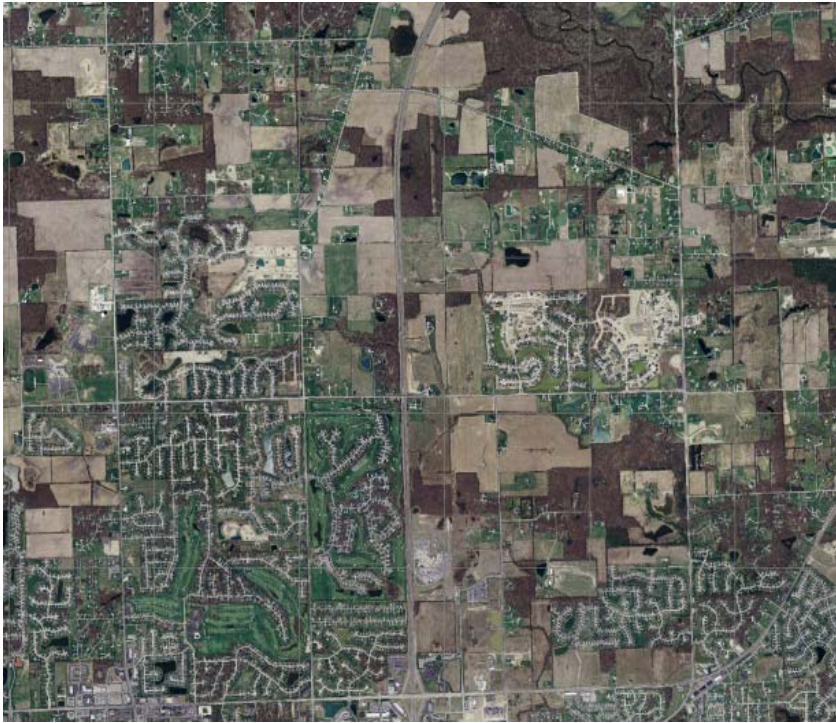


UTILITY PROJECTS

CELL 23-UTILITY STUDY-ALLEN COUNTY

Project Description



Project Overview

Complete utility analysis of the region designated as "Cell 23" in the north central part of Allen County, IN. This study included sanitary sewer collection system and potable water supply network preliminary design. The basic components of this study were: Analysis of existing conditions (service level, development status and types, etc.), predictions for future growth and types in parts of Cell 23, analysis of sanitary sewer collection components required to service future growth at various time lines throughout the proposed development cycle, and development of preliminary plans and cost estimates to complete the skeleton service system for sanitary and water service.

Study Area Size and Utility Study Cost

The Cell 23 (and watershed) study covered over 6,000 acres. Estimates for utility construction cost were approximately \$10M. The study and documentation engineering cost was approximately \$75,000.

Survey and Property Research

Some topographical survey work was completed for this project to verify sanitary inverts, lift station locations and inverts, and other important points. General property ownership mapping was undertaken to determine the likelihood of development for the properties within the study area.

Preliminary Routing Plans

Preliminary Routing Plans were completed as part of this project to illustrate appropriate pipe sizes, grades, and inverts to service the area included within the study limits. These plans were used as the basis for the cost estimates to complete the construction.

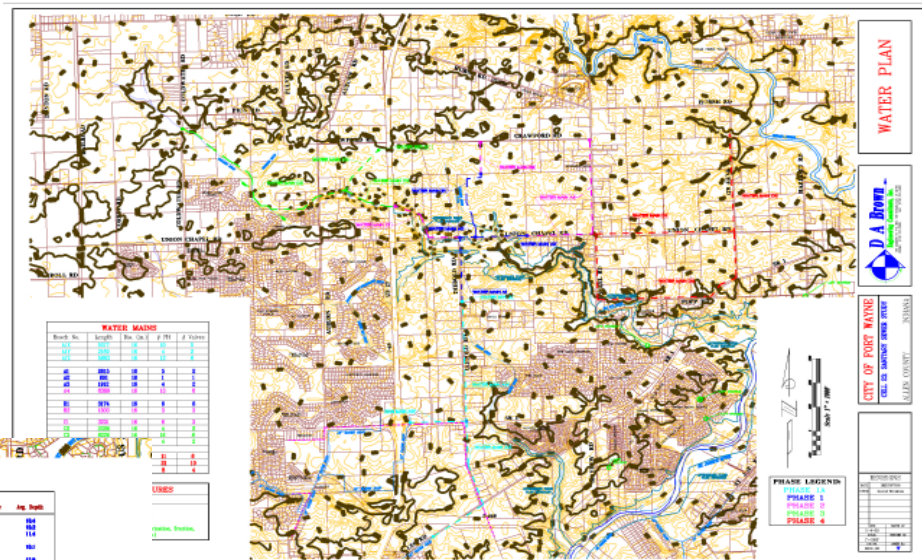
Cost Estimates and Phasing Options

Cost estimates were generated for this project on an "event horizon" basis, which allowed for phasing costs to be evaluated and ultimately for the cost of the system to be divided among the new users in the area. Splitting the project into manageable chunks will also allow the City to build service into this area in an organized fashion.

SANITARY SEWER DESIGN DATA

GRAVITY SEWER MAINS:

Block No.	Length (Feet)	Diameter	1' Grade	Spotman In	Spot. Grad.	Sp. Run	Spot In	Spot. Grad.	Spot Run	Spot In	Spot. Grad.	Spot Run	Spot In	Spot. Grad.	Spot Run	Spot In	Spot. Grad.	Spot Run
10	100	12"	0.01	1.00	0.01	100	1.00	0.01	100	1.00	0.01	100	1.00	0.01	100	1.00	0.01	100
11	150	12"	0.01	1.00	0.01	150	1.00	0.01	150	1.00	0.01	150	1.00	0.01	150	1.00	0.01	150
12	200	12"	0.01	1.00	0.01	200	1.00	0.01	200	1.00	0.01	200	1.00	0.01	200	1.00	0.01	200
13	250	12"	0.01	1.00	0.01	250	1.00	0.01	250	1.00	0.01	250	1.00	0.01	250	1.00	0.01	250
14	300	12"	0.01	1.00	0.01	300	1.00	0.01	300	1.00	0.01	300	1.00	0.01	300	1.00	0.01	300
15	350	12"	0.01	1.00	0.01	350	1.00	0.01	350	1.00	0.01	350	1.00	0.01	350	1.00	0.01	350
16	400	12"	0.01	1.00	0.01	400	1.00	0.01	400	1.00	0.01	400	1.00	0.01	400	1.00	0.01	400
17	450	12"	0.01	1.00	0.01	450	1.00	0.01	450	1.00	0.01	450	1.00	0.01	450	1.00	0.01	450
18	500	12"	0.01	1.00	0.01	500	1.00	0.01	500	1.00	0.01	500	1.00	0.01	500	1.00	0.01	500
19	550	12"	0.01	1.00	0.01	550	1.00	0.01	550	1.00	0.01	550	1.00	0.01	550	1.00	0.01	550
20	600	12"	0.01	1.00	0.01	600	1.00	0.01	600	1.00	0.01	600	1.00	0.01	600	1.00	0.01	600



Existing Conditions with Water Main Grid Plan

Client Reference

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