

Staff Report

EXTENSION OF UTILITIES EAST OF INTERSTATE 35

January 24, 2012

BACKGROUND

The Ames Economic Development Commission (AEDC) submitted a letter to the City Council requesting that land be annexed north of Lincoln Way from I-35 to 590th Avenue, citing the lack of large industrial lots available for development. Realizing that this could mean the City may incur costs to extend infrastructure into this area, the City Council asked staff to report on the broad, conceptual estimates for extending the utilities, which was done in August of 2011. Subsequently, Council asked that dialog be continued with the AEDC regarding this potential annexation and that the possibilities for a more detailed study of the utility infrastructure costs be investigated. Following discussion of the 2012/13 budget guidelines in November 2011, City Council directed staff to engage a consultant to develop conceptual plans and associated costs for these extensions.

Staff asked the consultant to develop multiple scenarios for providing water and sewer infrastructure to the land between Lincoln Highway and the Union Pacific Railroad (UPRR) east of Barilla up to 590th Avenue. Scenarios were also developed to provide sewer service to the land on East 13th Street zoned for regional commercial development.

In order to insure that these investments are compatible with potential growth in the surrounding areas into the more distant future, staff also directed the consultant to consider the service level needs of potential long-term development within the area reaching one-half mile south of US 30 and up to a mile north of East 13th Street. It should be emphasized that there are no present plans to annex this expanded territory. However, these more expansive scenarios are appropriate in order to help with the City's long-term planning. This is particularly important since any interceptor sewer brought north from the WPC Facility should have the capacity to serve for 50-100 years. Otherwise, the cost to upsize that line in a few decades would be exorbitant. It should also be emphasized that planning capacity and routes that could serve this larger area does not necessarily mean that the City will grow there. That would be based upon the willingness of private landowners and future City Councils to consider such annexation.

The basic scenarios shown below present possible options for serving the East Lincoln Way corridor, as well as alternatives that extend service to the regional commercial area. Exhibits with the layout of new water and sewer facilities are attached for each scenario. A fifth exhibit portrays the two points at which a sewer trunk line could be connected to the City's Water Pollution Control facility.

Scenario 1: Extend water main and trunk sewer line from the west to serve the north side of Lincoln Way (Barilla to 590th Avenue). A portion of the existing sewage collection system on Lincoln Way west of I-35 would need to be upsized (shown on attached drawing). Potable water can be serviced from the existing system servicing the Barilla facility.

Scenario 2: Same as Scenario 1, but also extends the sewer to the north to encompass the Regional Commercial Area (former Wolford Property).

Scenario 3: Extend water main from the west along Lincoln Way, and extend the trunk sewer up from the south to connect to the Water Pollution Control facility.

Scenario 4: Same as Scenario 3, but also extends the sewer north to serve the Regional Commercial Area.

Alfred Benesch & Co. of Ames conducted the conceptual planning study to analyze the issues and costs for extending water and sanitary sewer infrastructure to serve the scenario regions. Key work in their study included analyzing findings from previous planning studies, assigning baseline development parameters, identifying potentially environmentally sensitive areas, developing specific utility corridors and routing plans, defining right-of-way needs, and preparing preliminary engineering level cost estimates. A final report that includes evaluation of serving the greater potential growth area (a mile north of East 13th Street south through the US 30 corridor, east to 590th Avenue) and consolidates all of the work and findings will be completed and delivered to staff next month.

SUMMARY OF ANTICIPATED DESIGN DEMANDS FOR POTABLE WATER AND SEWER FLOWS

Table 1 includes a summary of net developable areas (i.e., accounting for steep slopes, environmentally sensitive areas), and shows potential flows based on a distribution of various types of anticipated use. The design flows are summarized as follows (see note 7, below):

TABLE 1

Scenario #	Net New Developable Area (acres)	Design Flow (water and sewer) in million gallons per day (MGD)
1	563	2.96
2	804	4.17
3	563	2.96
4	804	4.17

CONCEPTUAL COST ESTIMATES

The cost estimates for these scenarios are shown below in Table 2. The development of these estimates was based on the following assumptions:

1. Maximize gravity lines for sewer service.
2. Minimize/eliminate the need for pump stations for sewer service.
3. No low pressure/grinder sewer systems.
4. Maximize utility location in existing public rights-of-way.
5. Wastewater Plant upgrades will account for increased flow from the proposed development areas; estimates for plant upgrades are out of the scope of this study.
6. Existing sewer system capacities for individual pipes were not known for inclusion in the conceptual system layouts. Dry weather relative capacities were known and used to the greatest extent possible. Wet weather conditions should be verified in the preliminary design stage.
7. Potable water demands will be met through the City's existing water treatment facility (currently undergoing upgrades). The flows shown in the table, above, have been estimated using the higher end of potential demand for the corresponding possible land uses. As the areas develop, consideration must be given to the impact on the water treatment plant from projected demand for the specific proposed development.
8. Fire protection flows are to be provided through the City water system via appropriate main sizing and with installation of appropriate elevated storage*.

* Elevated storage may not be required at the time of initial development, and is dependent on specific water and fire demands. Since some type of elevated storage will ultimately be needed for the area, the water system costs for all four scenarios include \$3,000,000 for an elevated tower. However, the construction of this storage could be phased in at a later date, depending on specific demands. Phasing in that storage later could put the initial water system cost for each scenario at \$.8 million.

TABLE 2

Scenario #	Water System Costs	Sanitary Sewer System Costs	Combined Costs	Acres Served
1	\$3.8 million	\$4.5 million	\$8.3 million	563**
2	\$3.8 million	\$4.9 million	\$8.7 million	804**
3	\$3.8 million	\$10.5 million	\$14.3 million	563**
4	\$3.8 million	\$11.2 million	\$15 million	804**

Notes:

- **All scenarios should provide approximately 400 additional acres for development along the south frontage of the East Lincoln Way corridor.
- In Scenarios 1 and 2, a portion of the existing sewage collection system on Lincoln Way west of I-35 would need to be upsized in order to provide adequate capacity. However, if additional areas to the south later need to be served, then the eventual extension of a sewer interceptor up to the US

- 30 corridor could obviate the need for the upsized main along Lincoln Way.
- Water service to the regional commercial area is available off of the existing water main that extends along East 13th Street and south to the Barilla property.

TRANSPORTATION INFRASTRUCTURE ISSUES

As the City develops to the east, there will also be a need to extend and improve the street network serving the area. This includes appropriate access to US 30.

The Iowa DOT recently initiated a planning study for the US 30 corridor from the Dayton Avenue interchange to the Nevada city limits. The study will identify recommendations for enhanced access control as well as new interchange(s) in this section. Preliminarily, 590th Avenue has been identified as a challenging location for a new interchange due to development on both sides of the road north of US 30. This would lead to 580th Avenue as a possible alternate location for a new interchange within the potential East Ames growth area.

The Iowa DOT has also conducted a public open house regarding improvements to the I-35/US 30 clover leaf interchange. Any improvements to that interchange will occur within the existing right-of-way and will not commence before 2017.

The potential East Ames industrial growth area is currently accessed through county roads, generally on a one mile grid. As the area develops, these roads would likely be improved to arterial street standards, with local or industrial streets serving specific areas within the growth region. Story County already has plans to begin improving some of these roads based upon current industrial growth, and is using TIF revenue funding from the Story County wind farm.

RURAL WATER ISSUES

In 1992 Central Iowa Water Association (CIWA) asked the City of Ames for approval of CIWA's proposal to provide potable water service to existing and new customers within the City's two-mile fringe east of Interstate 35. CIWA needed City approval in order to be eligible for USDA Rural Development Administration loan funds. The City granted CIWA's request, and thereafter CIWA installed water infrastructure in the area using federal loan funds.

CIWA is an Iowa Chapter 504 nonprofit corporation, formally known as Iowa Regional Utilities Association, Inc. The water provided to CIWA's territory near Ames is supplied primarily from plants in Newton and Marshalltown. Ames is on the extreme west of CIWA's territory.

Because CIWA is a "federally indebted water association," federal law prohibits the City of Ames from any curtailment or limitation of CIWA's service within this area. CIWA

could voluntarily give up rights to serve this area (as it did several years ago for the Barilla property) as long as the USDA Rural Development Administration consented.

Together with the City of Nevada, staff recently held an initial meeting with CIWA staff to discuss possible transition of the proposed east industrial area to allow water service by the City of Ames. At that time CIWA indicated that they do not desire to give up rights to serve additional parcels east of I-35 and west of Nevada.

The aggregate water demand forecast in the Benesch engineering study significantly exceeds CIWA's present capacity to supply water for the area. It is important that additional discussions be held with CIWA prior to Council committing whether or not to budget for water service expansion in this area.

ANNEXATION ISSUES

The potential annexation area between Lincoln Highway and the UPRR includes a total of 566.57 acres. The AEDC has been in contact with all of the property owners within the annexation area, either in writing or verbally on the phone, to discuss the infrastructure proposal and to ask whether they would consider annexing their property into the City of Ames in an effort to support future industrial expansion.

Communication with the property owners is on-going. The AEDC currently has verbal agreements to annex from 36.7 percent of the annexation area property owners. The AEDC will likely have an additional 61.7 percent soon as a result of attending meetings and providing paperwork to the property owners. They do not anticipate that the remaining 1.6 percent will wish to annex their property. The properties that equal 1.6 percent are commercial and residential in use and do not benefit from the annexation in lower taxes, as does the agricultural properties. It would not be necessary to annex the 1.6 percent to enable the annexation of the remainder of the annexation area.

The AEDC will continue to work with affected property owners and will provide further updates to the City Council as this effort progresses.

LAND USE ISSUES

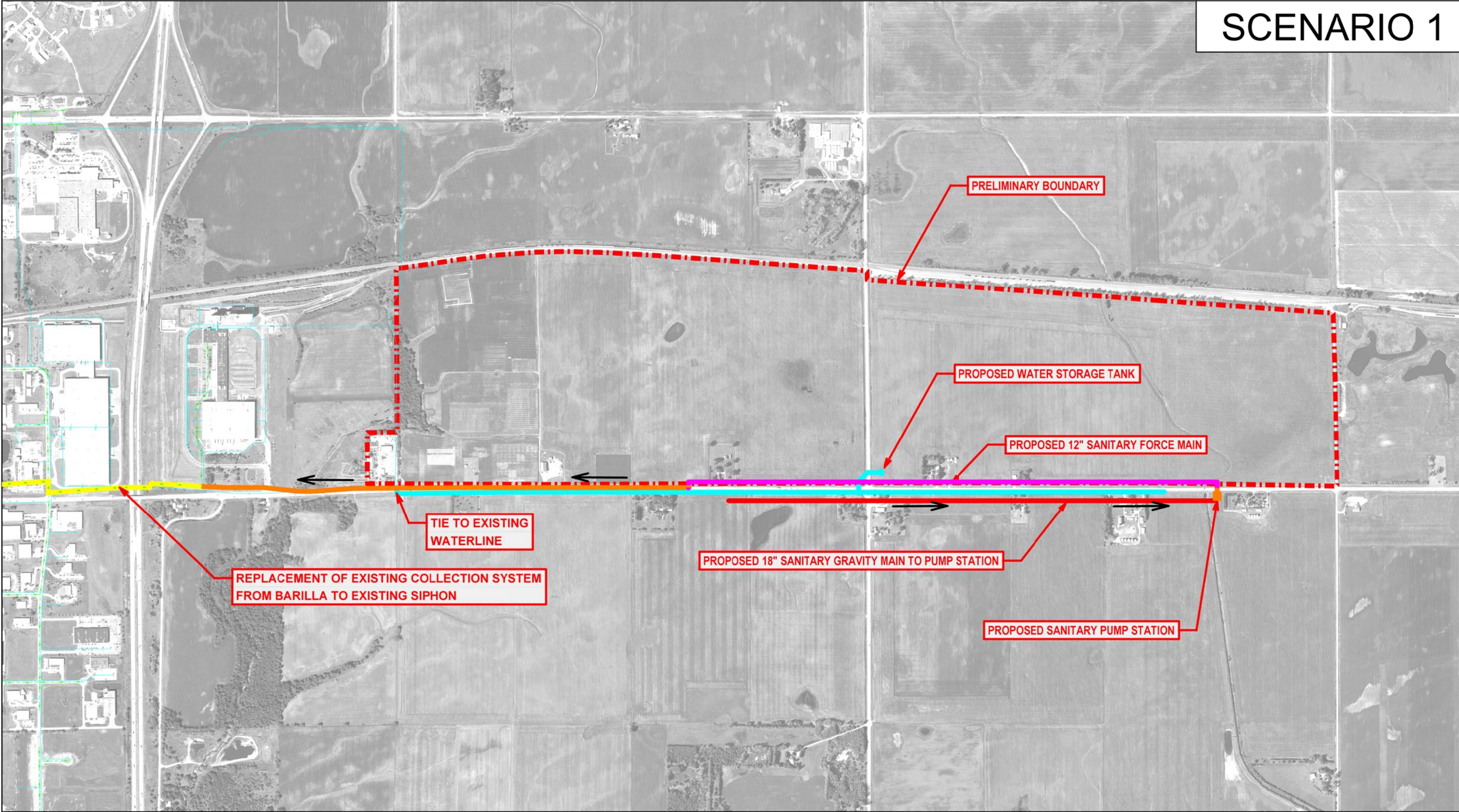
Should Council decide to proceed with infrastructure expansion and annexation into this area, it will be important to update the City's Land Use Policy Plan to reflect future planned growth. The Ames Fringe Area Plan does not currently fully extend to 590th Avenue and decisions must also be made regarding the northern and southern boundaries of future planned industrial growth. Should Council so desire, staff should be directed to work closely with Story County, as well as Nevada, to update the LUPP and the Fringe Plan to reflect those changes.

IMPACT ON UTILITY RATES

This report provides important information related to the costs for extending water and sewer infrastructure to the eastern industrial area. It will also be important for Council to

consider the impact of these potential expenses upon utility rates. Staff will have that information prepared in time for Council's budget kick-off meeting on February 3.

SCENARIO 1



GENERAL INFORMATION

AVAILABLE DEVELOPABLE AREA = 563 ACRES
EST. WATER/SEWAGE FLOW = 2.9 MGD
SANITARY SEWER COSTS = \$4.5 MILLION
WATER SYSTEM COSTS = \$3.8 MILLION

LEGEND

- 12" WATERLINE
- 24" WATERLINE
- 12" SANITARY SEWER
- 18" SANITARY SEWER
- 24" SANITARY SEWER
- 36" SANITARY SEWER
- 48" SANITARY SEWER

EAST AMES UTILITY PLANNING

AMES, IOWA

SCENARIO 1

WATER AND SEWER LAYOUT



Alfred Benesch & Company
223 South Walnut Avenue
Suite C
Ames, Iowa 50010
515-232-1103

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Date
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MJP

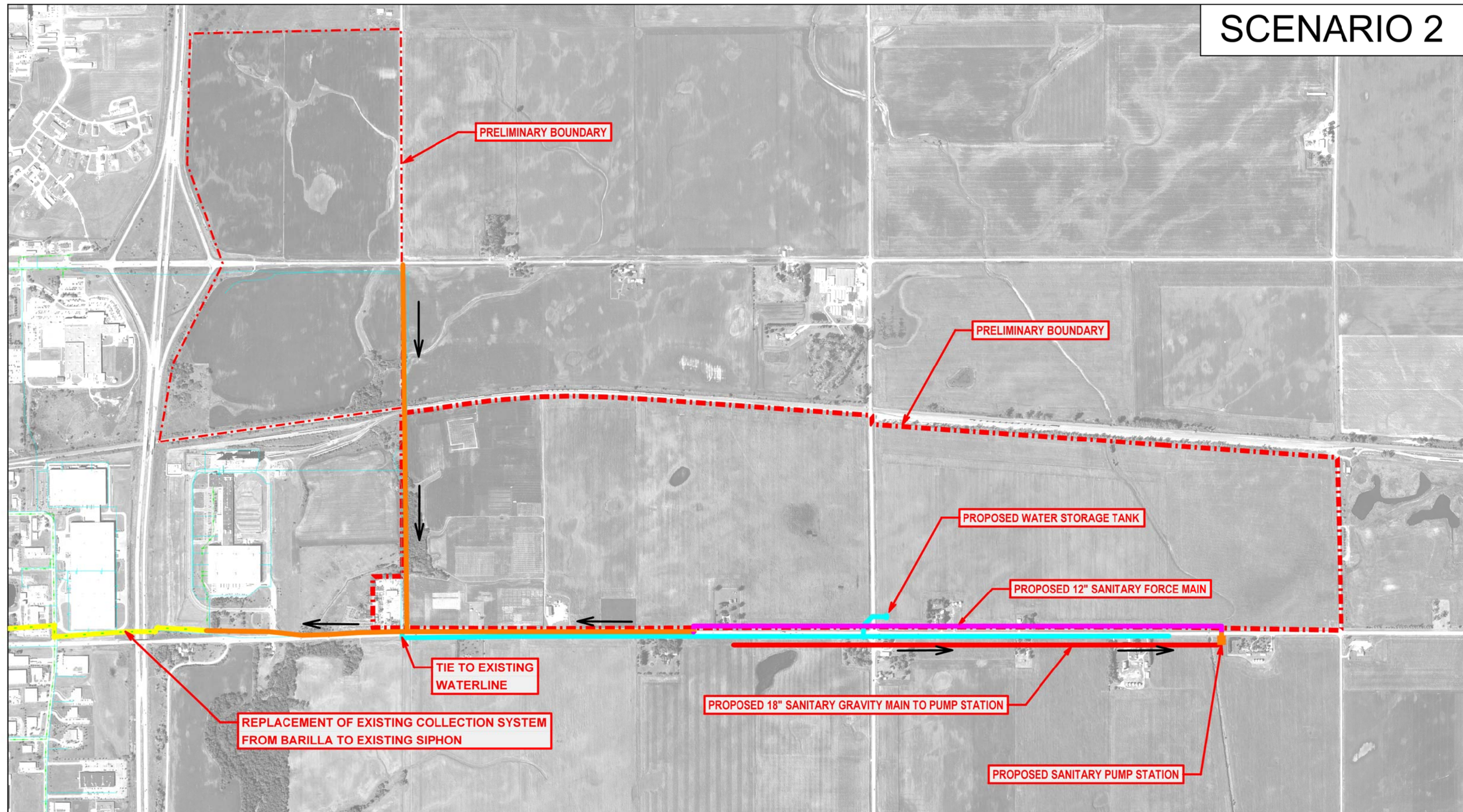
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SCENARIO 2



GENERAL INFORMATION

AVAILABLE DEVELOPABLE AREA = 805 ACRES
EST. WATER/SEWAGE FLOW = 4.2 MGD
SANITARY SEWER COSTS = \$4.9 MILLION
WATER SYSTEM COSTS = \$3.8 MILLION

LEGEND

- 12" WATERLINE
- 24" WATERLINE
- 12" SANITARY SEWER
- 18" SANITARY SEWER
- 24" SANITARY SEWER
- 36" SANITARY SEWER
- 48" SANITARY SEWER

EAST AMES UTILITY PLANNING
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SCENARIO 2

WATER AND SEWER LAYOUT



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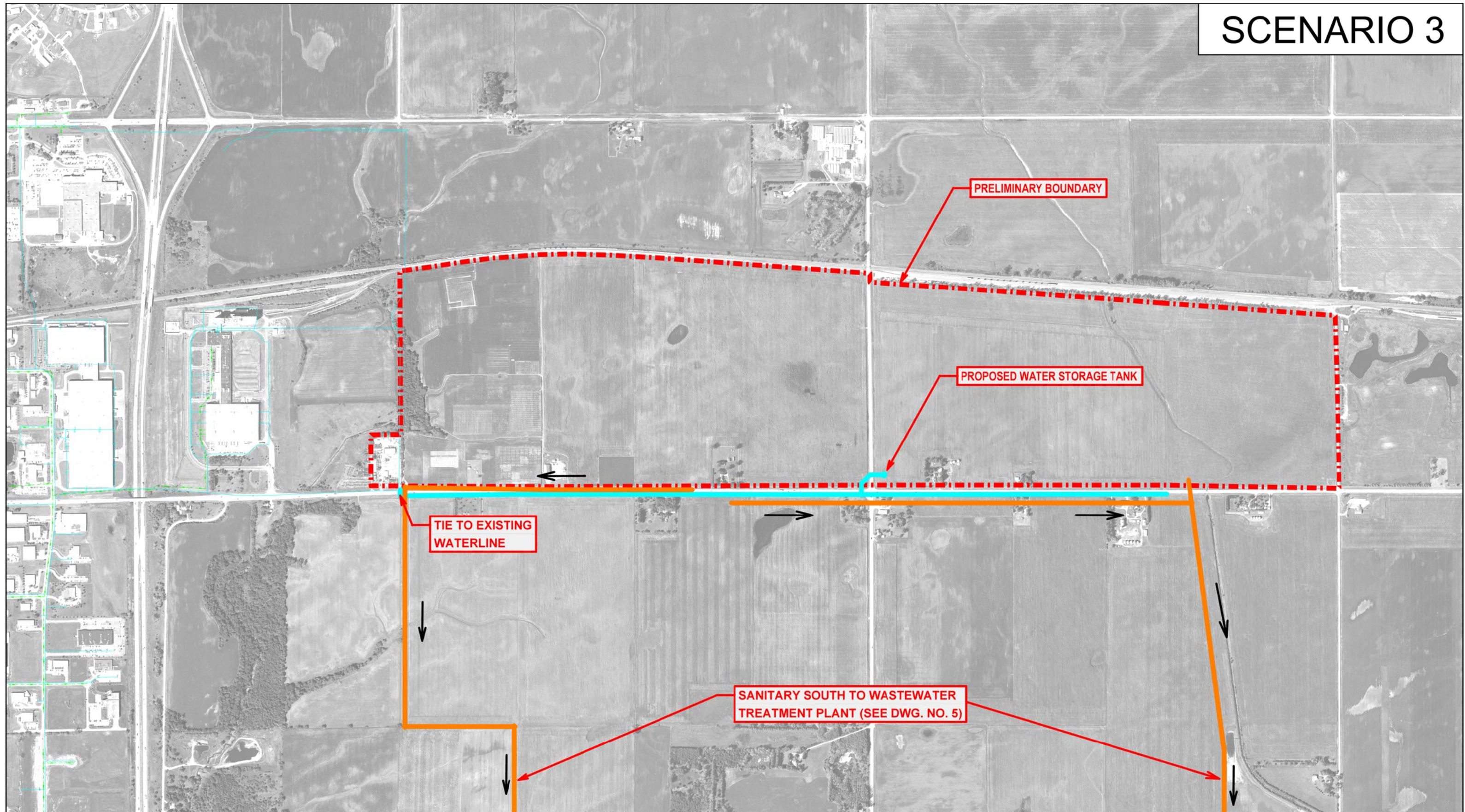
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SCENARIO 3



GENERAL INFORMATION

AVAILABLE DEVELOPABLE AREA = 563 ACRES
EST. WATER/SEWAGE FLOW = 2.9 MGD
SANITARY SEWER COSTS = \$10.5 MILLION
WATER SYSTEM COSTS = \$3.8 MILLION

LEGEND

- 12" WATERLINE
- 24" WATERLINE
- 12" SANITARY SEWER
- 18" SANITARY SEWER
- 24" SANITARY SEWER
- 36" SANITARY SEWER
- 48" SANITARY SEWER

EAST AMES UTILITY PLANNING
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SCENARIO 3

WATER AND SEWER LAYOUT



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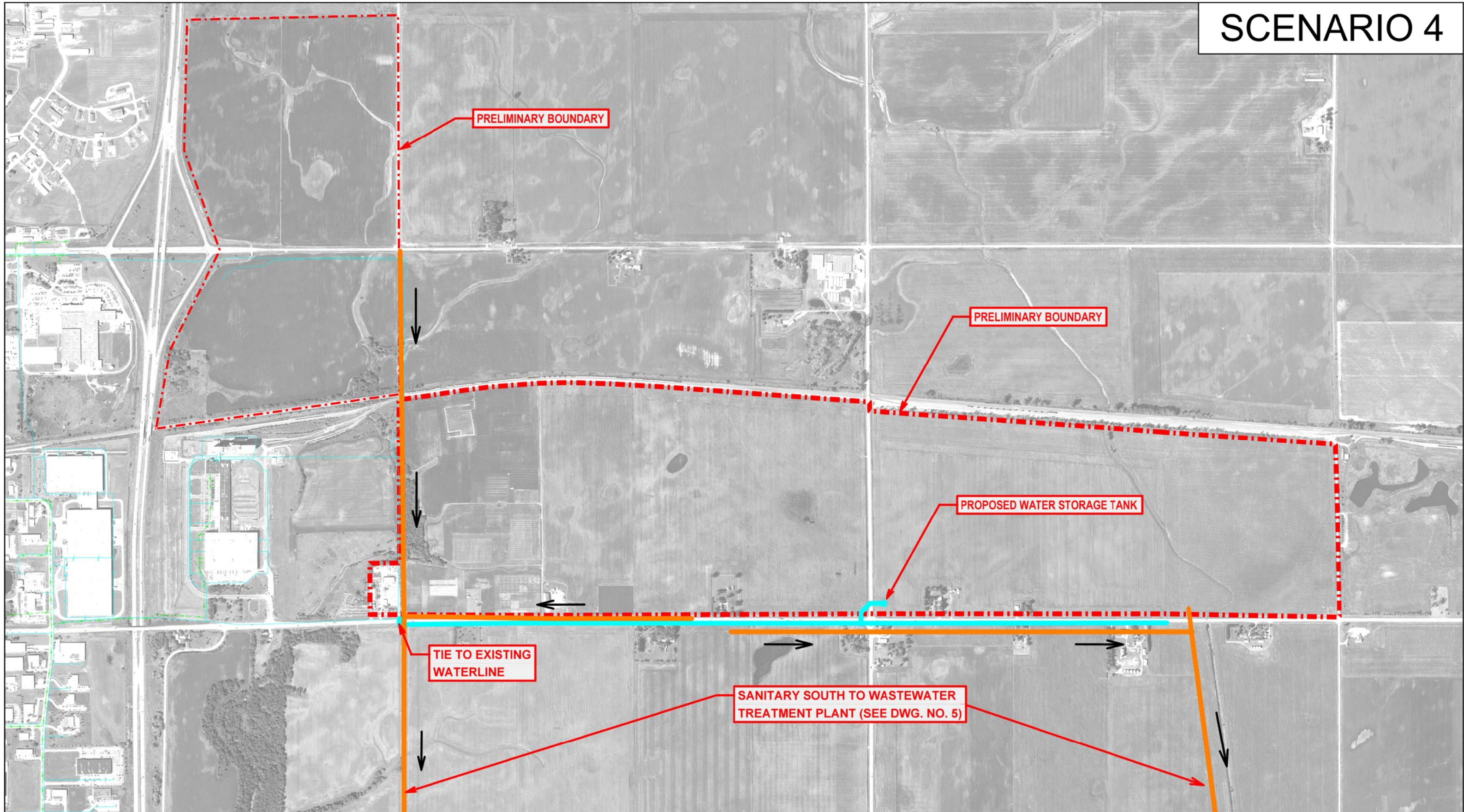
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SCENARIO 4



GENERAL INFORMATION

AVAILABLE DEVELOPABLE AREA = 804 ACRES
EST. WATER/SEWAGE FLOW = 4.2 MGD
SANITARY SEWER COSTS = \$11.2 MILLION
WATER SYSTEM COSTS = \$3.8 MILLION

LEGEND

- 12" WATERLINE
- 24" WATERLINE
- 12" SANITARY SEWER
- 18" SANITARY SEWER
- 24" SANITARY SEWER
- 36" SANITARY SEWER
- 48" SANITARY SEWER

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SCENARIO 4

WATER AND SEWER LAYOUT



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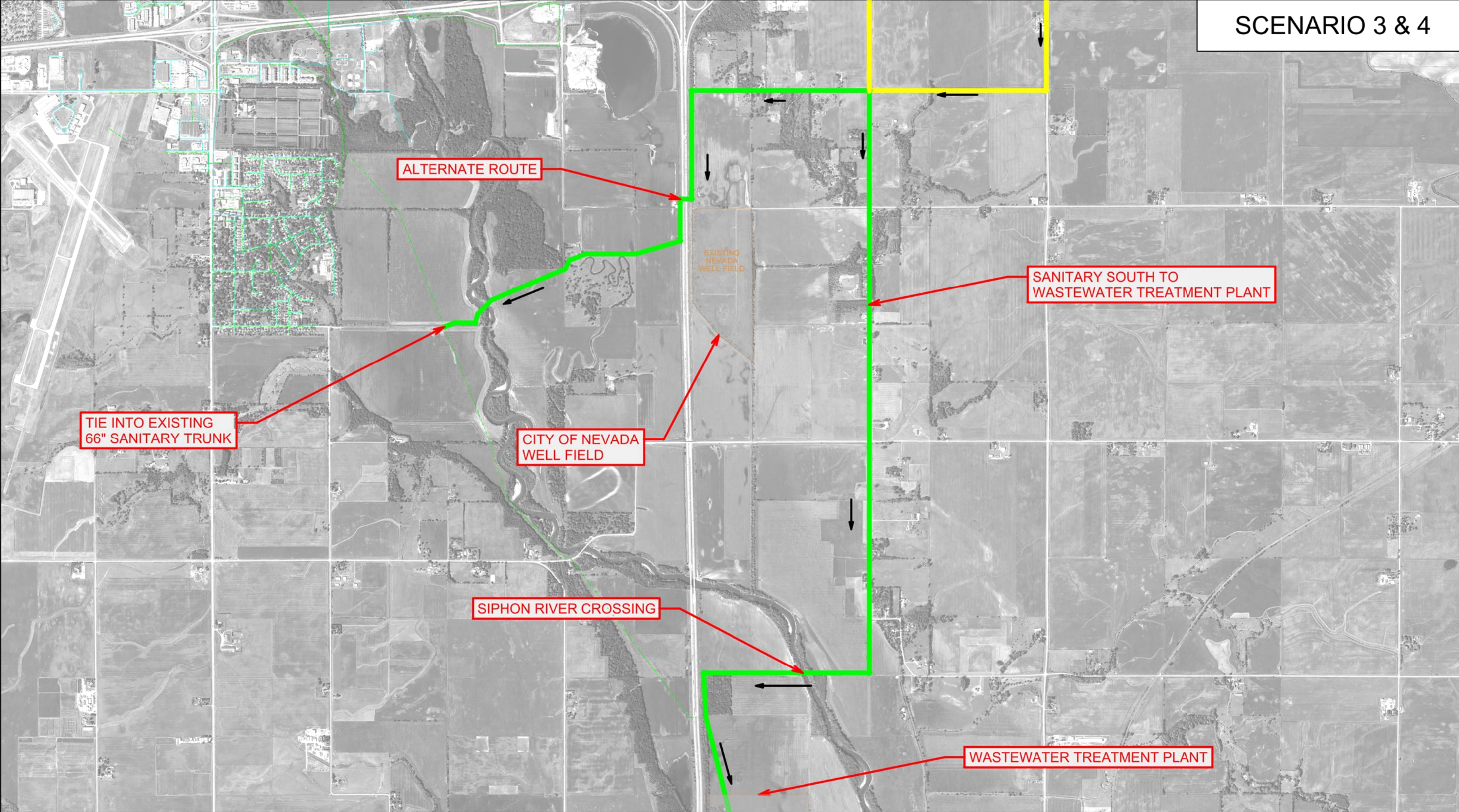
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GENERAL INFORMATION

AVAILABLE DEVELOPABLE AREA = 804 ACRES
EST. WATER/SEWAGE FLOW = 4.2 MGD
SANITARY SEWER COSTS = \$11.2 MILLION
WATER SYSTEM COSTS = \$3.8 MILLION

LEGEND

- 12" WATERLINE
- 24" WATERLINE
- 12" SANITARY SEWER
- 18" SANITARY SEWER
- 24" SANITARY SEWER
- 36" SANITARY SEWER
- 48" SANITARY SEWER

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SCENARIO 3 & 4

WATER AND SEWER LAYOUT



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Memo

City Manager's Office

33b

TO: Mayor and Ames City Council Members

FROM: Bob Kindred, Assistant City Manager

DATE: January 20, 2012

SUBJECT: Extension of Infrastructure to Serve Northern Residential Area

As the Council considers possible extension of water and sewer infrastructure to the east, it is important to also remember that a request has been made for water and sewer to be extended northward to serve the proposed Quarry Estates subdivision.

The existing Rose Prairie annexation agreement provides that Rose Prairie will install sewer and water mains to serve the entire planned residential area up to 190th Street. If the City desires to facilitate residential development in the area prior to that time, the agreement specifies that the City may install water and sewer lines and set up assessment districts to recover the costs.

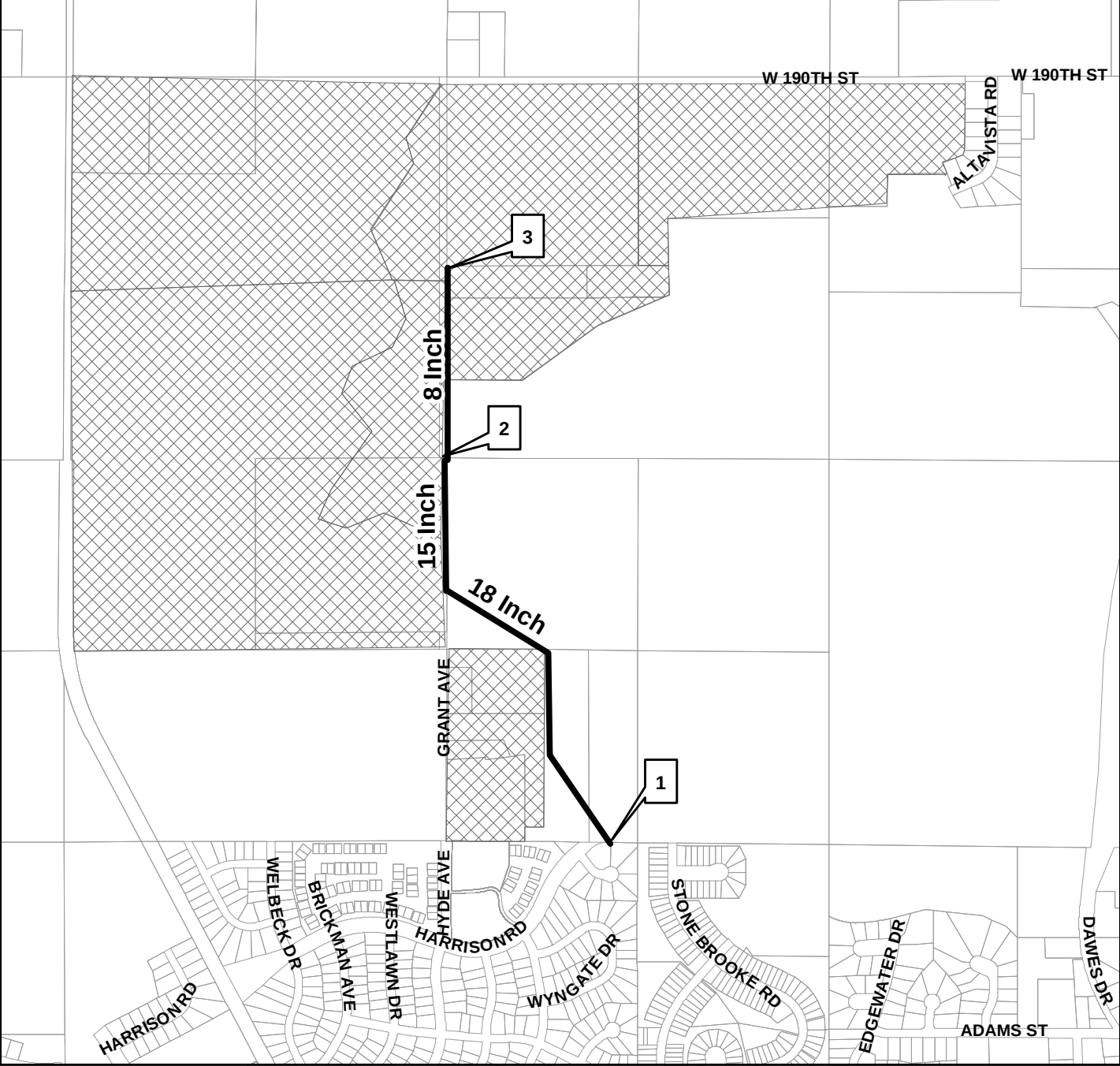
The two attachments included with this memo portray the routes and costs for the City to extend sanitary sewer and water mains to serve the proposed Quarry Estates subdivision. The developers of this subdivision have previously approached Council asking for the City to extend utilities to serve this area. They recently have also begun working with staff, preparatory to their submission of an annexation petition for their property.

In addition to seeing the costs for utility extensions to this northern residential area, it will also be important for Council to consider the impact of these potential expenses upon utility rates. Staff will have that information prepared in time for Council's budget kick-off meeting on February 3.

Encl.

ATTACHMENT I SANITARY SEWER

TOTAL COST
\$698,000
SANITARY TRUNK LINE COST (1-2)
\$556,000
8" SANITARY COST (2-3)
\$142,000



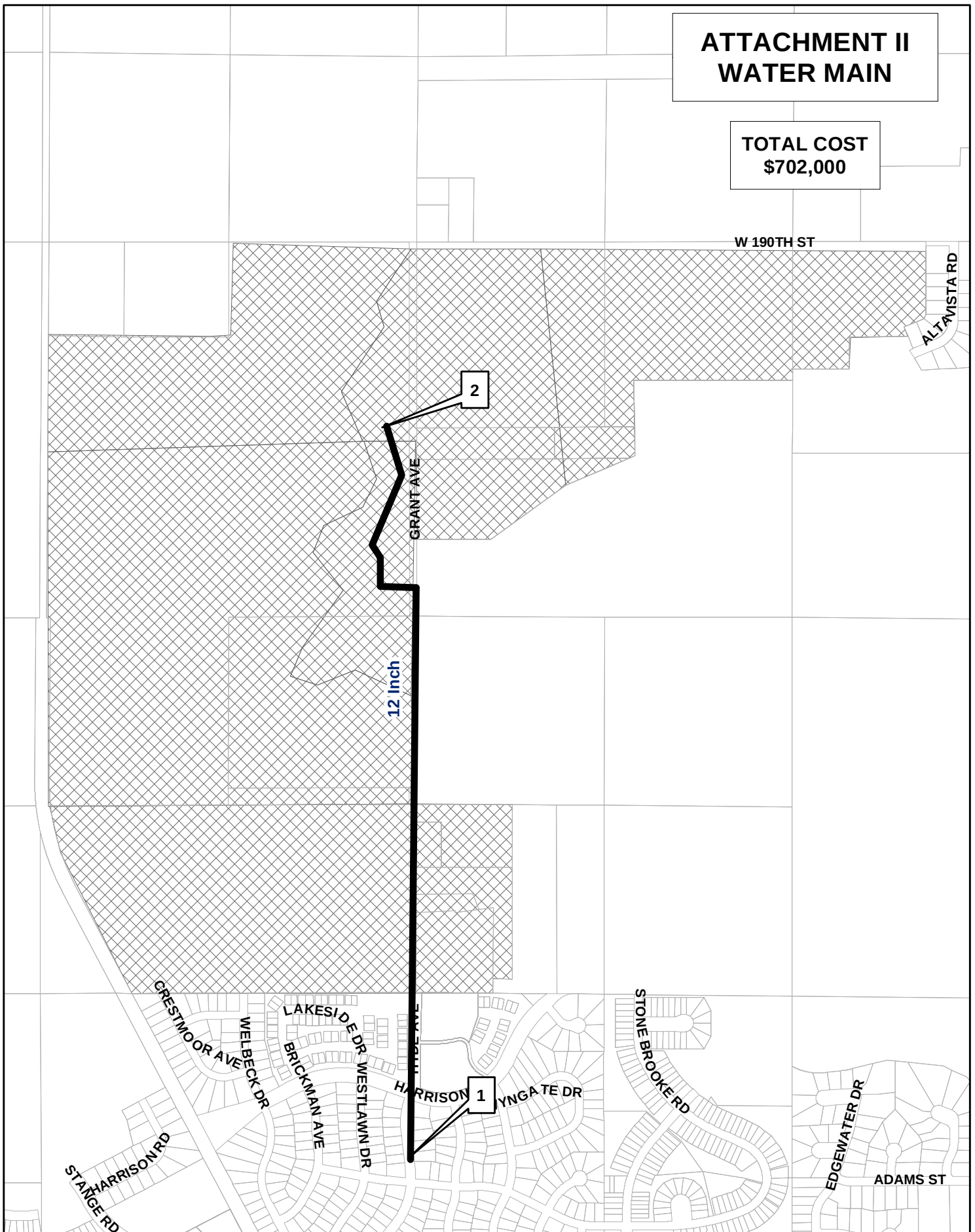
1 inch = 1,039 feet
520 260 0 520 Feet

— Sanitary Sewer Main Potential Sanitary Connection District



ATTACHMENT II WATER MAIN

TOTAL COST
\$702,000



1 inch = 879 feet



Water Main selection selection



Potential Water Connection District

