OTTUMWA

CITY OF BRIDGES...RIVER OF OPPORTUNITY

RECEIVED
JAN 02 2018
DNR FO6

December 29, 2017

Jeff Thomann
DNR Field Office 6
1023 W. Madison
Washington, IA 52353

RE: Ottumwa, Iowa 2017 Annual Report- CSO Separation Projects

Dear Jeff,

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

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

Enclosures

Cc: Terry Kirschenman, Iowa DNR
John Crotty, Iowa DNR

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

2017 STORMWATER REPORT

RECEIVED
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Projects listed in the Administrative Consent Order

PHASE 4, WEST END FLOOD AND SEWER SEPARATION

(December 31, 2015) **Construction Completed**

The West End project was designed as the main backbone system with the intent of continued separation as development occurs. With the planned construction of an additional apartment complex at 539 4th Street, intakes on Ottumwa Street and adjacent alley will be separated including picking up an existing detention basin outlet from Oak Terrace Apartments for an additional 5.68 acres of separation from the combined sewer system.

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) All laterals now removed from Richmond Box.***

Phase 5, Division 3- ***COMPLETE***
Construction on the Richmond basin lining project was completed on November 6th 2017. The project included lining of 28,255 LF of existing sanitary sewer line, rehabilitation of 69 MH and installation of 9 new MHs. We plan on evaluating the flow reduction throughout 2018 to determine concept for the Richmond pump station. ***(see Figure 22)***

We are reviewing private side I & I in an area bound by Quincy Ave on the east, Wildwood on the west, Albia Road on the south and 34 on the North. We are working on setting up a program that council can accept.

PHASE 6, NORTHSIDE TRUNK CLEANING/ EVALUATION

(December 31, 2014)- ***COMPLETE***

Designs have been completed to rehabilitate 2 of the vertical joints in the North Side Box sewer wall by replacement of joint material. This project will be dependent on river levels and surface temperature allow.

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

City of Ottumwa, Engineering Department
105 East Third Street, Ottumwa, Iowa 52501
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north side sluice gate is backed up with four flap gates and controls the level set to maximize storage in the box. The new gate has been installed, however current gate operations has been changed without engineering review.*(see Figure 18)*

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

Main Street Reconstruction
Has been designed and awarded. The project includes separation On Main Street from Vine to Green. The system is designed to allow future separation at the Green Street intersection.

Back-up Generator Installation Program 2007-2016 Completed
(See Figure 9) City has the ability to set back-up generator if required in 30 minutes for Milner and Finley.

Nine Minimum Controls
City crews continued its efforts to clean and maintain our sewer systems. During 2017, the City cleaned 152,620 LF of sewer line, (removing approximately 50.48 tons of material), 499 catch basins (removing an estimated 15.05 tons of debris) and the street sweeper cleaned 10,109 lane miles (collecting an estimated 2410.5 tons of material).

We had 1 public side sewer backup resulting from a missed lateral cut in our lining project, down from a high of 52 in 2008.

Flow Monitoring/ Pump Station Removal
Do to funding limits, Reconstruction of Milner Street has been moved to a 2020 construction schedule. We are reviewing if the Milner Pump station should be eliminated ahead of the street project. Design is complete for removal of the pump station.

Long Term Control Plan schedule
The City plans on continuing its efforts to meet the LTCP mile markers as currently listed in *Figure 15*. Starting preliminary engineering on Phase 8.

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 1200 pound average. Ongoing monitoring.

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) On going***

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

Figure 21- Proposed Sewer lining Project

Figure 22- Phase 5, Div 3 sewer lining

Figure 1

Phased Sewer Separation Projects

LEGEND

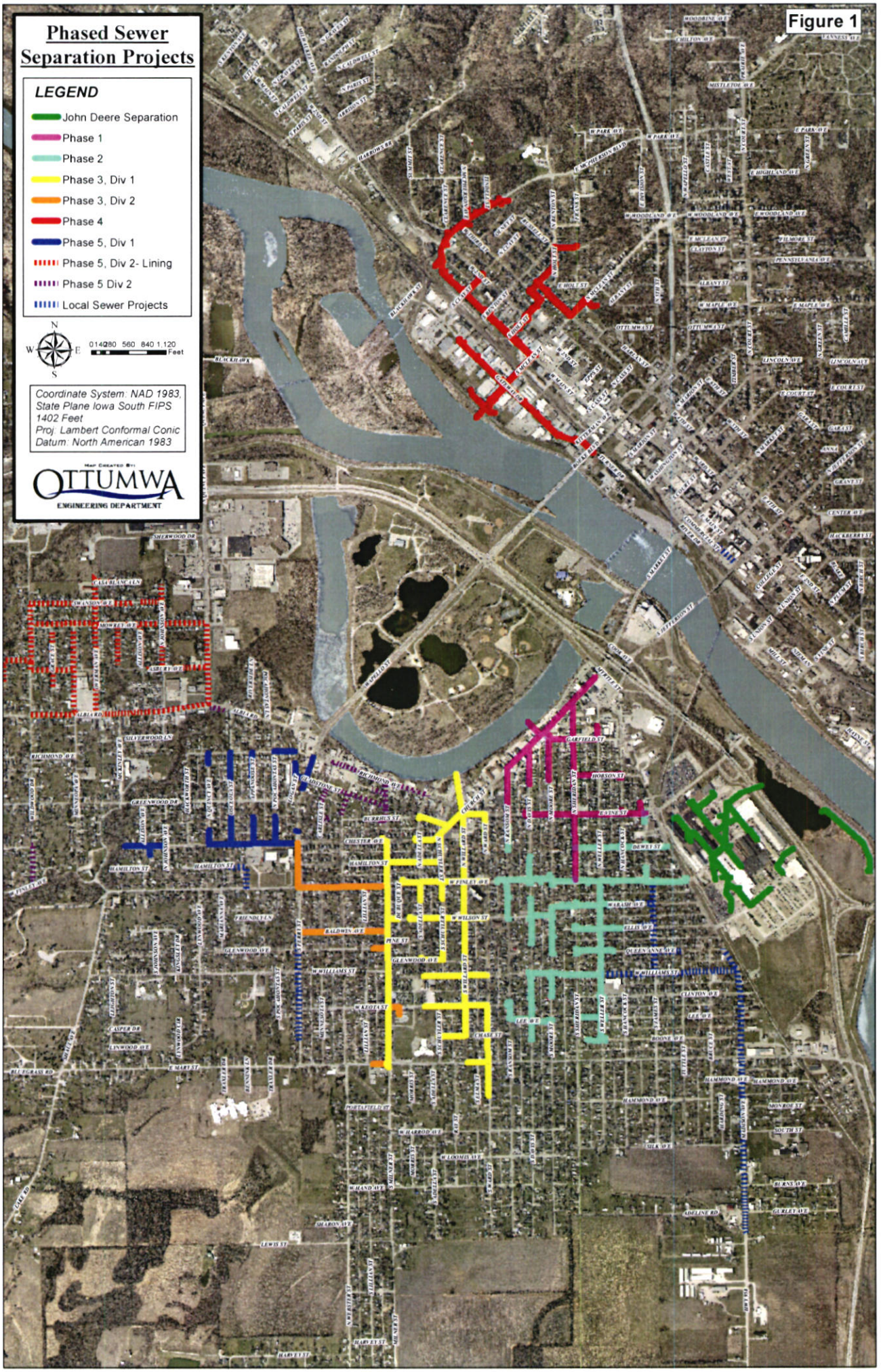
- John Deere Separation
- Phase 1
- Phase 2
- Phase 3, Div 1
- Phase 3, Div 2
- Phase 4
- Phase 5, Div 1
- Phase 5, Div 2- Lining
- Phase 5 Div 2
- Local Sewer Projects

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



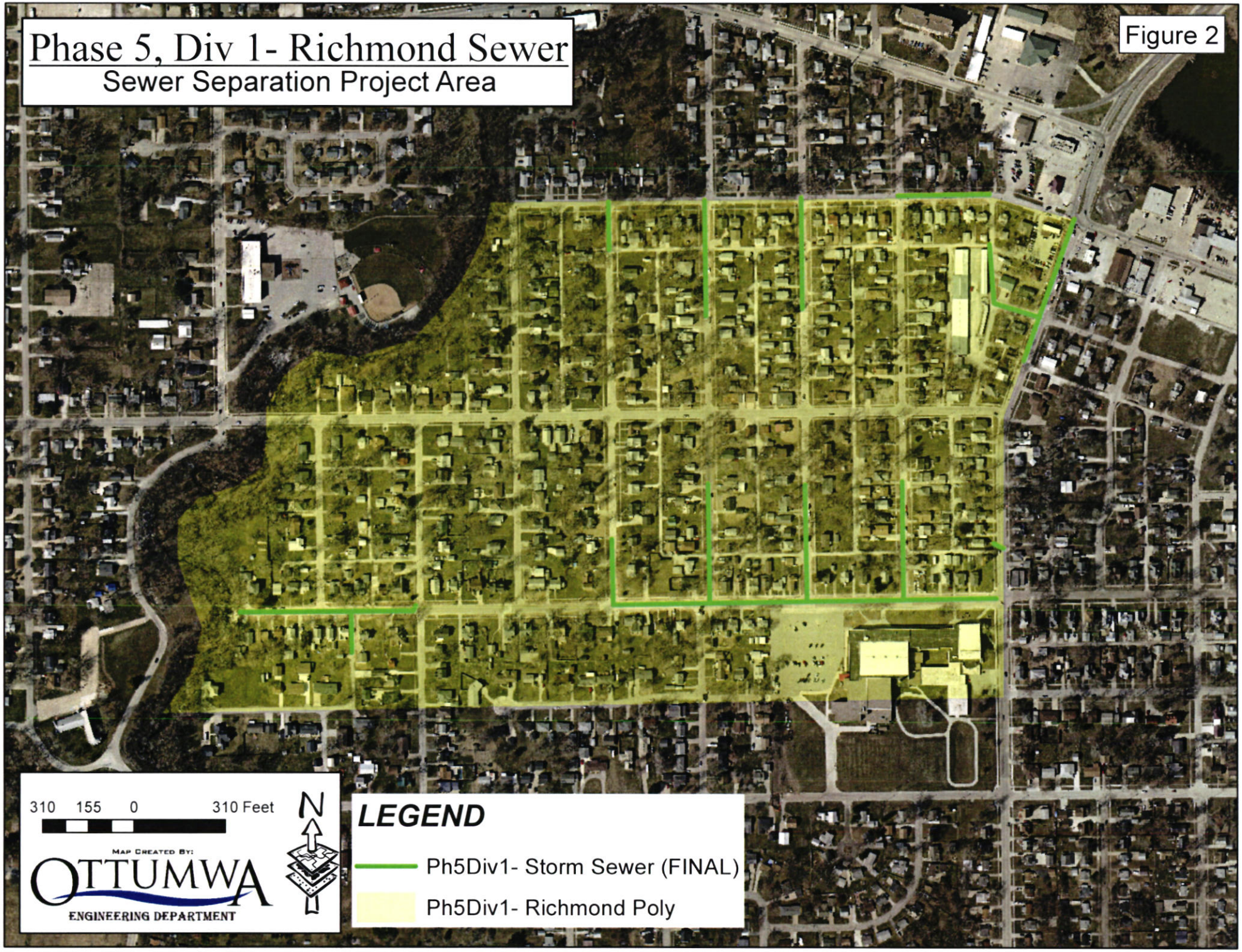
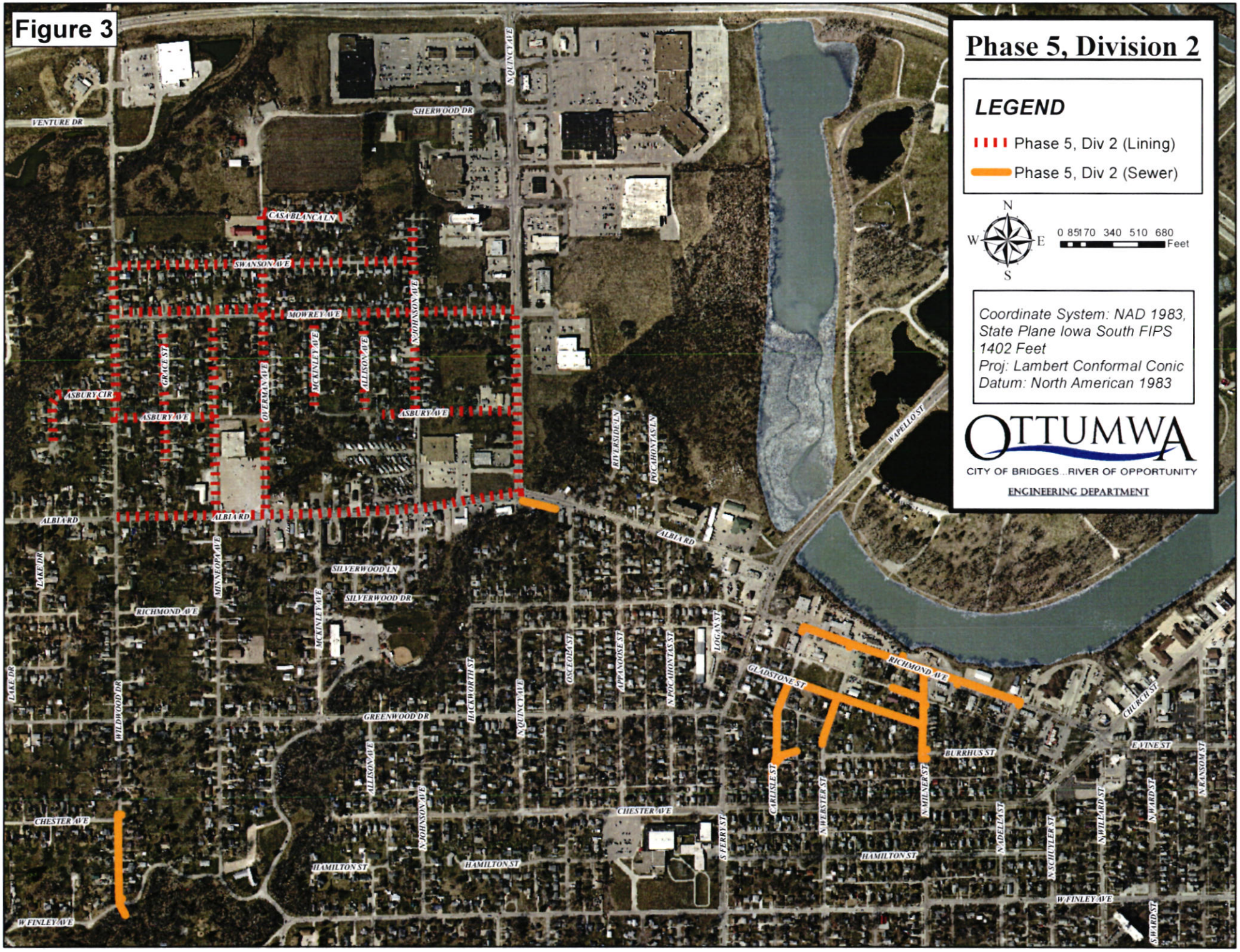

Phase 5, Div 1- Richmond Sewer
Sewer Separation Project Area
Figure 2
310 155 0 310 Feet
N
Map Created By:
OTTUMWA
ENGINEERING DEPARTMENT
LEGEND
Ph5Div1- Storm Sewer (FINAL)
Ph5Div1- Richmond Poly

Figure 3


Phase 5, Division 2
LEGEND
Phase 5, Div 2 (Lining)
Phase 5, Div 2 (Sewer)
N
W
E
S
0 85 170 340 510 680
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
CASABLANCA LN
SWANSON AVE
MOWREY AVE
GRACE ST
ASBURY CIR
ASBURY AVE
QUEEN ANN AVE
MCKINLEY AVE
ALDISON AVE
WASHINGTON AVE
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
RIVERSIDE LN
POCAHONTAS LN
WAPELLO ST
GLADSTONE ST
CHURCH ST
E VINE ST
BURRHUS ST
CARLISLE ST
N WEBSTER ST
N MILNER ST
N ADELL AST
N SCHUYLER ST
N WILLARD ST
N WARD ST
N RANSOM ST
CHESTER AVE
HAMILTON ST
S FERRY ST
W FINLEY AVE
S WARD ST

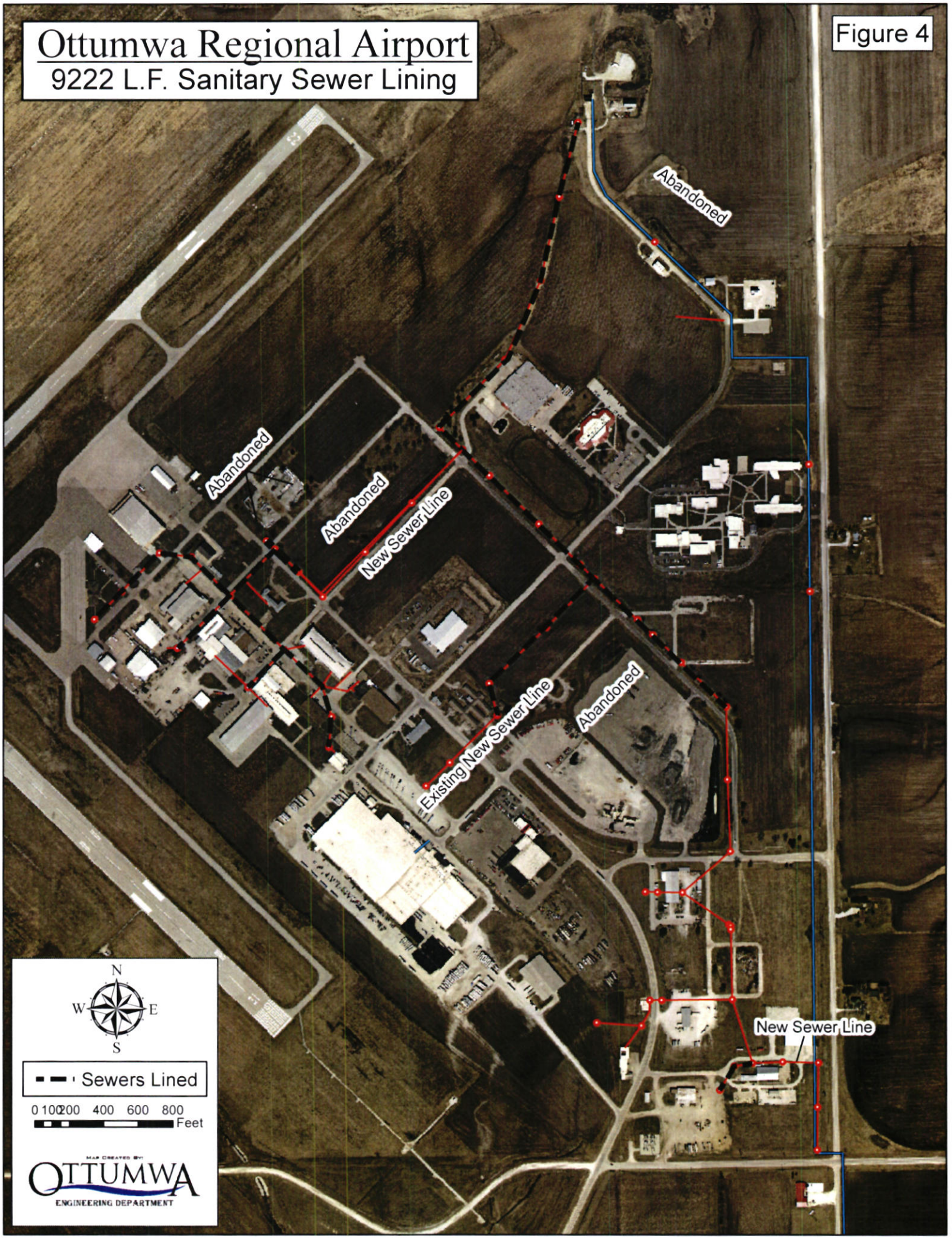
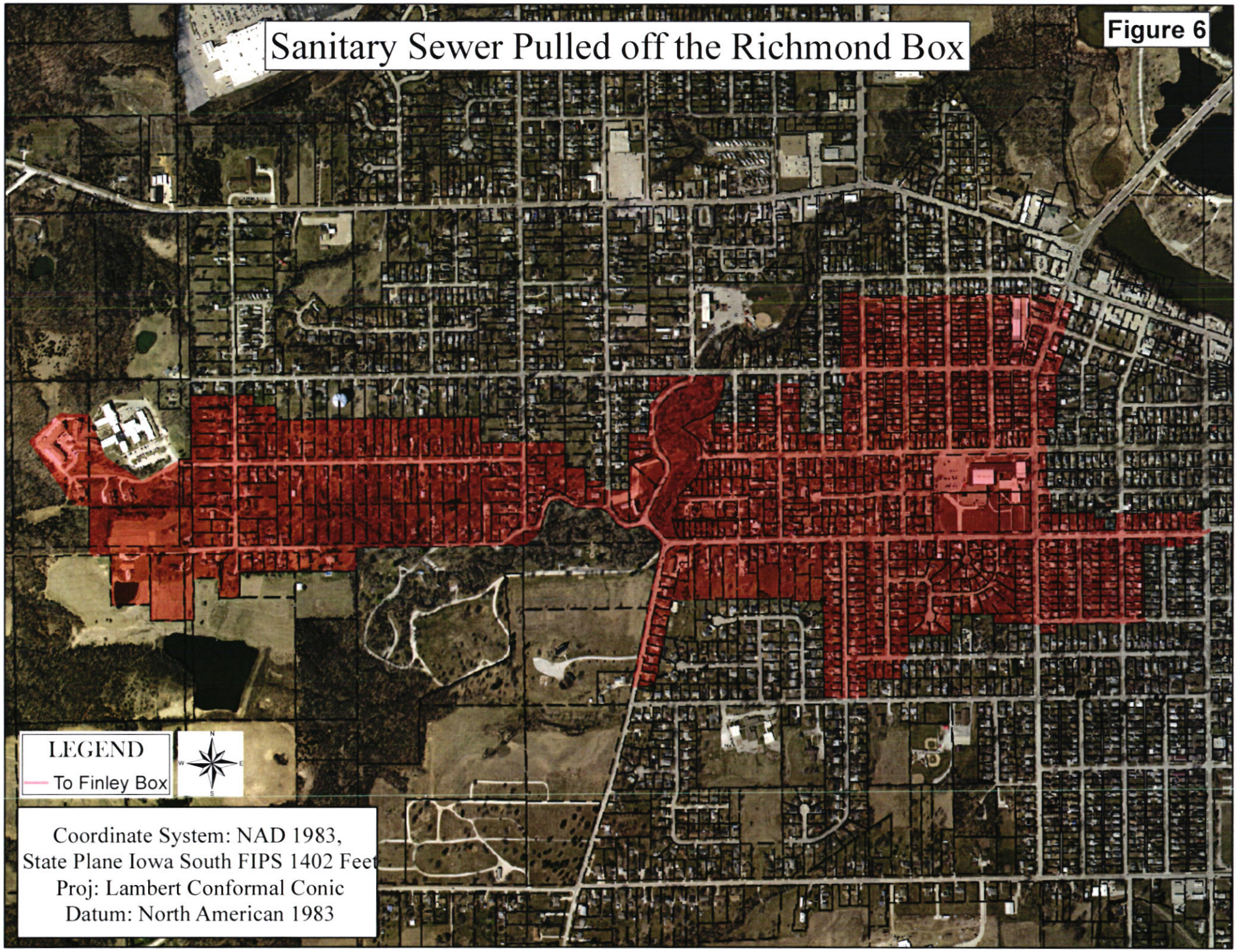

Ottumwa Regional Airport
9222 L.F. Sanitary Sewer Lining
Figure 4
Abandoned
Abandoned
Abandoned
New Sewer Line
Existing New Sewer Line
Abandoned
New Sewer Line
N
W
E
S
Sewers Lined
0 100 200 400 600 800
Feet
MAP CREATED BY:
OTTUMWA
ENGINEERING DEPARTMENT


Figure 5
Phase 4 Sewer Separation
FEMA HMGP Funded
W HIGHLAND AVE
CLARENCE ST
N MCPHERSON
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
CLEM ST
N HOLT ST
FRANK ST
E HOLT ST
W DIVISION ST
BLACKHAWK ST
S CLAY ST
S BENTON ST
N HOLT ST
W 2ND ST
S HOLT ST
NW MCLEAN ST
W 4TH ST
OTTUMWA 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
LEGEND
To Finley Box
N
W
E
S
Coordinate System: NAD 1983,
State Plane Iowa South FIPS 1402 Feet
Proj: Lambert Conformal Conic
Datum: North American 1983

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					**9890**
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**

Updated: 1/8/16

Figure 8a

Current Sewer Separation Project Costs

(Sewer System Improvements)

Project	Project Costs	Spent to Date	Est. % Complete	Grant Funds	Source of Funds	Date Completed	Updated
Sewer Separation (General)							
South Plan of Action and Study	$550,000.00	$550,000.00	100%			2004	Complete
NS Sewer design study mapping cleaning televising	$552,522.64	$552,522.64	100%				Complete
UAA study	$42,339.63	$42,339.63	100%			7/22/2011	Complete
North side interceptor automated gate controls purchase	$66,130.00	$66,130.00	100%			5/15/2009	Complete
North side interceptor automated gate controls installation	$78,270.00	$78,270.00	100%			8/30/2011	Complete
	$1,289,262.27	**$1,289,262.27**					
Phase 1 Sewer Separation							
Phase 1 design and construction administration	$638,007.23	$638,007.23	100%			10/13/2007	Complete
Phase 1 construction	$8,109,560.30	$8,109,560.30	100%	$ 500,000.00	CDBG	9/15/2009	Complete
	$8,747,567.53	**$8,747,567.53**					
Phase 2 Sewer Separation							
Phase 2 design and construction administration	$898,116.43	$898,116.43	100%			3/21/2009	Complete
Phase 2 construction Division 1 (Portzen)	$4,217,844.50	$4,217,844.50	100%			8/3/2010	Complete
Division 2 (DeLong)	$1,030,809.31	$1,030,809.31	100%			5/18/2010	Complete
	$6,146,770.24	**$6,146,770.24**					
Phase 3 Sewer Separation							
Phase 3, Div 1 design and construction administration	$1,079,412.52	$1,079,412.52	100%			12/16/2011	Complete
Phase 3, Div 1 construction (Portzen)	$6,461,792.46	$6,461,792.46	100%	$ 2,251,000.00	ARRA/CDBG	5/22/2012	Complete
Phase 3, Div 2 design and construction administration	$89,943.97	$89,943.97	100%			11/18/2011	Complete
Phase 3, Div 2 construction (Portzen)	$1,242,433.52	$1,242,433.52	100%	$ 800,000.00	I-Jobs II	5/22/2012	Complete
	$8,873,582.47	**$8,873,582.47**					

Phase 4 Sewer Separation							
West End storm separation Prelim engineering evaluation	$156,350.20	$156,350.20	100%			12/31/2012	Complete
Phase 4, Construction (FEMA, CDBG)				$ 20,339,235.00	FEMA/CDBG		12/1/2014
Phase 4, Property & Easements	$100,000.00	$96,608.64	97%				1/6/2015
Phase 4, misc admin	$35,955.14	$35,934.64	99%				1/6/2016
Phase 4, Contract 1- Design, Construction Admin, General Service	$350,000.00	$349,150.70	99%				1/6/2015
Phase 4, Cont 1, Div 1- Construction (Portzen)	$4,234,585.06	$4,234,585.06	100%			11/17/2015	Complete
Phase 4, Cont 1, Div 2- Construction (Portzen)	$1,790,823.10	$1,790,823.10	100%			11/17/2015	Complete
Phase 4, Contract 2- Design, Construction Admin, General Service	$634,000.00	$634,000.00	100%			7/17/2015	Complete
Phase 4, Cont 2, Div 1- Construction (WHR)	$7,111,077.40	$6,965,518.42	98%				1/6/2016
Phase 4, Cont 2, Div 2- Construction (WHR)	Contract 2 is part of Phase 4, but is only Water Main Installation						NA
Phase 4, Contract 3- Design, Construction Admin, General Service	Flood Wall- Part of Phase 4, but not associated with Sewer Separation						NA
Phase 4, Contract 3- Construction (Portzen)	Flood Wall- Part of Phase 4, but not associated with Sewer Separation						NA
Phase 4, Contract 4- Design, Construction Admin, General Service	$843,000.00	$843,000.00	100%			12/31/2015	Complete
Phase 4, Cont 4, Div 1- Construction (Langman)	$5,412,978.31	$3,446,011.01	64%				1/6/2016
Phase 4, Cont 4, Div 2- Construction (Langman)	Contract 2 is part of Phase 4, but is only Water Main Installation						NA
	$20,668,769.21	**$18,551,981.77**					

Phase 5 Sewer Separation							
Phase 5, Div 1 design and construction administration	$107,500.00	$107,500.00	100%			5/11/2012	Complete
Phase 5, Div 1 construction (H&W Contracting)	$1,470,856.39	$1,470,856.39	100%	$ 1,605,000.00	ARRA/CDBG	12/17/2013	Complete
Phase 5, Div 2- Design & Construction Admin	$466,500.00	$466,500.00	100%				1/6/2016
Phase 5, Div 2- Construction (Langman)	$4,325,710.26	$4,151,458.04	96%	$ 1,410,000.00	Forgivable Loan		1/6/2016
Phase 5, Div 3- Design	$170,000.00	$0.00	0%				
Phase 5, Div 3- Construction	$1,600,000.00	$0.00	0%	$ 800,000.00	CDBG		
	$8,140,566.65	**$6,196,314.43**					

Phase 6 North Side Interceptor							
Phase 6, North Side Interceptor Cleaning	$486,027.50	$486,027.50	100%	$ 413,123.38	FEMA/State	11/19/2013	Complete
	$486,027.50	**$486,027.50**					

Local Projects							
Williams & James- Construction	$757,900.40	$757,900.40	100%			9/25/2003	Complete
Ferry Street- Construction	$1,083,156.75	$1,083,156.75	100%	$ 242,000.00	I-Jobs	4/17/2012	
Hamilton St Sewer- Construction	$127,485.34	$127,485.34	100%			1/7/2014	Complete
EDA- Airport I & I Design and Construction Admin	$55,858.91	$55,858.91	100%				Complete
EDA- Airport I & I Construction	$439,551.40	$439,551.40	100%	$ 392,000.00	EDA	9/3/2013	Complete
EDA- Harrows Branch Design & Construct	$34,647.30	$34,647.30	100%			5/7/2013	Complete
EDA- Harrows Branch Construction	$535,503.07	$535,503.07	100%	$ 330,000.00	EDA	4/19/2013	Complete
	$3,034,103.17	**$3,034,103.17**					
	$57,386,649.04	**$53,325,609.38**		**$ 29,082,358.38**			

Current Sewer Separation Project Costs

(Waste Water Treatment Plant Improvements)

Project	Project Costs	Spent to Date	Est. % Complete	Grant Funds	Source of Funds	Date Completed	Updated
Aerobic Digester & Air System Improvements							
Engineering and Permitting (Mactec)	$147,772.01	$147,772.01	100%			7/17/2009	Complete
System Installation (Winger)	$1,143,510.00	$1,143,510.00	100%	$50,000.00	Alliant rebate	10/20/2009	Complete
Equipment Purchase (Turblex)	$547,100.00	$547,100.00	100%			10/19/2010	Complete
	$1,838,382.01	**$1,838,382.01**					
Headworks Building Improvements							
Design and Construction Admin	$197,200.00	$197,200.00	100%			8/20/2010	Complete
Headwork's Grit Construction (Winger)	$1,331,592.00	$1,331,592.00	100%			10/7/2011	Complete
	$1,528,792.00	**$1,528,792.00**					
Bio-Solids Storage Facility							
Design and Construction Admin	$53,000.00	$53,400.00	100%			12/31/2009	Complete
Bio-solids storage expansion project (Carl A. Nelson Co)	$550,687.20	$550,687.20	100%			9/7/2010	Complete
	$603,687.20	**$604,087.20**					
Flow Meter Installation							
Flow Meter Installation (Weidner)	$78,207.92	$78,207.92	100%			4/6/2010	Complete
Purchase flow meter	$7,018.00	$7,018.00	100%			5/7/2010	Complete
	$85,225.92	**$85,225.92**					
Bartons Branch Sampling Station							
Bartons Branch Sampling Station- Construction	$22,915.50	$22,915.50	100%			10/24/2012	Complete
Bartons Branch Composit Sampler	$12,912.95	$12,912.95	100%			2/25/2013	Complete
	$35,828.45	**$35,828.45**					
Plant Effluent Water System							
PEW Design & Admin	?	?					
PEW Construction	$117,052.00	$117,052.00	100%				Complete

	$117,052.00	$117,052.00					
EQ Project							
EQ Project Equipment & Installation	$8,014.56	$8,014.56	100%			2/15/2013	Complete
	$8,014.56	$8,014.56					
UV Disinfection System- Design							
Project Design	$212,200.00						
Construction	$813,000.00						
	$1,025,200.00	$0.00					
Pump Stations Back Up Generators							
Equipment & Installation	$449,650.00	$449,650.00	100%			5/1/2015	Complete
	$449,650.00	$449,650.00					
	$5,691,832.14	$4,667,032.14		$50,000.00			

TOTAL PROJECT COSTS **$63,078,481.18**

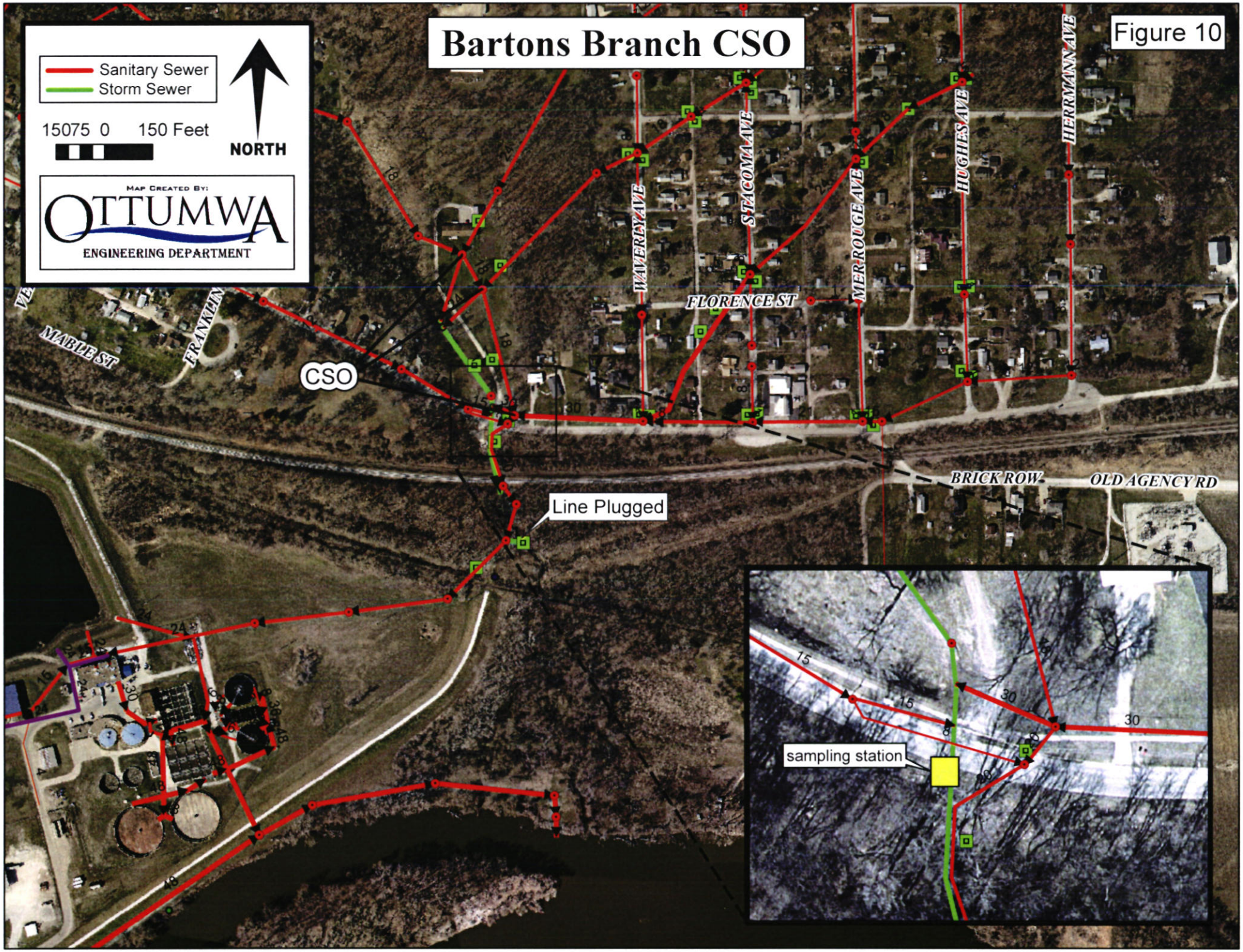
PROJECT COSTS TO DATE **$57,992,641.52**

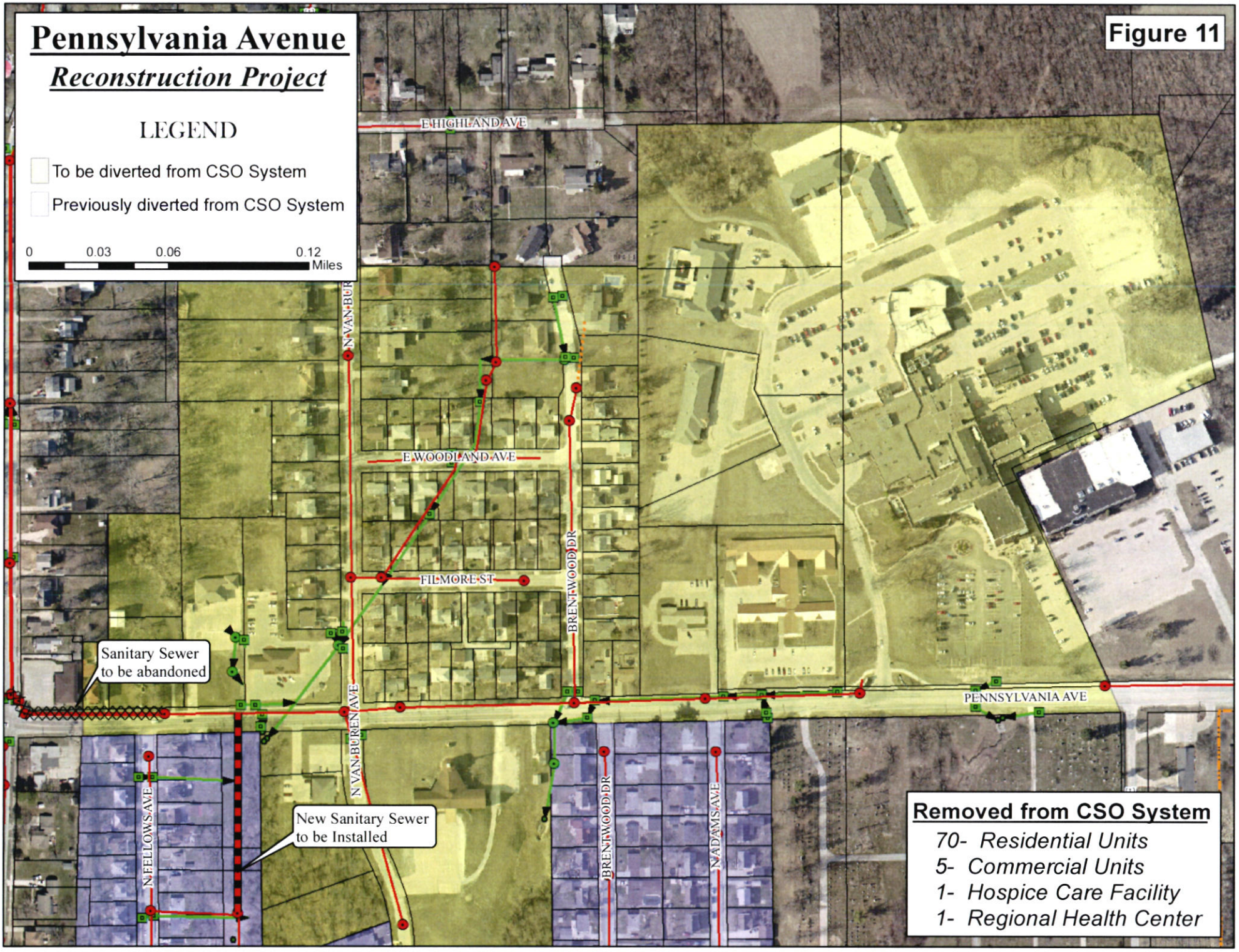
SEWER PUMP STATIONS
CITY of OTTUMWA
BACK-UP GENERATOR STATUS

Jan. 7,2016

Figure 9

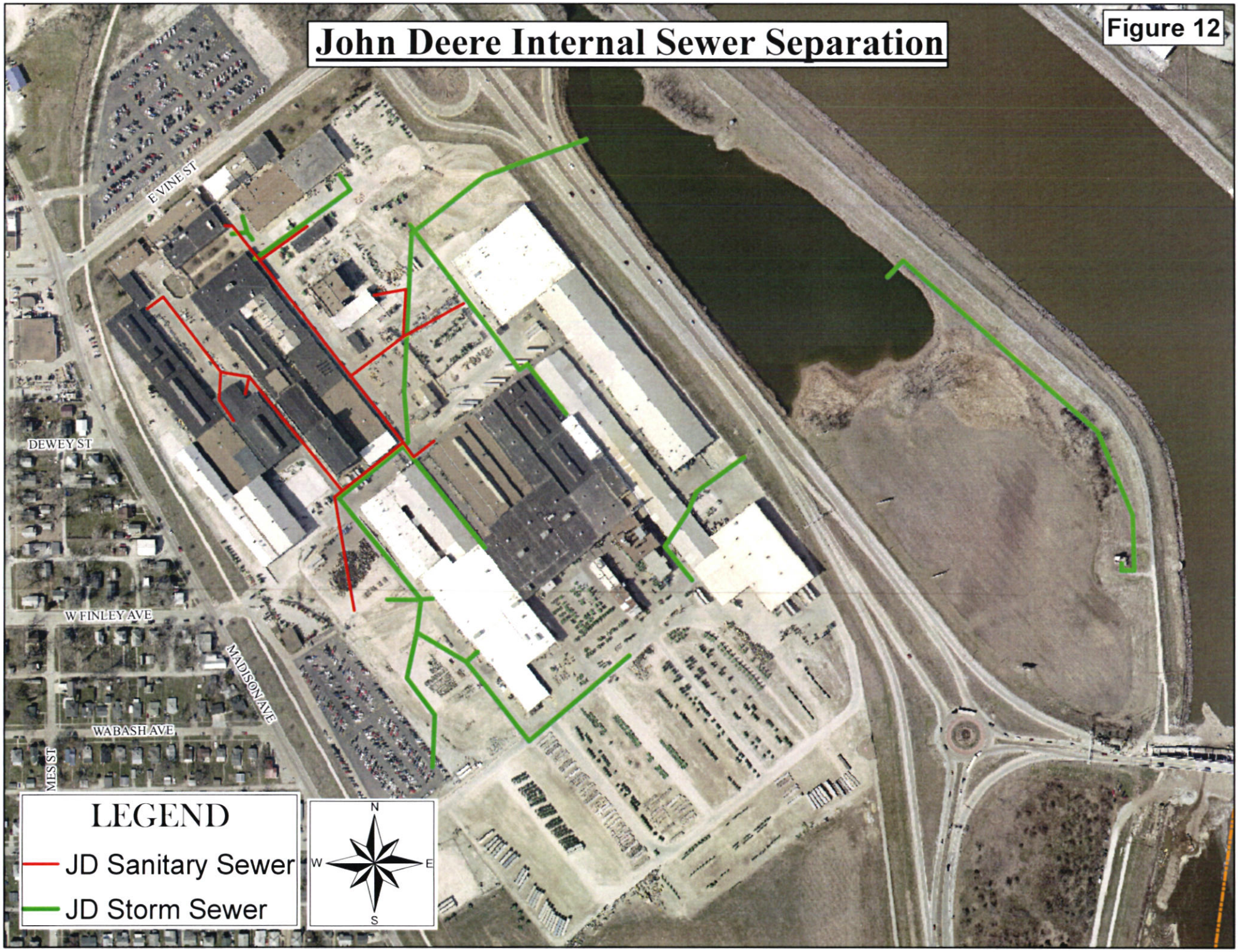
	SANITARY PUMP STATIONS Station Name	Address	Backup Power	Gen KW Size	Generator Est. Cost	Installation Est. Cost	Est. Install Date	Date Installed	Final Cost Generator	Material	Labor Hrs	Labor	Total
1	Airport (Main)	15650 6th Street	YES	125	$0	$9,000	Complete	Jul-94				$0.00	$0.00
2	Airport (South)		YES	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
MABLE ST
FRANKLIN
CSO
WAVERLY AVE
STACOMA AVE
FLORENCE ST
MER ROUGE AVE
HUGHES AVE
HERRMANN AVE
BRICK ROW
OLD AGENCY RD
Line Plugged
sampling station


Pennsylvania Avenue
Reconstruction Project
LEGEND
To be diverted from CSO System
Previously diverted from CSO System
0 0.03 0.06 0.12
Miles
Figure 11
E HIGHLAND AVE
N VAN BUR
E WOODLAND AVE
FILMORE ST
BRENTWOOD DR
Sanitary Sewer to be abandoned
N VAN BUREN AVE
PENNSYLVANIA AVE
N FELLOWS AVE
New Sanitary Sewer to be Installed
BRENTWOOD DR
N ADAMS AVE
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



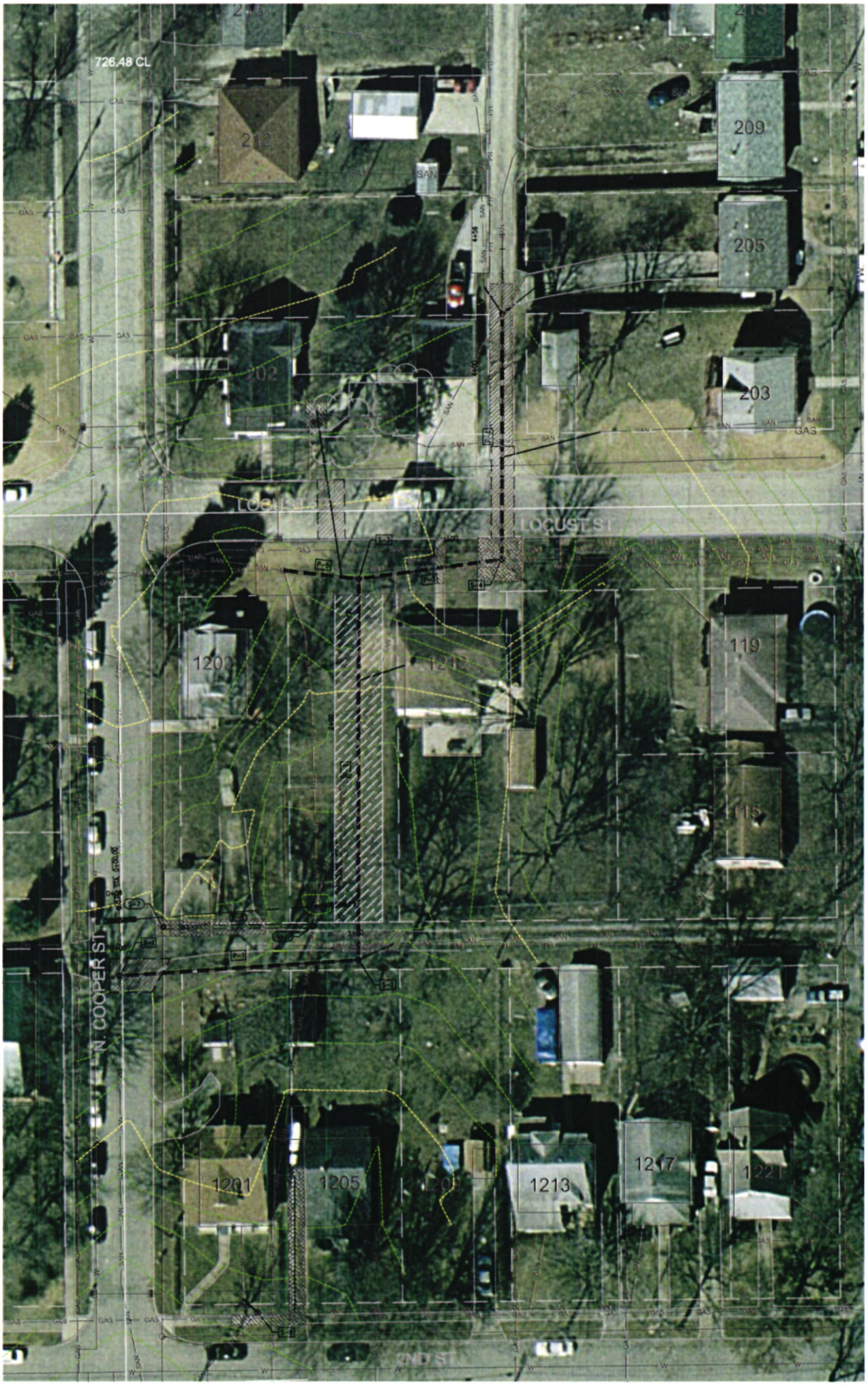

726.48 CL
212
209
205
202
203
LOCUST ST
LOCUST ST
1202
1212
119
115
N. COOPER ST
1201
1205
1213
1217
1221
2ND ST

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				

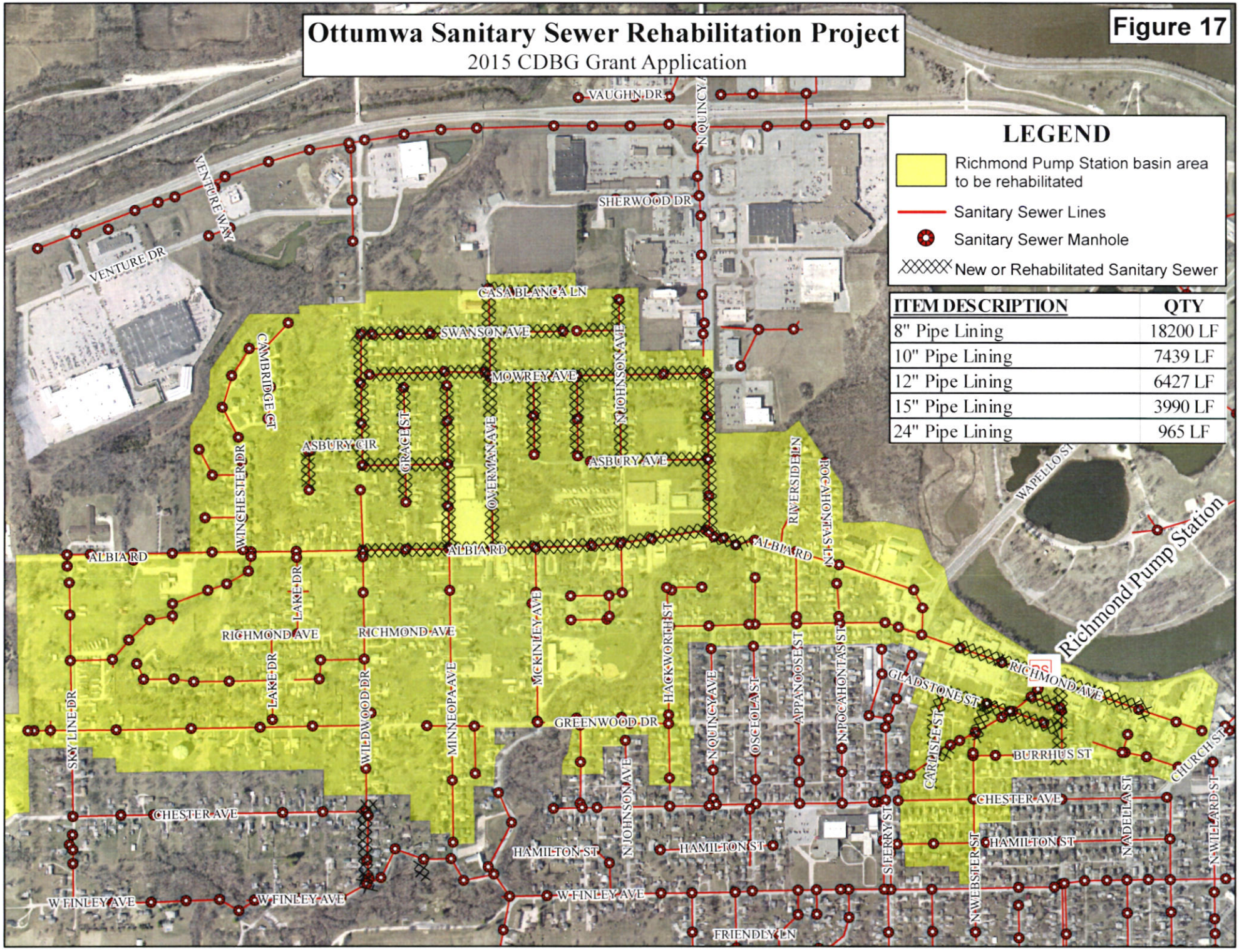
CSO 1	Diffuser
CSO 2	EQ Outfall
CSO 3	North Side
CSO 4	Blakes
CSO 5	Finlely Ave
CSO 6	Mary Street
CSO 7	Orchard
CSO 8	Walnut
CSO 9	Richmond
CSO 10	Moore St.
CSO 15	East Main


Figure 16
Phase 7 Contracts
Contract 1
Pump Station
Contract 2-
60" Bore under Hwy 34
Contract 3-
Lagoon Dredging
TURNER DR
BOLKE BLVD
W MAIN ST
W 2ND ST
S COURT ST
E 2ND ST
E MAIN 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
HOBSON ST
N HANCOCK ST
MADISON AVE
E VINE ST

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

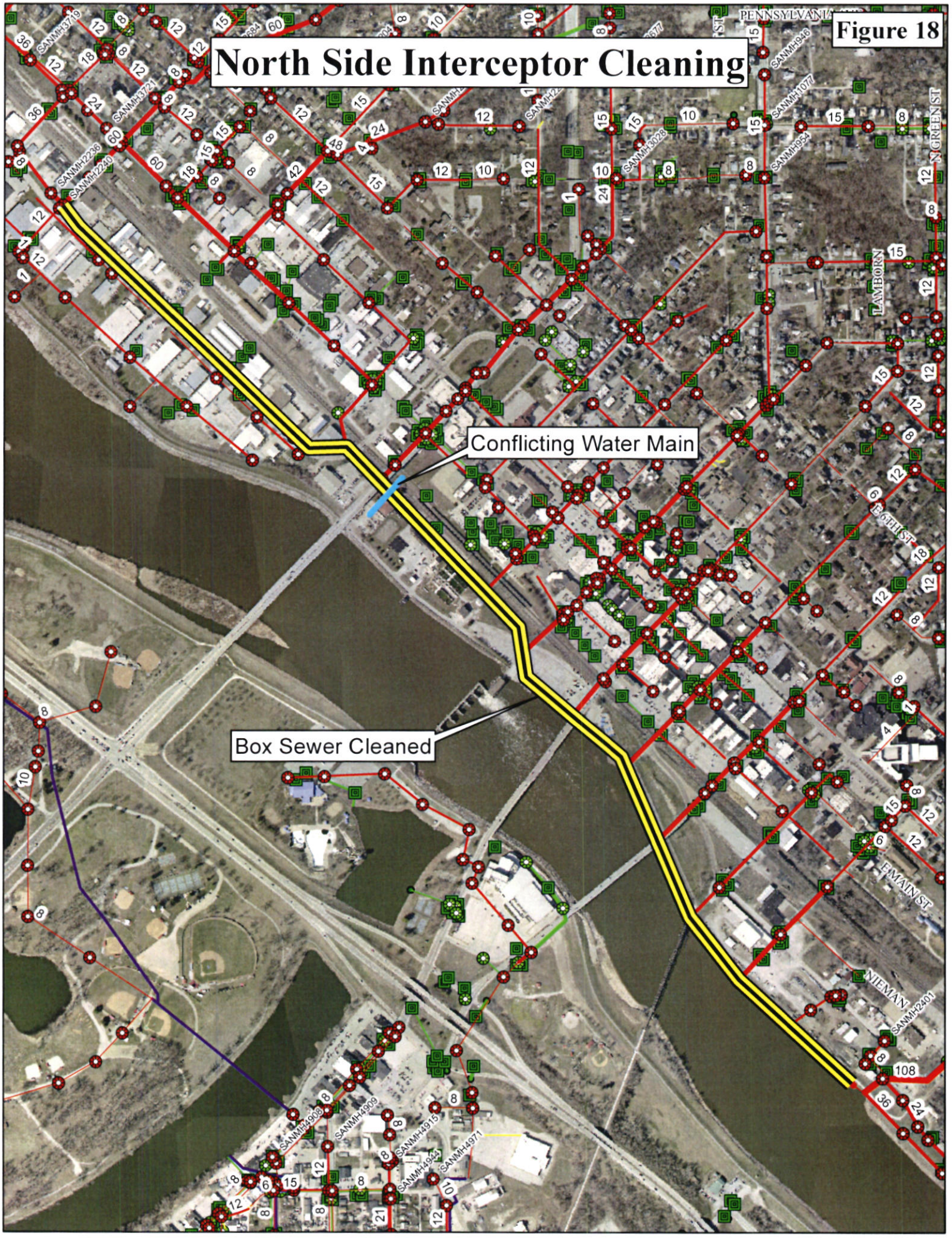


TABLE 1

Project Phase	Project Description	Timeline	Cost	Impacted Population	Cummulative Percent of Impacted Population	Estimated BOD Removed (lbs.)	Cummulative Percent BOD Removed	Number of Acres in Combined Sewer System	Cummulative Percent of Combined Sewer Area	Estimated Volume of Flow Removed from Combined Sewer System (CFS)	Cummulative Percent Volume of Flow Removed
1	Moore Street and Finley Avenue CSO	2006-2008	$8,708,224	2,000	8%	340	4%	220	8%	264	8%
2	Finley Avenue CSO	2007-2010	$6,328,654	2,000	16%	340	8%	250	17%	300	17%
3 - Division 1	Finley Avenue CSO	2010-2011	$6,363,295	1,900	24%	323	12%	174	24%	167	23%
3 - Division 2	Finley Avenue & Richmond Avenue CSO	2010-2011	$1,297,753	2,400	33%	408	17%	48	26%	58	24%
4	2010 Flood Protection Mitigation Project/Westside	2012-2016	$15,380,000	4,500	51%	765	26%	385	40%	462	39%
5	Richmond Avenue CSO	2011-2016	$5,000,000	2,400	61%	408	30%	32	41%	109	42%
6	Northside Combined Sewer	2011-2014	$10,000,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Lagoon Stormwater Pumps	2014-2019	$5,000,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Blakes Branch CSO	2020-2025	$8,000,000	6,200	86%	1,054	43%	708	67%	850	68%
9	Ottumwa Industrial Airport Trunk Sewer	2030-2036	$8,000,000	N/A	N/A	3,862	88%	520	87%	624	87%
10	Annual I&I Allocation	2011-2036	$100,000	21,400	N/A	N/A	N/A	N/A	N/A	150	92%
			Total Ottumwa Population = 25,000		Total System BOD = 8,500		Total Area in Combined System = 2,700			Total Flow in System = 3,240 CFS	

*Combined Sewer Flow Reduction for Annual I&I Allocation is estimated.


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
N CALDWELL ST
WOODBINE AVE
CHILTON AVE
HARROWS BR
LOTSPEACH ST

Figure 21

2018 CDBG Sewer Rehabilitation Project



Project Area

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Map Created By:
OTTUMWA
ENGINEERING DEPARTMENT

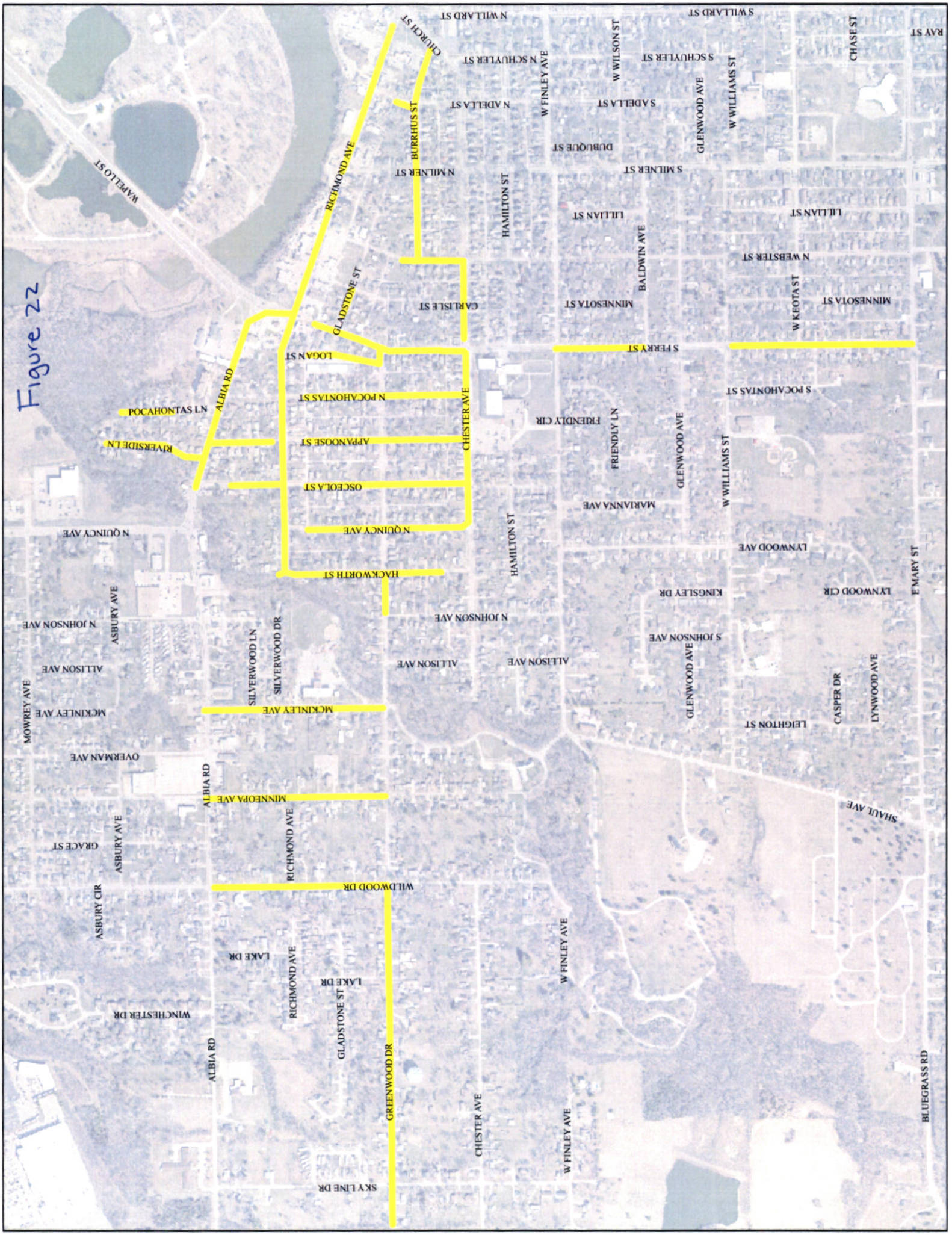
Figure 22
N WILLARD ST
S WILLARD ST
CHURCH ST
N SCHUYLER ST
S SCHUYLER ST
W WILSON ST
CHASE ST
RAY ST
W FINLEY AVE
N ADELLA ST
S ADELLA ST
GLENWOOD AVE
W WILLIAMS ST
DUBUQUE ST
BURRHUS ST
N MILNER ST
S MILNER ST
WAPELLO ST
RICHMOND AVE
HAMILTON ST
LILLIAN ST
BALDWIN AVE
N WEBSTER ST
W KEOTA ST
MINNESOTA ST
CARLISLE ST
GLADSTONE ST
S FERRY ST
LOGAN ST
ALBIA RD
POCAHONTAS LN
N POCAHONTAS ST
S POCAHONTAS ST
CHESTER AVE
FRIENDLY CIR
FRIENDLY LN
RIVERSIDE LN
APPANOOSE ST
OSCEOLA ST
MARIANNA AVE
N QUINCY AVE
LYNWOOD AVE
HACKWORTH ST
KINGSLEY DR
LYNWOOD CIR
E MARY ST
N JOHNSON AVE
S JOHNSON AVE
ASBURY AVE
ALLISON AVE
SILVERWOOD LN
SILVERWOOD DR
MOWREY AVE
MCKINLEY AVE
LEIGHTON ST
CASPER DR
LYNWOOD AVE
OVERMAN AVE
MINNEOPA AVE
SHAUL AVE
GRACE ST
WILDWOOD DR
ASBURY CIR
LAKE DR
W FINLEY AVE
WINCHESTER DR
GLADSTONE ST
GREENWOOD DR
SKY LINE DR
BLUEGRASS RD