



City of Yankton

Wastewater Treatment Plant Improvements

December 13th, 2021



Investing in our Wastewater Treatment Plant (WWTP)

AGING INFRASTRUCTURE

Our treatment facility is 10+ years past its design life

WWTP has portions of the plant that are between 30 and 60 years old with equipment past useful service life.

AVAILABLE FUNDING

Current water infrastructure provides opportunity for funding assistance

Outside funding minimizes impacts to rate payers.

FUTURE REGULATIONS

Water quality regulations will be stronger in the future

This plan prepares the facility for future regulations.

GROWING CUSTOMER BASE

2,700 added service area population are anticipated by 2046

New grit removal and clarifier needed for reliability and capacity. Digester boiler addition needed for code requirements.

Aging Conditions and Risk of Failure

- The WWTP was originally constructed in 1964 with significant plant upgrades in the late 1970s, late 1990s, and early 2000s.
- Portions of the plant are 30-57 years old and are unreliable for maintaining treatment.
- The grit removal facilities lack sufficient capacity.
- There is currently no means for taking the single large clarifier off-line and continuing to meet permit.
- Majority of process equipment has reached the end of useful service life and needs to be replaced.
- The boilers are in a space adjacent to digester gas storage and need to be relocated.

Capitalize on Federal Funding

- Why Plan for These Changes Now?
- Applications due January 1 for SRF and Grant Funding



Accommodating a Growing Population

PLANNING FOR THE NEXT 20 YEARS

- 17% increase in Service Population

Year	Population
2019	15,235
2026	16,068
2031	16,550
2041	17,543
2046	17,964
2046 w/Regionalization	19,964

Weighing the Alternatives: Envisioning Solutions

Facility Plan Analysis



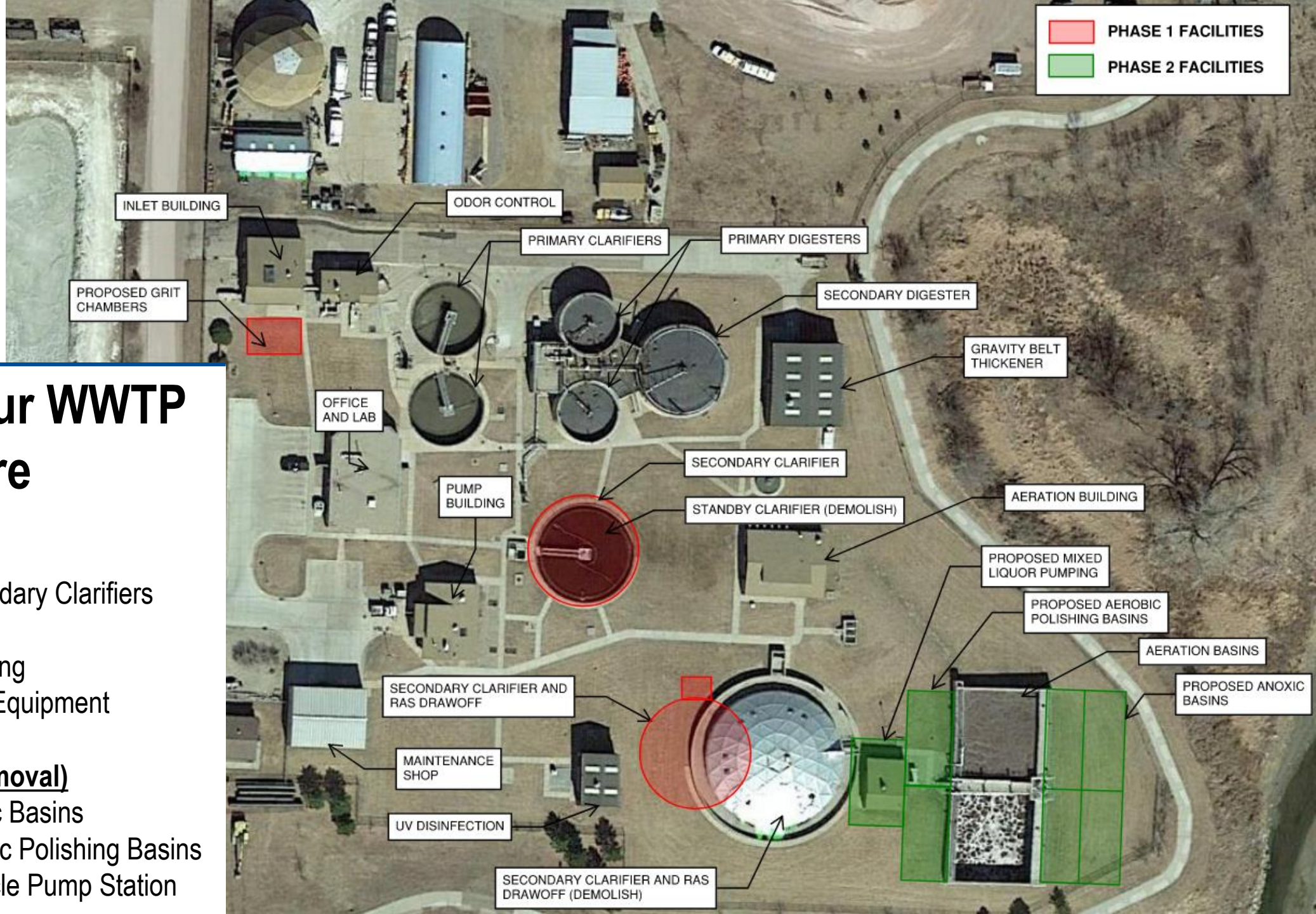
Alternative	Advantages	Drawbacks	Cost
Construct New WWTP	<ul style="list-style-type: none"> - Frees up Riverside Property - Least Complexity 	<ul style="list-style-type: none"> - Highest Capital Cost - Land Acquisition - Easements for Force Main & Outfall 	Phase 1 = \$88.0 million Phase 2 = \$10.0 million
Expand Existing WWTP	<ul style="list-style-type: none"> - Lowest Capital Cost 	<ul style="list-style-type: none"> - Site Constraints Limit Expandability 	Phase 1 = \$44.6 million Phase 2 = \$10.6 million

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Recommended Alternative			
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Preparing our WWTP for the Future

Phase 1

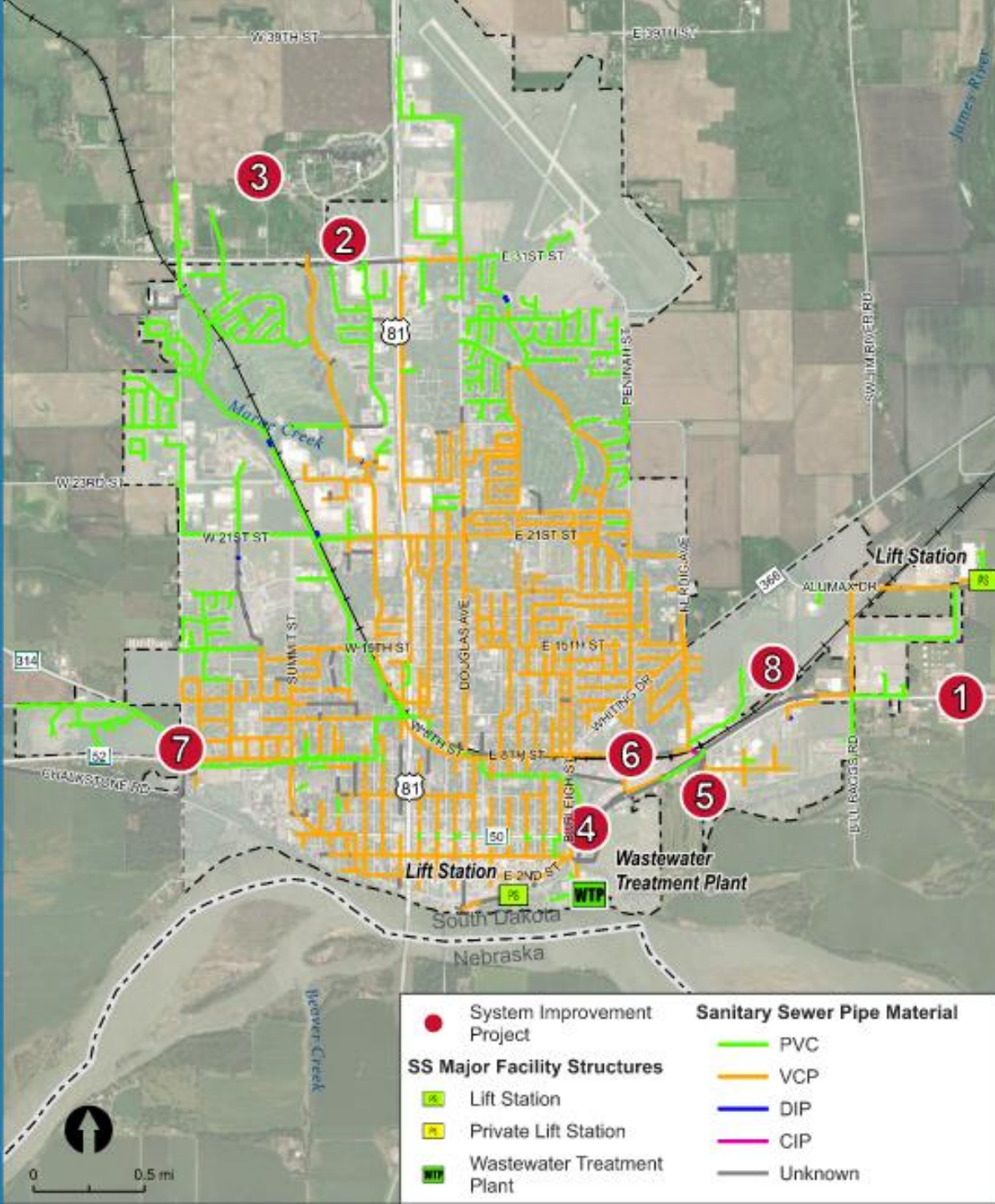
- New Grit Removal
- Two (2) New Secondary Clarifiers
- New UV Equipment
- Install Digester Mixing
- Replace Outdated Equipment

Phase 2 (Nutrient Removal)

- Two (2) New Anoxic Basins
- Two (2) New Aerobic Polishing Basins
- Mixed Liquor Recycle Pump Station

Wastewater Collection System Improvements

1. East Highway 50 Extension - \$700,580
2. HSC/Soccer Complex - \$120,150
3. Sewer Line & HSC Lift Station Decommission - \$400,000
4. Highway 50 Replacement Marne Creek Crossing - \$670,000
5. Hastings Lift Station Replacement - \$1,000,000
6. 8th Street Burleigh to Ferdig - \$678,823



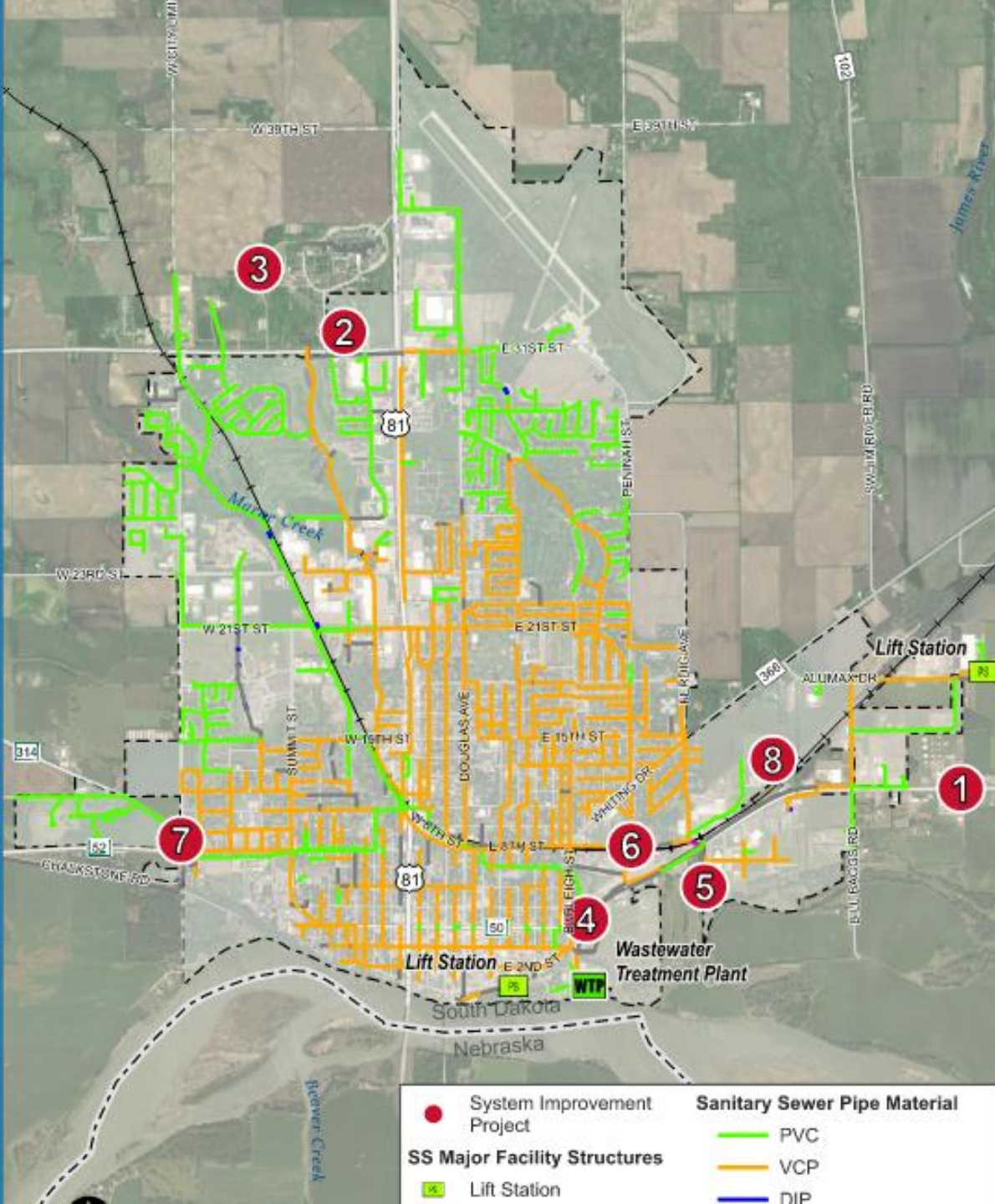
Wastewater Collection System Improvements

7. West City Limits Road 8th to 9th Street - \$75,000

8. East Yankton Thrive Property - \$1,533,000

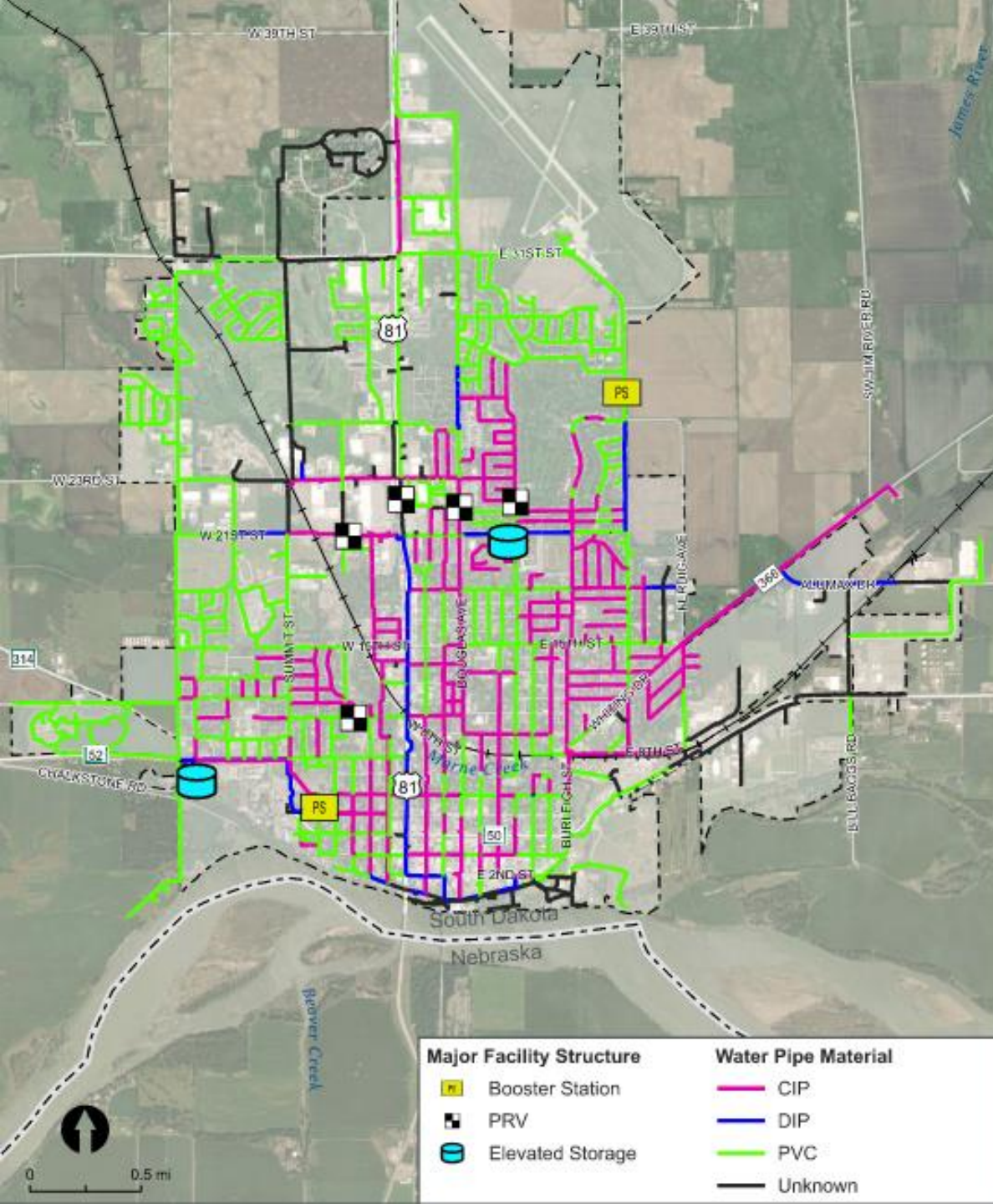
Total Project Cost-\$7.2 Million.

30% grant=\$5.04 Million



Water Distribution System Improvements

1. 22 Water Main Replacements - \$5,106,700
 2. Water Meter Upgrade - \$2,195,000
 3. Elevated Tower Rehabilitation – \$350,000-\$900,000
- Total project Cost- \$8.2Million
30% Grant= \$5.74Million



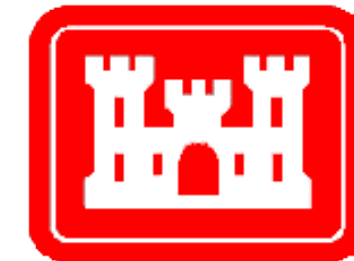
Environmental Compliance

Considering potential project impacts requires:

- Consultation with appropriate agencies
- Taking measures to limit impacts to
 - wetlands and waterways
 - parks and public facilities
 - air and water quality
 - agricultural and farmland
 - threatened and endangered species
 - cultural resources



Natural Resources
Conservation Service



US Army Corps
of Engineers®

No adverse impacts were found during investigations for cultural or environmental resources.

Funding

- American Rescue Plan Act (ARPA)
 - \$600,000,000 in ARPA funding for water and sewer infrastructure projects across the state.
 - 100% match local ARPA funds(City of Yankton \$2.6Million=\$5.2Million)
 - A minimum of 30% ARPA grant (percent of total amount requested). A grant cap will be determined by a per person project cost based on the population served by the system.
 - Service populations above 2,500: 30% grant with a \$3,000 per person maximum per applicant for all project(s) considered for ARPA grants.
 - Grant cap may be exceeded if an applicant currently has rates or will have rates upon project completion that meet the following user rate targets - \$55 for 5,000 gallons for each water or sewer for city residents.
- Clean Water or Drinking Water State Revolving Fund Principal Forgiveness
- Other state grants in addition to state ARPA funds

Funding Continued

Wastewater Plant Expansion-\$44.5Million

- ARPA Local + Match \$5.2 Million=\$39.3 Million
- 30% of \$39.3Million=\$11.8 Million
- $\$44.5 - \$5.2 - \$11.8 = \27.5 Million Final Project Cost

Wastewater Collection Project- \$7.2 Million

- 30% of \$7.2 Million=\$2.16Million
- $\$7.2 - \$2.16 = \$5.04$ Million Final Project cost

$\$27.5$ Million + $\$5.04$ Million = $\$32.54$ Million WWTP Expansion and WW Collection Project
Total

How Will This Project Affect Our Rates?

- The project will impact rates as shown below with terms known by Spring 2022.
- The project will be adjusted accordingly based on the terms and project approval from the State. Rates are based on 20-year loan at 2% interest rate or 30-year loan at 2.125%. Rates are an estimate based on proposed funding.
- Current Wastewater Rate for 5,000 gallons- \$45.22. Water rate - \$59.01

Scenario	Wastewater Rate Increase	
0% Forgiveness - \$51.7M	120.8%	(Approx. \$99.85 per 5000 gallons)
30% Forgiveness - \$32.54M	73%	\$78.24
Additional -\$43M (for relocation)	147.68%	\$112.00

Public Input/Questions?

			Plant Retrofit	Collection	Total	Cust	Current Avg	%
			20 Yr.	30 Yr.		5273	per 5000 gal.	Increase
	Multiplier		27.5	5.04			\$45.22	
Current Annual Revenue from Waste Water User Fee (Consumption + base or minimum)		\$4,351,363						
						Surcharge	New avg.	
Annual Debt Service per/Million (retrofit) @ 2% - 20 years @ 110%		\$66,867	\$1,838,842	\$250,396	\$2,089,238	\$33.02	\$78.24	73.02%
Annual Debt Service per/Million (new facility / location, and collection) @ 2.125% - 30 years @ 110%		\$49,682		New Site				
				43				
				\$2,136,314	\$4,225,552	\$66.78	\$112.00	147.68%
Annual Debt Service \$42 Million Borrowed (retrofit)	27.5	\$1,838,842						
Annual Debt Service \$5.04 Million Borrowed (Collection System)	5.04	\$250,396						
Annual Debt Service \$90 Million Borrowed (new facility and location)	43	\$2,136,314						

Rates