic Model Analysis and CIP Development
- Northeast Interceptor Corridor Study

- Projected Master Collection System Plan
- Staff / Administration / Council Update

Conceptual Design - Northeast Interceptor Sewer

- Meeting
- Identify and Evaluate Alternatives for Sewer Segment from 7th St. to WWTP
- Public Information Meetings
- Technical Memorandum
- Staff / Administration / Council Update

Conceptual Design - Collection System Rehabilitation

- Workshop
- Review Video Inspections
- Evaluate In Situ Rehabilitation Technologies
- Design Memorandum / Plan Review Lift Station No. 7
- Opinion of Probable Costs
- Prioritize Pipeline Segments
- Public Information Meetings
- Staff / Administration / Council Update

Preliminary Design - Collection System Rehabilitation

- Site Survey
- Geotechnical Services
- Preliminary Design
- Opinion of Probable Costs
- Design Memorandum
- Project Permitting

Conceptual Design - WWTP Improvements

- Workshop
- Alternatives / Technical Memorandum
- Alternatives Screening
- Staff / Administration / Council Update

Preliminary Design - WWTP Improvements

- Civil Design
- Site Survey
- Geotechnical Services
- Architectural Design
- Structural Design
- Process and Mechanical Design
- Instrumentation and Control Design
- Electrical Design
- Opinion of Probable Costs

- Design Memorandum

Conclusion

This item is presented to the City Council in a Study Session to allow for questions to be answered and to create a greater understanding of the issue at hand.

It is the intent of City Administration to bring this issue to a future council meeting for the contract approval between the City of Grand Island and Black & Veatch of Kansas City, Missouri for Professional Engineering Services entitled “Wastewater Treatment Plant and Collection System Rehabilitation”.

BUILDING A WORLD OF DIFFERENCE

OCTOBER 4, 2011

WASTEWATER TREATMENT PLANT & COLLECTION SYSTEM REHABILITATION



CITY COUNCIL
STUDY SESSION



AGENDA

PURPOSE OF STUDY SESSION
UPDATE & BACKGROUND
PROJECT DRIVERS
PROJECT DESCRIPTION & PHASING
REQUESTED ACTION

PURPOSE OF STUDY SESSION

TERRY BROWN

MANAGER OF ENGINEERING SERVICES



Purpose of Study Session

- Provide the City Council with background information related to the WWTP & Collection System Improvements Project.
- Review the basis for the Project.
- Describe the proposed project components including planning efforts to establish the long-term implementation plan.
- Explain the proposed project phasing plan.
- Respond to questions.
- Gain the City Council's understanding of the proposed Project and associated engineering contract.

UPDATE & BACKGROUND

TERRY BROWN

MANAGER OF ENGINEERING SERVICES



Since April 2011 Cost of Service and Rate Design Update

April 15, 2011	May 23, 2011	June 7, 2011	June 30, 2011	July 6, 2011
Council Approval Rate Study Including 5-Year CIP for Rehabilitation to WWTP & Collection System	Issued RFP for Engineering Services	Received Proposals from Engineering Firms	Interviewed Three Engineering Firms	Staff Recommended B&V for Engineering Contract Negotiations

PURPOSE OF STUDY SESSION

APPROVED CAPITAL IMPROVEMENTS PLAN (CIP)

Project	2011	2012	2013	2014	2015	Total
	\$	\$	\$	\$	\$	\$
Aeration Basin Improvements	1,758,500	1,758,500	0	0	0	3,537,000
North East Interceptor	420,000	3,000,000	4,640,000	4,640,000	3,000,000	15,700,000
Sewer Replacement 4th-5th Eddy-Vine	100,000	1,000,000	0	0	0	1,100,000
Replace Bar Screen/ Concrete Vault	300,000	1,000,000	1,000,000	700,000	0	3,000,000
Replace Influent Pumps	450,000	0	0	0	0	450,000
Replace Parshall Flume	150,000	500,000	500,000	500,000	0	1,650,000
Replace Grit Basin	400,000	920,000	1,500,000	1,300,000	0	4,120,000
Internal Recycle for Aeration Basin	0	0	0	0	1,252,000	1,252,000
Methanol Feed System	50,000	50,000	0	0	0	100,000
Repair Final Clarifier Corrosion	0	0	600,000	0	0	600,000
Capital Ave. Forcemain	0	490,000	600,000	0	0	1,090,000
Lift Station 21 Replacement	0	0	0	0	430,000	430,000
Lift Station 21 Construction	0	0	600,000	2,800,000	0	3,400,000
South Interceptor	0	0	400,000	0	2,580,000	2,980,000
West Interceptor	0	0	0	910,000	0	910,000
PVIP East 2011 only	320,000	0	0	0	0	320,000
New Assessment Districts	250,000	250,000	250,000	250,000	250,000	1,250,000
Annual Sewer Rehab	190,000	350,000	350,000	350,000	350,000	1,590,000
Miss. Items	100,000	100,000	100,000	100,000	100,000	500,000
Lift Station #7 CDBG Fund Match	160,000	0	0	0	0	160,000
	4,658,500	9,428,500	10,540,000	11,550,000	7,972,000	44,149,000

INITIAL ENGINEERING CONTRACT CIP COMPONENTS

Northeast Interceptor \$15.70M

Collection System Rehabilitation

4th-5th Eddy-Vine \$ 1.10M

South Interceptor \$ 2.98M

West Interceptor \$ 0.91M

Wastewater Treatment Plant \$ 9.22M

\$29.91M

PROJECT DRIVERS

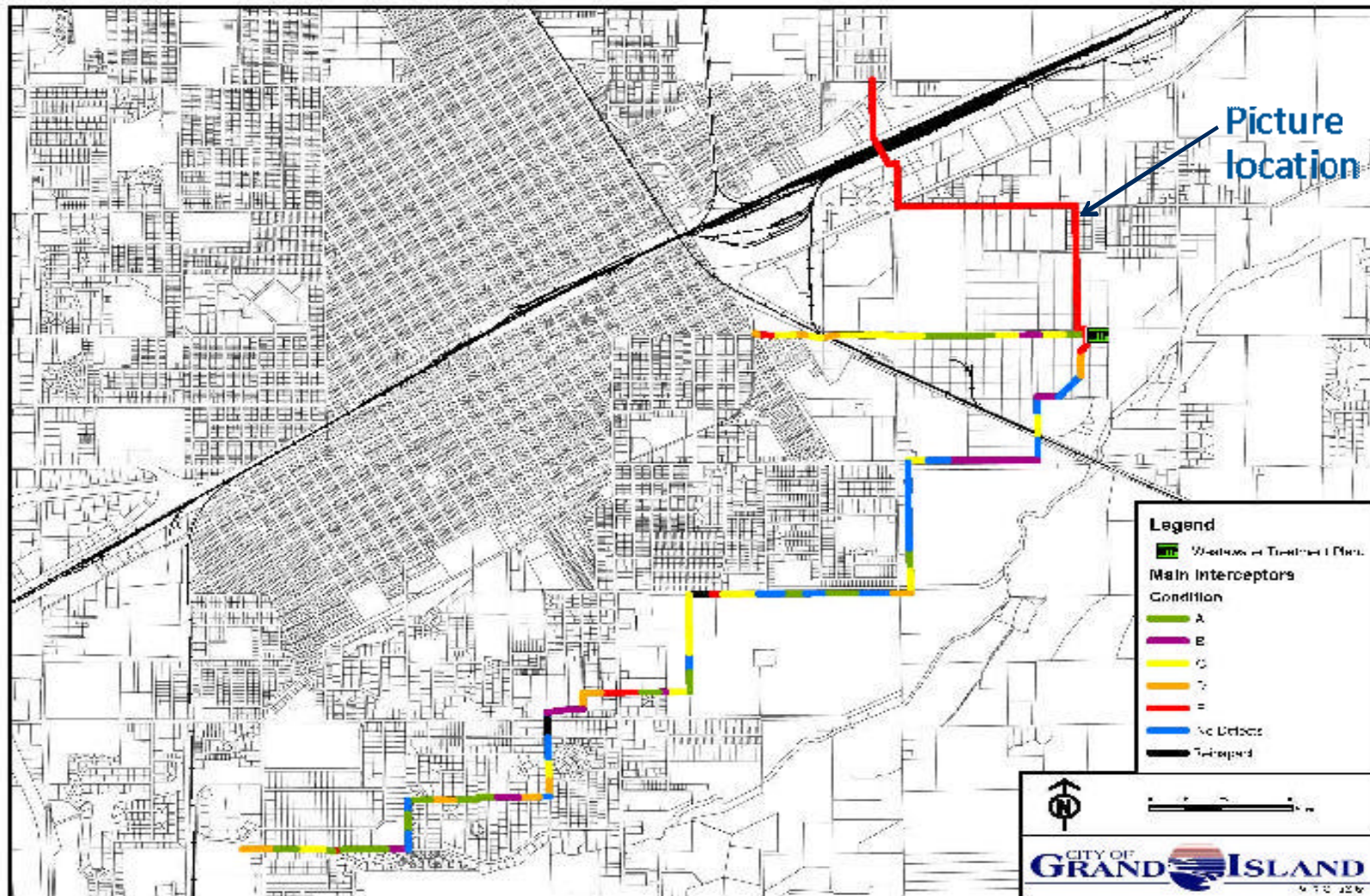
DEREK CAMBRIDGE PROJECT DIRECTOR



THREE CRITICAL NEED AREAS

- Collection System Rehabilitation
- Collection System Planning and Improvements
- Wastewater Treatment Plant Rehabilitation

SANITARY SEWER MAIN INTERCEPTORS



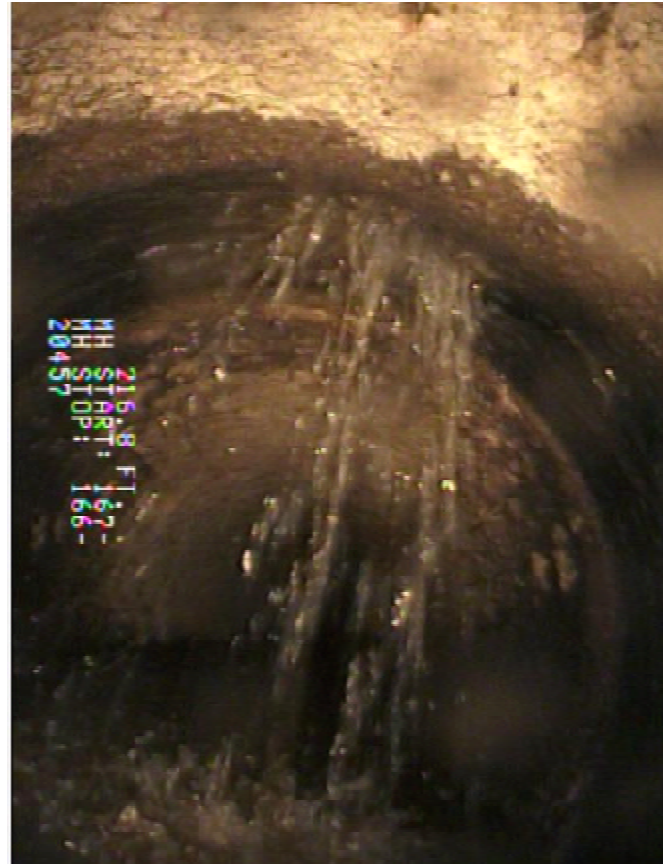
CONCRETE PIPE CORROSION - 2005



CONCRETE PIPE CORROSION - 2011



LEAKING JOINTS



WASTEWATER TREATMENT PLANT REHABILITATION

- Raw Sewage Pump Station
- Deep Screens
- Parshall Flume (Flow Measurement)
- Grit Removal
- Flow Distribution



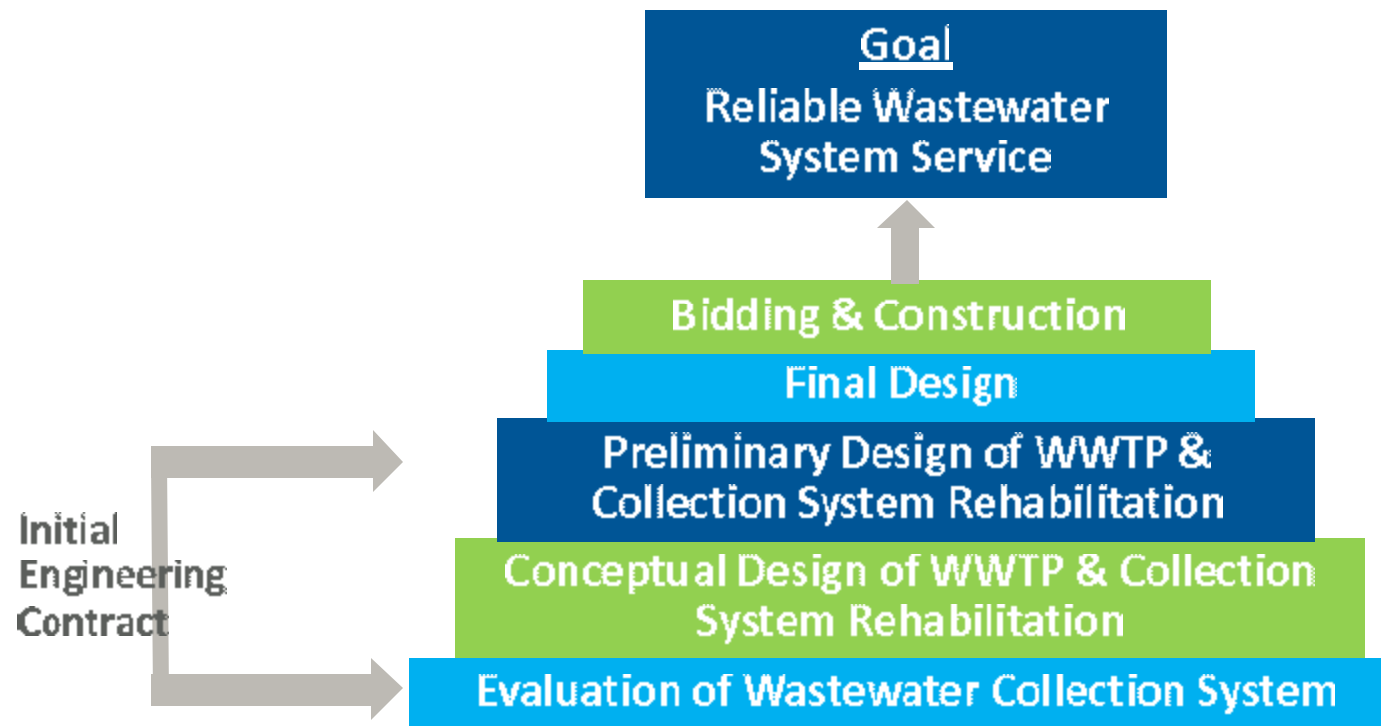
BAR SCREENS – 1965 CONSTRUCTION



DETERIORATION AND LEAKING AT PARSHALL FLUME – 1965 CONSTRUCTION



PROJECT OBJECTIVES



PROJECT DESCRIPTION & PHASING

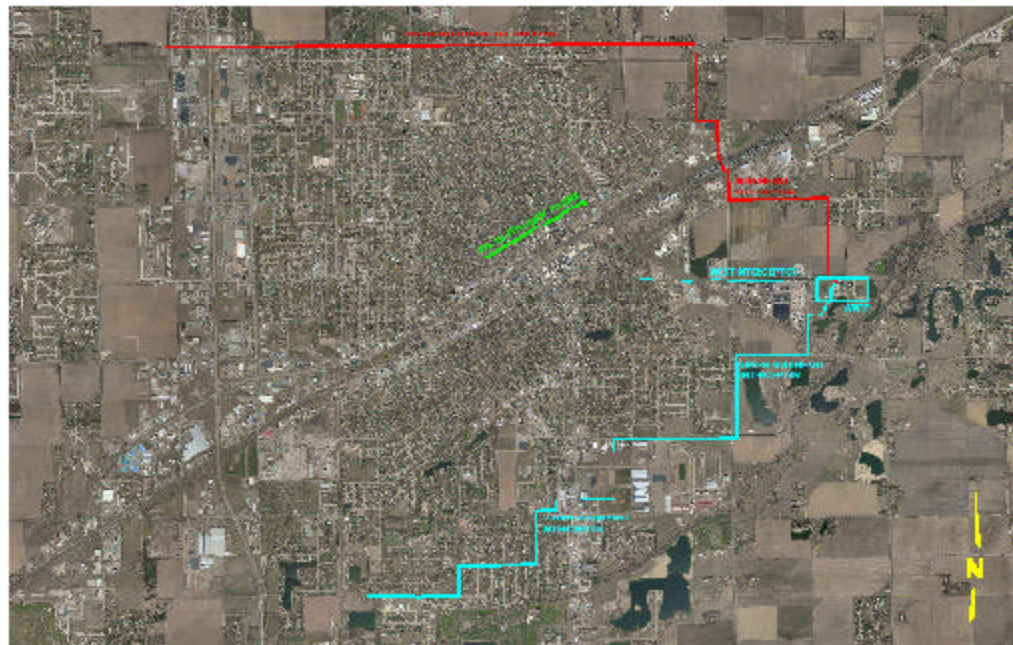
KEVIN MEADOR

PROJECT MANAGER

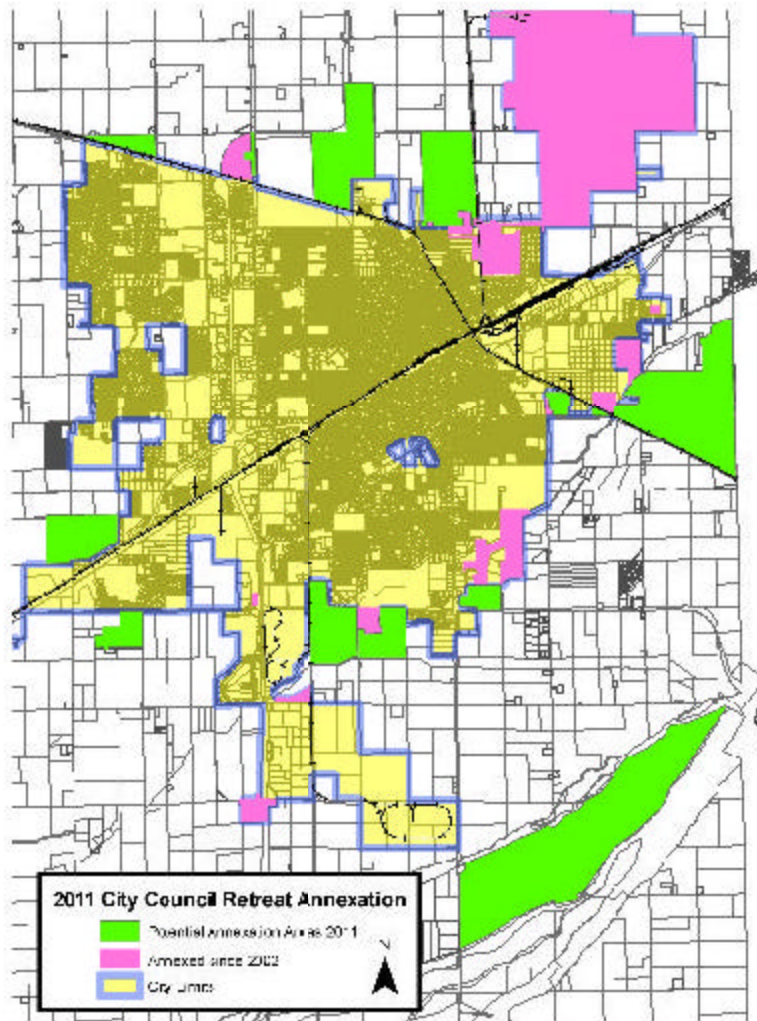


PROJECT COMPONENTS

- **Planning Study**
 - Collection System Model
 - Northeast Interceptor Corridor Study
- **Collection System Rehabilitation**
 - Northeast Interceptor (7th to WWTP)
 - 4th – 5th & Eddy-Vine
 - South & West Interceptor
- **WWTP Rehabilitation**
 - Influent Pumping & Screening
 - Flow Measurement
 - Grit Removal



FUTURE PLANNING



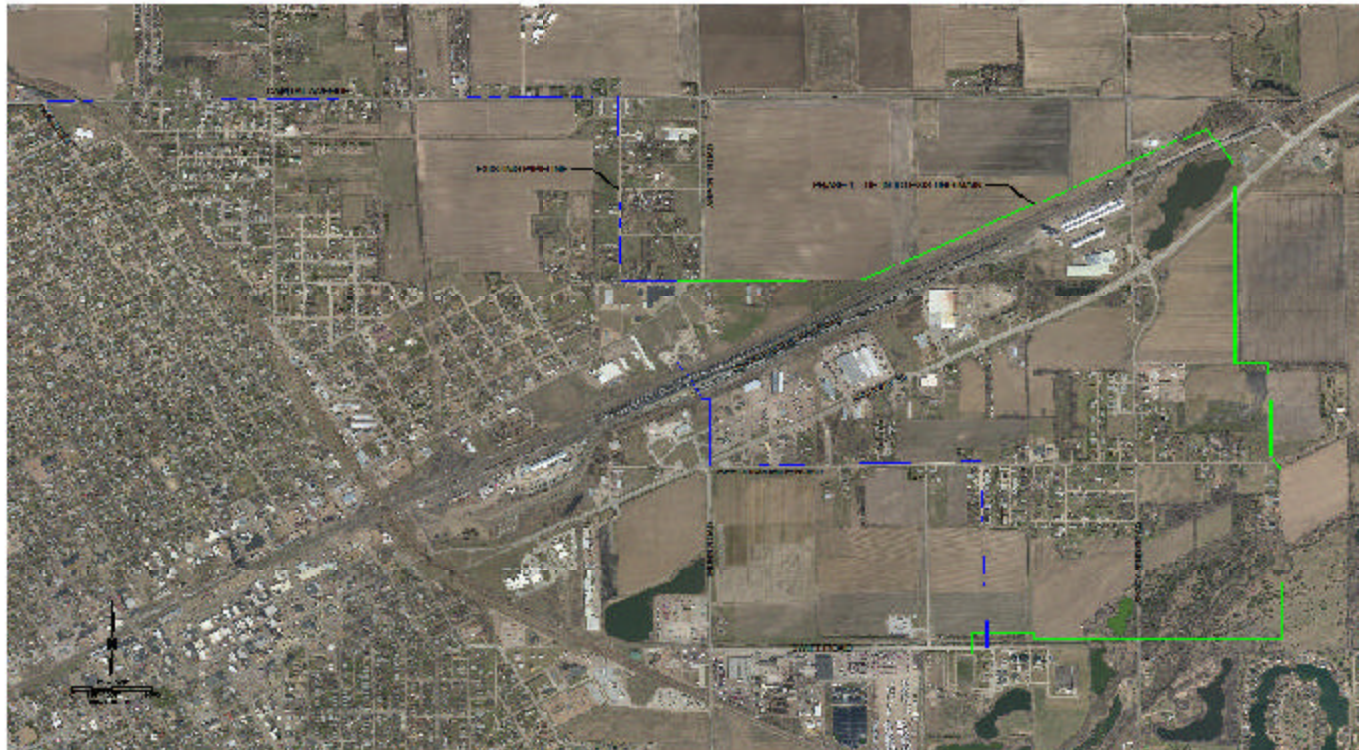
- **Contract includes:**

- Eagle Scout Park
- Vanosdal Fields
- Rainbow Lakes
- Husker Hwy and Hwy 281
- 13th St and North Rd
- East Lake
- Webb Rd
- Airport Rd
- Saint Paul Rd
- Schroeder Subdivision
- Stolley and Engleman
- Wellfield
- Old Potash and North Rd
- Bismark Road

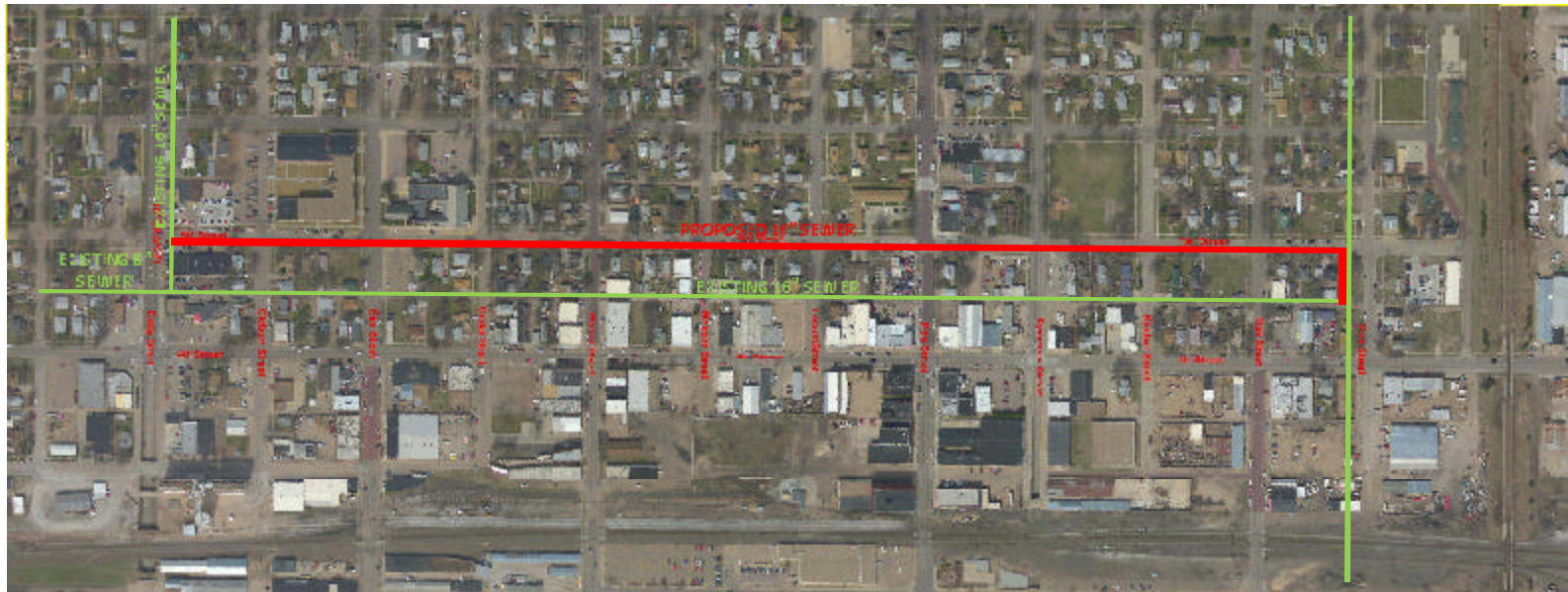
NORTHEAST INTERCEPTOR CORRIDOR STUDY



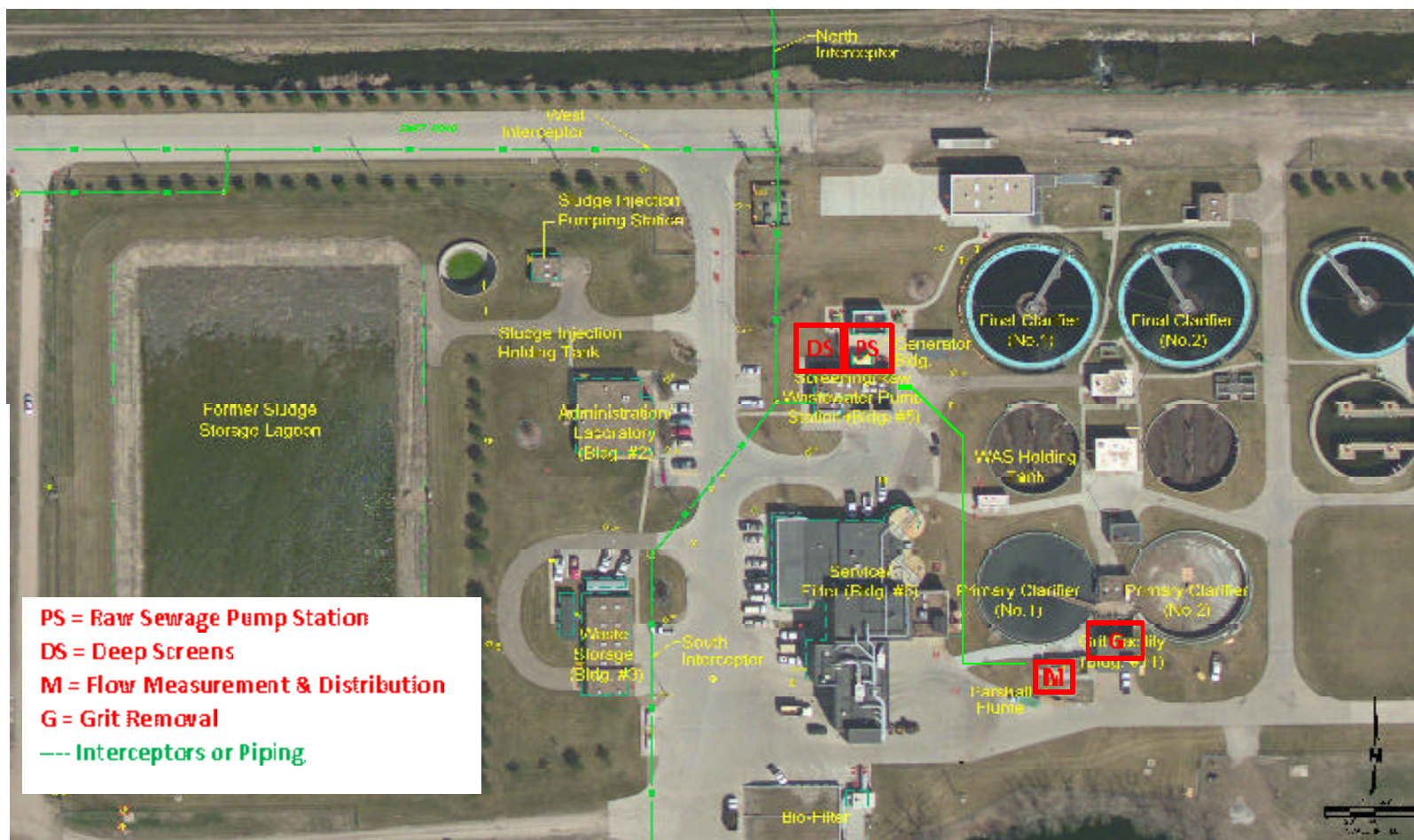
NORTHEAST INTERCEPTOR (7TH AVENUE TO WWTP) REHAB, REPLACE, OR REROUTE?



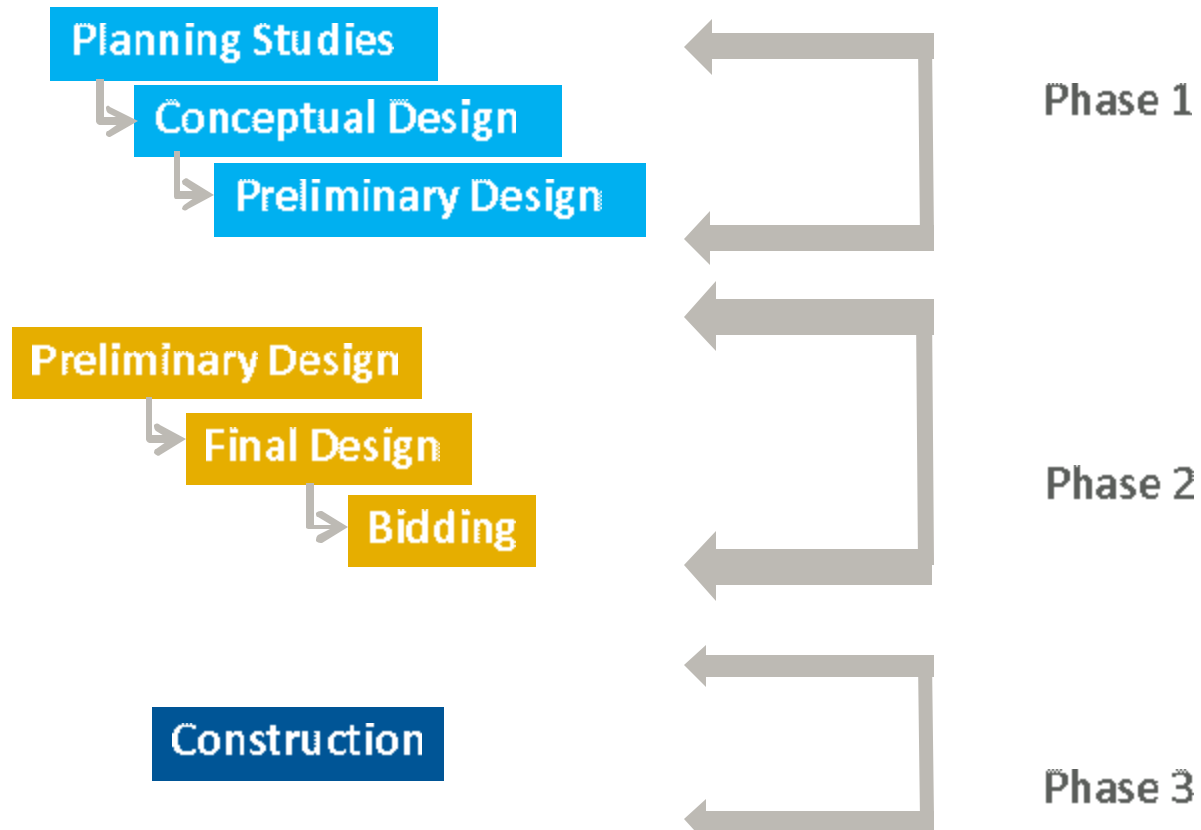
4TH – 5TH EDDY TO VINE



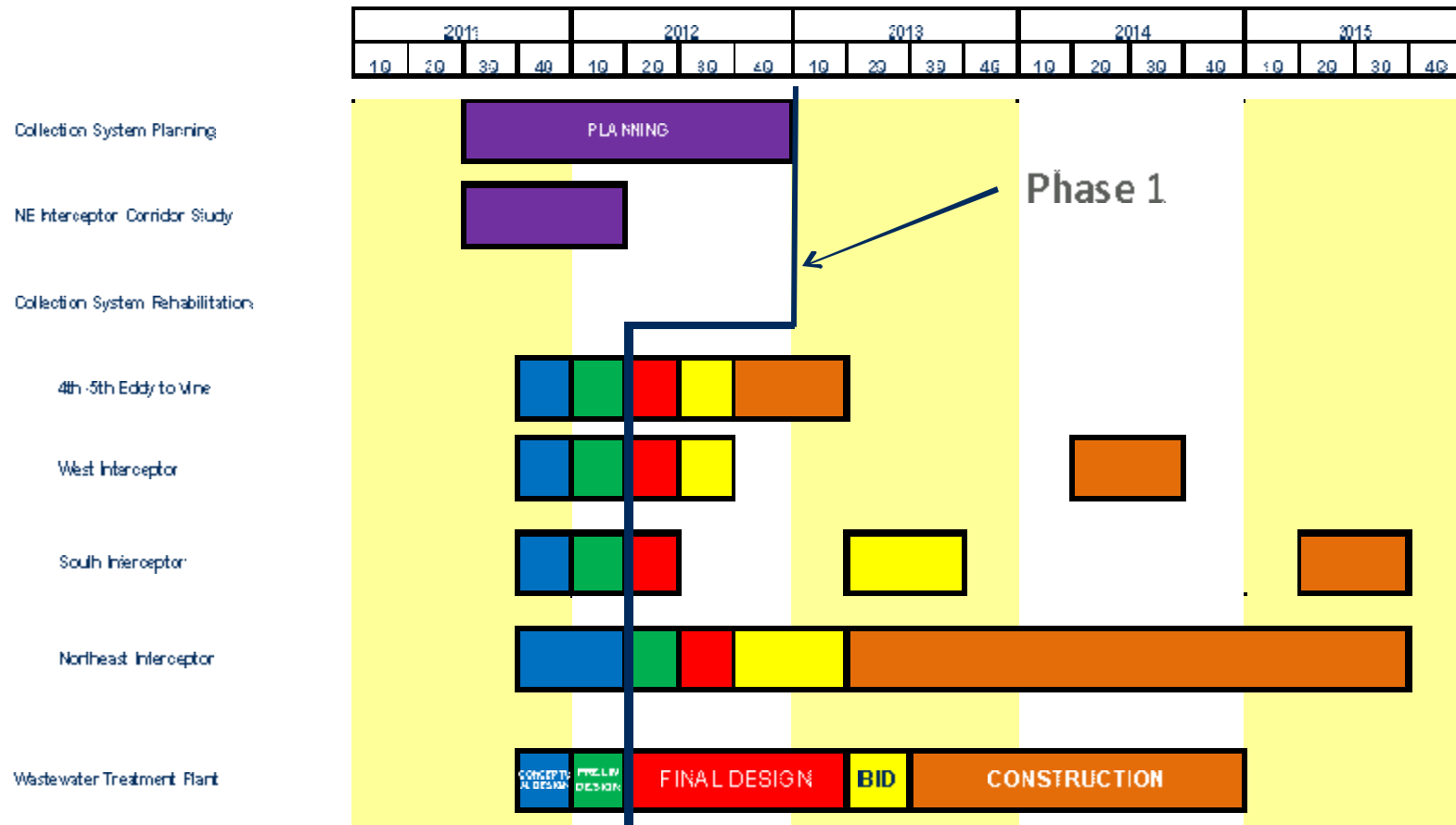
WWTP REHABILITATION



PROJECT PHASING



PROJECT SCHEDULE



REQUESTED ACTION

TERRY BROWN

MANAGER OF ENGINEERING SERVICES



INITIAL CONTRACT AND FUTURE AMENDMENTS

INITIAL ENGINEERING CONTRACT	
Project Management	\$103,360
Initial Planning Studies	\$407,000
Conceptual & Preliminary Design	
4 th -5 th Eddy to Vine West & South Interceptors	\$166,040
WWTP	\$274,800
Northeast Interceptor	<u>\$169,960</u>
	\$1,121,160
AMENDMENT NO. 1 (SPRING 2012)	
Final Design & Bidding	
4 th -5 th Eddy to Vine West & South Interceptors	
Preliminary & Final Design & Bidding	
Northeast Interceptor (7 th to WWTP)	
Final Design & Bidding	
WWTP Improvements	
AMENDMENTS 2-4	
Construction Services	



QUESTIONS

Building a **world** of difference.®

Together



BLACK & VEATCH

