OTTUMWA

CITY OF BRIDGES...RIVER OF OPPORTUNITY

Sc ✓
Food ✓
EPA ✓

RECEIVED
JAN 17 2017
DNR FO6

January 13, 2017

Russell Royce
DNR Field Office 6
1023 W. Madison
Washington, IA 52353

RE: Ottumwa, Iowa 2015 Annual Report- CSO Separation Projects

Dear Russell,

The following is a condensed report on the progress the City of Ottumwa continues to make in its efforts to meet water quality standards. Attached are corresponding figures that are periodically referred to in this report. All figures are included from previous reports.

Feel free to contact us with any questions regarding this report.

Sincerely,

Larry Seals
Director of Public Works
City of Ottumwa
641-683-0680

Enclosures

Cc: Terry Kirschenman, Iowa DNR
Jon Tack, Iowa DNR

City of Ottumwa, Engineering Department
105 East Third Street, Ottumwa, Iowa 52501
Telephone 641-683-0680 Fax 641-683-0692

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JAN 17 2017
DNR FO6

2017 STORMWATER REPORT

Projects listed in the Administrative Consent Order

PHASE 4, WEST END FLOOD AND SEWER SEPARATION

(December 31, 2015) Construction Completed

The Phase 4, West End Flood and Sewer Separation Project FEMA grant application was awarded. Cost overruns were encountered and additional funds were applied for and awarded. Total Project Cost is $20,226,996.40.

This project was let under 4 contracts. Contract 1 includes the large diameter storm sewer pipe which will serve as the main backbone of the west end storm sewer system. Major items include a 96" storm sewer pipe. Contract 1 has been completed. Contract 2 includes the construction of a storm sewer pump station 220 CFS, a levee gate well for both the gravity and pressure system along with the installation of large diameter storm pipe. Contract 4 includes smaller diameter storm sewer pipe that will feed the 96" storm installed in Contract 1. *(See Figure 5)*

This overall project separates 450 acres of a 650 acre drainage basin. Approximately 330 acres will flow gravity directly to the river. The remaining 120 acres will be pumped to the river. Sanitary sewer has been replaced as required.

PHASE 7, LAGOON PUMP STATION

(December 31, 2019)- *COMPLETE*
See previous years repost for full details

PHASE 5, SEWER SEPARATION

(December 31, 2016)

Phase 5, Division 1- *COMPLETE*
Phase 5, Division 1 Richmond Area is completed *(see Figure 2)*

Phase 5, Division 2- *COMPLETE*
Phase 5, Division 2 includes the installation of new sanitary and storm sewers as well as over 18,000 L.F. of sanitary sewer lining. *(See Figure 3)*

Phase 5, Division 3- *ACTIVE*
The third phase of the Richmond CSO project area is to line the remaining sanitary system as needed. The contractor has started rehabilitation of exising manholes in the project area along with cleaning and tap cutting. The project is expected to be completed by June of 2017. The major project items consist of lining 22,369 LF of 8" to 24" sanitary sewer line. The installation of five manholes and installation of 486 VF manhole lining.

City of Ottumwa, Engineering Department
105 East Third Street, Ottumwa, Iowa 52501
Telephone 641-683-0680 Fax 641-683-0692

By completing the necessary lining, we believe that we can retrofit the Richmond Pump Station instead of a complete reconstruction (estimated at $3.6 million). Ultimately this would save the rate payers.

PHASE 6, NORTHSIDE TRUNK CLEANING/ EVALUATION
(December 31, 2014)- *COMPLETE*

The City of Ottumwa contracted Hydro Klean to clean 7404 LF of the Northside interceptor. The contractor removed 5,192.7 tons of material from the box sewer.

Continued maintenance efforts included an internal inspection of the north side box December 3rd 2015. Staff identified two more existing construction form pin holes that will be addressed when river levels allow and need to rehabilitate end of barrel section joint rehab. Additional project included for summer replacement is the sluice gate that experienced a mechanical failure causing damage to the thimble casting at the Northside CSO outfall. The repair has been reassigned to Ottumwa Engineering Department. The new gate has been completed and the new automatic opener is being manufactured. An installation contact is planned for letting February 2017. With this gate out of service we have experienced a considerable inflow of river water during high river levels. The north side sluice gate is backed up with four flap gates and controls the level set to maximize storage in the box. *(see Figure 18)*

PHASE 3, SEWER SEPARATION
(December 31, 2011)

Phase 3, Division 1- *COMPLETE*
See previous years repost for full details

Phase 3, Division 2- *COMPLETE*
See previous years repost for full details

Additional construction projects related to compliance but not individually listed in the Administrative Consent Order.

Sanitary Sewer diverted from the Blake's Branch Sewer system. Completed
(See Figure 11)

Industrial Airport Rehabilitation Project (I & I Reduction & Sewer Replacement)
Completed (*see Figure 4)*

Back-up Generator Installation Program 2007-2016 Completed
(See Figure 9)

Nine Minimum Controls
City crews continued its efforts to clean and maintain our sewer systems. During 2016, the City cleaned 114,302 LF of sewer line, (removing approximately 28.63 tons of

material), 618 catch basins (removing an estimated 6.5 tons of debris) and the street sweeper cleaned 8447 lane miles (collecting an estimated 3050 tons of material).

We had 2 public side sewer backups, down from a high of 52 in 2008.

Flow Monitoring/ Pump Station Removal
Milner Pump Station is budgeted to be removed fall of 2018. This will be removed when the street is reconstructed.

John Deere Plant internal separation project
The John Deere internal separation project has been completed. This project removed 63.59 acres from the Finley Avenue box sewer and rerouted a calculated 334 (CFS) during a 10 year storm event. *(See Figure 12)*

UV disinfection installation Project
Completed

Long Term Control Plan schedule
The City plans on continuing its efforts to meet the LTCP mile markers as currently listed in *Figure 15*. The upcoming construction season will see the continuation and completion of the Phase 5, Division 3

Dr. Pepper-Snapple Pre-Treatment unit
The Dr. Pepper-Snapple bottling plant has completed construction of a pre-treatment unit. The unit became operational in July 2016. The current trend indicates a reduction of BOD to around 1000 pound average.

Sewer Rate Review
This project was reassigned to the Public Works Department. City has contracted with V&K and is gathering base data. The rate study will include projected project costs for both the Administrative Compliance Order and the pending plant improvements. A new facility plan will be prepared by HDR.

Cross County Sewer Easement Clearing
The City has under taken City wide cross county sewer easement clearing. We are in our fourth year with 2.2 miles completed as winter work. Crews have raised buried manholes and added armor in exposed creek crossing. This allows for routine inspection and access for cleaning. *(See Figure 20)*

Figures referred to in this report and for general informational purposes:

Figure 1- Sewer Separation Map: This map offers an overview of the various phases of sewer separation that have taken place within the City of Ottumwa.

Figure 2- Phase 5, Division 1 Map: This map shows the project area and storm sewer installation associated with the Phase 5, Division 1 Sewer Separation project.

Figure 3- Phase 5, Division 2 Map: This map shows the project area including the portions of the project that include new sewer installation and the rehabilitation of the existing sewers.

Figure 4- Airport I & I Map: This map depicts the improvements made to the sewer system at the Ottumwa Industrial Airport including new installations and rehabilitation.

Figure 5- Phase 4 Contracts: This map shows the FEMA West End Flood Mitigation and Sewer Separation project. The 4 contracts are depicted in this map.

Figure 6- Sanitary Sewer pulled of the Richmond Box Map: This map shows the area in which the sanitary sewers have been taken off the Richmond Box (previously a CSO) and redirected to the Finley Box.

Figure 7- Sewer Separation Quantity Spreadsheet: This spreadsheet shows the quantities of sanitary and storm sewer installed during each separation project.

Figure 9- Generator Installation Spreadsheet: This spreadsheet shows the generator installation and costs to date.

Figure 10- Barton's Branch Sampling Station: This map shows the location and details of the Barton Branch CSO #15 Sampling Station.

Figure 11- Pennsylvania Avenue sewer pulled off CSO system: This map shows the properties and location of the new sewer being installed to redirect an active sanitary flow off of a CSO system.

Figure 12- John Deere Separation Map: This map shows the internal sewer separation work that took place within the John Deere Ottumwa Works plant.

Figure 14- Locust Street Map: This map depicts the work that took place on Locust Street to repair and separate a portion of previously combined and improperly built sewer system.

Figure 15- LTCP Load Reduction:

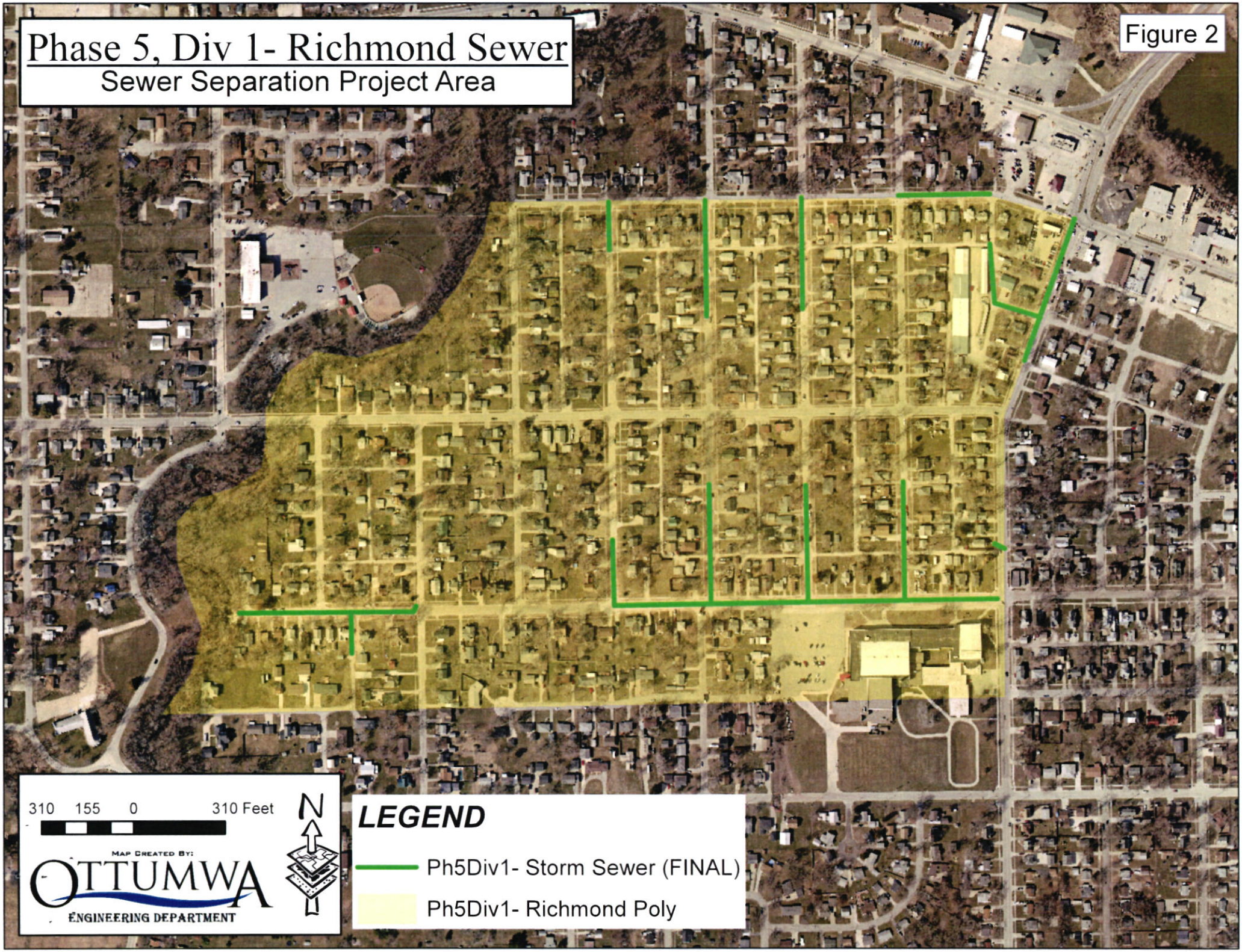
Figure 16- Phase 7 Contracts: This map shows the 3 contracts associated with Phase 7 and their locations

Figure 17- Sewer Rehabilitation CDBG Map: This map shows the project area for Phase 5, Division 3, which was awarded CDBG funds. This project would include lining the sanitary sewer to reduce areas with known I&I.

Figure 18- North Side Interceptor Cleaning Map: This map shows the portion of the North Side interceptor that was cleaned by Hydro Klean. This map also shows the water main in conflict with the box sewer.

Figure 19- Original chart of BOD and Flow Reduction Spreadsheet

Figure 20- Cross county sewer easement clearing


Phase 5, Div 1- Richmond Sewer
Sewer Separation Project Area
Figure 2
310 155 0 310 Feet
N
MAP CREATED BY:
OTTUMWA
ENGINEERING DEPARTMENT
LEGEND
Ph5Div1- Storm Sewer (FINAL)
Ph5Div1- Richmond Poly

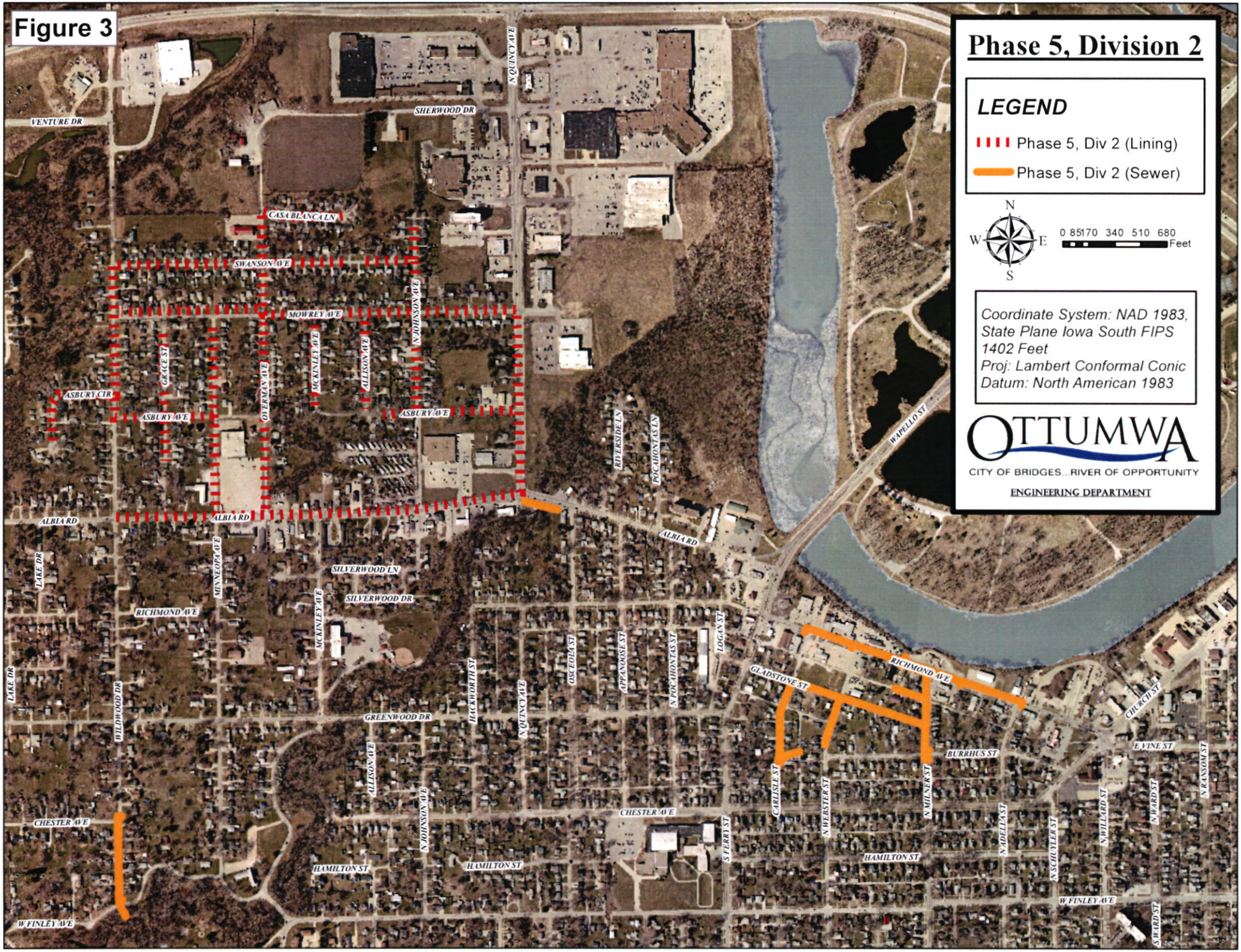


Figure 3
Phase 5, Division 2
LEGEND
Phase 5, Div 2 (Lining)
Phase 5, Div 2 (Sewer)
N
W
E
S
0 85170 340 510 680
Feet
Coordinate System: NAD 1983, State Plane Iowa South FIPS 1402 Feet
Proj: Lambert Conformal Conic
Datum: North American 1983
OTTUMWA
CITY OF BRIDGES...RIVER OF OPPORTUNITY
ENGINEERING DEPARTMENT
VENTURE DR
SHERWOOD DR
N QUINCY AVE
CASA BLANCA LN
SWANSON AVE
MOWREY AVE
GRACE ST
ASBURY CIR
ASBURY AVE
OLIVEMAN AVE
MCKINLEY AVE
ALLISON AVE
N JOHNSON AVE
RIVERSIDE LN
POCAHONTAS LN
WAPELLO ST
ALBIA RD
LAKE DR
MINNEOPA AVE
SILVERWOOD LN
SILVERWOOD DR
RICHMOND AVE
WILDWOOD DR
GREENWOOD DR
HACKWORTH ST
OSCEOLA ST
APPANOOSE ST
N POCAHONTAS ST
LOGAN ST
GLADSTONE ST
CHURCH ST
E VINE ST
BURRHUS ST
CARLISLE ST
N WEBSTER ST
N MILNER ST
N ADELLA ST
N WILLARD ST
N HARD ST
N RANSOM ST
N SCHUYLER ST
S FERRY ST
CHESTER AVE
HAMILTON ST
W FINLEY AVE
S WARD ST

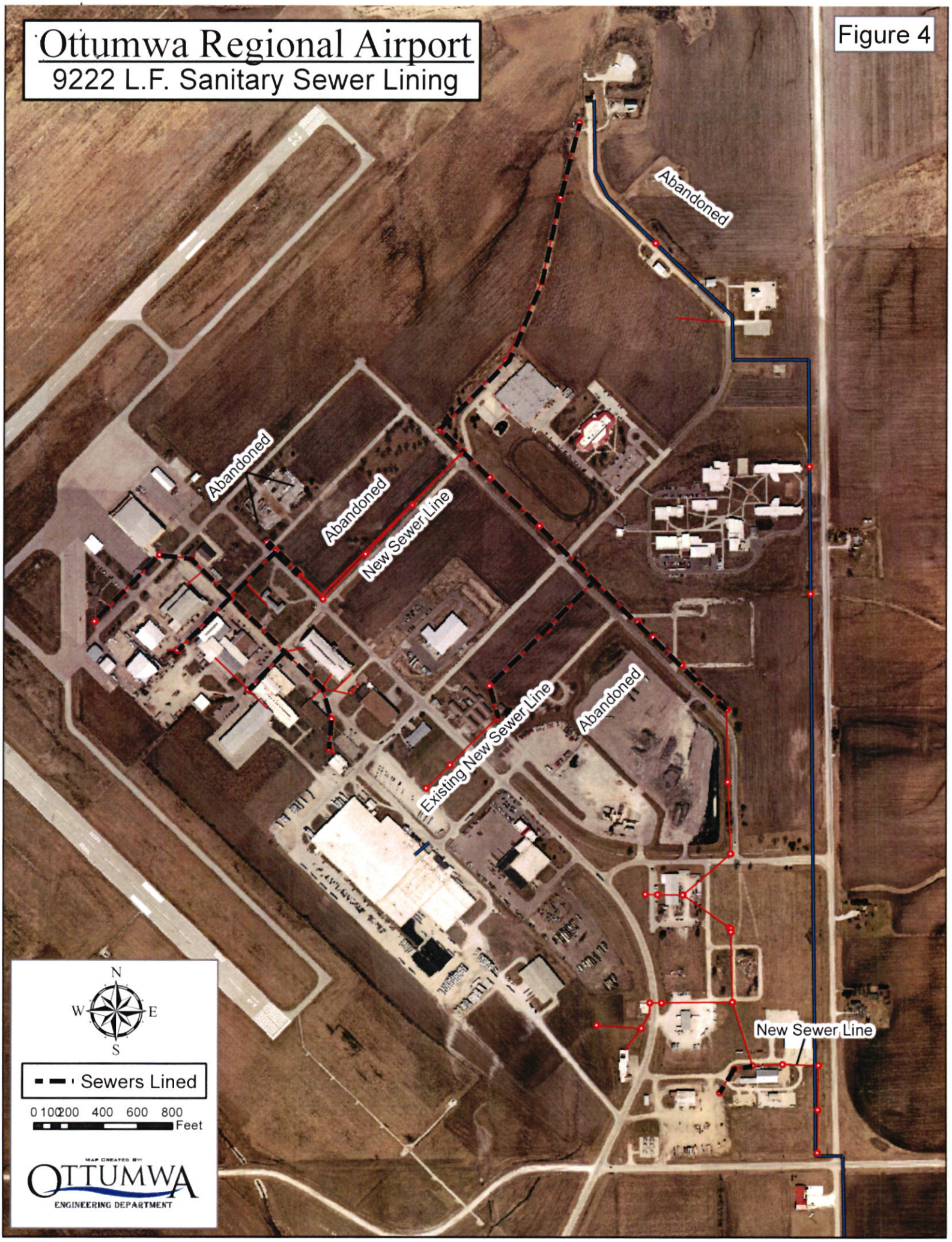
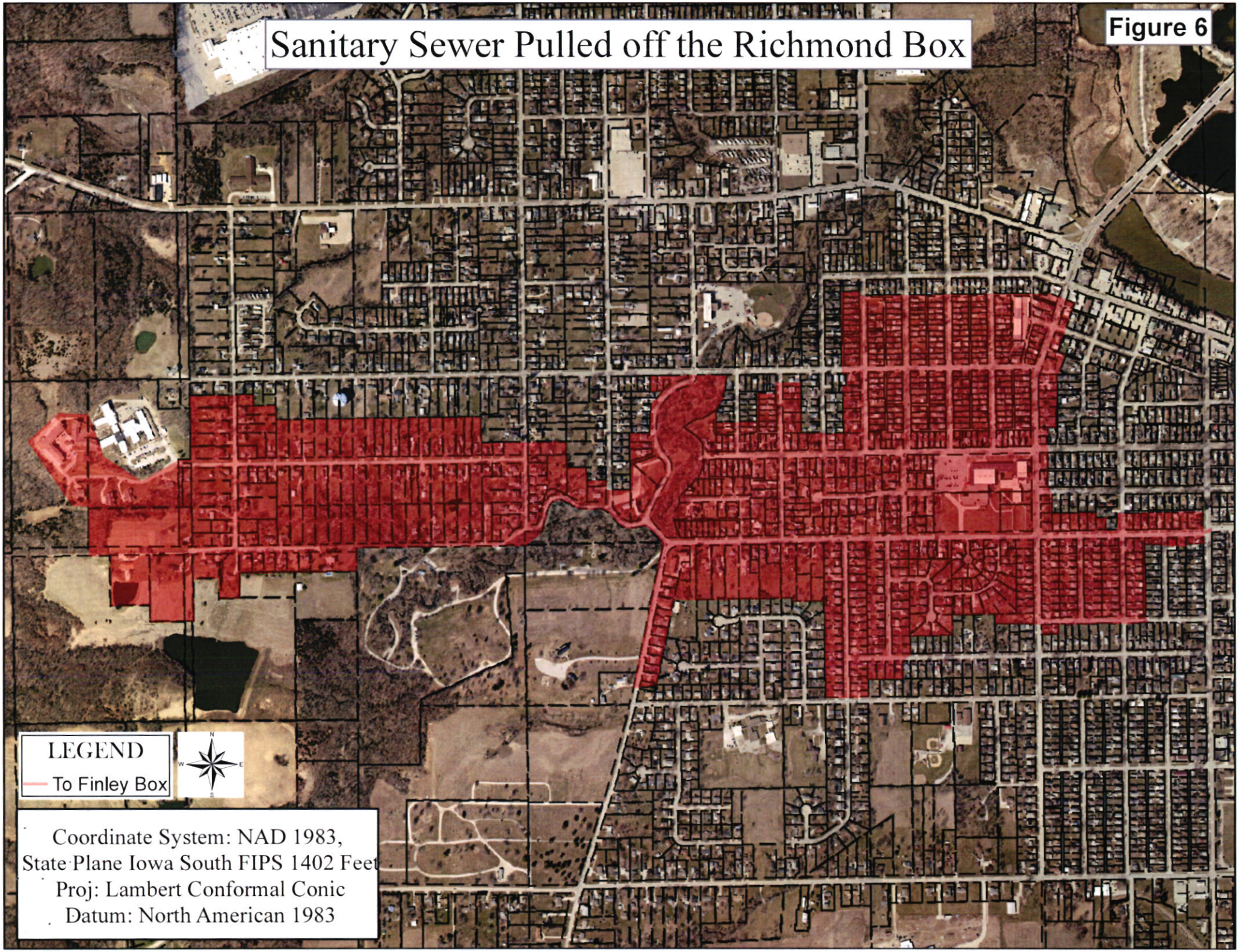

Ottumwa Regional Airport
9222 L.F. Sanitary Sewer Lining
Figure 4
Abandoned
Abandoned
Abandoned
New Sewer Line
Existing New Sewer Line
Abandoned
New Sewer Line
N
W
E
S
Sewers Lined
0 100 200 400 600 800
Feet
MAP CREATED BY:
OTTUMWA
ENGINEERING DEPARTMENT


Figure 5
Phase 4 Sewer Separation
FEMA HMGP Funded
W HIGHLAND AVE
CLARENCE ST
N MCPHERSON ST
E MCPHERSON BLVD
SUMMIT ST
W 2ND ST
PHILLIPS ST
OLNEY ST
RUSSELL ST
FRANK ST
W WOODLAND AVE
BAKER ST
SHEFFIELD ST
N CLAY ST
N BENTON ST
W THIRD ST
GLEN ST
N HOLT ST
FRANK ST
E HOLT ST
W DIVISION ST
BLACKHAWK ST
S CLAY ST
S BENTON ST
N HOLT ST
N MCLEAN ST
W 2ND ST
W 4TH ST
OTTUMWA ST
S HOLT ST
W MAIN ST
W 2ND ST
S MCLEAN ST
Detention Basin
GATEWAY DR
TISDALE ST
PACKARD AVE
EPPS ST
S CASS ST
KITTERMAN AVE
TURNER DR
LEGEND
Completed to Date
Contract #1
Contract #2
Contract_2 Det Basin
Contract #3
Contract #4

Sanitary Sewer Pulled off the Richmond Box

Figure 6



Updated January 6, 2016

Figure 7

Sewer Project Quantities (Installed to Date)

New Installation

Project	Status	Cost (To Date)	Storm Sewers																										Sanitary Sewer																	
			Intakes	MH	4"	8"	10"	12"	15"	16"	18"	21"	24"	27"	29" x 18"	30"	36"	42"	48"	54"	60"	66"	72"	84"	96"	8'x6'	TOTAL L.F. ST	MH	4"	6"	8"	10"	12"	14"	15"	16"	18"	24"	30"	48"	84"	TOTAL L.F. SS
Williams James	Final	$757,900.40	27	11				546	1588		472	58	13			332	1054										4063																	
Phase 1	Final	$8,109,560.30	86	31				430	2119		569		1805	131		2293	1787	24								2834	11992	45	66	1361	633	6150	932	305	418		25					9939
Phase 2, Division 1	Final	$4,217,844.50	104	39			28	606.8	2380.9		4160.8	270.5	1020.3	540.5		1154.5	1449	656		362.3	1872					322	14823.6	17		791	486	100.8	137.2	43.8	8.5	52	32.8				108	1760.1
Phase 2, Division 2	Final	$1,030,809.31	37	9				43.5	778.5	51.5	1132.5		324			979.3		686									3995.3	1		376.5			129.5	20	17	13	21.5					577.5
Phase 3, Division 1	Final	$6,461,792.46	195	45	42.5				3257.4		4098	1899.8	3323.8	1042		118.5	886	837	911	2868.5	1367	1019.5	619.8				22290.8	8	115	1906	448.3		119.8	51	39		38.3	19				2736.4
Phase 3, Division 2	Final	$1,242,433.52	22	6				13.5	900.7		275		304			1371											2864.2	13		435.5	282	25.5	37		41		2	100.4	1955			2878.4
Ferry Street	Final	$1,083,156.75	20						327		132		745	616		33											1853	0			332												332
Phase 5, Division 1	Final	$1,397,313.57	43	21					656		3897		310			1320.8											6183.8	2		609			30			26.5	80.5	160				906
Harrows Branch	Final	$535,503.07																									0	18	169.7		31	1310					3254.8					4765.5
Airport I & I	Final	$439,551.40																									0	11															0
Hamilton St	Final	$127,485.34	5	6					238		69		334.5		51												692.5																0
Penn Ave. Ph 2	98%	$2,448,667.78	32	3					808		1152		382			432	48										2822	9	488		143	1403	1396		167								3597
Quincy Ave	99%	$1,289,734.62	5	2							200		259.5				301		549		549						1858.5	1															0
Phase 5, Division 2	96%	$4,151,458.04	37	12					367	1562	2091																4020	27		1404	544	5	1198		528	2626	119	172				6596
Ph 4, Con-1, Division-1	Final	$4,234,585.06	50	8					421		371.3		469	54.2		32	684.3	330	604		301		416.8	797.4	602		5083																0
Ph 4, Con-1, Division-2	Final	$1,790,823.10																									0	12		718.8			488			608.2		205.3	22.5			2042.8
Ph 4, Con-2, Division-1	98%	$6,965,518.42	9	7		27		12	127		45.5		73.8				526.4	78.5	68.5	16.3	569				554		2098	1		104													104
Ph 4, Con-2, Division-2	NA	NA																									0																0
Ph 4, Con 3	NA	NA																									0																0
Ph 4, Con-4, Division-1	64%	$3,446,011.01	22	19					135		166		384						1527	137	718						3067	14		601	74	59	454				1102			40		2330
Ph 4, Con-4, Division-2	NA	NA																									0																0
TOTALS		$49,730,148.65	694	219	42.5	27	28	1651.8	14103.5	1613.5	18831.1	2228.3	9747.9	2383.7	51	8066.1	6735.7	2611.5	3660	3384.1	5376	1019.5	1036.6	797.4	1156	3156	87706.7	179	838.7	8306.8	2973.3	9053.3	4921.5	419.8	1218.5	3325.7	4675.9	656.7	1978	40	108	38515.7

Rehabilitation (Sewer Lining)

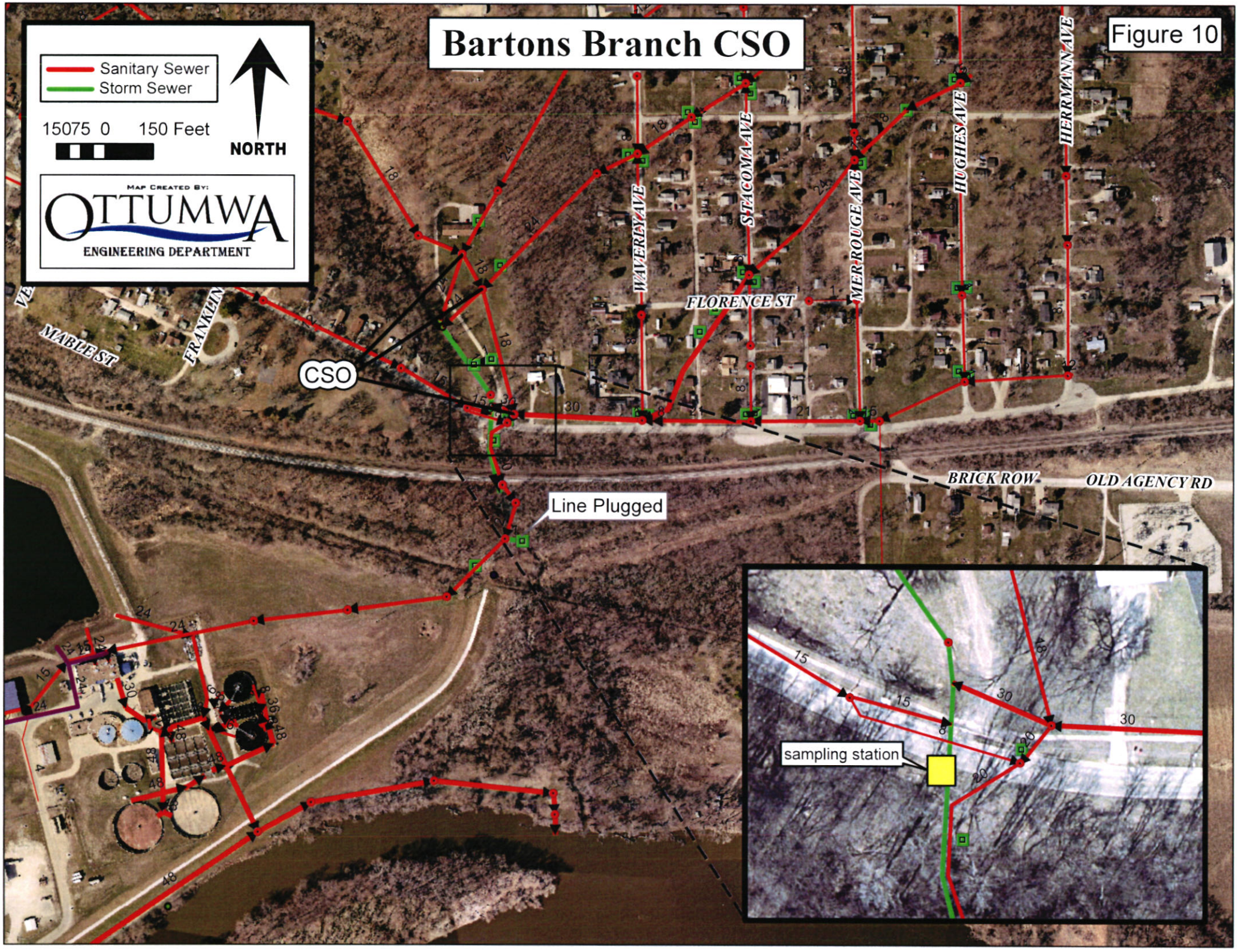
Project	Status	Cost (To Date)	Sanitary Sewer															
			MH (VF)	4"	6"		8"	10"	12"	14"	15"	16"	18"	24"	30"	84"		TOTAL L.F. SS
Airport I & I	Final	pd above					2818	4412					1992					9222
Phase 5, Div 2	98%	pd above	631				8964	3792	664		3821							17241
																		0
																		0
TOTALS		$0.00	631	0	0		11782	8204	664	0	3821	0	1992	0	0	0		26463

SEWER PUMP STATIONS
CITY of OTTUMWA
BACK-UP GENERATOR STATUS

Jan. 7,2016

Figure 9

	SANITARY PUMP STATIONS		Backup	Gen	Generator	Installation	Est. Install	Date	Final Cost				
	Station Name	Address	Power	KW Size	Est. Cost	Est. Cost	Date	Installed	Generator	Material	Labor Hrs	Labor	Total
1	Airport (Main)	15650 6th Street	YES	125	$0	$9,000	Complete	Jul-94				$0.00	$0.00
2	Airport (South)		YES	40	$20,000	$4,000	Complete	Sept.-13	$26,222.00	$5,312.12	28	$835.52	$32,369.64
3	Alta Vista	#14 Country Club Place	YES	30	$20,000	$4,000	Complete	Oct-10	$16,268.00	$2,588.28	30	$919.58	$19,775.86
4	Babe Ruth	Ottumwa Park	Not Req.		$13,000	$3,000	Seasonal	Not Req.				$0.00	$0.00
5	Cambridge Court	20 Cambridge Court	YES	50	$20,000	$4,000	Complete	Nov-10	$22,610.00	$3,034.99	30	$0.00	$25,644.99
6	Crestview	604 Crestview	YES	50	$20,000	$4,000	Complete	Nov-10	$22,610.00	$4,187.63	30	$919.58	$27,717.21
7	Elm Street	555 South Elm	YES	200	$8,000	$2,500	Complete	Oct-10	$30,406.00	$4,280.41	6	$183.92	$34,870.33
8	Fairport Sanitary	2235 Samantha	YES	60	$23,000	$3,000	Complete	Aug-13	$27,455.00	$5,079.72	32	$980.88	$33,515.60
9	Grandview	542 Indian Trail Road	YES	150	$42,000	$6,000	Complete	Aug-10	$41,930.00	$3,561.59	31	$950.23	$46,441.82
10	Kmart	1100 North Quincy	YES	80	$25,000	$5,000	Complete	Aug.-12	$28,986.00	$3,171.24	28	$858.27	$33,015.51
11	Madison	446 North Madison	YES	60	$25,000	$5,000	Complete	May - '15	$22,460.00	$5,775.51	32	$980.88	$29,216.39
12	Midwest Little Leag	Union Park	Not Req.		$12,000	$3,000	Seasonal	Not Req.				$0.00	$0.00
13	Milner & Finley	100 South Milner	No		$22,000	$4,000	Oct-10	Going Gravity ?				$0.00	$0.00
14	Moore Street	415 Garfield	YES	80	$50,000	$9,000	Complete	Aug-11	$27,210.00	$3,176.83	42	$1,287.41	$31,674.24
15	OADC	2942 Pawnee Drive	YES	60	$27,100	$4,000	Complete	Jun.-12	$27,100.00	$5,766.82	32	$980.88	$33,847.70
16	Quail Creek	25 Pinehurst Circle	YES	50	$20,000	$4,000	Complete	Jul-11	$22,610.00	$4,278.90	30	$919.58	$27,808.48
17	Richmond	519 Richmond	YES	125	$35,000	$6,000	Complete	May-11	$34,880.00	$6,038.17	30	$610.00	$41,528.17
18	Rochester	278 E. Rochester	YES	60	$27,100	$4,000	Complete	Aug.-12	$27,100.00	$3,898.16	40	$1,226.10	$32,224.26
19	Shelter House	Ottumwa Park	Not Req.		$10,000	$3,000	Seasonal	Not Req.				$0.00	$0.00
20	Silk & James	802 Silk	No-Storm		$20,000	$4,000	2013-2014					$0.00	$0.00
21	WPCF	2222 Emma St	Yes	800			Complete	1998					
			Total		**$439,200**	**$90,500**			**$377,847**	**$60,150**	**421**	**$11,653**	**$449,650**


Bartons Branch CSO
Figure 10
Sanitary Sewer
Storm Sewer
15075 0 150 Feet
NORTH
Map Created By:
OTTUMWA
ENGINEERING DEPARTMENT
WAVERLY AVE
STACOMA AVE
MERROUGE AVE
HUGHES AVE
HERRMANN AVE
FLORENCE ST
MABLE ST
FRANKLIN
CSO
Line Plugged
BRICK ROW
OLD AGENCY RD
sampling station

Pennsylvania Avenue
Reconstruction Project

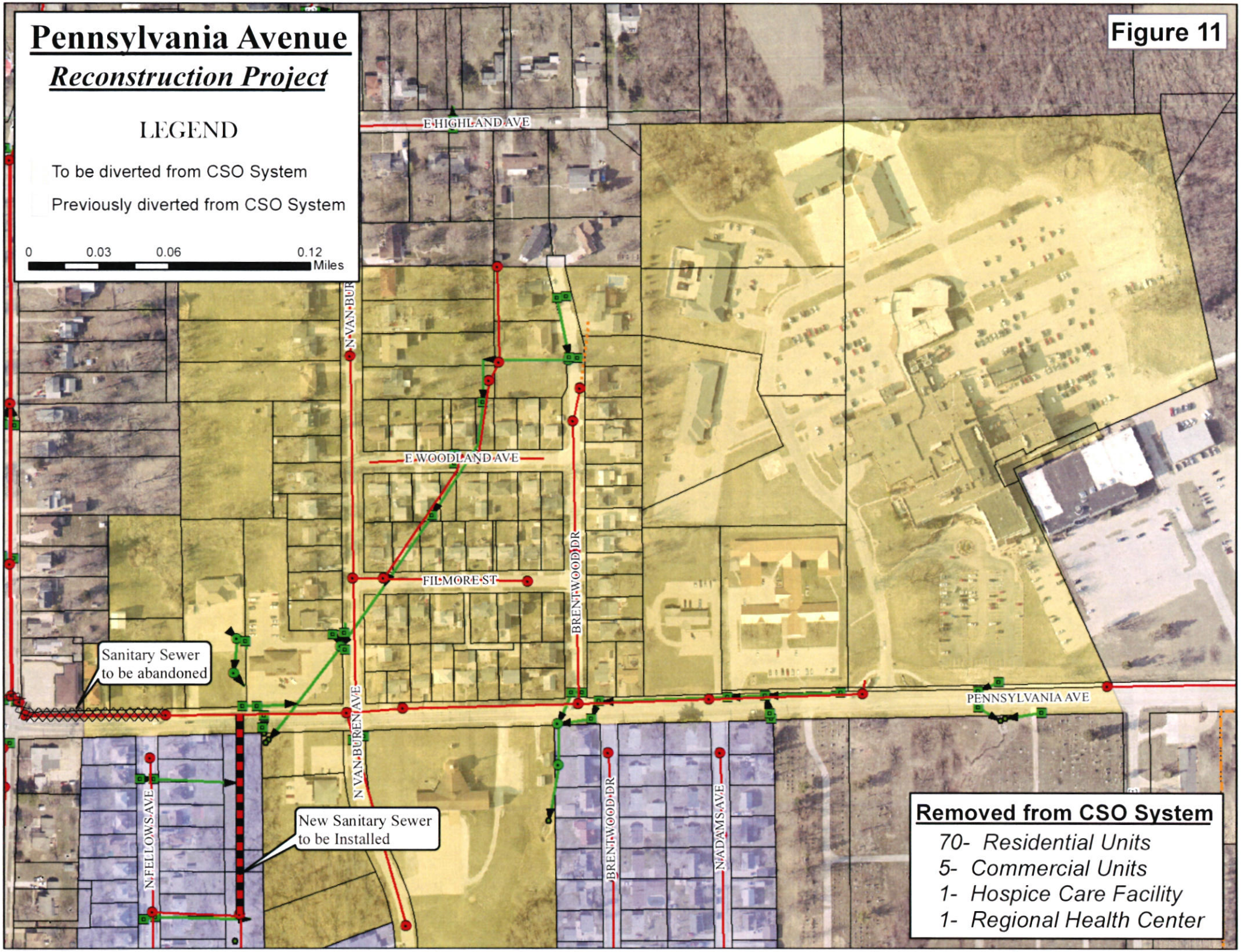
Figure 11

LEGEND

To be diverted from CSO System

Previously diverted from CSO System

0 0.03 0.06 0.12 Miles



Removed from CSO System

70- Residential Units
5- Commercial Units
1- Hospice Care Facility
1- Regional Health Center

John Deere Internal Sewer Separation

Figure 12

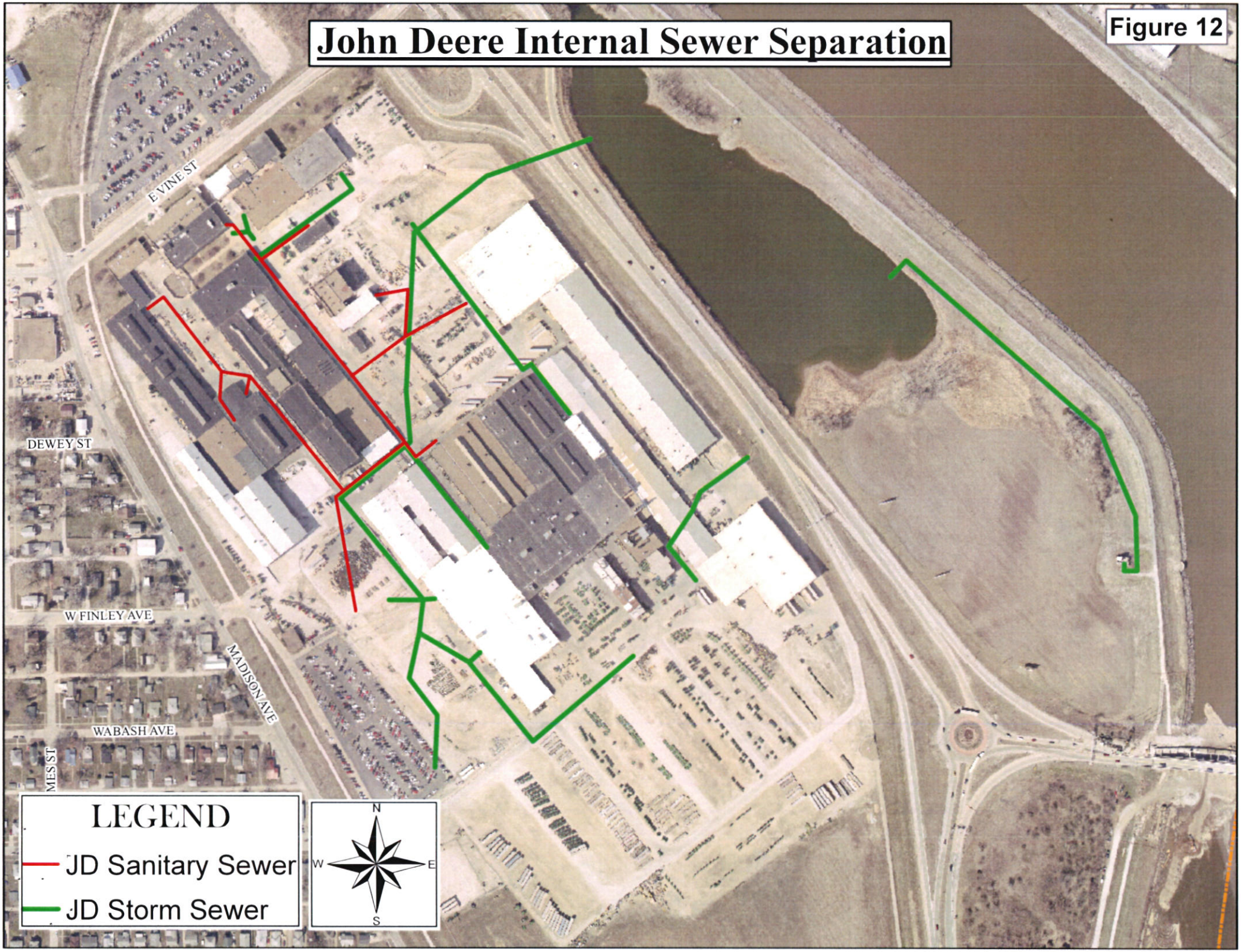


Figure 14

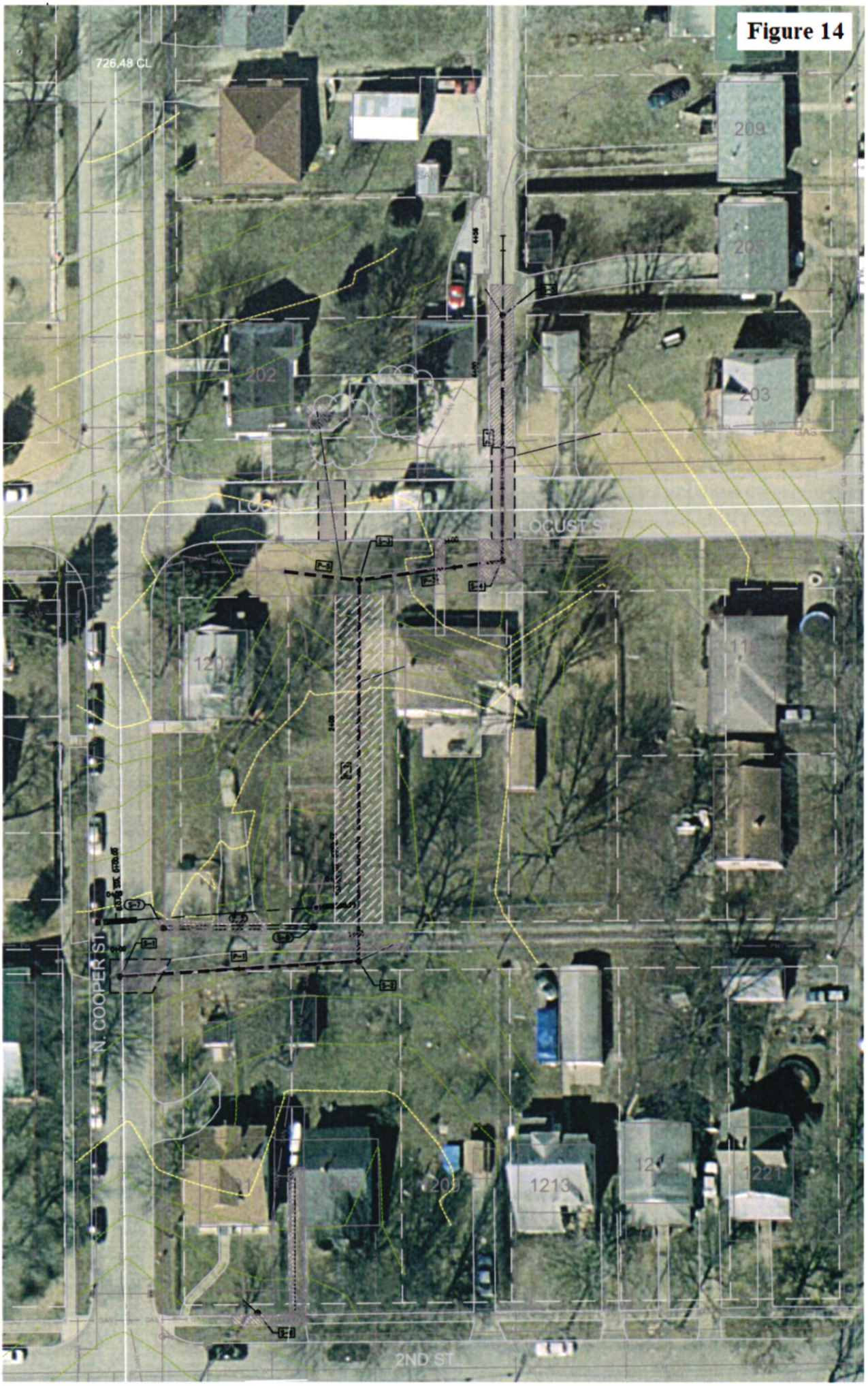

726.48 CL
209
205
202
203
LOCUST ST
1203
119
N. COOPER ST
1213
1221
2ND ST


Figure 16
Phase 7 Contracts
Contract 1
Pump Station
Contract 2-
60" Bore under Hwy 34
Contract 3-
Lagoon Dredging
BOEKE BLVD
TURNER DR
W MAIN ST
W 2ND ST
S COURT ST
E MAIN ST
E 2ND ST
S MARKET ST
RIVER DR
S GREEN ST
MILL ST
S JEFFERSON ST
COOK AVE
MYRTLE ST
WAPELLO ST
ALBIA RD
S FERRY ST
LOGAN ST
RICHMOND AVE
GLADSTONE ST
CHURCH ST
N DAVIS ST
N MOORE ST
N SHERIDAN ST
N WELLER ST
N HANCOCK ST
MADISON AVE
HOBSON ST
E VINE ST

Figure 15

LTCP signed September 7th 2011

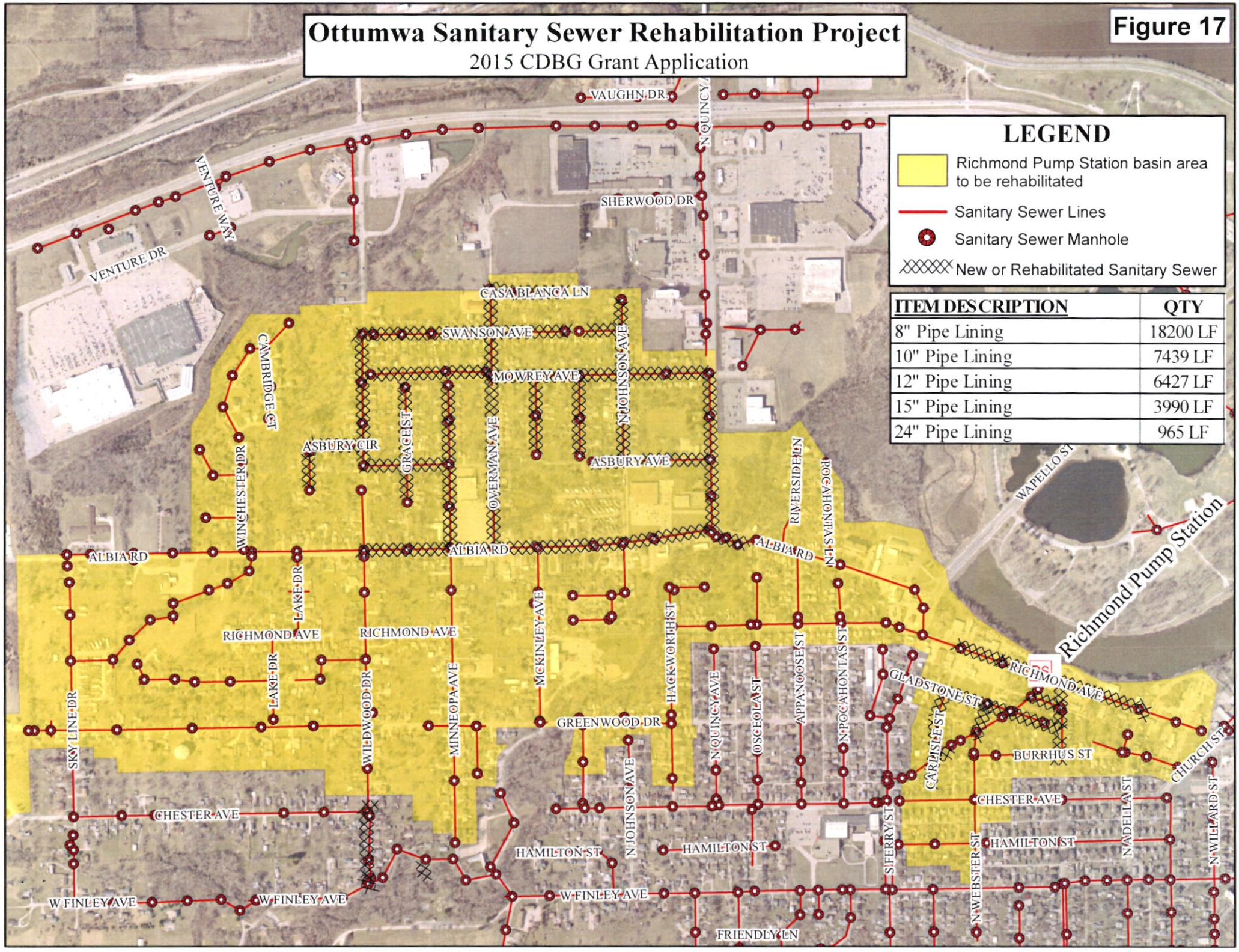
		LTCP Schedule	Completed	Proposed Schedule		Flow		BOD	
CSO 10	Phase 1				Moore Street CSO	8%		4%	
CSO 5	Phase 2				Finley Ave CSO		17%		8%
CSO 5	Phase 3	December, 31 2011			Finley Ave CSO		24%		26%
CSO 3	Phase 4	December, 31 2014			Westend Storm System		39%		26%
CSO 9	Phase 5	December, 31 2016			Richmond Area		42%		30%
CSO 3	Phase 6	December, 31 2014			Northside Box Clean				
CSO 9 - 10	Phase 7	December, 31 2019			Lagoon Pump Station				
CSO 4	Phase 8	December, 31 2025			Blake's Branch		68%		43%
CSO 3 - 4	Phase 9	December, 31 2036			Airport Main		87%		88%
	Phase 10	December, 31 2036			I&I on going				

CSO 1	Diffuser
CSO 2	EQ Outfall
CSO 3	North Side
CSO 4	Blakes
CSO 5	Finlely Ave
CSO 6	Mary Street
CSO 7	Orchard
CSO 8	Walnut
CSO 9	Richmond
CSO 10	Moore St.
CSO 15	East Main

Ottumwa Sanitary Sewer Rehabilitation Project

2015 CDBG Grant Application

Figure 17



LEGEND

- Richmond Pump Station basin area to be rehabilitated
- Sanitary Sewer Lines
- Sanitary Sewer Manhole
- New or Rehabilitated Sanitary Sewer

ITEM DESCRIPTION	QTY
8" Pipe Lining	18200 LF
10" Pipe Lining	7439 LF
12" Pipe Lining	6427 LF
15" Pipe Lining	3990 LF
24" Pipe Lining	965 LF

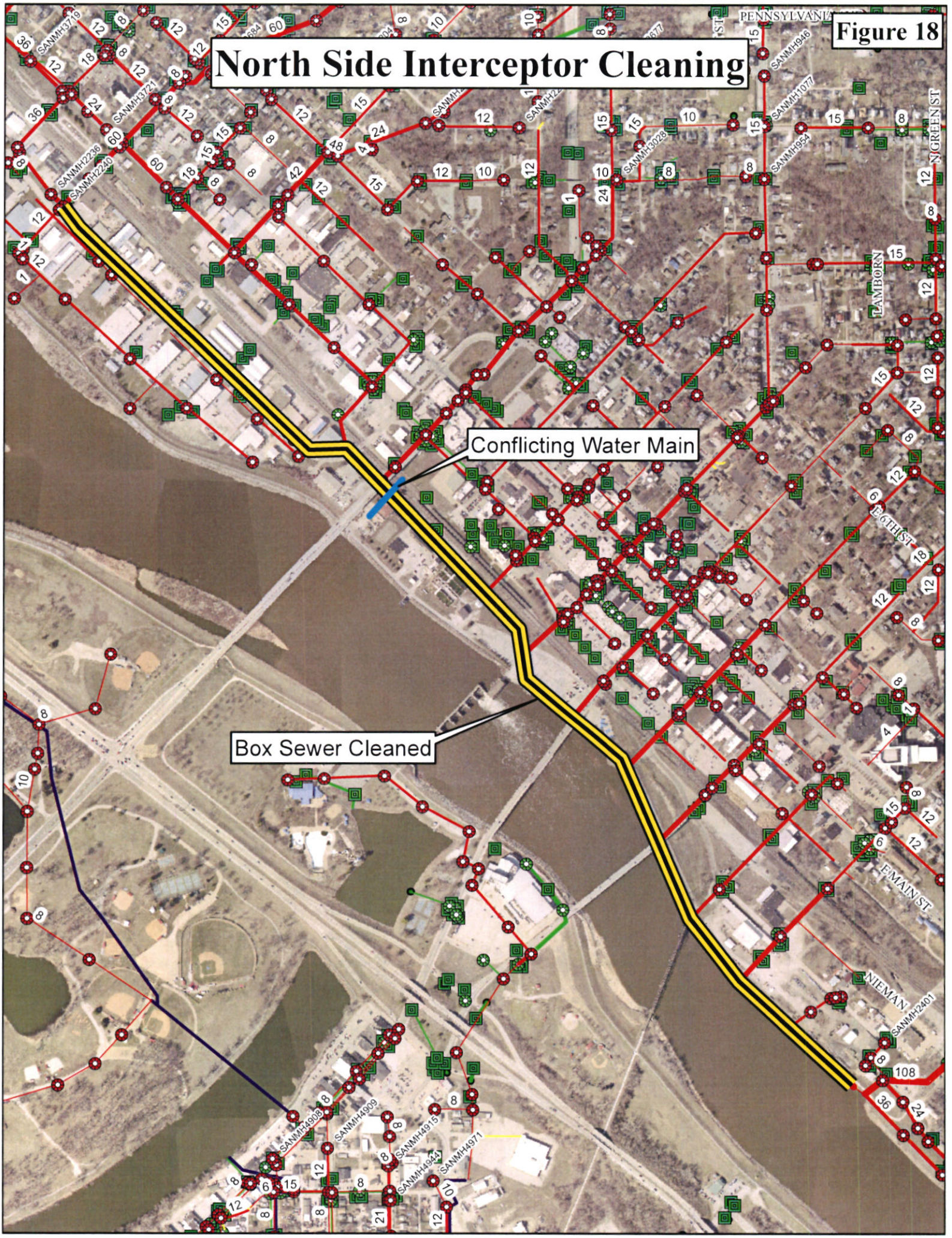
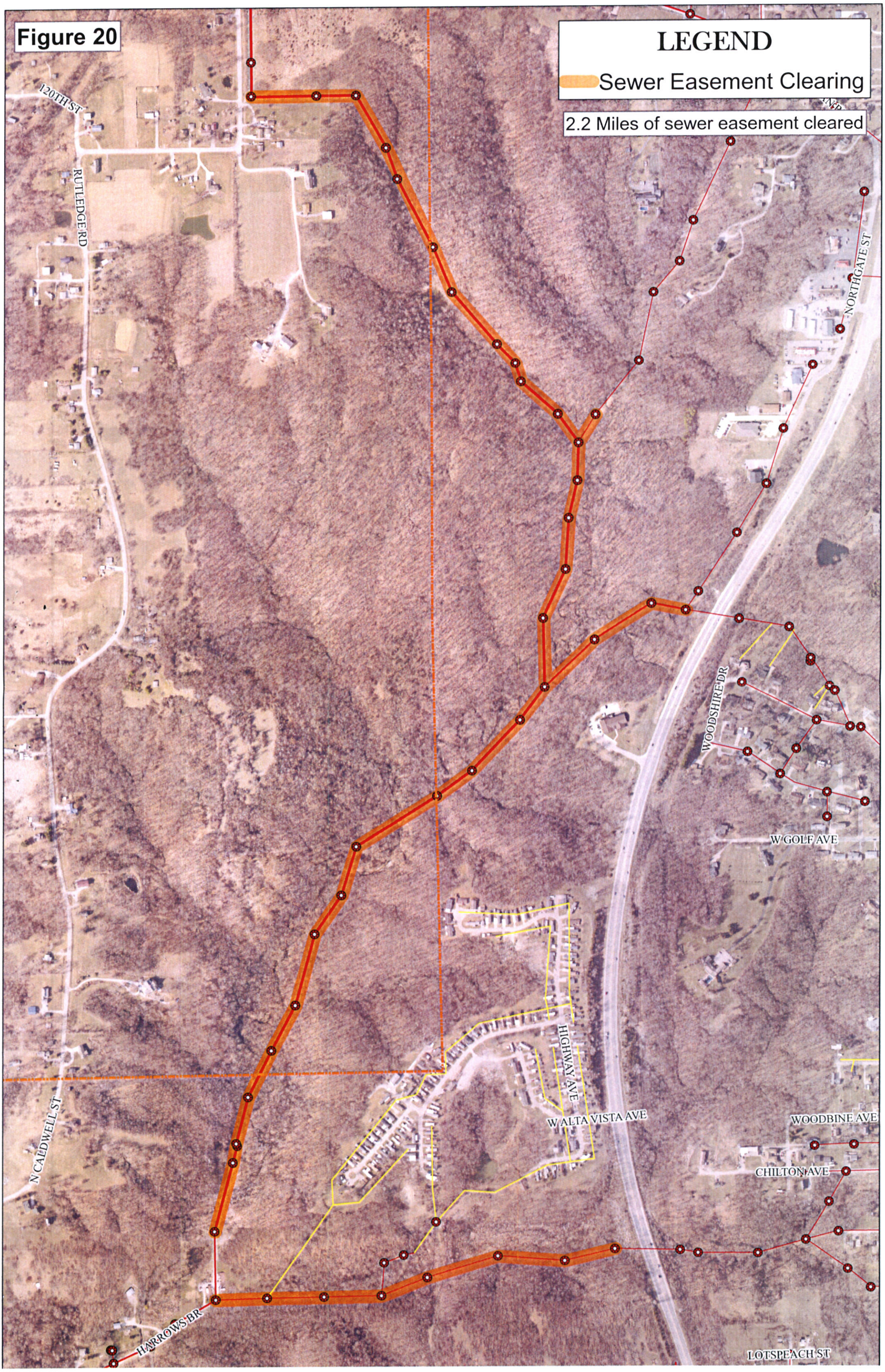


Figure 18
North Side Interceptor Cleaning
Conflicting Water Main
Box Sewer Cleaned
PENNSYLVANIA
LAMBORN
E 6TH ST
E MAIN ST
NIEMAN
GREEN ST
SANMH3719
SANMH3721
SANMH2236
SANMH2240
SANMH946
SANMH1077
SANMH3028
SANMH954
SANMH2401
SANMH4908
SANMH4909
SANMH4915
SANMH4944
SANMH4971

Figure 20


LEGEND
Sewer Easement Clearing
2.2 Miles of sewer easement cleared
120TH ST
RUTLEDGE RD
NORTHGATE ST
WOODSHIRE DR
W GOLF AVE
HIGHWAY AVE
W ALTA VISTA AVE
WOODBINE AVE
CHILTON AVE
N CALDWELL ST
HARROWS BR
LOTSPEACH ST

Phased Sewer Separation Projects

Figure 1

LEGEND

- John Deere Separation
- Phase 1
- Phase 2
- Phase 3, Div 1
- Phase 3, Div 2
- Phase 4
- Phase 5, Div 1
- Phase 5, Div 2- Lining
- Phase 5 Div 2
- Local Sewer Projects

N W E S

0 140 280 560 840 1,120 Feet

Coordinate System: NAD 1983, State Plane Iowa South FIPS 1402 Feet
Proj: Lambert Conformal Conic
Datum: North American 1983

MAP CREATED BY:
OTTUMWA
ENGINEERING DEPARTMENT