



City Council
COMMITTEE OF THE WHOLE
City of Belvidere, Illinois

Alderman Clayton Stevens,	1 st Ward	Public Works Vice Chairman
Alderman Tom Porter,	1 st Ward	F&P Vice Chairman, City-County
Alderman Daniel Snow,	2 nd Ward	BPZ Chairman, City-County Chairman
Alderman Michael Borowicz,	2 nd Ward	Public Safety Vice Chairman, City-County
Alderman Wendy Frank,	3 rd Ward	City-County Vice Co Chairman
Alderman Thomas Ratcliffe,	3 rd Ward	F&P Chairman
Alderman Ronald Brooks,	4 th Ward	Public Works Chairman
Alderman George Crawford,	4 th Ward	Public Safety Chairman
Alderman Mark Sanderson,	5 th Ward	BPZ Vice Chairman
Alderman Marsha Freeman,	5 th Ward	City-County Coordinating Committee

AGENDA

February 12, 2018

6:00 p.m.

**City Council Chambers
401 Whitney Boulevard
Belvidere, Illinois**

Call to Order: Mayor Chamberlain

Roll Call: Present: Absent:

Public Comment:

Public Forum:

Reports of Officers, Boards, and Special Committees:

1. Building, Planning & Zoning, Unfinished Business: None.
2. Building, Planning & Zoning, New Business:
 - (A) Community Development FY19 Budget Review.

3. Public Works, Unfinished Business: None.

4. Public Works, New Business:

- (A) Buchanan Street Parking – 15 minute parking restriction signs.
- (B) Alley – between S. State and Whitney and E. 8th Street and E. 9th Street.
- (C) Intersection Review – Garfield and W. 6th Street.
- (D) Trailer Parking - Section 110-191.
- (E) An Ordinance Authorizing Institution of Eminent Domain Proceedings with Respect to 141 Appleton Road.
- (F) Sump Pump Inspection Results and I and I Update.
- (G) Wycliffe Area Basement Backup Investigation.
- (H) Southside Stormwater Study.
- (I) 2018 MFT Street Maintenance Program.
- (J) Public Works FY19 Budget Review.

5. Adjournment:

PSDC

Buchanan Street Pub

111 Buchanan Street

Belvidere, IL 61008

January 28, 2018

Subject: Buchanan Street Parking

To whom it may concern

As a business owner on Buchanan Street, I am requesting a review of the 15-minute parking ordinance dedicated to two parking spaces on the South side of Buchanan Street. This ordinance was instituted at the request of the local bakery business that used to be in business on this street. Review of the request was approved, and the 2 spaces were designated as such. Shortly after the ordinance was approved and implemented, the said business closed and vacated their business.

I am requested these two spaces be returned to normal parking with no restrictions. This will benefit all the businesses on Buchanan Street, as there is a limited amount of parking currently. These two spaces will help attract more business

Sincerely,

A handwritten signature in cursive script that reads "Sandra Grant". The signature is written in black ink and is positioned above the printed name.

Sandra Grant

Owner Buchanan Street Pub

ORDINANCE #84H

AN ORDINANCE AMENDING SECTION 110-198
OF THE CITY OF BELVIDERE MUNICIPAL CODE
(BUCHANAN STREET PARKING)

NOW, THEREFORE BE IT ORDAINED by the Mayor and City Council of the City of Belvidere, Boone County, Illinois, as follows:

SECTION 1: Section 110-198 is amended to add an additional parking restriction as follows:

<u>Location</u>	<u>Condition</u>
2 Spaces in front of 107 Buchanan Street As determined by The Dept. of Public Works.	15 Minute Parking Only from 6:00 a.m. to 6:00 p.m.

SECTION 2: All parking and other maps, journals and other records of the City shall be modified accordingly. The Director of Public Works shall acquire and install all necessary signage in accordance with State law and the Uniform Traffic Control Manual.

SECTION 3: If any section, paragraph, subdivision, clause, sentence or provision of this Ordinance shall be adjudged by any Court of competent jurisdiction to be invalid, such judgment shall not affect, impair, invalidate or nullify the remainder thereof, which remainder shall remain and continue in full force and effect.

SECTION 4: All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

SECTION 5: This Ordinance shall be in full force and effect from and after its passage and publication in pamphlet form as required by law, which publication is hereby authorized.

Voting Aye: Bowley, Chamberlain, Fabish, Morris, Pendzinski, Racz, Sanderson and Schultz.

Voting Nay: Marks.

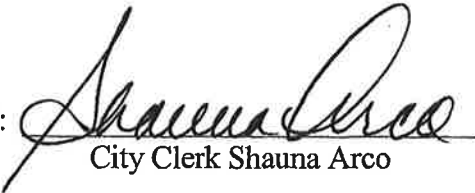
Absent: Crawford.

APPROVED:



Mayor Frederic C. Brereton

ATTEST:



City Clerk Shauna Arco

(SEAL)

Passed:	November 1, 2010
Approved:	November 2, 2010
Published:	November 2, 2010





1 inch = 30 feet

Memo

To: Mayor and City Council
From: Brent Anderson, Director of Public Works
Date: 2/5/2018
Re: Alley Information

The City of Belvidere currently has 83 alleys within its jurisdiction. 53 of the alleys are fully improved, 19 alleys dead end and 11 alleys are unimproved. The improved alleys total approximately 21,650 lineal feet (4.1 miles). Unimproved alleys total approximately 7,350 lineal feet (1.4 miles).

Alley maintenance is done on an as needed basis. Funding for this work is included in the Street Department line item #01-5-310-6002, street & parking lot maintenance and materials.

Past practice for improvements to vacant public right-of-way has been the property owner's responsibility. The owner/developer would be responsible to construct the minimum pavement cross-section and storm drainage in accordance with City standards. The construction would be completed by a contractor who is bonded and insured with the City. Depending on the specific improvement, the owner/developer would be entitled to a recapture for that portion of the improvement that was constructed outside the boundaries of his property.

S STATE ST

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310-004
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310-017
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310-012
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310-014
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310-018
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E 9th ST



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132

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99

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66

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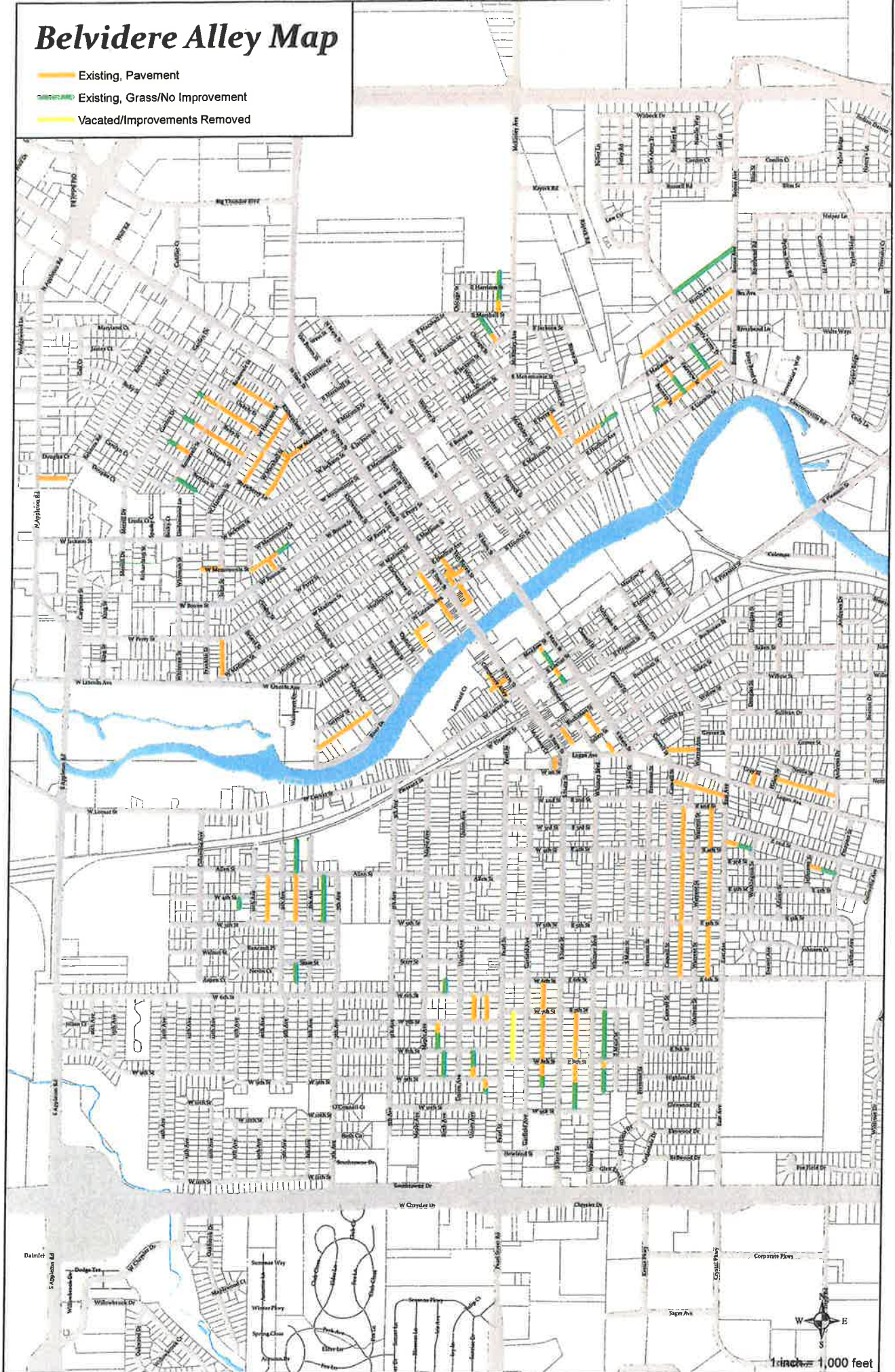
4

6

5

Belvidere Alley Map

- Existing, Pavement
- Existing, Grass/No Improvement
- Vacated/Improvements Removed



MEMO

BELVIDERE PUBLIC WORKS

401 Whitney Boulevard

Belvidere, IL 61008

Phone 815-544-9256

Fax: 815-544-4255

To: Mayor and City Council
From: Brent Anderson, Director of Public Works
Date: February 5, 2018
Re: Intersection Review – Garfield & 6th Street

After review of the above intersection, I would offer the following:

Current Status:

Garfield Avenue yields at Caswell Street. 6th Street stops at Pearl Street one block west of this intersection and stops at State Street one block east of this intersection. Posted speed limit for both streets is 25mph.

Traffic Volume:

Based on IDOT's current Traffic Volume Map, 6th Street has an ADT of 3300 and Garfield Avenue has an ADT of 200 or less.

Accident History:

Police Department records indicate four accidents have occurred at this intersection over the last five years:

2017 0 2016 0 2015 3 2014 0 2013 1

Pedestrian Activity:

This intersection is located in a residential neighborhood with typical pedestrian activity.

Sight Distance:

No sight distance limitations noted.

Conclusion:

Based on the above information and IDOT's Manual on Uniform Traffic Control Devices, I would recommend replacing the yield signs on Garfield Avenue with stop signs.



Memo

To: Mayor and City Council
From: Mike Drella
CC: Jan Noble / Shane Woody / Brent Anderson
Date: 01/17/2018
Re: Trailer Parking

As you know, Alderman Sanderson wished to consider prohibiting trailer parking on City streets unless they were properly connected to a towing vehicle. Attached is a proposed amendment to section 110-191 of the City's Code to achieve that goal.

Sec. 110-191. - Time limits.

It shall be unlawful for any vehicle or trailer, as defined in the Illinois Vehicle Code, or any snowmobile or boat ~~or lawboy~~ to be parked on any street in the city for a period of longer than 24 consecutive hours. A trailer shall not be parked on any street unless it is safely and properly connected to an operable and legally parked towing vehicle.

ORDINANCE #

AN ORDINANCE AUTHORIZING
INSTITUTION OF EMINENT DOMAIN
PROCEEDINGS WITH RESPECT TO 141 APPLETON ROAD

WHEREAS, on December 4, 2017, the City of Belvidere (the City) adopted Ordinance 378H , An Ordinance Authorizing Acquisition of an Easement for Sanitary Sewer Purposes; and

WHEREAS, acquisition of a perpetual easement over real property, commonly known as the Waterfall Bar and Grill, and legally described in the attached Exhibit A (the Property) which is incorporated herein by this reference, is necessary for the construction and maintenance of a sanitary sewer; and

WHEREAS, the Corporate Authorities previously directed the Mayor and City Staff to negotiate for the purchase of the perpetual easement; and

WHEREAS, the City has attempted to negotiate the purchase of the perpetual easement but the owners of the Property have failed to reply.

NOW THEREFORE, BE IT ORDAINED by the Mayor and City Council of the City of Belvidere, Boone County, Illinois, as follows:

- 1) The foregoing recitals are incorporated herein as if fully set forth.
- 2) It is necessary and desirable that a perpetual easement over the Property be acquired by the City of Belvidere for the purpose of constructing and maintain a sanitary sewer from the Van Epps Lift Station to the City's Waste Water Treatment Plant. The Corporate Authorities specifically find that (1) the easement area is not improved with any structure and not currently used by the owners; (2) portions of the remainder of the property are improved with a commercial enterprise that will not be effected by the perpetual easement or storm sewer; (3) It is necessary for the protection of the general health and welfare of the City, and for future development, to construct the sanitary sewer from the Van Epps Lift Station to the City's Waste Water Treatment Plant.
- 3) The Mayor, his staff and the City Attorney are authorized and directed to take such steps, either by negotiation or prosecution of eminent domain proceedings, to acquire the easement over the Property and to continue to negotiate for the acquisition of the Property even after the commencement of an eminent domain action. Further, the Mayor, his staff and the City Attorney are authorized and directed to obtain Minutes of Condemnation/title to retain such experts and witnesses as necessary and incur such costs as customary in the acquisition of property or prosecution of eminent domain proceedings.

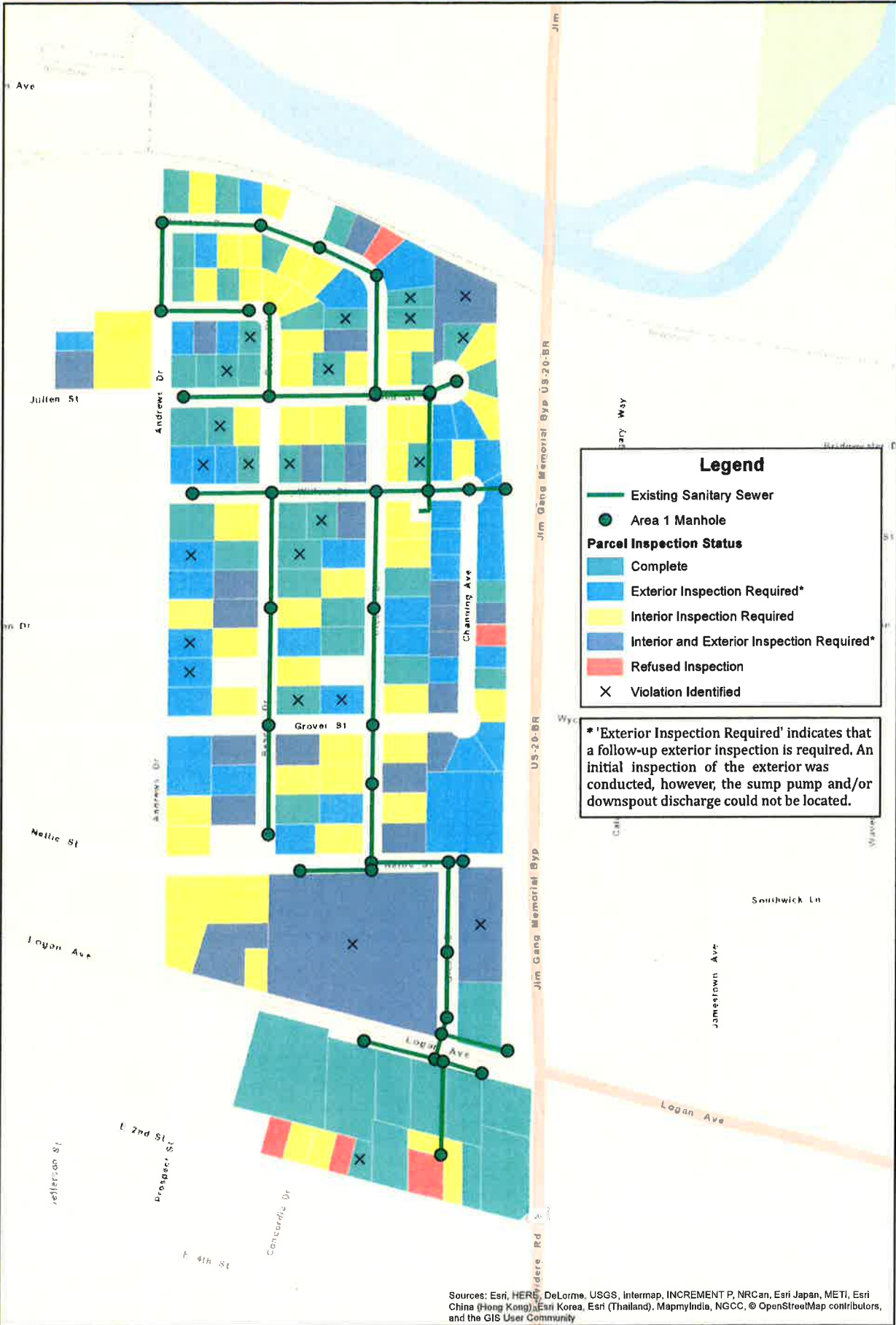
EXHIBIT A

A 20' WIDE SANITARY SEWER EASEMENT

OF PROPERTY DESCRIBED AS:

A strip of land being 20 feet in width, the centerline described as follows: Part of Lot 9 of the Assessor's Survey of the Southeast Quarter of Section 27, Township 44 North, Range 3 East of the Third Principal Meridian as platted and recorded in the Recorders Office of Boone County, Illinois in Book 33 of Deeds on page 632 bounded and described as follows:

Commencing at the Southeast Corner said Section 27; thence South 89 degrees 35 minutes 00 seconds West along the South Line of said Section 27, a distance of 297.04 feet to a point being 297.00 feet Westerly of the East Line of said Section 27, as measured perpendicular to said East Line; thence North 00 degree 29 minutes 47 seconds East, parallel with the East Line of said Section 27, a distance of 148.11 feet to the Point of Beginning of the hereinafter described easement centerline; thence North 26 degrees 18 minutes 05 seconds East, a distance of 190.98 feet to the termination of said centerline, subject to all easements, agreements, city codes and/or ordinances



Legend

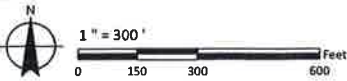
- Existing Sanitary Sewer
- Area 1 Manhole

Parcel Inspection Status

- Complete
- Exterior Inspection Required*
- Interior Inspection Required
- Interior and Exterior Inspection Required*
- Refused Inspection
- X Violation Identified

* 'Exterior Inspection Required' indicates that a follow-up exterior inspection is required. An initial inspection of the exterior was conducted, however, the sump pump and/or downspout discharge could not be located.

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community



8678 Ridgefield Road
Crystal Lake, IL 60012
815.459.1260
815.455.0450
www.baxterwoodman.com
info@baxterwoodman.com



Memo

To: Brent Anderson, Director of Public Works; City of Belvidere

From: Jerry Groth, Steve Verseman, Alan Phelps

Date: January 29, 2018

Project No.: 170793.30

Subject: Wycliffe Area Basement Backup Investigation

Over the past 20 years, several houses in the Wycliffe subdivision have experienced basement backup events. The City retained Baxter & Woodman, Inc. (B&W) to investigate possible causes of the backups and to evaluate various solutions to minimize or eliminate the basement backups in the Wycliffe subdivision.

B&W performed an on-site survey to gather manhole rim and pipe invert elevation data, house sill elevations, and basic information on the Wycliffe Pumping Station, located on Bridgewater Drive, just east of Jamestown Avenue. The survey information was used to produce profile elevation drawings to compare basement floor elevations with sewer pipe and pumping station elevations. B&W also plotted the depth of the reported backup water levels on the profile elevation drawings and determined the various basement backup elevations were similar in neighboring houses.

B&W received additional information from the City regarding the Wycliffe Pumping Station. That information included email correspondence, pump cut-sheets, equipment purchase orders, pump curves, pump station yard piping plans, a trunk sewer engineering study, and a brief summary of past problems at the pumping station. Based on the information received, it appears basement backups began to appear in the Wycliffe area around 2006/2007 after the Willow Street Pumping Station was removed from service. Sewage flows previously flowing to the Willow Street Pumping Station were then re-routed to a new gravity sewer flowing east into the Wycliffe development. The gravity sewers in the Wycliffe subdivision flow to, and are eventually pumped by, the Wycliffe Pumping Station.

The Wycliffe Pumping Station and its force mains and discharge points have been modified several times since 2007 to increase the capacity of the pumps and the force mains. Originally, the developer of the Wycliffe subdivision was required to install two force mains – an 8-inch pipe for sewage flows from the initial development, and an 18-inch pipe for sewage flows from the ultimate tributary area of the Wycliffe Pumping Station. Due to the increased flows at the Wycliffe pumping station, the previous 8-inch force main was abandoned, and the Wycliffe Pumping Station pumps were connected to the 18-inch force main. The 18-inch force main was extended across U.S. Business Route 20/Belvidere Road and west to Meadow Street where it discharges into a 36-inch gravity sewer.

HYDRAULIC ANALYSIS:

B&W reviewed the City's sanitary sewer system maps and analyzed the capacity of the 8-inch and 15-inch sanitary sewers tributary to the Wycliffe Pumping Station. The capacities of the 8-inch and 15-inch influent sewers were determined with the sewers flowing full under a reasonable surcharged (not causing basement backups) condition. We calculated the surcharged capacity of the influent sewers to be approximately 3,200 gallons per minute (gpm).

The pumps currently in use at the Wycliffe Pumping Station are two (2) HOMA AMX644-300-34.5 HP pumps, each operating at approximately 1,050 gpm at 80 feet total discharge head (TDH), with recently installed 300 mm impellers. We calculated the pumping capacity with both pumps operating to be approximately 1,650 gpm, though the pumping station was intended to operate with only one pump operating and the second pump serving as a redundant pump.

CONCLUSIONS:

Using the information provided by the City, the following conclusions were made and are considered to be contributing to the basement backups:

1. The Wycliffe Pumping Station pumps provide a capacity up to 1,650 gpm when both pumps are operating, which falls well short of the 3,200 gpm surcharged influent sewer capacity.
2. High flows have been reported to come from the area west of U.S. Business Route 20 into the Wycliffe subdivision. The removal of the Willow Street Pumping Station, with a sewer now flowing by gravity into the Wycliffe area, is contributing to increased flows.
3. The original 310 mm diameter pump impellers were replaced with 300 mm diameter impellers to prevent overloaded pump motors caused by the larger, original impellers. The smaller impellers have decreased pumping capacity, but not substantially.
4. Yard piping, and specifically the use of a butterfly valve in the force main, do not allow for maximum flow out of the pumping station. The butterfly valve could serve as an obstruction to flow or to closing the valve completely for a bypass pumping operation.
5. Two studies are being completed for the area previously tributary to the abandoned Willow Street Pumping Station. That area is bounded by U.S. Business Route 20, the Kishwaukee River, Andrews Drive, and Logan Avenue; and is known as Area 1. Results of those two studies are being finalized, and it is anticipated recommendations to remove excess flow (infiltration and inflow) from the Area 1 sewers would reduce peak flows from Area 1, thereby reducing peak flows at the Wycliffe Pumping Station.

6. Equipment Issues:

- a. Power outage and failure of the generator to start which led to basement backups.
- b. One instance occurred where only one of the two pumps was operable during a rainstorm, leading to a backup event.

7. In June 2017, the Wycliffe Pumping Station was operating with both pumps, but a basement backup event still occurred – due to high wet weather flows.

Based on available information, B&W believes inadequate pumping station capacity is the leading cause of the basement backups.

CONCLUSIONS AND RECOMMENDATIONS:

The City is conducting two studies in area upstream of the Wycliffe subdivision. There is currently an inflow and infiltration (I/I) study being done in Area 1, which could include additional sanitary sewer evaluation and survey (SSES) work. In addition, sump pump and house piping inspections were completed to identify discharge points of sump pumps and other sources of sewer infiltration/inflow. These projects are currently in progress and we anticipate the results of those studies will include recommendations for improvements/repairs to reduce the flow coming from Area 1 into the Wycliffe subdivision and its pumping station.

However, the amount of flow reduction is not quantifiable until after construction of the rehabilitation projects. Even with those rehabilitation projects, it cannot be concluded existing flows can be reduced substantially to eliminate basement backups in the Wycliffe subdivision. In addition, wet weather flow rates tributary to the Wycliffe pumping station are unknown, and cannot be reliably determined until such time as there is adequate pumping capacity and flow metering capability at the Wycliffe Pumping Station. Therefore, we recommend making immediate improvements to the Wycliffe Pumping Station.

Two higher priority, relatively low cost improvements are possible to improve the hydraulic performance of the Wycliffe Pumping Station. The improvements consist of replacing onsite yard piping and valves at the pumping station. The first priority item is replacing the existing 18" butterfly valve with a plug valve. The second priority item consists of upsizing the existing piping between the valve vault and the 18" force main. Improvements to the piping could also include a revised bypass connection. These steps will improve the hydraulic capacity, make better use of the 18" force main capacity, and avoid a potential plugging issue with the butterfly valve.

To ensure the pumping station discharge capacity is not the cause of basement backups, the pumps need to be replaced with pumps having a total flow capacity greater than or equal to the capacity of the surcharged influent 8-inch and 15-inch sewers. City staff has stated the Wycliffe Pumping Station was designed to allow the installation of larger and/or additional pumps to take advantage of the 18-inch force main capacity. Pump/motor improvements will most likely require larger/improved electrical equipment and a new emergency power generator. Replacement of electrical equipment

should include examining other equipment such as float/pressure switches, valves, and controls. There is no indication of a flow meter at the pumping station, and IEPA regulations require flow metering capability at pumping stations with capacities greater than 1,200 gpm. To allow a greater variation in flow rates, and to provide increased energy efficiency, we recommend installing pump motors equipped with variable frequency drives (VFDs).

The following section consists of a detailed, line item breakdown of various work to improve the Wycliffe Pumping Station to eliminate basement backups caused by capacity and operational problems at the pumping station.

OPINION OF PROBABLE COSTS FOR PUMPING STATION IMPROVEMENTS:

No.	Description	Approximate Quantity	Unit	Unit Price	Amount
-	General Conditions, Overhead and Profit, Insurance, Bonds	15	%		\$ 69,000
1	Discharge Pipe (PS to VV)	45	Feet	\$ 300	\$ 15,000
2	Valve Vault Piping and Valves		Lump Sum		\$ 45,000
3	Force Main (RJT), 16"	30	Feet	\$ 400	\$ 12,000
4	Gate Valve and Box (Bypass)	2	Each	\$ 4,500	\$ 9,000
5	Gate Valve and Box	1	Each	\$ 4,500	\$ 4,500
6	Remove Butterfly Valve, 18"	1	Each	\$ 1,200	\$ 1,200
7	Plug Valve, 18" with box	1	Each	\$12,000	\$ 12,000
8	Submersible Pumps w/ VFDs	2	Each	\$45,000	\$135,000
9	Electrical Equipment		Lump Sum		\$ 30,000
10	Automation Equipment		Lump Sum		\$ 20,000
11	Temporary Bypass Pumping		Lump Sum		\$ 20,000
12	Flow Meter and Vault		Lump Sum		\$ 25,000
13	Emergency Power Generator		Lump Sum		\$100,000
14	Restoration of Lawns	1,330	Sq. Yd.	\$ 10	\$ 13,300
15	Sidewalk Restoration	300	Sq. Ft.	\$ 20	\$ 6,000
16	Driveway Restoration	80	Sq. Yd.	\$ 50	\$ 4,000
17	Trench Backfill	20	Feet	\$ 100	\$ 2,000
Opinion of Probable Construction Cost					\$523,000
Contingencies; Design and Construction Engineering; and Legal, Administrative, and Financial (40%)					\$209,000
Opinion of Probable Total Project Cost					\$732,000

Other Considerations

The proposed improvements to the Wycliffe Pumping Station will provide capacity for peak flow rates in the influent sewers under reasonable surcharged conditions. This will eliminate basement backups caused by inadequate pumping capacity. However, future development to be served by the Wycliffe Pumping Station might be limited by existing wet weather/peak flows in the sanitary sewers tributary to this pumping station. Relief sewers and additional pumping capacity with another

pumping station and force main(s) – or additional pumping capacity at the existing Wycliffe Pumping Station – might be needed prior to additional development occurring in the Wycliffe Pumping Station’s tributary area. Subsequent to completion of the recommended improvements, a thorough review of future rainfall events and pumping station flow metering data should be undertaken to determine if there is capacity in the sanitary sewers available for additional development.

Even with the proposed pumping station improvements, there will always be a chance of an unforeseen or unexpected problem (clogged sewer, collapsed sewer, etc.) occurring. The only way for property owners to guarantee they will never experience basement backups is to install overhead plumbing in their basements or to separate their house from the sewer with an ejector pump or a sewage pump installed outside the house. The City’s cost sharing program would assist property owners with such improvements by paying for a portion of the cost, up to a maximum of \$2,500.



C.E.S. Inc. – Main Office
700 West Locust Street
Belvidere, Illinois 61008
Phone: (815) 547-8435
Fax: (815) 544-0421

C.E.S. dba Survey-Tech
104 A Maple Court
Rochelle, IL 61068
Phone: (815) 562-8771
Fax: (815) 562-

6555

Kevin.Bunge@CivilIdeas.com

WORK AUTHORIZATION

Date: February 7, 2018

Subject: Wycliffe Lift Station Improvements - 2018

Requested by: City of Belvidere – Brent Anderson

General scope of work to be completed:

C.E.S. Inc. will prepare IEPA Permit Applications, Construction Plans, Specifications and Bid Documents for the proposed Wycliffe Lift Station Improvements 2018. C.E.S. will analyze the existing lift station and design improvements that have the capability to pump a design peak flow of 3200 gpm.

Final Design Documents to include: topographic survey as required, construction plans, specifications, standard details, I.E.P.A. permit application, summary of quantities, and one bid package including bid and contract documents.

The anticipated scope of the project based on our review to date is indicated on Attachment A to this work authorization.

Not included in the quoted fees:

Revisions due to changes in the scope or limits of project after our work has commenced; Application fees to any agency; Easements.

See attached fee schedule for T&M rates and reimbursables.

Fees: Lump sum of \$36,500.00 (Thirty-six thousand and five hundred dollars).

Approval of Quote and Authorization to proceed (Owner/Client)

Date

Printed Name (Owner/Client)

Title

Organization (Owner/Client)

Please deliver, mail, e-mail, or fax completed Work Authorization to C.E.S. Inc. at
Kevin.Bunge@civilideas.com

WYCLIFFE LIFT STATION IMPROVEMENTS 2018

ATTACHMENT "A" TO WORK AUTHORIZATION DATED FEBRUARY 7, 2018.

DESIGN PARAMETERS/SCOPE OF WORK

THE NEW STATION WILL BE TRIPLEX (EXISTING, UPGRADED DUPLEX WITH SIMPLEX ADD-ON) WITH ANY 2 PUMPS HAVING A COMBINED PEAK CAPACITY OF 3200 GPM.

THE EXISTING ELECTRICAL SERVICE TO THE SITE WILL BE LEFT IN PLACE AND IS 230 VOLT.

THE EXISTING LIFT STATION WILL BE LEFT IN PLACE. NEW PUMPS WILL BE PROVIDED AND INSTALLED ALONG WITH REVISIONS TO THE DISCHARGE PIPING, HARDWARE, ELECTRICAL AND CONTROLS.

THE EXISTING STATION 6" DIAMETER PIPING PROVIDES A REASONABLE DESIGN VELOCITY OF 5 FPS AT 1600 GPM. THE PIPING AND VALVE VAULT CAN BE LEFT IN PLACE FOR THE MOST PART.

THE EXISTING SEGMENT OF 8 INCH DIAMETER FORCMAIN WILL REQUIRE UPSIZING.

VARIABLE FREQUENCY DRIVES SHOULD NOT BE REQUIRED.

A NEW SIMPLEX STATION WILL BE DESIGNED TO DELIVER 3200 GPM WITH 2 PUMPS IN OPERATION. THE NEW STATION WILL INCLUDE NEW ELECTRICAL, CONTROLS, PIPING AND VALVE VAULT AND GENERATOR/SHELTER. THE NEW WETWELL WILL BE HYDRAULICALLY CONNECTED TO THE EXISTING WETWELL VIA AN APPROXIMATE 24"/30" PIPE, SO IT ACTS AS SUPPLEMENTAL RESERVOIR VOLUME.

IT IS ANTICIPATED THAT AN AERATION SYSTEM WILL BE REQUIRED FOR BOTH WET WELLS.

THE NEW WET WELL WILL BE CONSTRUCTED AT THE SAME DEPTH AS THE EXISTING WET WELL. THE DESIGN IS NOT INTENDED TO BE AT A DEPTH SUFFICIENT TO ALLOW CONNECTION TO THE FUTURE EASTERN TRUNK SEWER.

A FLOWMETER AND VAULT WILL BE REQUIRED PER IEPA REQUIREMENTS.



C.E.S. Inc. – Main Office
700 West Locust Street
Belvidere, Illinois 61008
Phone: (815) 547-8435
Fax: (815) 544-0421

C.E.S. dba Survey-Tech
104 A Maple Court
Rochelle, IL 61068
Phone: (815) 562-8771
Fax: (815) 562-6555

Kevin.Bunge@civlideas.com

City of Belvidere, Illinois Design, Survey and Construction Services 2018 Rate Structure

Rates effective January 1, 2018 through December 31, 2018

Principal Engineer (P.E.)	\$ 143.00/hr.
Professional Land Surveyor (P.L.S.)	\$ 125.00/hr.
Senior Engineer (P.E.)	\$ 117.00/hr.
Staff Engineer (E.I.T.)	\$ 97.00/hr.
Survey Technician (S.I.T.)	\$ 82.00/hr.
Rodperson / Staking Technician	\$ 56.00/hr.
GPS Usage (One person)	\$ 98.00/hr.
Construction Observation	\$ 77.00/hr.
AutoCAD Draftsman	\$ 87.00/hr.
Administrative Support	\$ 46.00/hr.
Mileage	\$.70/mile
Plots / Copies (24" x 36" Black & White)	\$ 3.00/ea
Plots / Copies (24" x 36" Mylar)	\$ 18.00/ea
Mailings	Cost plus 15%
Reimbursable	Cost plus 10%

ENGINEER'S OPINION OF PROBABLE COST

Client City of Belvidere
 Project 170791.3

**100 YEAR DESIGN STORM - ULTIMATE BUILDOUT**

No.	Pay Item	Quantity	Unit	Unit Price	Amount
1	BASIN A STORM SEWER				
	68" X 106" ELLIPTICAL RCP	2,200	LF	\$ 2,500	\$ 5,500,000
	72" RCP	1,460	LF	\$ 1,950	\$ 2,847,000
	60" RCP	685	LF	\$ 1,700	\$ 1,164,500
	48" RCP	1,395	LF	\$ 1,100	\$ 1,534,500
	42" RCP	1,010	LF	\$ 900	\$ 909,000
	36" RCP	1,215	LF	\$ 750	\$ 911,250
	30" RCP	200	LF	\$ 550	\$ 110,000
	ABANDONMENT OF EXISTING SEWERS	2,190	CY	\$ 180	\$ 394,200
2	BASIN B STORM SEWER				
	84" RCP	1,200	LF	\$ 2,400	\$ 2,880,000
	72" RCP	385	LF	\$ 1,950	\$ 750,750
	60" RCP	395	LF	\$ 1,700	\$ 671,500
	54" RCP	450	LF	\$ 1,450	\$ 652,500
	42" RCP	3,145	LF	\$ 900	\$ 2,830,500
	36" RCP	1,035	LF	\$ 750	\$ 776,250
	ABANDONMENT OF EXISTING SEWERS	1,480	CY	\$ 180	\$ 266,400
3	DETENTION POND, CHURCH PROPERTY, 1.75 AC-FT	1	LS	\$ 260,000	\$ 260,000
4	EXPAND DETENTION POND, HIGH SCHOOL PROPERTY, 24.3 AC-FT TOTAL	1	LS	\$ 1,308,000	\$ 1,308,000
5	SURFACE STORAGE, WASHINGTON ELEMENTARY, 44.3 AC-FT	1	LS	\$ 3,364,000	\$ 3,364,000
6	SURFACE STORAGE, GLENWOOD DR AND FREEMONT ST, 9.8 AC-FT, 4 LOT BUY-OUTS	1	LS	\$ 1,514,000	\$ 1,514,000
7	SURFACE STORAGE, E 8TH ST AND S MAIN ST, 12.1 AC-FT, 12 LOT BUYOUTS	1	LS	\$ 2,376,000	\$ 2,376,000
8	SURFACE STORAGE, E 4TH ST AND EAST AVE, 17.8 AC-FT, 17 LOT BUY-OUTS	1	LS	\$ 3,417,000	\$ 3,417,000
9	SURFACE STORAGE, E 4TH ST AND FREEMONT ST, 6.5 AC-FT, 11 LOT BUY-OUTS	1	LS	\$ 1,873,000	\$ 1,873,000
10	IMPROVED OVERLAND FLOW ROUTE, W 10TH ST	1	LS	\$ 400,000	\$ 400,000

SUBTOTAL, CONSTRUCTION \$ 36,800,000

10 CONSTRUCTION CONTINGENCY 15 % \$ 5,520,000

OPINION OF PROBABLE CONSTRUCTION COST \$ 42,320,000

11 ENGINEERING, DESIGN 6.0 % \$ 2,540,000

12 ENGINEERING, CONSTRUCTION 7.5 % \$ 3,180,000

13 LEGAL AND ADMINISTRATIVE 2.0 % \$ 850,000

14 FINANCIAL CONSULTANT 2.5 % \$ 1,060,000

OPINION OF PROBABLE TOTAL PROJECT COST \$ 49,950,000

Notes











- Prices include sanitary sewer and water service relocation/adjustment, trench backfill, pavement or lawn restoration, traffic control, erosion control, construction layout, and mobilization
- Prices do not include right-of-way acquisition, temporary or permanent easements, or relocating other utilities.
- Prices are current for 2018.

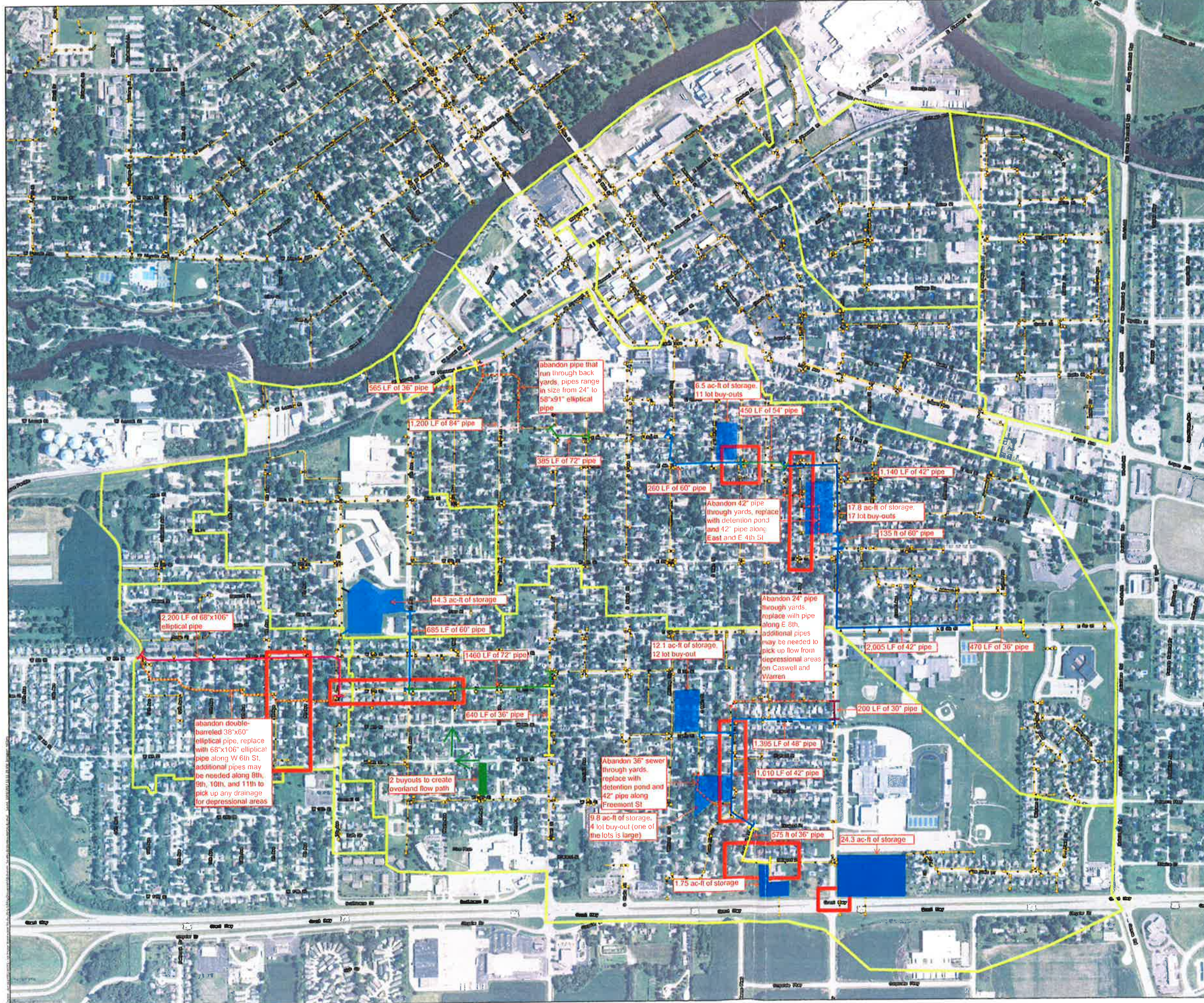
SOUTHSIDE STORMWATER STUDY

City of Belvidere, Illinois

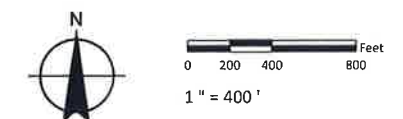
FULL SOUTHSIDE AREA

LEGEND

-  Storm Manhole
-  Catch Basin
-  Inlet
-  Drywell
-  Outfall
-  Storm Tee
-  Storm Cap
-  Storm Pipe
-  Problem Area
-  Storm Basin



Source: Storm and base data from City of Belvidere, October 2017
 Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGR, swisstopo, and the GIS User Community
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BAXTER & WOODMAN
 Consulting Engineers

Memo

To: Mayor and City Council
From: Brent Anderson, Director of Public Works
Date: 2/7/2018
Re: 2018 MFT Street Maintenance Program

The following is the proposed MFT Street Maintenance Program for this year:

Arterial & Collector Street Overlays:

<u>Street</u>	<u>From</u>	<u>To</u>	<u>Ward</u>	<u>Quantity</u>	<u>Distance</u>
Newburg Road	Ipsen	Shaw	1	8,167 SY	2,625 LF

Residential Overlays:

<u>Street</u>	<u>From</u>	<u>To</u>	<u>Ward</u>	<u>Quantity</u>	<u>Distance</u>
West 4 th Street	10 th Ave	Columbia	1	1,333 SY	875 LF
Distillery Road	Bus 20	River Run	2	15,067 SY	5,650 LF
Gateway Center Dr	Chrysler	Farmington Way	3	10,000 SY	2,250 LF
Willow Street	Warren	End	3	3,520 SY	1,320 LF
East 2 nd Street	Fremont	Caswell	3	778 SY	200 LF
Van Buren Street	Lincoln	Menomonie	4	7,511 SY	1,690 LF
Blaine Street	Madison	Jackson	4	2,334 SY	1,050 LF
Bennett Street	Lincoln	Madison	4	1,334 SY	600 LF
Glen Elms Drive	Fremont	Whitney	5	3,422 SY	1,100 LF
Elmwood Drive	East	Glen Elms	5	2,707 SY	870 LF
CedarDale Drive	Elmwood	Bellwood	5	933 SY	300 LF

Current MFT regulations require that ADA compliant sidewalk returns at all intersections of the streets being overlaid must be in place or installed in conjunction with the overlay project.

There is \$500,000 budgeted in MFT for the Street Maintenance Program.