

June 27, 2019

Cynthia Clendenon  
Michigan Department of Environment, Great Lakes and Energy  
Revolving Loan Section  
4<sup>th</sup> Floor South  
525 West Allegan Street  
Lansing, MI 48933

**Re: FY2020 SRF Project Plan Submittal for DWSD Sewer Rehabilitation Project**

Dear Ms. Clendenon,

On behalf of the Detroit Water and Sewerage Department (DWSD), and as approved by both Boards of Water Commissioners for DWSD and Great Lakes Water Authority (GLWA), AECOM transmits the enclosed final FY2020 SRF Project Plan for Sewer Rehabilitation Projects.

Please feel free to contact AECOM's task manager Robert Green at 313.304.6614, or DWSD's Monica Daniels at 313.964.9269 with any questions you may have.

Yours sincerely,



Robert Green  
Task Manager  
AECOM  
C: 313.304.6614  
E: [bob.green@aecom.com](mailto:bob.green@aecom.com)

Enclosure

# **CITY OF DETROIT**

## **Water and Sewerage Department**



### **Sewer Rehabilitation Project**

### **Streamlined Project Plan**

**April 2019**

**Mike Duggan  
Mayor**

Gary Brown  
Director

Michael Einheuser  
Chairperson  
Board of Water Commissioners



**City of Detroit**  
**Mike Duggan, Mayor**  
**Detroit City Council**

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- C PROJECT PLAN CORRESPONDENCE

# Item 1 - Project Definition and Overview

A task being performed by AECOM under the Detroit Water and Sewerage Department (DWSD) contract CS-1812, Capital Improvement Program Management Organization (CIPMO), is the assessment and evaluation of existing sewer collection mains and manholes in targeted locations within the City of Detroit. The primary criterion being used to determine if sewer collection mains and manholes will be scheduled for either rehabilitation or replacement is the structural integrity of the assets based upon National Association of Sewer Service Companies (NASSCO) PACP CCTV and MACP ratings respectively. There is discussion in this project plan below regarding evaluation of hydraulic modeling and potential for increases in piping diameters of selected pipes due to existing pipe size hydraulic capacity issues. Any increase in piping diameter will be strictly to convey existing customer discharges to alleviate backups and basement flooding due to undersized sewers, and not for additional capacity for future development. Additionally, the sewer interventions mentioned in this project plan are on combined sewers and these sewers will remain combined sewers at the conclusion of these projects.

Work planned for FY2020 (07/01/2019 – 06/30/2020) through FY 2023 capital expenditure is derived from the assessments/evaluations performed in the five City of Detroit neighborhoods known as the Five High Priority Neighborhoods of Brewster Homes, Brewster-Douglass, New Center Commons, Virginia Park and Piety Hills (Project A) and the Four Westside Neighborhoods of Riverdale, Miller Grove, Minock Park and South Rosedale Park (Project B). It is anticipated that construction will commence in May 2020 and be completed by October 2022.

## Project A – Five High Priority Neighborhoods

### Project Status

All CCTV and manhole inspections have been completed in the project area and preliminary intervention recommendations have been provided to DWSD. It is expected that minor changes will be made to the proposed interventions as project design begins.

### Full Project

From the assessments/evaluations in these neighborhoods, AECOM has recommended to DWSD the rehabilitation or replacement of approximately 51,281 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter in addition to 82 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$7,750,000.

### Loan-Eligible Portion of the Project

As only repairs to address defects that had a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 23,125 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter and 23 manhole repairs appear to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$5,000,000.

## Project B – Four Westside Neighborhoods

### Project Status

CCTV inspection and manhole surveys are currently being performed by an inspection company through an existing contract with DWSD. 53% of CCTV inspections and no manhole inspections in the project area have been provided to AECOM. As a result, no preliminary intervention recommendations have been provided to DWSD. The available CCTV data collected to-date in the last 18 months for the Pilot Project areas of North Rosedale Park and Cornerstone Village, the Five High Priority Neighborhoods (Project A), and the Westside Four (Project B) Neighborhoods indicates an average percentage of CCTV with Grade 4 or 5 Defects of 30%. As the total footage is 250,000 LF in Project B and the cost per inch per foot was available based upon the analyzed data in Project A, it was possible to extrapolate estimated repairs and costs from the available data.

### Full Project

From the assessments/evaluations in these neighborhoods, AECOM expects to recommend to DWSD the rehabilitation or replacement of approximately 150,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to 330 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes, and specialized cleaning. The total estimated cost of these repairs is approximately \$32,000,000.

### Loan-Eligible Portion of the Project

As only repairs to address defects that have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, approximately 59,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to over 100 manhole repairs are expected to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$21,000,000.

## Item 2 - Study Area and Project Zone

The locations of the proposed projects are provided in the general map below (Figure 1).

### Location

#### Project A – Five High Priority Neighborhoods

These neighborhoods comprise:

1. Piety Hill
2. New Center Commons
3. Virginia Park
4. Brewster Douglass
5. Brewster Homes

#### Project B – Four Westside Neighborhoods

These neighborhoods comprise:

1. Riverdale
2. Miller Grove
3. Minock Park
4. South Rosedale Park

### Population

The population projections presented in the 2015 Water Master Plan Update report prepared by CDM/Smith for DWSD indicate a forecasted decline in population for the City of Detroit. The City of Detroit population is expected to decrease from 713,777 (2010 Census) to 613,709 by the year 2035. The July 1, 2017 estimated population on the U.S. Census website is 673,104. The estimated 2018 population is not available on this website. The report also indicates a forecasted decline in the overall population in the DWSD service area in the suburban communities.

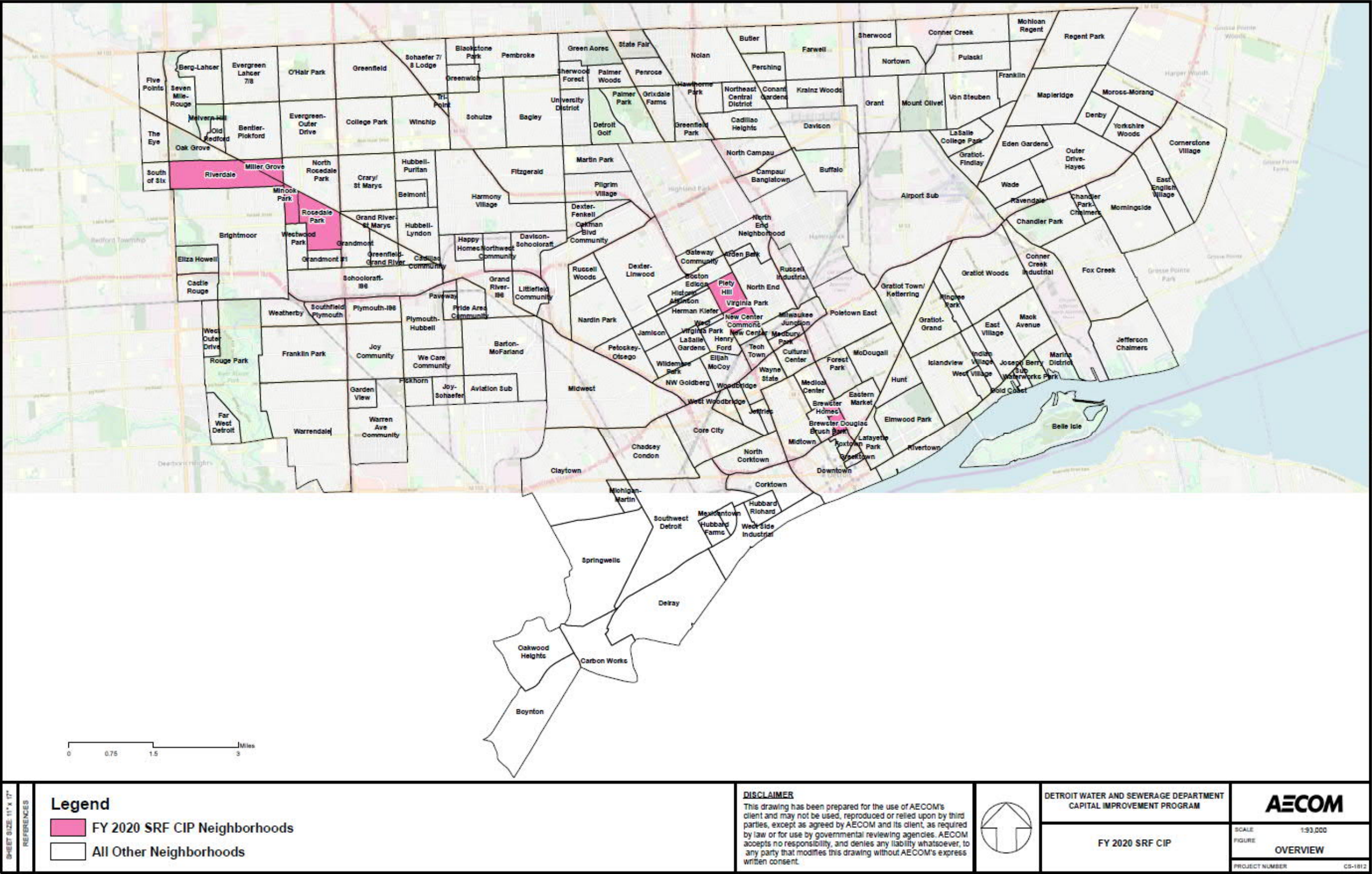


Figure 1 – CIP Neighborhoods



# 3 - Existing Facilities

## General

The gravity and force main system managed by DWSD comprises approximately 2,819 miles of pipe, of which nearly 15 percent has been rehabilitated or reconstructed by lining. 2,424 miles of Detroit's sewers were constructed prior to the 1940s. This infrastructure has an average age of 95 years. Cementitious material represents the largest portion of inventory. The number of reports for sinkholes and cave-ins associated with defects in the sewer infrastructure has averaged about 200 per year over the last 5 years. The structural condition of this infrastructure requires significant rehabilitation to prevent even more costly repairs and claims due to possible collapses.

## Project A – Five High Priority Neighborhoods

There are approximately 21 miles of pipe in Project A neighborhoods in total ranging in size from 10-inch to 54-inch. The pipe material includes brick, concrete, crock, PVC, reinforced concrete, vitrified clay, unknown and CIPP lined. Figure 2 identifies pipe mileage by material type in Project A neighborhoods. Figure 3 is a map of the sewer assets in the northern three neighborhoods of Project A. Figure 4 is a map of the sewer assets in the southern two neighborhoods of Project A.

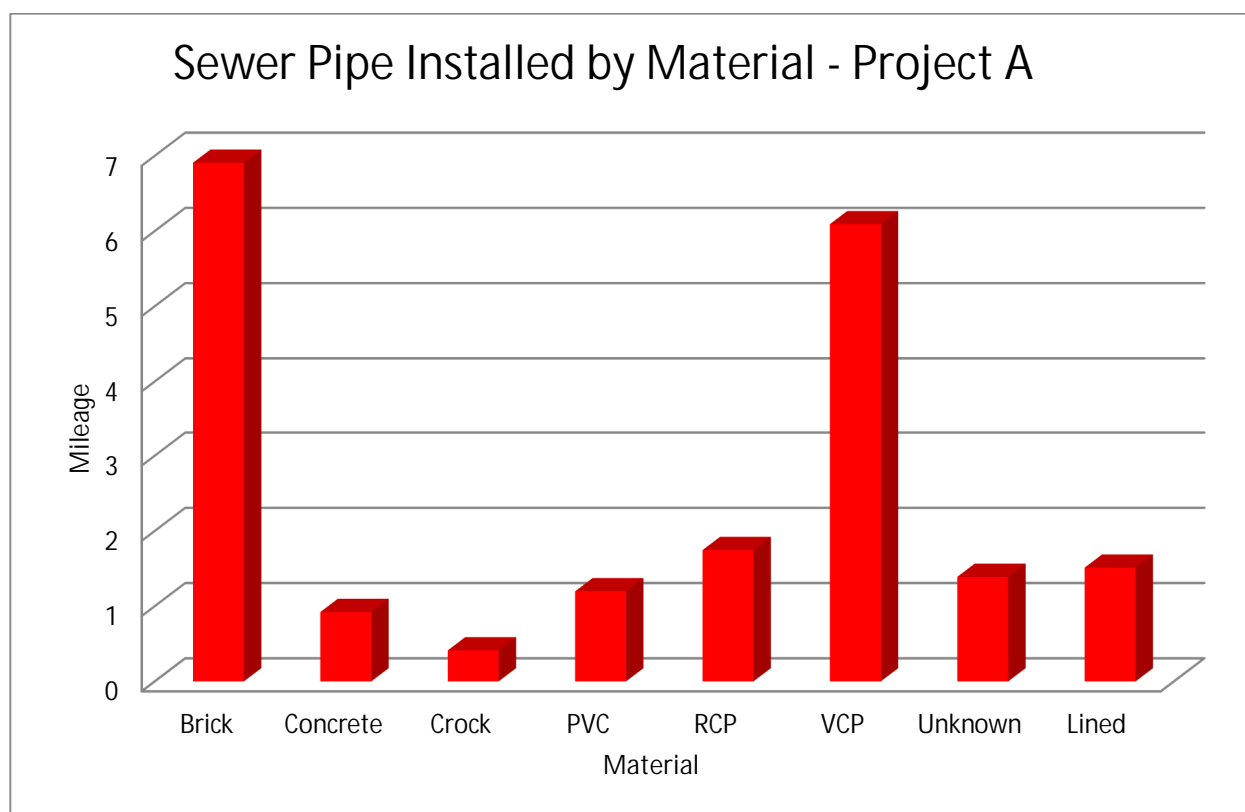


Figure 2 – Pipe Mileage by Material – Project A Neighborhoods



Figure 3 – Map of Assets in Northern Neighborhoods from Project A – Piety Hill, New Center Commons and Virginia Park

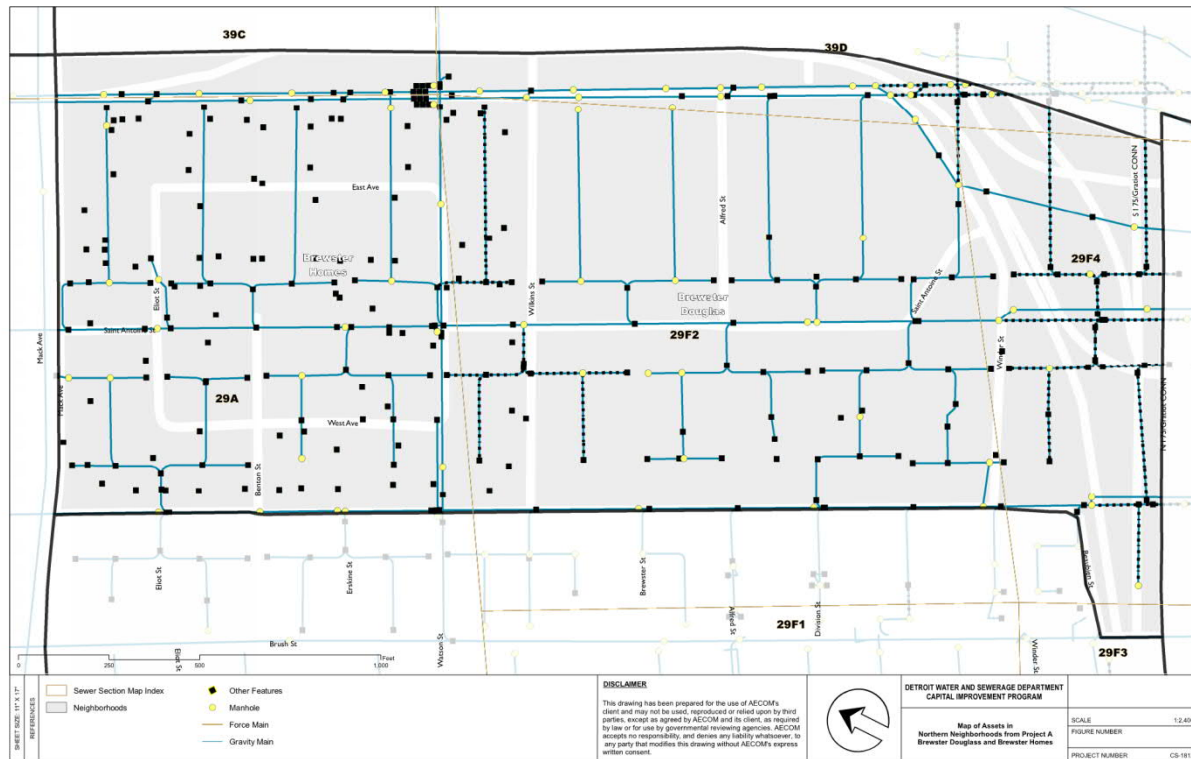


Figure 4 – Map of Assets in Southern Neighborhoods from Project A – Brewster Douglass and Brewster Homes

## Project B – Four Westside Neighborhoods

There are approximately 47 miles of pipe in Project B neighborhoods in total ranging in size from 8-inch to 180-inch. The pipe material includes brick, concrete, crock, PVC, vitrified clay, unknown and CIPP lined. Figure 5 identifies pipe mileage by material type in Project B neighborhoods. Not all of the pipe in Project B has been televised, so it is expected that the unknown quantity identified in Figure 5 will reduce once inspection is complete. Figure 6 is a map of the sewer assets in the neighborhoods of Project B.



## Sewer Pipe Installed by Material - 4 Westside

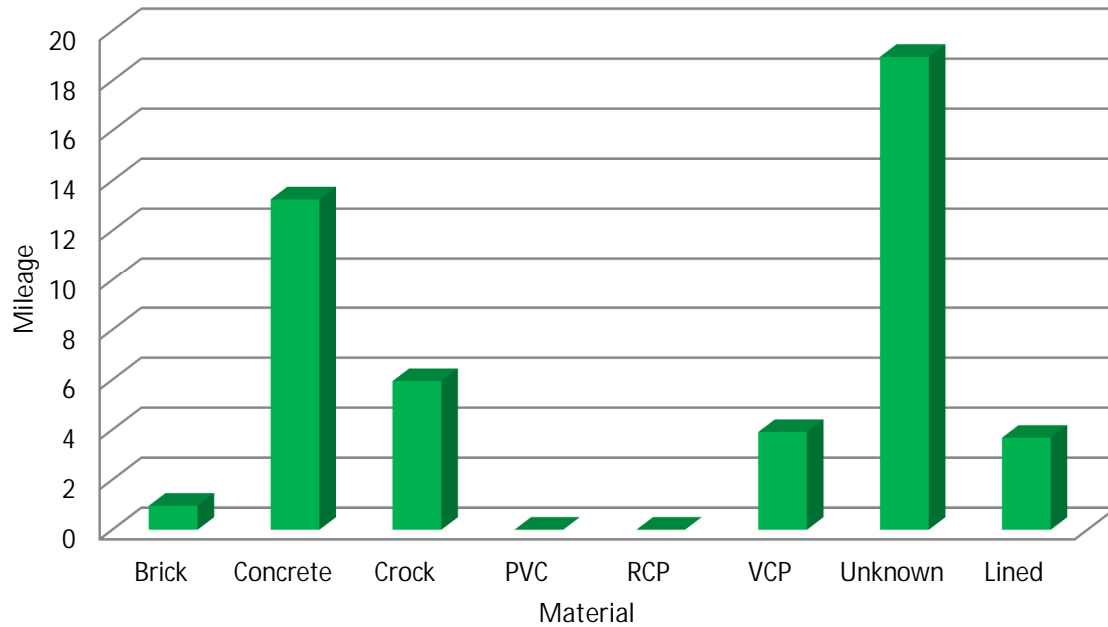


Figure 5 – Pipe Mileage by Material – Four Westside Neighborhoods

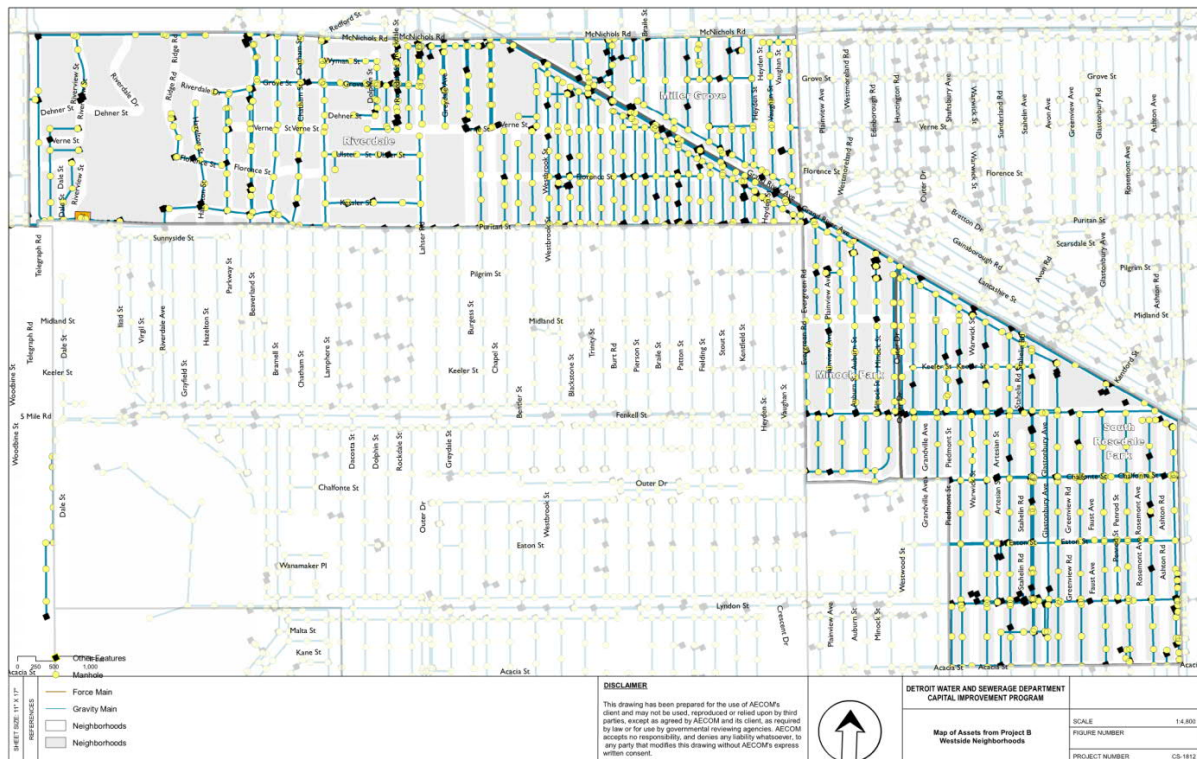


Figure 6 – Map of Assets from Project B - Four Westside Neighborhoods

## Item 4 – Project Need

### General

As a result of the CCTV and manhole inspection performed to-date, multiple defects requiring intervention have been identified. The primary structural defects encountered are fractures (spiral, hinge, longitudinal and circumferential), holes, continuous cracks, voids outside the pipe and deformation. Some of the defects have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5). To avoid sinkholes, back-ups in buildings and disruption to customers, it is recommended that interventions be made to prevent asset failure. Furthermore, based on the average age of the infrastructure at 95 years, the observed condition and the risk to public health, it is felt that the selected pipes and manholes are defensible candidates for intervention.

### Project A – Five High Priority Neighborhoods

53% of the pipes televised have defects requiring interventions with 24% of these having a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5). An example of one of these (a deformation with a Grade 5 structural rating) is shown in Figure 7. A significant crack in a manhole is shown in Figure 8.


CCTV survey : WWMH0000033216A\_U\_20181010\_1351

Defects Internal View

	Distance (ft)	PACP Code	Continuous	Value %	Value 1st Dim	Value 2nd Dim	Clock At/From	Clock to	Band	Material	Joint	Remarks	O and M Grade	Structural Grade	Video file	Counter
	82.40	DAE		5			7				<input checked="" type="checkbox"/>		2.00	0.00		565.1
	86.30	DAE		5			7	5			<input checked="" type="checkbox"/>		2.00	0.00		576.1
	89.00	CL					12				<input checked="" type="checkbox"/>	AECOM	0.00	2.00		587.1
	90.60	DAE		5			12	5			<input checked="" type="checkbox"/>		2.00	0.00		598.1
	102.30	DAE		5			7	10			<input checked="" type="checkbox"/>		2.00	0.00		623.1
	108.80	DAE		5			7	12			<input checked="" type="checkbox"/>		2.00	0.00		637.1
	113.20	DAE		5			7	5			<input checked="" type="checkbox"/>		2.00	0.00		656.1
▶	113.90	TFA			6		2				<input type="checkbox"/>		0.00	0.00		667.1
	120.00	DR		20							<input type="checkbox"/>		0.00	5.00		849.1
	121.20	B					12	12			<input type="checkbox"/>		0.00	4.00		710.1

< >

Observation:TFA(Tap Factory Activity)  
From: 02  
Counter:113.9  
Remarks:



15:31 10.10.18 LC1: +0118.16 ft

Add Defect

738/3147

No picture

OK Cancel Help

Figure 7. Sample CCTV Data from a Pipe in the Five High Priority Neighborhoods



Figure 8. Sample Manhole Defect from a Manhole in the Five High Priority Neighborhoods

## Project B – Four Westside Neighborhoods

While the CCTV inspections for the Project B area is approximately 50% completed, this data along with the 100% completed CCTV data for the Pilot Project areas of North Rosedale Park, Cornerstone Village and the Project A - Five High Priority neighborhoods indicates an average percentage of CCTV with Grade 4 or 5 Defects of 30% as shown in Table 1.

Table 1 - Cost Summary - Wastewater Interventions by Type for 4 Westside Neighborhoods

Area	Total Televised Footage (LF)	Footage with Grade 4 or 5 Structural Defects (LF)	Percentage with Grade 4 or 5 Structural Defects	Actual Repair Footage of Just Structural Interventions (LF)
North Rosedale	125,669	42,813	34%	31,379
Cornerstone Village	163,154	68,815	42%	54,530
Project A - Five High Priority	108,053	26,399	24%	23,125
Westside Four (As of 03/28/2019)	133,070	20,771	16%	16,855
Total/Average	529,946	158,798	30%	125,443
Westside Four (When inspections completed)	249,979	74,906	30%	59,172

While only 53% of pipes in the Four Westside Neighborhoods have been televised thus far with 16% having a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5), it has been assumed based on the completed inspections of all surveyed neighborhoods that the average percentage of footage with Grade 4 or 5 defects of 30% will be allocated to the Four Westside Neighborhoods. An external point repair (EPR) or trenchless point repair (TPR) will be shorter than the entire length of pipe where Grade 4 or 5 defects were observed hence the actual repair length of interventions is estimated to be 59,172 LF.

## Item 5 - Alternatives Analysis

### General

There are three options for addressing the problems associated with aged sewer mains. DWSD can either continue to repair the old pipes (Alternative 1), selected replace or rehabilitate the old pipes (Alternative 2), or replace the pipes using standard open-cut replacement (Alternative 3). As a part of Alternative 2, rehabilitation through CIPP lining of a majority of sewer main will be incorporated.

#### A. Alternative 1 – Repair of Existing Sewer Mains

Sewer main repair is conducted throughout the system, particularly in those areas where problems have not escalated to the point which would warrant replacement. Nevertheless, sewer main repairs are time consuming, costly, constitute a drain on DWSD resources needed to carry out the repairs, and pose a potential increase in public health risk. Sewer main repairs can require shutting off sewer service to multiple customers while the defect is repaired and returned to service. Repair activities cannot be pre-scheduled, and field crews must respond on an “as needed” basis at any time of year. As typically only point repairs are performed during emergency repairs, other locations along the same pipe may also be at risk of failure but are not repaired. Hence this alternative should not be considered as a viable alternative.

#### B. Alternative 2 – Sewer Main Selected Replacement/Rehabilitation

Sewer main replacement/rehabilitation of aged sewer main pipes is based on the criteria described under Item 4 - Project Need. The replacement pipe is sized to meet the service area needs, which may in some cases result in an increase of pipe size, depending on the changes in flow, customer base, including commercial, business and residential demographics. Rehabilitation of aged sewer mains also provides for the use of CIPP lining, which is considered superior because it has an expected useful life greater than that of damaged vitrified clay pipe and deteriorated concrete pipe and can be installed by trenchless means.

In addition to full replacement and full rehabilitation through CIPP lining, both external and trenchless point repairs are recommended as appropriate if the defects are localized and the remainder of the pipe is in generally good condition.

#### C. Alternative 3 – Sewer Main Replacement Only

Full sewer main replacement of aged sewer main pipes is based on the criteria described under Project Need. The replacement pipe is sized to meet the service area needs, which may in some cases result in an increase of pipe size, depending on the changes in flow, customer base, including commercial, business and residential demographics. This methodology suggests standard open-cut replacement of mains and not rehabilitation of the mains through the use of trenchless methodologies such as CIPP lining. Alternative 3 may be considered extreme but represents a viable alternative.

Based upon the alternative that can be most easily implemented with the least disruption to the utility and the rate payers, and the cost analysis that will be discussed below, Alternative 2, selected replacement and rehabilitation is the recommended alternative.

## Item 6 - Proposed Project

### Project A – Five High Priority Neighborhoods

#### Full Project – Alternative 2

From the assessments/evaluations in these neighborhoods, AECOM has recommended to DWSD, the rehabilitation or replacement of approximately 51,281 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter in addition to 82 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$7,750,000. Maps of the proposed improvements for Project A are shown in Figures 9 to 20, and are separated by neighborhoods, and by intervention type (O&M and structural). It should be noted that the Virginia Park neighborhood is a narrow strip of land included in the New Center Commons and Piety Hill neighborhood maps. As design is commencing on these projects and hydraulic modeling results are being reviewed, it is possible that some upsizing of pipes may be recommended that would increase these costs.

#### Cost Summary – Full Project – Alternative 2

Rehabilitation and replacement cost estimates have been developed, based on previous work completed to date. The pre-design total capital cost estimates and costs with contingencies for pipes and manholes in all Five High Priority Neighborhoods areas are shown in Table 2.

Table 2 - Cost Summary – Full Project A Interventions for Alternative 2

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	15	122	\$134,735
CIPP Lining	Structural	Pipe	170	31,462	\$4,842,987
Full Segment Replacement	Structural	Pipe	3	241	\$197,457
TPR-Liner	Structural	Pipe	21	103	\$139,362
TPR-Pointing	Structural	Pipe	12	28	\$70,780
TPR-Tyger	Structural	Pipe	7	23	\$43,855
Clean	O&M	Pipe	93	19,263	\$366,003
Cutting/grinding of Taps	O&M	Pipe	18	39	\$17,334
Replace Adjusters	Structural	Manhole	2		\$1,522
Replace Chimney Only	Structural	Manhole	4		\$12,120
Manhole Cleaning	O&M	Manhole	40		\$15,200
General and/or Spot Repairs	Structural	Manhole	32		\$16,800
Benching and Channel Reconstruction	Structural	Manhole	2		\$3,276
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$5,866,423
10% Contingency					\$586,642
Sub-total					\$6,453,065
20% Design Contingency					\$1,290,613
Total					\$7,743,678

#### Loan-Eligible Portion of the Project – Alternative 2

As only repairs to address defects that had a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 23,125 feet of sewer collection mains ranging in size from 10-inch through 42-inch in diameter in addition to 23 manhole repairs appear to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$5,000,000. Again, maps of the proposed improvements for Project A are shown in Figures 9 to 20, and are separated by neighborhoods, and by intervention type. It should be noted that the Virginia Park neighborhood is a narrow strip of land included in the New Center Commons and Piety Hill neighborhood maps. As design is commencing on these projects and hydraulic modeling results are being reviewed, it is possible that some upsizing of pipes may be recommended that would raise these costs.



### Cost Summary – Loan Eligible Portion – Alternative 2

Rehabilitation and replacement cost estimates have been developed, based on previous work completed to date. The pre-design total capital cost estimates and costs with contingencies for pipes and manholes in Project A Five High Priority Neighborhoods areas are shown in Table 3.

Table 3 - Cost Summary – Loan Eligible - Project A Interventions for Alternative 2

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	15	122	\$134,735
CIPP Lining	Structural	Pipe	100	22,729	\$3,391,361
Full Segment Replacement	Structural	Pipe	3	241	\$197,457
TPR-Liner	Structural	Pipe	5	23	\$33,855
TPR-Tyger	Structural	Pipe	3	10	\$18,850
General and/or Spot Repairs	Structural	Manhole	20		\$10,500
Benching and Channel Reconstruction	Structural	Manhole	1		\$1,638
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$3,793,388
10% Contingency					\$379,339
Sub-total					\$4,172,727
20% Design Contingency					\$834,545
Total					\$5,007,273

### Cost Summaries – Alternative 3 – Full Replacement

To illustrate the expected increase in cost if full replacement (Alternative 3) is assumed instead of rehabilitation (Alternative 2) of pipes using trenchless methodologies, Tables 4 and 5 were developed. The CIPP and TPR lining items have been removed and full replacement and EPR quantities have been increased accordingly. As shown, the costs for Alternative 3 are significantly higher than those for Alternative 2.

Table 4 - Cost Summary – Full Project – Project A for Alternative 3

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	43	248	\$387,014
Full Segment Replacement	Structural	Pipe	173	31,702	\$14,374,646
TPR-Pointing	Structural	Pipe	12	28	\$70,780
Clean	O&M	Pipe	93	19,263	\$366,003
Cutting/grinding of Taps	O&M	Pipe	18	39	\$17,334
Replace Adjusters	Structural	Manhole	2		\$1,522
Replace Chimney Only	Structural	Manhole	4		\$12,120
Manhole Cleaning	O&M	Manhole	40		\$15,200
General and/or Spot Repairs	Structural	Manhole	32		\$16,800
Benching and Channel Reconstruction	Structural	Manhole	2		\$3,276
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$15,269,687
10% Contingency					\$1,526,969
Sub-total					\$16,796,656
20% Design Contingency					\$3,359,331
Total					\$20,155,987

Table 5 - Cost Summary – Loan Eligible – Project A for Alternative 3

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	23	155	\$192,207
Full Segment Replacement	Structural	Pipe	103	22,970	\$10,224,569
General and/or Spot Repairs	Structural	Manhole	20		\$10,500
Benching and Channel Reconstruction	Structural	Manhole	1		\$1,638
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$10,433,906
10% Contingency					\$1,043,391
Sub-total					\$11,477,297
20% Design Contingency					\$2,295,459
Total					\$13,772,756

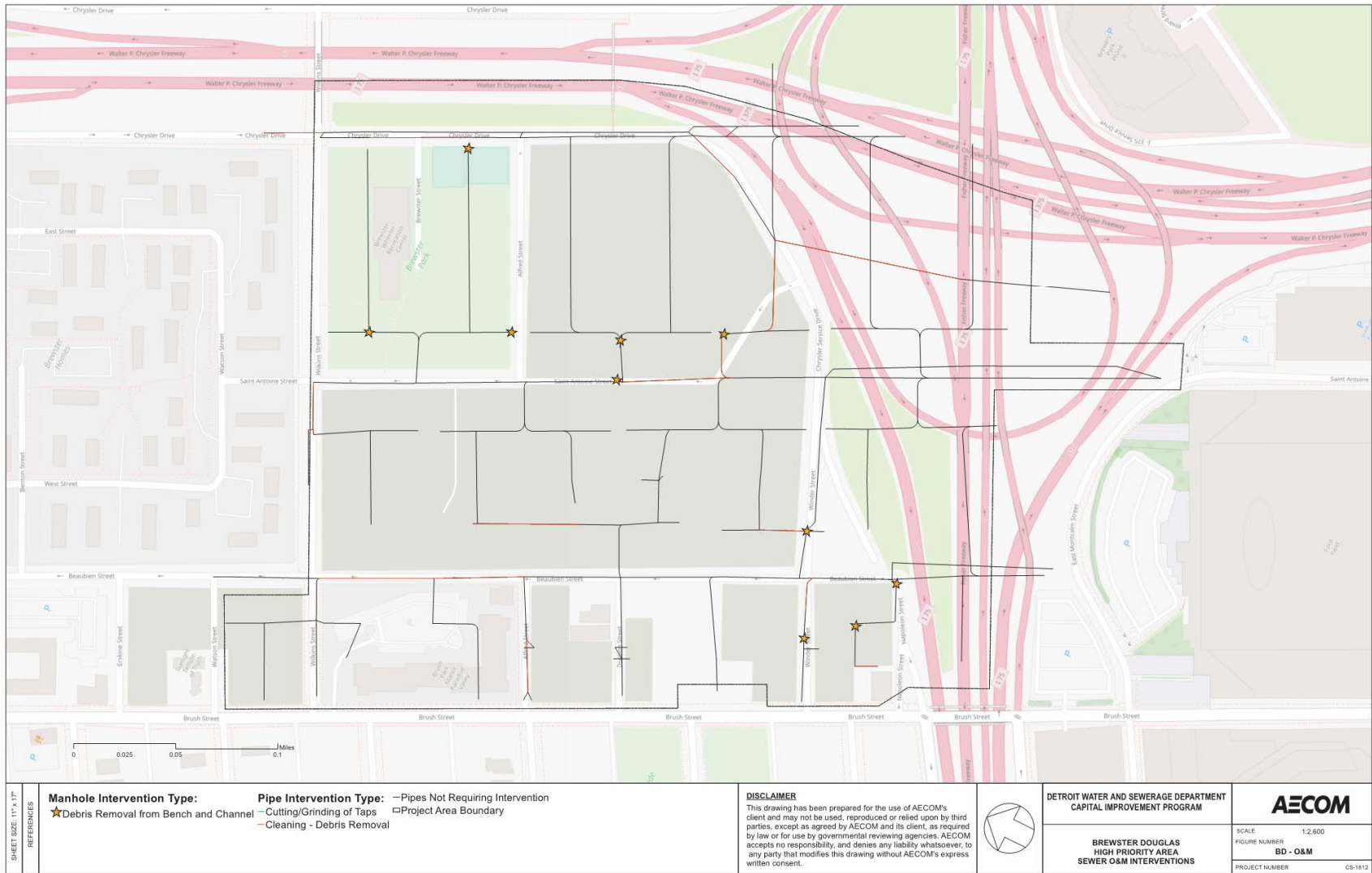


Figure 9 – Brewster – Douglas Sewer O&M Repairs

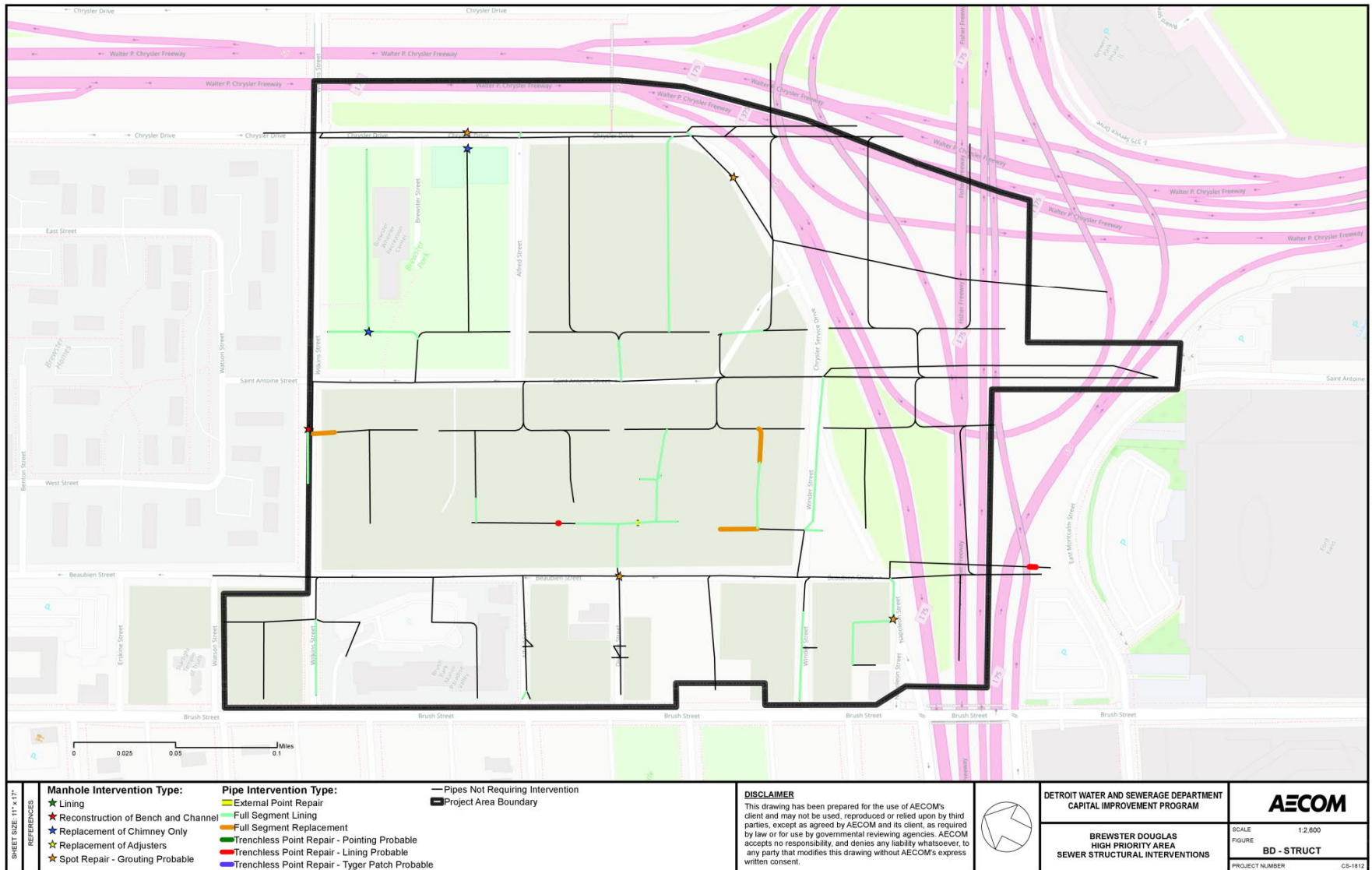


Figure 10 – Brewster – Douglas Sewer Structural Repairs

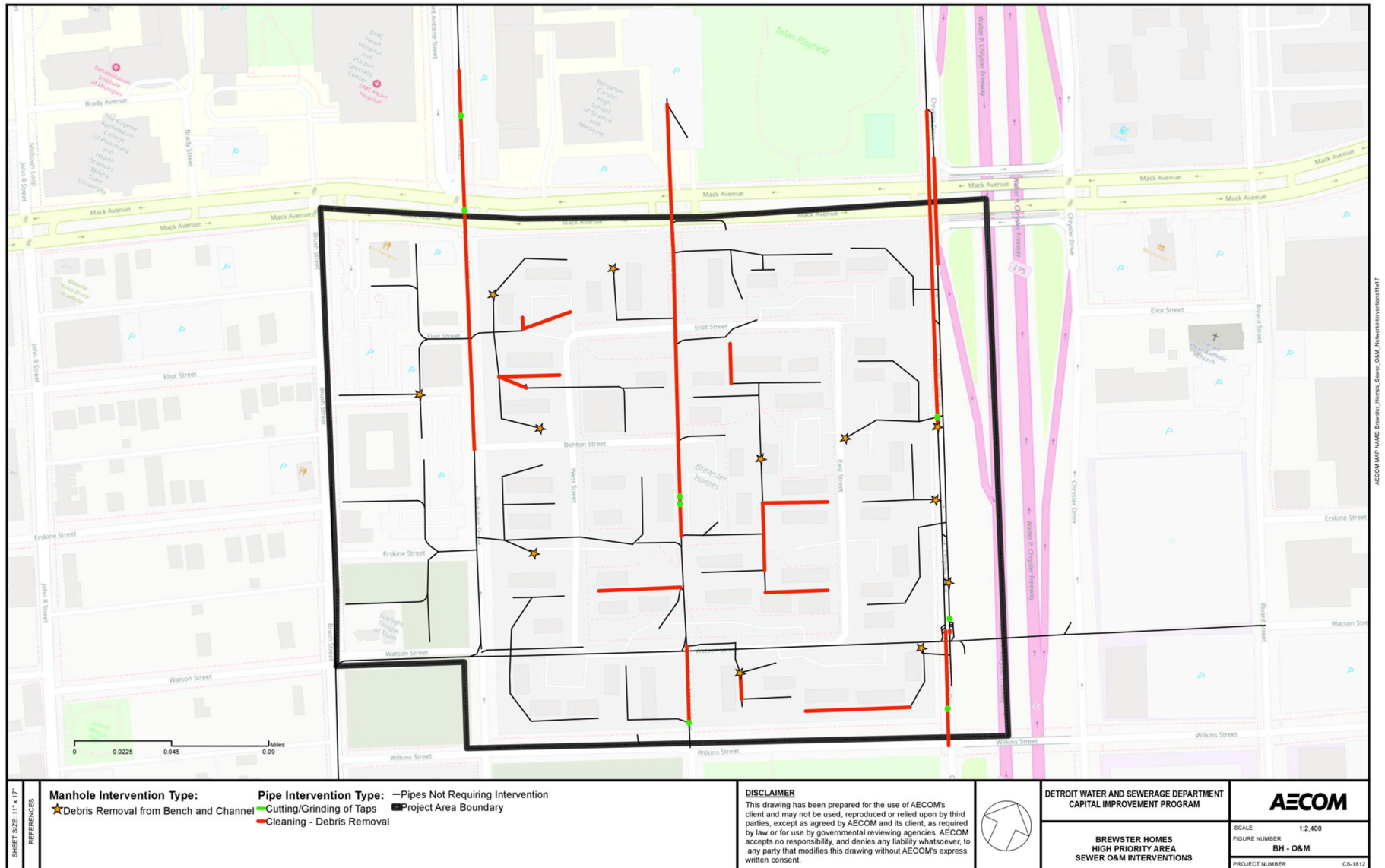


Figure 11 – Brewster Homes Sewer O&M Repairs





Figure 12 – Brewster Homes Sewer Structural Repairs

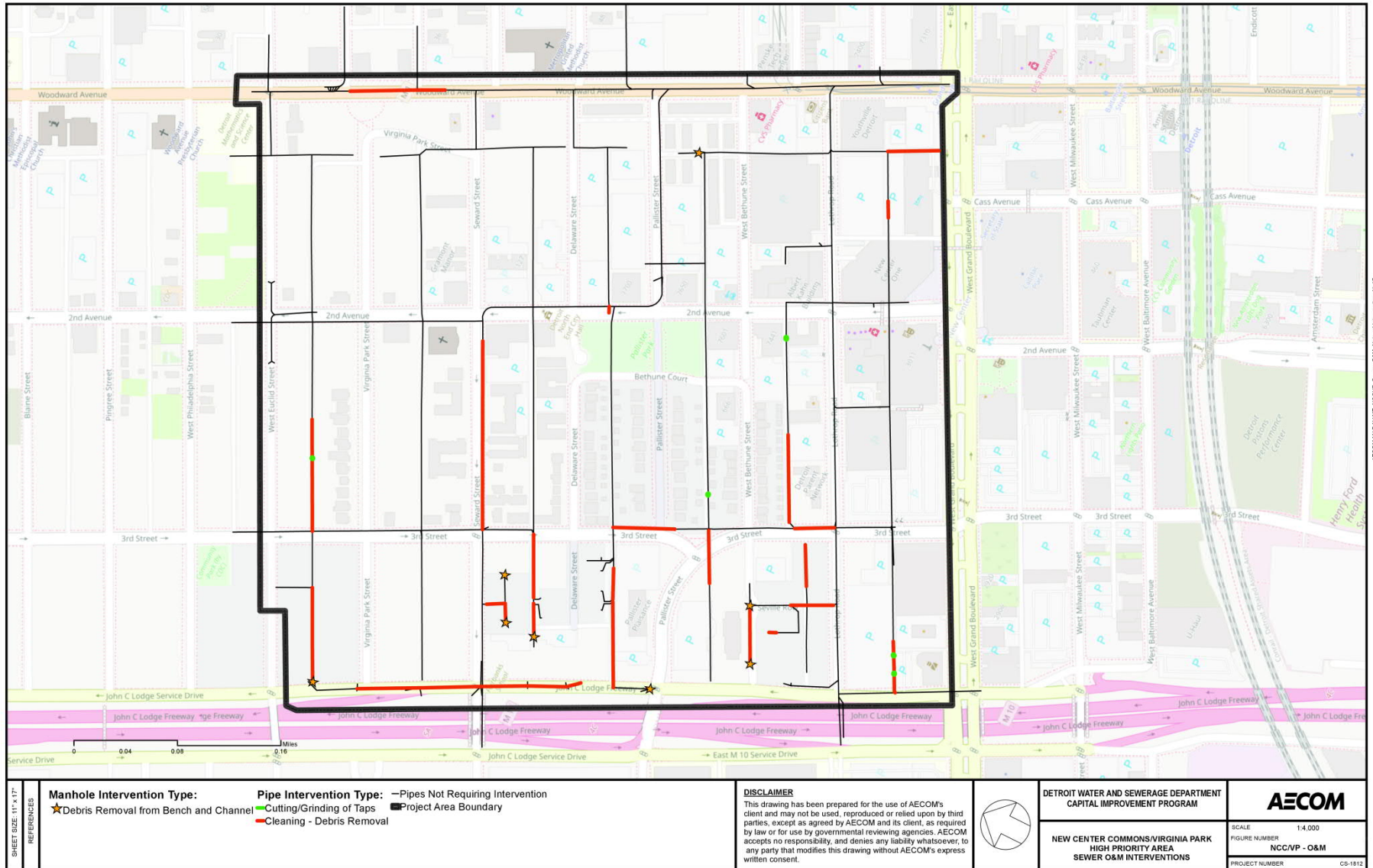


Figure 13 – New Common Center/Virginia Park Sewer O&M Repairs



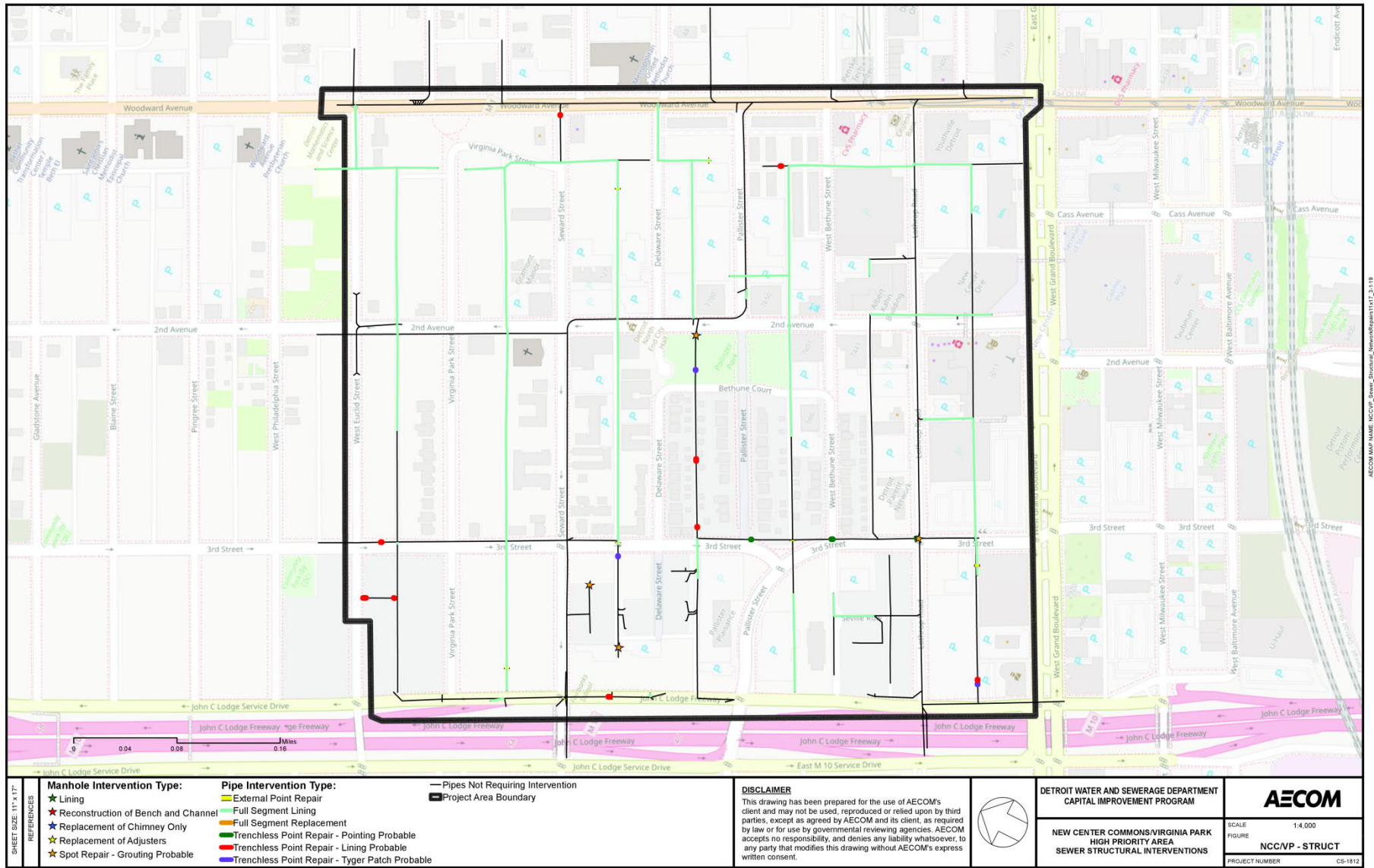


Figure 14 – New Common Center/Virginia Park Sewer Structural Repairs

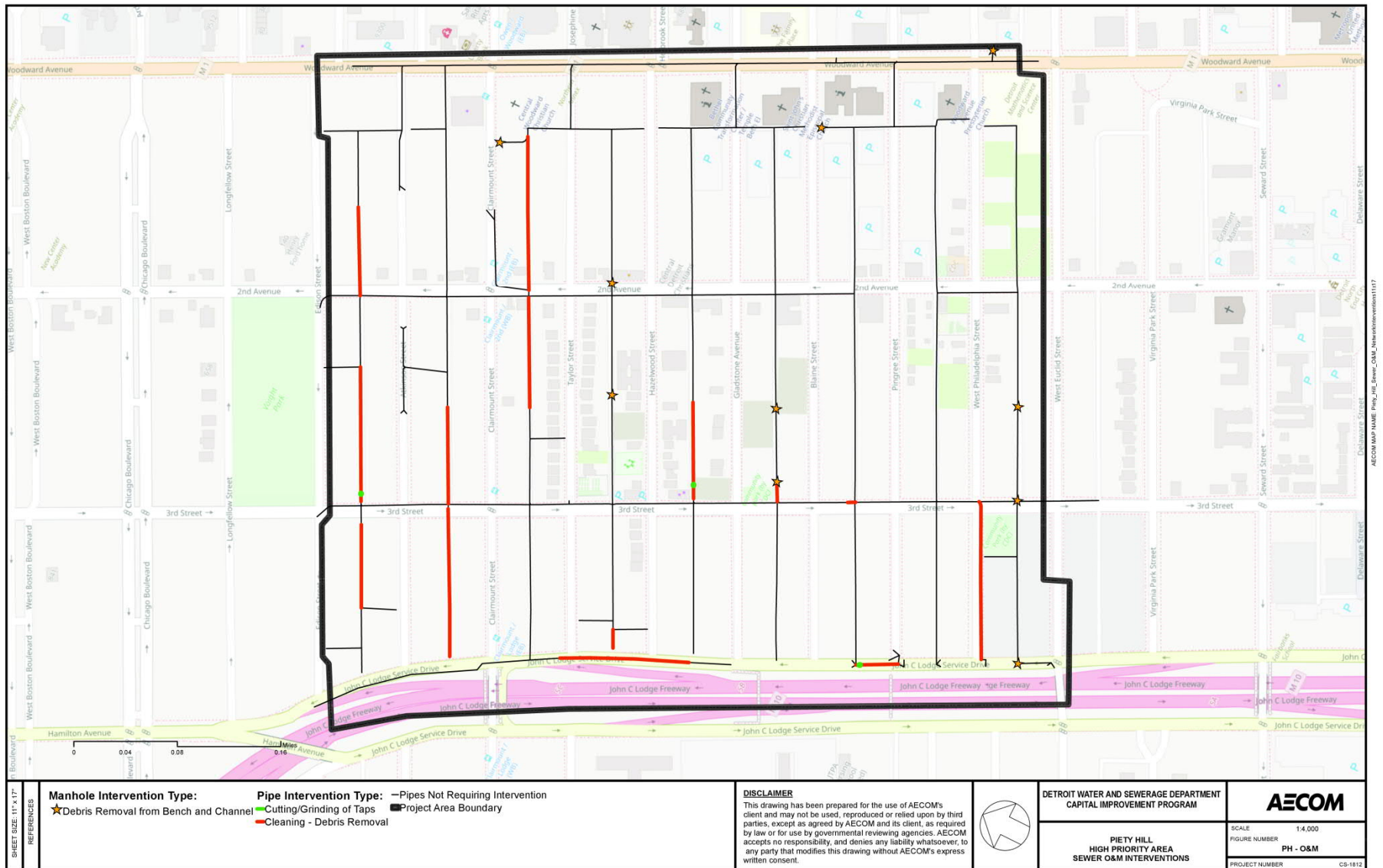


Figure 15 – Piety Hill Sewer O&M Repairs

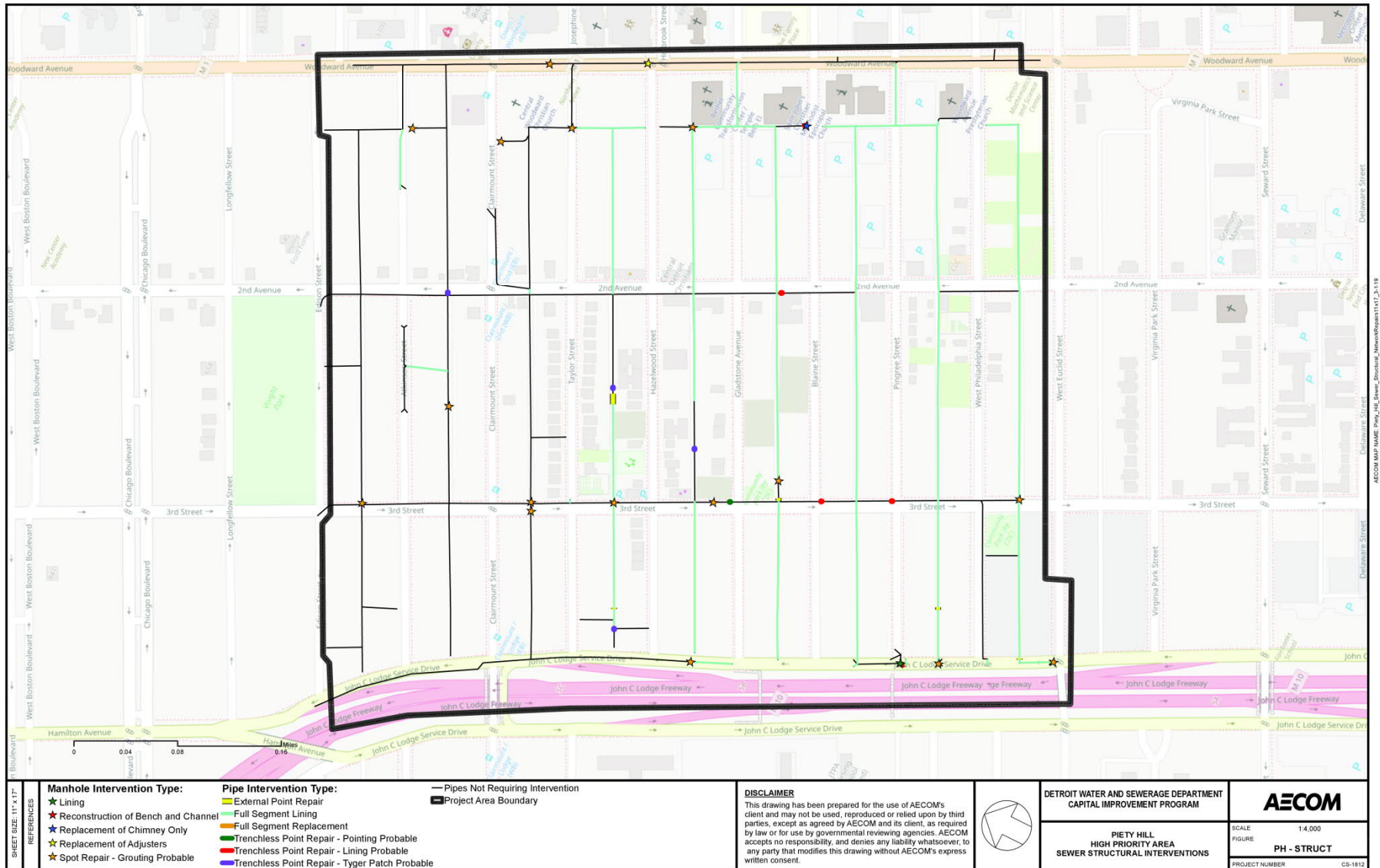


Figure 16 – Piety Hill Sewer Structural Repairs



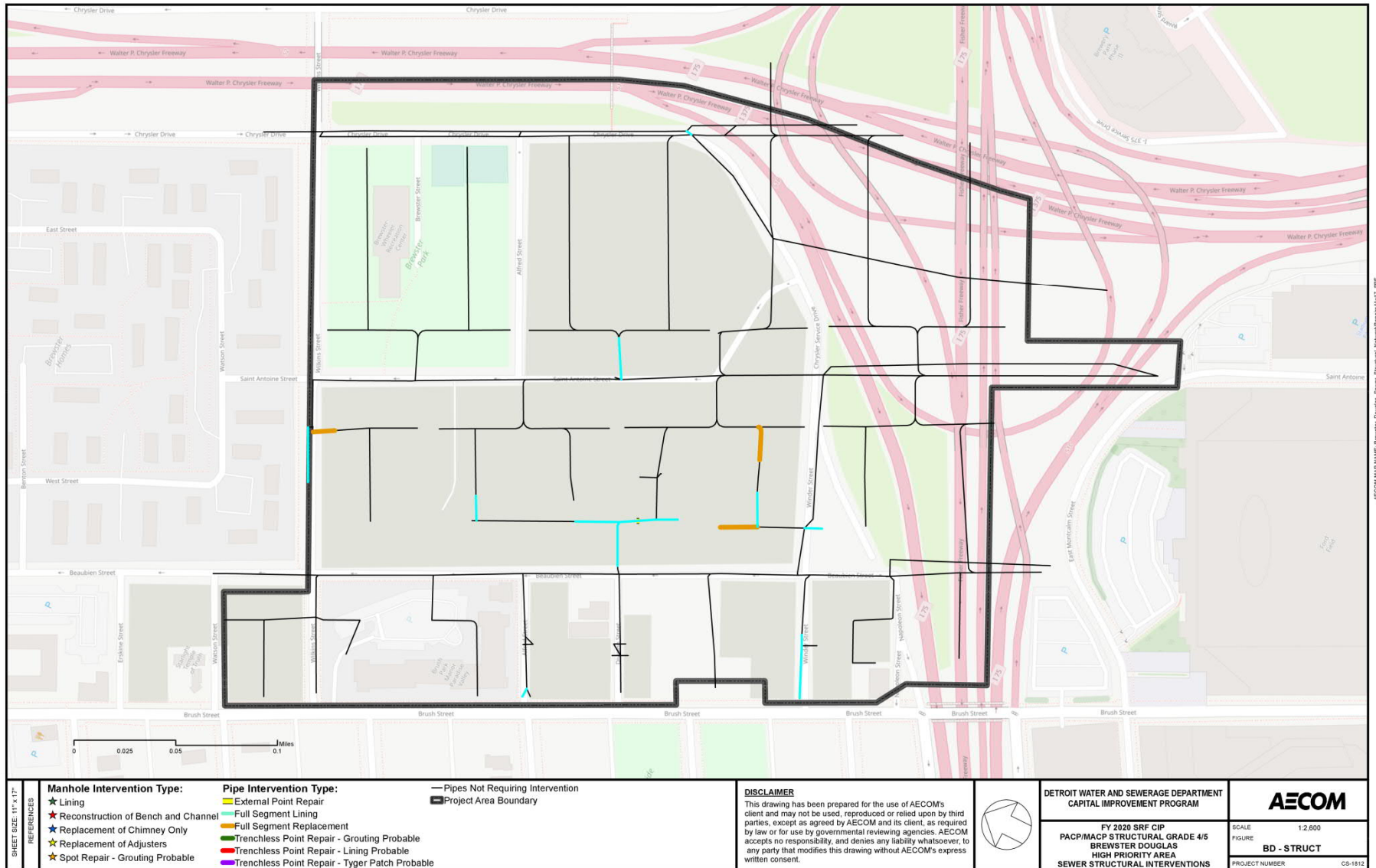


Figure 17 – Brewster – Douglas Sewer Structural Network Repairs



Figure 18 – Brewster Homes Sewer Structural Network Repairs

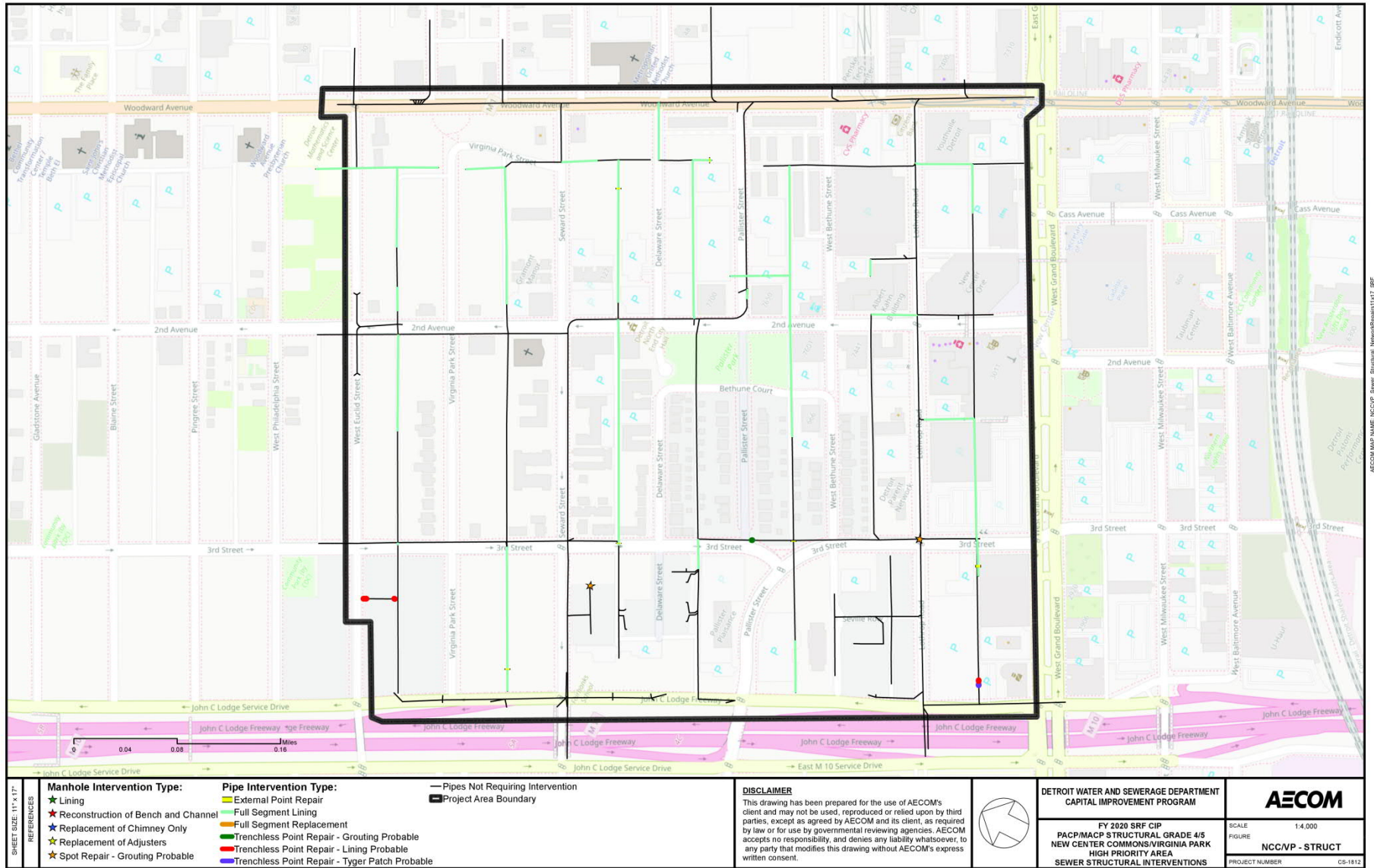


Figure 19 – New Center Commons/Virginia Park Sewer Structural Network Repairs 11x17



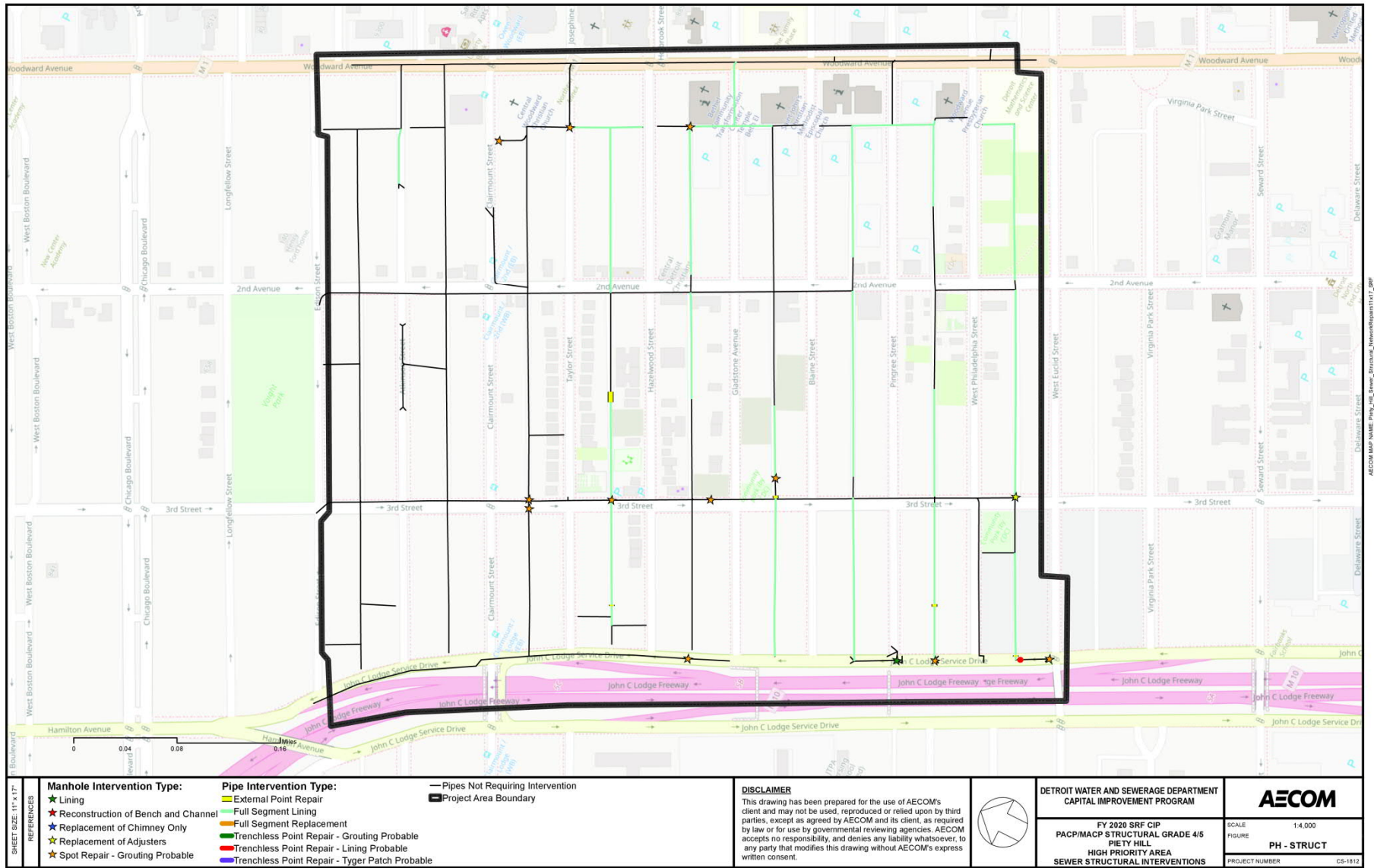


Figure 20 – Piety Hill Sewer Structural Network Repairs

## Project B – Four Westside Neighborhoods

### Data Interpolation – Alternative 2

The available CCTV data for the Pilot Project areas of North Rosedale Park, Cornerstone Village in addition to the Project A - Five High Priority and the Project B - Westside Four Neighborhoods indicates an average percentage of CCTV with grade 4 or 5 defects of 30%. Table 1 indicated that the actual repair length of interventions is estimated to be 59,172 LF for the Westside Four Neighborhoods.

As Table 6 below indicates, the available data also indicates that the cost per inch per foot to repair the grade 4 or 5 defects for Project A is estimated to be approximately \$10.80. This includes manhole repair costs. The average diameter of repairs was 15-inches for Project A, while for Project B based on the defects identified thus far it is 24-inches.

As the total footage is 250,000 LF in Project B and the cost per inch per foot is available based upon the analyzed data in Project A, it is possible to extrapolate estimated repairs and costs from the available data. As some upsizing of pipes is possible due to hydraulic capacity issues in the Project B area, the cost per inch per foot was rounded to \$11. Hence, for an estimated 59,172 LF of repairs with an average diameter of 24-inches, the expected repair cost is estimated to be \$15.6 MM as shown in Table 6. Adding a general 10% contingency and 20% for design/administration, the expected cost for the grade 4/5 defects is approximately \$21 MM as shown in Table 7.

Table 6 - Cost Interpolation – Loan Eligible – Project B for Alternative 2

Area	Total Televised Footage (LF)	Actual Repair Footage of Just Structural Interventions (LF)	Average Diameter of Repaired Pipes (Inches)	Cost per Inch per Foot	Cost per Foot	Estimated Repair Cost
Project A Estimate	108,053	23,125	15	\$10.8	\$164	\$3,793,388
Project B Interpolated	249,979	59,172	24	\$11.0	\$264	\$15,621,447

Table 7 - Cost Summary – Loan Eligible – Project B for Alternative 2

Intervention	Estimated Cost
Total Estimated Intervention Cost	\$15,621,447
10% Contingency	\$1,562,145
Sub-total	\$17,183,592
20% Design Contingency	\$3,436,718
Total	\$20,620,310



## Loan-Eligible Portion of the Project Summary – Alternative 2

As only repairs to address defects that have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 59,172 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to over 100 manhole repairs are expected to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$21,000,000 from Table 7 above. As full analysis of the infrastructure has not begun yet, maps of the proposed interventions for Project B cannot be provided in this Project Plan.

## Full Project Summary – Alternative 2

As shown in Table 8, the ratio of grade 4/5 repair costs to the total cost of the project is 1.55. Applying the same ratio to the Westside Four yields a total repair cost of \$24 MM for the Westside Four. Applying the same contingency figures as before, the total expected cost of the full project is estimated to be just under \$32 MM.

From the assessments/evaluations in these neighborhoods and the ratio of grade 4/5 defects to full interventions for Project A, AECOM expects to recommend to DWSD, the rehabilitation or replacement of approximately 150,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to 330 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$32,000,000 as detailed in Table 9. As full analysis of the infrastructure has not begun yet, maps of the proposed interventions cannot be provided.

Table 8 – Ratio between Grade 4/5 Costs and Full Project Costs

Area	Grade 4/5 Defect Cost	Estimated Full Project Total Cost	Ratio
Project A	\$3,793,388	\$5,866,423	1.55
Project B	\$15,621,447	\$24,158,356	1.55

Table 9 - Cost Summary – Full Project – Project B for Alternative 2

Intervention	Estimated Cost
Total Intervention Cost	\$24,158,356
10% Contingency	\$2,415,836
Sub-total	\$26,574,191
20% Design Contingency	\$5,314,838
Total	\$31,889,030

### Cost Summaries – Alternative 3 – Full Replacement

As tables 4 and 5 showed earlier for Project A - Five High Priority Neighborhoods, the costs for Alternative 3 are significantly higher than those for Alternative 2. As minimal data is available for the Project B - Westside Four Neighborhoods, it can be assumed that Alternative 3 - full replacement would also be significantly higher for Project B than would Alternative 2, which utilizes trenchless methodologies for much of the recommended pipe interventions.

### Monetary Evaluation of Alternative 2 and 3

A monetary evaluation of the feasible alternatives, Alternatives 2 and 3 was prepared using MDEQ guidelines for SRF Project Plans, including the present worth formulas and discount interest rate of 0.200%. Under this analysis, the useful life is assumed to be 50 years for pipelines. The salvage value of pipes at the end of the 20 or 30-year planning period was computed on the basis of a straight-line depreciation over the useful life of the item. Therefore, the salvage value of the pipes at the end of the 20 or 30-year planning period is estimated to be 60% or 40%, respectively, of the initial cost.

The present worth of salvage value was then computed by multiplying the salvage at the end of the 20 or 30 years by the conversion factor 0.9608 or 0.9418, respectively, based on the following formula:

$PW = F \times 1/(1 + i)^n$ , Where:

PW = Present Worth (Salvage)

F = Future Value (Salvage)

i = Discount Interest Rate (0.200%)

n = Number of Years (20 or 30)

$1/(1 + i)^n$  = Conversion Factor

Interest during the construction period was computed using the formula:

$I = i \times 0.5 \times P \times C$

Where:

I = Interest Value

i = Discount Interest Rate (0.200%)

P = Period of Construction in Years (assumed to be two and a half years)

C = Capital Cost of the Project

For each of Alternatives 2 and 3, the total Present Worth was computed from the estimated cost (including construction, engineering, and administrative costs), salvage value, and interest during construction. This equates to the amount which would be needed at the start of the project to cover design and construction costs over the 20 or 30-year planning period if interest were to accrue at the discount rate 0.200% annually.

The Present Worth of each alternative was then converted to an Equivalent Annual Cost, which is the amount which would be paid uniformly over a 20 or 30-year period based on the Present Worth value. This amount was obtained by the using the following formula and capital recovery factor of 0.0511 or 0.0344, respectively:

$$A = PW \times [(i(1 + i)^n)/((1 + i)^n - 1)]$$

Where:

A = Equivalent Annual Cost PW = Present Worth

i = Discount Interest Rate (0.200%) n = Number of Years (20 or 30)

$[(i(1 + i)^n)/((1 + i)^n - 1)]$  = Capital Recovery Factor

The cost effective analysis and present worth determination for Alternatives 2 and 3 for Project A is presented in Table 10. From the equivalent annual cost below, Alternative 2 minimizes the impact to the users more than does Alternative 3. This analysis has not been performed for Project B as those results would yield a similar outcome with Alternative 2 being more favorable.

Table 10 – Cost Effective Analysis/Present Worth Determination – Project A Loan Eligible

	Project A Alternative 2 Rehabilitation/Limited Section Replacement for Loan Eligible Grade 4/5	Project A Alternative 3 Full Replacement for Loan Eligible Grade 4/5	Comments
Initial Cost	\$5,007,272	\$13,772,756	
O&M Costs	\$0	\$0	
Replacement Costs	\$0	\$0	
Salvage Value 20-year Anal.	\$2,186,876	\$6,015,113	50 year asset
Salvage Value 30-year Anal.	\$1,429,077	\$3,930,748	50 year asset
Interest during Construction	\$10,015	\$27,546	2 year const.
Total Present Worth	\$2,830,411	\$7,785,189	20 year analysis
Total Present Worth	\$3,588,210	\$9,869,553	30 year analysis
Equivalent Annual Cost	\$144,511	\$397,486	20 year analysis
Equivalent Annual Cost	\$123,351	\$339,282	30 year analysis

Total Cost and Loan-Eligible Cost for Project A and B, Alternative 2

From Tables 2 and 9 the combined total cost for the full project for Alternative 2 for Projects A and B is \$39,632,708.

From Tables 3 and 7 above, the combined total loan eligible cost for Alternative 2 for Projects A and B is \$25,627,583.

Alternative 2 is recommended and DWSD anticipates paying for the entire Projects A and B Alternative 2 with SRF loan for the loan eligible portion, and cash and bonds for the non-loan eligible portion.

## User Cost

Repayment of the SRF loan through annual debt retirement payments will impact the residential customer rates resulting in increased user costs. The annualized equivalent costs for the loan eligible portions of Projects A and B are:

- Project A = \$144,511 (20-year); \$123,351 (30-year)
- Project B = \$595,108 (20-year); \$507,967 (30-year)
- Total Annualized Equivalent Cost for Projects A and B = \$739,619 (20-year); \$631,317 (30-year)

This impact to customer rates is generally determined by dividing the additional expenses among the users in the service area as summarized in Table 11. The annualized cost of the loan eligible portion of the project was calculated using the capital recovery factor 0.0511(20-year) or 0.0344 (30-year) following formula:

$$A = PW \times [(i(1 + i)^n)/((1 + i)^n - 1)]$$

Where:

A = Equivalent Annual Cost PW = Present Worth

i = Interest Rate through SRF Loan (2.0%)

n = Number of Years (20 or 30)

$[(i(1 + i)^n)/((1 + i)^n - 1)]$  = Capital Recovery Factor

**Table 11 – Loan Eligible User Cost Impact for Alternative 2 (Sewer Rehabilitation/Limited Replacement)  
Projects A and B**

Item	Sewer Rehabilitation/Limited Replacement	
	20-year Analysis	30-year Analysis
Total Cost of Projects A and B	\$25,628,000	\$25,628,000
Annualized Cost of Projects A and B (Assuming SRF interest rate 2.0%)	\$739,619	\$631,317
Number of User Accounts (households) in City of	178,791	178,791
Average Sewage Disposal Based upon Water Consumption per Household (industry average)	7,333 gallons/month (approx. 980 ft <sup>3</sup> /month)	7,333 gallons/month (approx. 980 ft <sup>3</sup> /month)
Current DWSD Sewage Disposal Rate	\$54.84 per 1,000 ft <sup>3</sup>	\$54.84 per 1,000 ft <sup>3</sup>
Current Estimated Monthly DWSD Sewage	\$53.74	\$53.74
Current Estimated Annual DWSD Sewage Disposal Rate per Household	\$644.92	\$644.92
Estimated Increase in Cost per Household (Year 1)	\$4.14	\$3.53
Proposed Estimated Annual DWSD Sewage Disposal Rate per Household (Year 1)	\$649.06	\$648.45
Proposed Percent Increase in Cost per Household per Year	0.64%	0.55%

### Non-Monetary Evaluation of Alternative 2 and 3

The end result of constructing either Alternative 2 or 3 will provide the end user the same level of service. Constructing Alternative 2, rehabilitation/limited replacement, can achieve that level of service more efficiently and with the least disruption to the user, natural or cultural features and the environment by the extensive use of trenchless technologies for a majority of the piping work. Rehabilitating manholes will also be less disruptive as opposed to excavations required for replacement. By use of trenchless technologies, restoration of the visible landscape is also minimized. It is also anticipated that Alternative 2 can be constructed in a shorter time period than Alternative 3.

### Disadvantaged Community Status

The SRF program includes provisions for qualifying the applicant community as a disadvantaged community. The benefits for communities with a population of 10,000 or more that qualify for the disadvantaged community status consist of:

- Award of 50 additional priority points.
- Possible extension of the loan term to 30 years or the useful life of the components funded, whichever is earlier. The estimated useful life of the sewer rehabilitation/limited replacement is 50 years. DWSD is aware that the SRF program offers both 20 and 30 year loan terms and will evaluate which term is the most appropriate for DWSD and its customers.

MDEQ requires submittal of a Disadvantaged Community Status Determination Worksheet to determine if the community qualifies for this status. A completed worksheet will be included in the final plan.

## Item 7 – Environmental Preview/ Review

The environmental setting for the proposed project is within the city limits and will be done in local urban neighborhoods. There is minimal environmental impact as the majority of work will occur within the public right-of-way, where multiple utilities and infrastructure already exists. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, and cementitious lining of manholes and specialized cleaning. Trenchless technologies will be used extensively on a majority of this project. The proposed project will not detrimentally affect the water quality of the area, air quality, wetlands, endangered species, wild and scenic rivers or unique agricultural lands.

The anticipated environmental impacts resulting from implementing the recommendations of this Project Plan include beneficial and adverse; short and long-term; and irreversible and irretrievable. The following is a brief discussion of the anticipated environmental impacts of the selected alternative.

### Beneficial and Adverse

The proposed improvements will significantly improve DWSD's capability to operate a reliable sewer collection system, reducing sewer backups into homes, avoiding catastrophic sinkholes from sewer collapses and increase efficiency at Detroit WRRF. Implementation of the improvements will also generate construction-related jobs, and local contractors will have an opportunity to bid contract work. The majority of the work to be constructed with this project will be performed by use of trenchless technologies; minimizing disruption to the existing natural and cultural features, and to the end users.

Noise and dust will be generated during construction of the proposed improvements. The contractor will be required to implement efforts to minimize noise, dust and related temporary construction byproducts. Street congestion and disruption of vehicular movement may occur for short periods of time on the roads where work is actively being done. For work resulting in the need to have open trenches, and spoils from open trenches will be subject to erosion; the contractor will thereby be required to implement a Soil Erosion and Sedimentation Control (SESC) Program as described and regulated under Michigan's Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act (NREPA). Underground utility service inside the project area may be interrupted occasionally for short periods of time. The aesthetics of the area will be temporarily affected until restoration is complete.

### Short and Long Term

The short-term adverse impacts associated with construction activities will be minimal, and will be mitigated, in comparison to the resulting long-term beneficial impacts. Short-term impacts include traffic disruption, dust, noise and site aesthetics. No adverse long-term impacts are anticipated.

### Irreversible and Irretrievable

The impact of the proposed project on irreversible and irretrievable commitment of resources includes materials utilized during construction and fossil fuels utilized to implement project construction.

## Item 8 – Other Impacts or Concerns

### Direct Impacts

Construction of the proposed project is not expected to have an adverse effect on historical, archaeological, geographic or cultural areas, as the construction activities will occur underground and will require minimal disturbance of the project area soils due to much of the work being performed by use of trenchless technologies. The proposed project will not detrimentally affect the water quality of the area, air quality, wetlands, endangered species, wild and scenic rivers or unique agricultural lands. The construction activities associated with this project will not permanently impact the visible landscape.

### User Rates

As discussed in Item 6 above, the impact of financing the Projects A and B, Alternative 2 through the SRF loan program is expected to increase by no more than 0.64% the cost of sewer disposal to a typical City of Detroit customer due to the impact of construction cost. However, the actual rate determination will be based on factors that encompass the delivery of comprehensive services by DWSD to its customers. The increase is based on repayment of the SRF loan over a 20-year period.

### Indirect Impacts

It is not anticipated that DWSD's proposed improvements to the sewer collection system will alter the ongoing pattern of growth and development in the study area as these neighborhoods are fully developed. Growth patterns in the service area are subject to local use and zoning plans, thus providing further opportunity to minimize indirect impacts.

### Cumulative Impacts

Improved reliability, efficiency and the ability to safely convey storm water and sanitary flows to the WRRF are the primary cumulative beneficial impacts anticipated from the implementation of the proposed project.



## Item 9 – Mitigation

Where adverse impacts cannot be avoided, mitigation methods will be implemented. Mitigating measures for the projects such as soil erosion control, if required, will be utilized as necessary and in accordance with applicable laws. Details will be further specified in the construction contract documents used for the project.

### Mitigation of Short Term Impacts

Short-term impacts due to construction activities such as noise, dust and minor traffic disruption cannot be avoided. However, efforts will be made to minimize the adverse impacts by use of thorough design and well planned construction sequencing. Noise from equipment cannot be avoided, but hours of work can be controlled. Dust and soil deposits on the streets can be controlled through watering and construction area sweeping. Construction area footprints will be minimized, and traffic control measures can be utilized. Site restoration will minimize the adverse impacts of construction, and adherence to the Soil Erosion and Sedimentation Act will minimize the impacts due to disturbance of the soil structure, if such disturbance is found to be necessary. Specific techniques will be specified in the construction contract documents.

### Mitigation of Long Term Impacts

Adverse long term impacts due to the proposed project are not anticipated. The aesthetic impacts of construction within the boundaries of the project area will be mitigated by site restoration.

### Mitigation of Indirect Impacts

In general, it is not anticipated that mitigative measures to address indirect impacts will be necessary for the recommended improvements addressed in this Project Plan. The proposed improvements are located within the project area so they do not promote growth in areas not currently served by DWSD. Therefore, indirect impacts are not likely to be a concern for these improvements.

## Item 10 – Public Involvement

The project team has pursued contact with the neighborhoods in the Project A and B areas during the initial planning and condition assessment phases leading up to the project plan development. Several of the techniques that have been progressively incorporated include: door-to-door outreach; door hangers; movable lawn signs while condition assessment work was being performed; informational meeting with neighborhood association presidents; information provided to the City's Department of Neighborhoods, Detroit Economic Growth Corporation District Liaisons and Detroit City Council. A key, required component of this public involvement will be a public hearing outlined in the following sections. Notice for the public hearing will be advertised in local publications and will be posted electronically on various websites, social media and through email.

### Public Hearing Advertisement and Notice

A notice will be published no less than 30 days in advance to alert parties interested in this Project Plan and request input at a public hearing prior to its adoption. In addition, a direct mail notification of the notice will be sent to the potentially interested local and federal agencies. This direct mail notice includes an invitation to comment.

### Public Hearing Transcript

A formal public hearing on the draft Project Plan will be held before the DWSD Board of Water Commissioners at 6:00 PM on June 19, 2019 at Unity Baptist Church, located at 7500 Tireman, Detroit, MI 48204. The hearing will include a presentation on the project, as well as an opportunity for public comment. The hearing transcript will be provided with the submission, along with a list of attendees.

### Public Hearing Comments Received and Answered

Comments from the public during the Public Hearing will be addressed and answered by the project team.

### Adoption of the Project Plan

Upon approval and certification of resolution by the DWSD Board of Water Commissioners, the GLWA Board of Water Commissioners will certify a resolution at its regular monthly meeting on June 26, 2019, authorizing GLWA to proceed with official filing of the Project Plan for purposes of securing low interest loan assistance under the SRF Program. Executed copies of both Boards of Water Commissioners' Resolutions and certifications for the Project Plan will be provided with the submission.

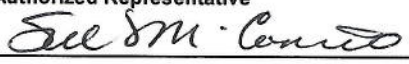
## APPENDIX A

SUBMITTAL FORM, SELF-CERTIFICATION FORM, DISADVANTAGED COMMUNITY STATUS  
DETERMINATION WORKSHEET, BOARD RESOLUTIONS, SRF SCORING FORM

Michigan Department of Environmental Quality  
Rick Snyder, Governor  
Dan Wyant, Director

<http://www.michigan.gov/deq>

Clean Water Revolving Funds  
SRF/SWQIF Project Plan Submittal Form

<b>Name of the Project</b> Sewer Rehabilitation Project		<b>Applicant's Federal Employer Identification Number (EIN)</b> 47-3993379	
<b>Legal Name of Applicant</b> (The legal name of the applicant may be different than the name of the project. For example, a county may be the applicant for bonding purposes, while the project may be named for the particular village or township it serves.) Great Lakes Water Authority		<b>Areas Served by this Project</b>  Counties <u>Wayne</u>  Congressional Districts <u>13 and 14</u>  State Senate Districts <u>1 through 5</u>  State House Districts <u>1 through 10</u>	
<b>Address of Applicant</b> (Street, PO Box, City, State & Zip) Water Board Building 735 Randolph Street Detroit, MI 48226			
<b>NPDES Permit Number</b> (if permit holder) MI0022802		<b>Associated SAW Grant Number</b> (if applicable) Not Applicable	
<b>Brief Description of the SRF/SWQIF Project</b> In-place rehabilitation and limited replacement of sewer lines in the City of Detroit based upon PACP/MACP/NASSCO based upon field data collection and evaluation for Class 4/5 structural defects.			
<b>Disadvantaged Community Determination</b> <input checked="" type="checkbox"/> The applicant is requesting a disadvantaged community determination, and a completed <i>Disadvantaged Community Status Determination Worksheet</i> is attached.			
<b>Estimated Total Cost of the SRF/SWQIF Project</b> \$25,627,583 (Loan Eligible Costs)		<b>SRF/SWQIF Construction Start Target Date</b> May 2020	
<b>Name and Title of Applicant's Authorized Representative</b> Sue McCormick, CEO			
<b>Address of Authorized Representative</b> (if different from above)  Same address as above		<b>Telephone</b> 313-964-9501  <b>E-Mail Address</b> sue.mccormick@glwater.org	
<b>Signature of Authorized Representative</b> 		<b>Date</b> 6.13.19	
<b>Joint Resolution(s) of Project Plan Adoption/Authorized Representative Designation is attached.</b> check here <input checked="" type="checkbox"/>			

A final project plan, prepared and adopted in accordance with the Department's *Clean Water Revolving Funds (SRF and SWQIF) Project Plan Preparation Guidance*, must be submitted by July 1st in order for a proposed project to be considered for placement on a Project Priority List for the next fiscal year. Please send your final project plan with this form to:

REVOLVING LOAN SECTION  
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30241  
LANSING MI 48909-7741

# SRF-DWRF-NPS Applicant Self-Certification Forms (Rev. Draft 16 Jan 2019)

## APPLICANT INSTRUCTIONS FOR SECTIONS "A" and "B"

<p>■ Use streamlined checklists A &amp; B below during and after the pre-application meeting to help determine which project planning elements are most relevant for developing a Project Application Narrative (PAN). The PAN proposed for pilot testing will be a streamlined version of the SRF-DWRF Project Plan. Refer to the Project Plan Preparation Guidance and Applicant Actions for details.</p>
<p>■ The PAN is an Executive Summary-style planning document to be submitted with all new or amended projects in lieu of an SRF-DWRF Project Plan. For editorial consistency in this test of streamlining, the PAN will provide a ten-point table of contents described elsewhere in another guidance document.</p>
<p>■ Important: <b>All planning elements in "A" and "B" must be considered for all projects, and all boxes must be marked, thereby attesting to the applicant's completion of a comprehensive planning process.</b> To streamline the narrative portion of the application, only the minimally required and most relevant elements must be described in the PAN (streamlined project plan).</p>
<p>■ After considering <u>each</u> element, circle the appropriate box to indicate either:          "Yes, the project is likely to involve or likely to impact" (Yes); or          "No, the project is not likely to involve or not likely to impact" (No).          Include "NA" if it is neither relevant nor applicable to the proposed project (NA).</p>
<p>■ "REQUIRED FOR ALL" means the element must be considered <u>and also</u> briefly described in the narrative portion of the streamlined PAN, even if the statement is "no impact." Additional information can be attached or incorporated by reference. Add a check mark to confirm completion of this step.</p>
<p>■ If a project involves multiple sub-projects or contracts with different characteristics and different answers for certain boxes, add clarifying comments, notes, or additional pages.</p>
<p>■ In addition to the required Act 399 (water) or Part 41 (wastewater) construction permits, any other permits likely to be required prior to construction must be identified in Section "B".</p>
<p>■ Submit the completed, signed self-certification forms "A" and "B" with the streamlined PAN document.</p>

### A. Purpose and Alternatives Analysis including Cost and Effectiveness PROJECT NO. \_\_\_\_\_

<p>Project Need and Eligibility (identify problems, NOT the project to be constructed)  <input type="radio"/> REQUIRED FOR ALL</p>	<p>Protection of Public Health and the Environment  <input type="radio"/> REQUIRED FOR ALL</p>	<p>Removal of Lead Service Pipes in Water Systems (DWRF only)          Yes No <input checked="" type="radio"/> NA</p>	<p>Public Information and Education  <input type="radio"/> REQUIRED FOR ALL</p>
<p>Existing Facilities (only as relevant to proposed project)  <input type="radio"/> REQUIRED FOR ALL</p>	<p>Compliance Violation, Enforcement Action, or Related Concerns          Yes <input checked="" type="radio"/> No NA</p>	<p>Alternatives: Option to optimize performance and improve operation and maintenance  <input type="radio"/> REQUIRED FOR ALL</p>	<p>Alternatives: Facility Regionalization / Coordination with Regional Planning Agencies  <input type="radio"/> REQUIRED FOR ALL</p>

Continued on Page 2



Comparative "Cost and effectiveness" of Feasible Alternatives, processes, materials, techniques, and technologies <input type="radio"/> REQUIRED FOR ALL <i>This checkbox satisfies the USEPA requirement</i>	Comparative non-monetary analysis of Feasible Alternatives (environmental, operational, other) <input type="radio"/> REQUIRED FOR ALL	Financial, legal, institutional, managerial, social, or other community considerations impacting planning analysis <input type="radio"/> REQUIRED FOR ALL	Enviro-Topographical-Geographical Constraints / Constructability concerns (e.g. poor soils, steep slopes) Yes <input type="radio"/> No <input checked="" type="radio"/> NA
Alternative Facility Locations or Pipe Routings Yes <input type="radio"/> No <input checked="" type="radio"/> NA	CSO separation or system upgrades (SRF only) Yes <input type="radio"/> No <input checked="" type="radio"/> NA	Structural Integrity PACP/MACP (SRF only) Yes <input checked="" type="radio"/> No <input type="radio"/> NA	Reduction of excessive infiltration and inflow (SRF only) Yes <input type="radio"/> No <input checked="" type="radio"/> NA
Water / Wastewater Pretreatment requirements Yes <input type="radio"/> No <input checked="" type="radio"/> NA	Other Planning Elements Relevant to Project Analysis: Changes to Land Use, Changes to Capacity, Long-Term Sustainability, Climate Resilience, Facility Security, Phasing of Construction, Geotechnical-Hydrogeological-Biological-Tree Survey, etc (please identify) Yes <input type="radio"/> No <input checked="" type="radio"/> NA		
Green Infrastructure for stormwater / Energy-water-wastewater conservation or resource recovery (USEPA Green Project Reserve) / Alternative or innovative technologies Yes <input type="radio"/> No <input checked="" type="radio"/> NA		Integrated Asset Management Planning Principles and Practices, including coordinated construction (water, sanitary, storm, transportation) Yes <input type="radio"/> No <input checked="" type="radio"/> NA	
Planning consideration of construction and operational impacts on water levels in streams, rivers, and groundwater aquifers (e.g., major dewatering, large water withdrawals) Yes <input type="radio"/> No <input checked="" type="radio"/> NA		Planning consideration of operational impacts to downstream processes, e.g., WTP or WWTP discharges, mgmt and disposal of spent filters, mgmt and disposal of sludges & other treatment residuals, etc. Yes <input type="radio"/> No <input checked="" type="radio"/> NA	
Description of Selected Alternative (the project to be constructed) <input type="radio"/> REQUIRED FOR ALL	User Impacts, Affordability, Disadvantaged Community, Environmental Justice <input type="radio"/> REQUIRED FOR ALL	Eligibility, construction schedule, and project delivery considerations (e.g., ineligible components, contracting method, project phasing or segmenting, other funding sources) <input type="radio"/> REQUIRED FOR ALL	
<p>DOCUMENTS INCORPORATED BY REFERENCE AND/OR SUBMITTED IN LIEU (CIRCLE AS APPROPRIATE)</p> <p>USDA-RD Preliminary Engineering Report &amp; Enviro Review <input type="radio"/> SSES (SRF only) <input type="radio"/> I/I Study (SRF only)</p> <p><input checked="" type="radio"/> PACP/MACP/NASSCO Report (see comment below) <input type="radio"/> AMP <input checked="" type="radio"/> CIP <input type="radio"/> Basis of Design</p> <p>Geotechnical-Hydrogeological-Biological-Tree Survey <input type="radio"/> Environmental Assessment Report</p> <p>Watershed Management Plan <input type="radio"/> Master Plan</p> <p>Compliance Documents (letters, ACO, LTCAP, permit schedule, DCA, other - please specify)</p> <p>Water Reliability Study (DWRF only) <input type="radio"/> Sanitary Survey (DWRF only) <input type="radio"/> SWPP (DWRF only),</p> <p>Symposia/Workshop Findings <input type="radio"/> Engineering Proposal <input type="radio"/> Rate Study <input type="radio"/> Existing Permit <input type="radio"/> Other</p>			
<p>Applicant Comments (attach additional page if necessary)</p> <p><b>PACP/MACP/NASSCO field data collection and evaluation for Project B is in progress. It is anticipated that a report will be available approximately 60 to 90 days after the July 1 deadline for final project plan submittal.</b></p>			
MDEQ Reviewer Comments (attach additional page if necessary)			

Continued on Page 3

**B. Environmental Preview / Review (NEPA-Like) and Useful Life Analysis PROJECT NO. \_\_\_\_\_**

SHPO: Archeo-Histor-Cultural <input type="radio"/> LETTERS SENT, REQUIRED FOR ALL See comment below	THPO: Tribal <input type="radio"/> LETTERS SENT, REQUIRED FOR ALL	Protected Plants and Animals (Endangered-Threatened) USFWS/MNFI Yes <input type="radio"/> No <input type="radio"/> NA	Protected or Important Habitats (including Trees) Yes <input type="radio"/> No <input type="radio"/> NA
Floodplain Impacts and/or Permit Yes <input type="radio"/> No <input type="radio"/> NA	Wetlands Impacts and/or Permit Yes <input type="radio"/> No <input type="radio"/> NA	Inland Lakes & Streams Impacts and/or Permit Yes <input type="radio"/> No <input type="radio"/> NA	Airspace and Airports Yes <input type="radio"/> No <input type="radio"/> NA
Soil Erosion and Sedimentation and/or Permit <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA	Construction Storm Water Permit, Storm Water Discharge Permit Yes <input type="radio"/> No <input type="radio"/> NA	Great Lakes Coastal Zone and related (Shorelands, Sand Dunes, Submerged Lands, etc) and/or Permit Yes <input type="radio"/> No <input type="radio"/> NA	Wild, Scenic and Natural Rivers / National Natural Landmarks / Farmland Preservation Yes <input type="radio"/> No <input type="radio"/> NA
Air Quality (beyond temporary construction) Yes <input type="radio"/> No <input type="radio"/> NA	Water or Wastewater Facility NPDES Discharge Permit (New or Modified) Yes <input type="radio"/> No <input type="radio"/> NA	Other permits anticipated for water-wells, roads, buildings, local health dept, lagoon berm, etc (please identify) Yes <input type="radio"/> No <input type="radio"/> NA	
Public Lands, Recreational Areas, Scenic Areas, Beauty Roads, Open Space, etc Yes <input type="radio"/> No <input type="radio"/> NA	Noise-Sensitive or Security-Sensitive Zones (e.g., hospitals, schools, apartments) Yes <input type="radio"/> No <input type="radio"/> NA See comment below	<b>USEFUL LIFE ANALYSIS (SRF ONLY)</b> <i>This checkbox satisfies the USEPA requirement</i>  The Useful Design Life of the project or activity is <u>50</u> years. For projects with multiple sub-components, see XYZ for determining the Useful Life.	
Applicant Comments (attach additional page if necessary) <b>Submittal to SHPO will be made sometime after July 1 final project plan submittal once Project B areas of potential effect (APE) can be defined.</b> <b>Noise sensitive zones will be evaluated once Project B eligible areas are defined.</b>			
MDEQ Reviewer Comments (attach additional page if necessary)			

**APPLICANT CERTIFICATION** (Please print or type)

I certify that all the above-referenced planning requirements Pages 1-3 have been considered, including the environmental preview, and including additional planning elements where relevant and applicable to the proposed project.

Name of Professional Engineer Robert A Green, PE

Signature of Professional Engineer 

Date 6/10/2019

Name of Authorized Representative Gary Brown

Title of Authorized Representative Director of DWSO



Signature of Authorized Representative

Date

6/11/2019

Name of Great Lakes Water Authority (GLWA) Authorized Representative Sue F. McCormick

Signature of GLWA Authorized Representative

Sue F. McCormick 6/24/2019

**MDEQ Review** (attach existing May 1/July 1 Screening checklist until Rules / Law are amended)

I certify that I have completed a thorough review of the above-referenced proposed SRF/DWRF loan project, using steps consistent with the long-established State Environmental Review Process and associated historical and recent guidance documents.

Date of PAN Screening Review \_\_\_\_\_

Name of Reviewer \_\_\_\_\_

More Info Needed? Y / N

Preliminary Tier 1 - 2 - 3

Approve for Initial PPL? Y / N

End Draft 5 January 2018 CJC

Rev. Draft 30 Nov 2018 CJC

Rev. Draft 16 Jan 2019 CJC (added the PM certification on Page 4)

## Disadvantaged Community Status Determination Worksheet

The following data is required from each municipality in order to assess the disadvantaged community status. Please provide the necessary information and return to:

Robert Schneider  
Revolving Loan Section  
Office of Drinking Water and Municipal Assistance  
P.O. Box 30241  
Lansing, MI 48909-7741  
[Schneiderr@michigan.gov](mailto:Schneiderr@michigan.gov)

If you have any questions please contact Robert Schneider at 517-388-6466

Please check the box this determination is for:

☐ DWRF    ☒ SRF

*Under Criterion 1, Detroit qualifies for Disadvantaged Community Status based on approximately 37.9% of families in Detroit below the poverty level.<sup>1</sup>*

1. Total amount of anticipated debt for the proposed project, if applicable.

\_\_\_\_\_

2. Annual payments on the existing debt for the system.

\_\_\_\_\_

3. Total operation, maintenance and replacement expenses for the system on an annual basis.

\_\_\_\_\_

4. Number of "residential equivalent users" in the system.

\_\_\_\_\_

**For determinations made using anticipated debt, a final determination will be made based upon the awarded loan amount.**

(EQP 3530 REV 1/2015)

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<sup>1</sup> <https://www.census.gov/quickfacts/fact/table/detroitcitymichigan/IPE120216#viewtop>



# Detroit Water and Sewerage Department Certified Copy

735 Randolph Street  
Detroit, Michigan 48226  
(313) 224-4704 Office  
dwsd.legistar.com

Resolution, BOWC: 19-00176

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**File Number: 19-00176**

The Board of Water Commissioners for the City of Detroit, Water and Sewerage Department **recommends adoption of the “A final project plan for the Detroit Water and Sewerage Department Sewer Rehabilitation Project and Designating an Authorized Project Representative FY 2020 State Revolving Fund”** and also authorizes the Chief Financial Officer and the Director to take such other action as may be necessary to accomplish the intent of this vote.

**Agenda of June 19, 2019**

**Item No. 19-00176**

**TO:** The Honorable  
Board of Water Commissioners  
City of Detroit, Michigan

**FROM:** Gary Brown, Director  
Water and Sewerage Department

**RE: A RESOLUTION ADOPTING A FINAL PROJECT PLAN FOR THE DETROIT  
WATER AND SEWERAGE DEPARTMENT SEWER REHABILITATION  
PROJECT AND DESIGNATING AN AUTHORIZED PROJECT  
REPRESENTATIVE FY2020 STATE REVOLVING FUND (SRF)**

**MOTION**

Upon recommendation of Thomas Naughton, Chief Financial Officer, the Board of Water Commissioners for the City of Detroit, Water and Sewerage Department **recommends adoption of the “A final project plan for the Detroit Water and Sewerage Department Sewer Rehabilitation Project and Designating an Authorized Project Representative FY 2020 State Revolving Fund”** and also authorizes the Chief Financial Officer and the Director to take such other action as may be necessary to accomplish the intent of this vote.

**JUSTIFICATION**

The Detroit Water and Sewerage Department will utilize the State’s Revolving Fund to finance the sewer rehabilitation/ limited replacement of the City’s aging sewers in multiple areas located within the city in accordance with the approved FY 2020 Capital Improvement Plan. Anticipated borrowings are not to exceed \$25.6 million.

## **BACKGROUND**

The Detroit Water and Sewerage Department has requested the Great Lakes Water Authority to apply on its behalf for the State Revolving Fund loan with the State. DWSD prepared a project plan outlining the projects, scope in which three projects; one active and two in procurement, DWS-903, DWS-909 and DWS-910, include sewer condition assessments. In addition based on the condition assessments performed by AECOM Great Lakes, as part of the Capital Improvement Program management Organization (CIPMO) the projects will comprise of recommended rehabilitating/limited replacement of aging sewers in multiple areas located within the city. Construction will include in-place rehabilitation of sewers and manhole structures, and in limited instances, excavation of existing sewers for replacement. Right-of-way restoration will be performed on any disrupted areas.

The purpose of the project plan is to describe the capital improvement projects for sewer rehabilitation and serves as the basis for public review and comment on the proposed work in accordance with the public participation requirements of the SRF program.

**A RESOLUTION ADOPTING A FINAL PROJECT PLAN  
FOR THE DETROIT WATER AND SEWERAGE DEPARTMENT  
SEWER REHABILITATION PROJECT AND  
DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE  
FY2020 STATE REVOLVING FUND (SRF)**

**WHEREAS**, the City of Detroit through its Detroit Water and Sewerage Department (DWSD), and the Great Lakes Water Authority (GLWA), jointly recognize the need to make improvements to portions of the existing sewer collection system that are owned and operated by the City of Detroit and that are physically located within the city limits; and

**WHEREAS**, The DWSD prepared a State Revolving Fund (SRF) Project Plan, which recommends sewer line and manhole rehabilitation along with limited sewer line and manhole replacement and associated appurtenances; and

**WHEREAS**, The Project Plan was presented by DWSD at a Public Hearing held on June 19, 2019 at 6:00 pm at the DWSD Board of Water Commissioners (BOWC) Community Meeting at Unity Baptist Church, 7500 Tireman, Detroit, Michigan 48204, and all public comments were considered and addressed; and

**WHEREAS**, The DWSD formally adopted said Project Plan and agreed to implement the identified selected alternative of sewer line and manhole rehabilitation along with limited sewer line and manhole replacement as described in said document, as evidenced by the DWSD resolution in Attachment 1;

**NOW THEREFORE BE IT RESOLVED**, that the Director, currently held by Mr. Gary Brown is designated to sign contractual and other loan related documents as required or recommended, and for the purpose of serving as primary points of contact for local and state intergovernmental coordination during implementation of the projects.

**BE IT FURTHER RESOLVED**, the BOWC recognizes the SRF requirement that GLWA serve as the SRF loan applicant on behalf of the City of Detroit, the loan recipient, for all activities required by SRF financing, and in accordance with local and state intergovernmental agreements.

**BE IT FURTHER RESOLVED**, that the Director is authorized to transmit the final DWSD Sewer Rehabilitation SRF Project Plan to GLWA Board of Directors and DWSD BOWC and take all appropriate steps to secure approval of a low interest loan in accordance with the State of Michigan's SRF procedures so that the project can proceed expeditiously to construction.

I, Marian King-Bell, certify that this is a true copy of Resolution, BOWC No. 19-00176, passed by the Board of Water Commissioners on 6/19/2019.

Attest: Marian King-Bell

06/20/19

**Date Certified**





**Board of Directors**  
735 Randolph Street, Suite 1900  
Detroit, Michigan 48226  
(313) 224-4785

**Resolution to Adopt the Detroit Water and Sewerage Department Sewer Rehabilitation – FY 2020 State Revolving Fund (SRF) Project Plan**

Agenda of: June 26, 2019

Item No.: **2019-248**

**TO:** The Honorable  
Board of Directors  
Great Lakes Water Authority

**FROM:** Sue F. McCormick  
Chief Executive Officer  
Great Lakes Water Authority

**DATE:** June 26, 2019

**RE:** **Resolution to Adopt the Detroit Water and Sewerage Department Sewer Rehabilitation – FY 2020 State Revolving Fund (SRF) Project Plan**

**MOTION**

Upon recommendation of Nicolette Bateson, Chief Financial Officer/Treasurer, Financial Services, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA) **approves the Resolution to adopt the Detroit Water and Sewerage Department (DWSD) Sewer Rehabilitation – FY 2020 State Revolving Fund (SRF) Project Plan;** and authorizes the CEO to take such other action as may be necessary to accomplish the intent of this vote.

**BACKGROUND**

The Detroit Water & Sewerage Department (DWSD) has identified two (2) sewer system rehabilitation projects in its FY 2020 to 2024 Capital Improvement Plan (CIP) for submittal to the Michigan Department of Environment, Great Lakes, and Energy (MDEGLE) for the SRF financing program for funding in the state's 2020 fiscal year. The deadline for submitting all SRF project plans to MDEGLE is July 1, 2019, but prior to submitting the project plans, a public hearing must be held for the affected area.

The two (2) projects are comprised of the rehabilitation with some limited replacement of aging sewers in nine (9) neighborhoods within the City of Detroit. Construction will include rehabilitation of sewers and manhole structures, and in limited instances,

excavation of existing sewers for replacement. The impact of the projects will be improved customer satisfaction and safe reliable service delivery of sewage sewer conveyance to the Water Resource Recovery Facility (WRRF). The estimated cost of these projects is \$25,628,000.

The FY 2020 SRF Project Plan and public hearing notice for these combined DWSD Sewer Rehabilitation Projects has been posted on the DWSD website and can be found at: <https://detroitmi.gov/events/public-hearing-sewer-rehabilitation>. This project plan was presented at the DWSD Capital Improvement Program and Operations Committee on June 5, 2019. These documents are subject to review and approval by the DWSD Board of Water Commissioners following the Public Hearing on June 19, 2019.

### **JUSTIFICATION**

Pursuant to Section 7.2(b) of the Regional Sewage Disposal System Lease between the City of Detroit and GLWA, the Authority shall cooperate fully with the City in the implementation of the Detroit Capital Improvement Plan, including financing through the Authority. Therefore, GLWA will submit the local project plan as it will be the SRF loan applicant. Per notification, from MDEGLE, GLWA does not need to hold a separate public hearing on the local project, however, the GLWA Board of Directors will need to act on the included resolution at its regularly scheduled meeting on June 26, 2019. The resolution must be approved and signed to ensure that the finalized Project Plan is assembled, printed, and submitted to the MDEGLE by the deadline of July 1, 2019.

GLWA concurs with the DWSD Sewer Rehabilitation project plan adoption, and as the SRF applicant, is seeking low interest loan assistance through the SRF program.

Although the MDEGLE interest rate for FY 2020 will not be determined until October 2019, the current year's interest rate of 2.25% for 30-year loans is less than the present conventional bond rate. Based on the estimated project amount, DWSD could save an estimated \$11.2 million in interest costs and avoided issuance costs, based on a similar market revenue bond with a 30-year and 4.50% interest rate. This will afford saving to DWSD and its customers.

### **BUDGET IMPACT**

GLWA will be the loan applicant on SRF loans issued on behalf of the DWSD, and DWSD will be the SRF loan recipient as determined by MDEGLE. All project costs financed by GLWA, on behalf of DWSD, through the SRF program bonds and resulting principal and interest payments on the bonds will be directly allocable to the DWSD local system. Debt service is anticipated to begin in FY 2021 for this project and will be included as part of the FY 2021 financial plan.

### **COMMITTEE REVIEW**

This matter was presented to the GLWA Audit Committee at its June 21, 2019 meeting. The Audit Committee unanimously recommended that the Great Lakes Water Authority Board approve the Resolution to Adopt the Detroit Water and Sewerage Department Sewer Rehabilitation – FY 2020 SRF Project Plan.

### **SHARED SERVICES IMPACT**

This item does not impact the shared services agreement between GLWA and DWSD.



**Board of Directors**  
735 Randolph Street, Suite 1900  
Detroit, Michigan 48226  
(313) 224-4785

Great Lakes Water Authority  
Resolution  
RE: Resolution to Adopt the Detroit Water and Sewerage Department (DWSD) Sewer  
Rehabilitation Final Project Plan  
FY 2020 State Revolving Fund (SRF) Project Plan

- Whereas: The City of Detroit through its Detroit Water and Sewerage Department (DWSD), and The Great Lakes Water Authority (GLWA), both jointly recognize the need to rehabilitate and/or replace aging sewers in multiple areas within the City of Detroit; and
- Whereas: Pursuant to Section 7.3(b) of the Regional Sewage Disposal System Lease between the City of Detroit and GLWA, the Authority shall cooperate fully with the City in the implementation of the Detroit Capital Improvement Program, including financing through the Authority; and
- Whereas: The DWSD prepared a State Revolving Fund (SRF) Project Plan, which recommends rehabilitation of sewers and manhole structures, and in limited instances, excavation of existing sewers for replacement in multiple areas within the City of Detroit; and
- Whereas: The Project Plan was presented by DWSD at a Public Hearing held on June 19, 2019 at 6:00 p.m. at Unity Baptist Church 7500 Tireman Avenue, Detroit, MI 48204, and all public comments were considered and addressed;
- Whereas: The DWSD formally adopted said Project Plan and agreed to implement the identified selected sewer rehabilitation as described in said document, as evidenced by the DWSD resolution in Attachment 1;
- Whereas: It is the desire of the GLWA Board of Directors to secure low interest loan assistance through the SRF program; and

Now Therefore Be It:

- Resolved The GLWA Board hereby accepts and approves the DWSD Sewer Rehabilitation SRF Project Plan as approved by the DWSD BOWC at its June 19, 2019 meeting; and Be It Further
- Resolved GLWA concurs with the SRF Project Plan adoption and agrees to serve as the SRF loan applicant on behalf of the City of Detroit, the loan recipient, for all activities required by SRF financing, and in accordance with local and state intergovernmental agreement; and Be It Further
- Resolved The GLWA Resolution identifying Designated Representatives adopted on April 26, 2017 established the GLWA authorized representatives for all SRF program activities, and no updates to these designations are necessary at this time and Be It Further

Resolved That the Chief Executive Officer (CEO) is authorized to transmit the final FY 2020 SRF Project Plan for the Sewer Rehabilitation project to the Michigan Department of Environment, Great Lakes, and Energy on behalf of the GLWA Board of Directors and take all appropriate steps to secure approval of a low interest loan in accordance with the State of Michigan's SRF procedures so that the project can proceed expeditiously to construction.



**Board of Directors**  
735 Randolph Street, Suite 1900  
Detroit, Michigan 48226  
(313) 224-4785

## Great Lakes Water Authority Board of Directors

### General Certification

The undersigned hereby certifies that (i) the Resolution **2019-248** regarding **“Resolution to Adopt the Detroit Water and Sewerage Department Sewer Rehabilitation – FY 2020 State Revolving Fund (SRF) Project Plan”** attached hereto is a true and complete copy of the Resolution duly passed by the Great Lakes Water Authority Board of Directors at a meeting held on June 26, 2019 at which meeting a quorum was present and remained throughout, (ii) the original thereof is on file in the records of the Great Lakes Water Authority Board of Directors, (iii) the meeting was conducted, and public notice thereof was given, pursuant to and in full compliance with the Open Meetings Act (Act No. 267, Public Acts of Michigan, 1976, as amended) and (iv) Minutes of such meeting were kept and will be or have been made available as required thereby.

YES: Brian Baker, Abe A. Munfakh, Robert J. Daddow, Gary A. Brown,  
Freman Hendrix, and Craig A. Hupy

NO: None

ABSTAIN: None

EXCUSED: None

Dated: June 26, 2019

By: Rechanda L. Willis

Title: Executive Board Assistant



## Project Priority List (PPL) Scoring Data Form

Please complete the information requested below and indicate the page numbers or appendices in the project plan which verify the information provided. Enter "N/A" if information is not pertinent.

PROJECT APPLICANT: \_\_\_\_\_

PROJECT LOCATION: \_\_\_\_\_

### 1. Water Pollution Severity Data (0 to 500 points)

- page \_\_\_\_\_ 1. **Pre-project conditions, including wastewater collection/treatment deficiencies and water quality problems currently occurring.**
- page \_\_\_\_\_ 2. **Post-project conditions, including proposed facilities and water quality improvements.**

Does the existing facility (or facilities) being upgraded, expanded, or replaced by this project file either surface water or groundwater discharge monitoring reports?

☐ YES, Proceed to Section C or ☐ NO, Proceed to Section A or B

Note: If a project with either a surface water or groundwater discharge is also causing a nitrate problem in the groundwater (i.e., leaky lagoons), please be sure to complete Item B.5. Projects may receive points for both surface water and groundwater contamination.

### A. Data on Existing Surface Water Discharge

- page \_\_\_\_\_ 1. **Discharge type:**
- ☐ Continuous
- ☐ Seasonal
- ☐ Intermittent (*if CSO, or SSO, please complete Sections E and F below*)
- page \_\_\_\_\_ 2. **Flow.** For facilities that discharge to regional treatment plants and do not file surface water discharge monitoring reports, provide the average daily metered flow (*identify whether units are MGD or MGY*) \_\_\_\_\_
- page \_\_\_\_\_ 3. **Identify Receiving Water and Type** \_\_\_\_\_
- page \_\_\_\_\_ 4. **Location** (*town, range, and section*) \_\_\_\_\_
- page \_\_\_\_\_ 5. **Existing Treatment**
- ☐ Untreated ☐ Secondary ☐ Combined Sewer Overflow ☐ Tertiary
- ☐ Primary (including septic systems with direct surface water discharge)
- page \_\_\_\_\_ 6. **Existing Disinfection Process:**
- ☐ None
- ☐ Chlorination
- ☐ Alternative Technology (*specify type*) \_\_\_\_\_

### B. Data on Existing Groundwater Discharge

- page \_\_\_\_\_ 1. **Discharge Type:**
- ☐ Continuous
- ☐ Seasonal
- ☐ Intermittent

page	_____	2. <b>Flow.</b> For unsewered areas, flow should be calculated using a figure of 70 gpcd. For facilities that do not file groundwater discharge monitoring reports, provide the existing metered flow figure ( <i>identify whether units are MGD or MG Y</i> )	_____
page	_____	3. <b>Location</b> ( <i>provide town, range, and section</i> )	_____
page	_____	4. <b>Existing Treatment</b>	
		<input type="checkbox"/> Untreated <input type="checkbox"/> Primary (including septic with tile field) <input type="checkbox"/> Secondary	
page	_____	5. <b>Nitrate contamination of public or private wells caused by the discharge of effluent/waste from the treatment system or systems</b>	
		<input type="checkbox"/> Public well(s) in vicinity contains nitrates > 10 mg/L (100 points)	
		<input type="checkbox"/> Private well(s) in vicinity contains nitrates > 10 mg/L (75 points)	
		<input type="checkbox"/> Monitoring well(s) in vicinity contains nitrates > 10 mg/L (50 points)*	
		<input type="checkbox"/> No evidence of nitrate contamination in local wells	

\*Note: If only the total inorganic nitrogen ("TIN" ammonia + nitrite + nitrate) concentration is available, a separate sampling and nitrate analysis should be performed to document the nitrate concentration.

**C. Information on Proposed Surface Water/Groundwater Discharge**  
*(Attach additional pages if necessary; a copy of the effluent limits letter/permit table may suffice.)*

page	_____	1. <b>Discharge Type:</b>	
		<input type="checkbox"/> Continuous	
		<input type="checkbox"/> Seasonal	Identify all discharge points and receiving waters.
		<input type="checkbox"/> Intermittent	
page	_____	2. <b>Average Design Flow</b> ( <i>identify units as MGD or MG Y</i> )	_____
page	_____	3. <b>Identify receiving water for a surface water discharge</b>	_____
page	_____	4. <b>Location</b> ( <i>town, range, and section</i> )	_____
		5. <b>List Effluent Limits:</b>	
		Minimum Dissolved Oxygen	_____
		CBOD <sub>5</sub>	_____
		Ammonia	_____
		Phosphorus	_____
		Total Inorganic Nitrogen (TIN) (from Groundwater Permit)	_____
page	_____	6. <b>Will the proposed facility address <u>documented</u> total residual chlorine (TRC) violations?</b>	
		<input type="checkbox"/> YES, proceed to 7 <input type="checkbox"/> NO	
		7. <b>Will the proposed disinfection improvements involve either dechlorination or an alternative disinfection technology (e.g. ultraviolet disinfection, ozonation) that eliminates the use of chlorine?</b>	
		<input type="checkbox"/> YES <input type="checkbox"/> NO	

**D. Data on Existing (Pre-Project) CSO and SSO Discharges**

Information must be provided **for each outfall** directly associated with the proposed correction project.

Outfall #	Receiving Stream	Location* Town/Range/Section	Estimated Overflow Volume (MG) for 1-year, 1-hour storm event
001			

Outfall #	Estimated Overflow Duration (Hours)	Estimated Annual Overflow Volume (MG)	Tributary Residential Population
001			

\* A map showing the discharge locations by number is highly preferable and can be attached to this sheet.

**E. Data on Future (Post-Project) CSO and SSO Discharges**

List each outfall from Section E. For outfalls which will cease to function as combined sewer outfalls upon the completion of this project, simply enter "Eliminated" under Receiving Stream. List any new outfalls (e.g., for a retention/treatment basin) created by this project and include its associated discharge data.

Outfall #	Receiving Stream	Location* Town/Range/Section	Estimated Overflow Volume (MG) for 1-year, 1-hour storm event
001			

Outfall #	Estimated Overflow Duration (Hours)	Estimated Annual Overflow Volume (MG)	Detention Time Prior to Discharge for 1-year, 1-hour storm event
001			

\* A map showing the discharge locations by number is highly preferable and can be attached to this sheet.

Please attach additional pages if necessary.

## 2. Enforcement Actions (0 or 300 points)

Is the proposed project necessary for compliance with a fixed-date construction schedule established by an order, permit, or other document issued by the DEQ, or entered as part of an action brought by the state against a municipality?

☐ YES, Proceed to Item A or ☐ NO, Proceed to Section 3

page \_\_\_\_\_ A. Copy of the enforcement action, order, permit or other DEQ document.

## 3. Population Data (30 to 100 points)

page \_\_\_\_\_ A. Existing residential population to be served by the proposed project: \_\_\_\_\_

page \_\_\_\_\_ B. Existing population of the POTW service area: \_\_\_\_\_

## 4. Dilution Ratio (25 to 100 points)

*The data for the dilution ratio scoring category is collected from several questions in the Water Quality Severity Data section of this document and information in DEQ files, therefore, **no action is required from the applicant for the completion of this item of the PPL Scoring Data Form.** The primary purpose of this section is to clarify and document the figures utilized in the dilution ratio calculation. Please note that for new collection system projects, the existing discharge is calculated by multiplying the residential population to be served by the proposed project by 70 gallons per capita per day (gpcd). For projects with existing Groundwater and NPDES permits, the Discharge Monitoring Report (DMR) data will be obtained by the DEQ staff. For projects that discharge to regional facilities and do not have individual discharge permits, the existing discharge will be based on the average daily metered flow.*

**The following information will be completed by DEQ staff:**

The dilution ratio is \_\_\_\_\_ and was calculated from \_\_\_\_\_/\_\_\_\_\_.

(Specify the units for both the numerator and denominator).

## 5. Failing On-Site Septic Systems (0 or 100 points)

Does the project propose to correct failing on-site septic systems that have no suitable replacement?

☐ YES, Proceed to Item A or ☐ NO, Proceed to Section 6

page \_\_\_\_\_ A. Documentation of site limitations that prevent septic system replacement.

## 6. Septage Receiving/Treatment Facilities (0 or 100 points)

Does the project propose to construct, upgrade, or expand a septage receiving or treatment facility?

☐ YES, Proceed to Item A or ☐ NO

page \_\_\_\_\_ A. Description of the proposed septage facility improvements.

## APPENDIX B

PUBLIC HEARING NOTICE, MAILING LIST FOR PUBLIC HEARING, PUBLICATION AFFIDAVITS, PUBLIC HEARING TRANSCRIPT, VISUAL AIDS, ATTENDENCE LIST



Water & Sewerage  
Department

**PUBLIC HEARING • JUNE 19, 2019**

# **NOTICE**

## **PUBLIC HEARING FOR SEWER REHABILITATION FY20 STATE REVOLVING FUND (SRF) PROJECT**

The Detroit Water and Sewerage Department (DWSD) announces a Public Hearing regarding its Project Plan for proposed Sewer Rehabilitation in the city of Detroit. DWSD will be seeking low interest State Revolving Fund (SRF) loan assistance for FY2020. The project is comprised of rehabilitating/limited replacement of aging sewers in multiple areas located within the city. Construction will include in-place rehabilitation of sewers and manhole structures, and in limited instances, excavation of existing sewers for replacement. Right-of-way restoration will be performed on any disrupted areas. The impact of the project will be improved customer satisfaction and safe reliable service delivery of sewage sewer conveyance to the Water Resource Recovery Facility. The temporary impact of construction activities will be minimized largely through extensive use of trenchless technologies, along with mitigation measures specified in the contract documents. Adverse impacts on historical, archaeological, geographic, or cultural areas are not expected. This project is necessary to ensure that DWSD will consistently and reliably provide sewer conveyance to the Water Resource Recovery Facility. The total cost of the loan eligible portions of these two (2) projects is currently estimated at approximately \$25,628,000, which is being sought through the SRF low interest loan program. The Sewer Rehabilitation projects are eligible for participating under the State of Michigan low interest SRF loan program.

The Public Hearing will present a description of the recommended project, estimated costs, as well as the estimated cost per household impact for customers for the loan eligible loan. The typical residential customer bill for sewer disposal in the city of Detroit is expected to increase by no more than 0.64% assuming that low interest loans can be obtained through the SRF loan program. The purpose of the hearing is not only to inform, but to seek and gather input from people that will be affected. Comments and viewpoints from the public are encouraged.

**THE PUBLIC HEARING WILL BE HELD:**

**WEDNESDAY, JUNE 19, 2019  
UNITY BAPTIST CHURCH  
7500 TIREMAN  
DETROIT, MICHIGAN 48204  
6 P.M.**

Information on the Project Plan will be available at the following locations:

- [www.detroitmi.gov/dwsd](http://www.detroitmi.gov/dwsd)
- Detroit Water and Sewerage Department  
Water Board Building  
735 Randolph, First Floor  
Detroit, Michigan 48226

If you have questions or want to submit written statements for the Public Hearing Record, call (313) 964-9269 or write:

Monica Daniels  
Detroit Water and Sewerage Department  
735 Randolph, 7<sup>th</sup> Floor  
Detroit, MI 48226

Written comments will be accepted at the above address if received prior to 1:00 p.m. EST, Tuesday, June 18, 2019.



1452 Randolph, Suite 400  
Detroit, MI 48226

Fax # 313-963-8115

# Invoice

	<b>Total</b>	\$912.60
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# AFFIDAVIT OF PUBLICATION

## NOTICE

DETROIT WATER AND SEWERAGE DEPARTMENT  
SEWER REHABILITATION FY20 STATE  
REVOLVING FUND PROJECT

\$25,628,000

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DATE: WEDNESDAY, JUNE 19, 2019

PLACE: UNITY BAPTIST CHURCH

7500 TIREMAN AVENUE

DETROIT, MI 48204

TIME: 6:00 P.M.

Information on the Project Plan will be available at the following locations:

[www.detroitmi.gov/dwsg](http://www.detroitmi.gov/dwsg)

Detroit Water and Sewerage Department

Water Board Building

735 Randolph, 1st Floor - Permits

Detroit, Michigan 48226

If you have questions or want to submit written statements for the Public Hearing Record, call (313) 964-9269 or write:

Monica Daniels

Detroit Water and Sewerage Department

735 Randolph, 7th Floor

Detroit, MI 48226

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GARY A. BROWN

Director

Detroit Water and Sewerage Department

DWSD - 4

STATE OF MICHIGAN

County of Wayne

Pushpa Jayaprakash an employee of the publisher of  
having knowledge of the facts, being duly sworn deposes a  
notice, a true copy of which is annexed hereto, was published in  
Detroit Legal News a newspaper printed and circulated in Wayne County on  
May 16th, 2019 A.D.

*Pushpa Jayaprakash*

Pushpa Jayaprakash

Subscribed and sworn to before me this

17th

day of June

2019 A.D.

*Christina Jacobs*

Christina Jacobs

Notary Public, State of MI, County of Macomb. My commission  
expires February 24, 2020 Acting in Oakland County, Michigan



America's Best African Newspaper  
**MICHIGAN CHRONICLE**

1452 RANDOLPH, SUITE 400  
DETROIT, MICHIGAN 48226  
Email: [www.michronicle.com](http://www.michronicle.com)

(313) 963-5522  
FAX (313) 963-8788  
FAX (313) 964-0958

STATE OF MICHIGAN

COUNTY OF WAYNE

I, Angelique Nelson of the Michigan Chronicle, a weekly newspaper, printed, published, and circulated in Detroit, Wayne County, Michigan being duly sworn, say that an ad has been published in the Michigan Chronicle newspaper.

For: Detroit Water & Sewerage - Public Hearing for Sewer Rehabilitation  
FY20 State Revolving Fund (SRF) Project

Date of Publication: 22-May-19

Signed: 

Sworn before me, and subscribed in my presence on

This 22<sup>nd</sup> day of May, 20 19

  
Notary Public

7/17/2020  
Commission Expires



State of Michigan } ss  
County of Macomb }

**Affidavit of Publication**  
IN  
**Michigan.com**  
**Detroit News and Free Press**

**DETROIT WATER & SEWERAGE DEPT**  
**735 RANDOLPH ST FL 9**  
**DETROIT, MI 48226**

**RE: PUBLIC HEARING FOR SEWER REHABILITATION FY20 STATE REVOLVING FUND**  
**(SRF) PROJECT**

See attached.

Lauren Henderson

(Lauren Henderson), being duly sworn, deposes and says that the above advertisement(s) appeared in Michigan.com - The Detroit News and Free Press on May 16, 2019. Invoice ad number 3566986 and as an authorized employee of Michigan.com, he/she knows well the facts stated herein.

Dated: May 20, 2019

Notarized By:

Gina Anne Huff

Acting in the County of Macomb

GINA ANNE HUFF  
NOTARY PUBLIC - STATE OF MICHIGAN  
COUNTY OF LIVINGSTON  
My Commission Expires March 9, 2023



**DETROIT WATER AND SEWERAGE DEPARTMENT  
NOTICE  
PUBLIC HEARING FOR SEWER REHABILITATION  
FY20 STATE REVOLVING FUND (SRF) PROJECT**

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**PLACE:** UNITY BAPTIST CHURCH  
7500 TREMAN AVENUE  
DETROIT, MI 48204  
**TIME:** 6 P.M.

Information on the Project Plan will be available at the following locations:

- [www.detroitmi.gov/dwdsd](http://www.detroitmi.gov/dwdsd)
- Detroit Water and Sewerage Department  
Water Board Building  
735 Randolph, 1st Floor - Permits  
Detroit, Michigan 48226

If you have questions or want to submit written statements for the Public Hearing Record, call (313) 964-9269 or write:

Monica Daniels  
Detroit Water and Sewerage Department

located at 18891 St. Louis Ave, Detroit, Wayne County, MI 48234. Members of the public interested in submitting comments on the possible effects of the proposed co-location on properties included in or eligible for inclusion in the National Register of Historic Places may send their comments to: Lauren, Trileaf Corporation representative acting on behalf of T-Mobile, 1821 Walden Office Square Suite 510, Schaumburg, IL 60173 or call at 630-227-0202.

**PUBLIC NOTICE**

On behalf of T-Mobile, this will advise interested members of the general public as follows. T-Mobile intends to install six telecommunications antennas and four RRIS at a centerline height of 55 feet on an existing 68-foot chimney located at 16441 Curtis Street, Wayne County, MI 48235. Members of the public interested in submitting comments on the possible effects of the proposed co-location on properties included in or eligible for inclusion in the National Register of Historic Places may send their comments to: Lauren Sereno, Trileaf Corporation representative acting on behalf of T-Mobile, 1821 Walden Office Square Suite 510, Schaumburg, IL 60173 or call at 630-227-0202.

**PUBLIC NOTICE**

On behalf of T-Mobile, this will advise interested members of the general public as follows. T-Mobile intends to install two telecommunications antennas at a centerline height of 92 feet, and one telecommunications antenna at a centerline height of 88 on a 90-foot building rooftop located at 727 W. Grand Boulevard, Detroit, Wayne County, MI 48216. Members of the public interested in submitting comments on the possible effects of the proposed co-location on properties included in or eligible for inclusion in the National Register of Historic Places may send their comments to: Anna Farrell, Trileaf Corporation representative acting on behalf of T-Mobile, 1821 Walden Office Square Suite 510, Schaumburg, IL 60173 or call at 630-227-0202.

**COVENANT HOUSE ACADEMY DETROIT**

**EAST CAMPUS**  
7600 GOETHE  
DETROIT, MI 48214  
Phone: (313) 267-4315  
Fax: (313) 267-4320

on June 25, 2019 at 7:30 am at the Cornerstone Health and Technology School. The location is 17351 Southfield Freeway, Detroit, MI 48235. The budget is available for public inspection at the same address. The meeting will be conducted in accordance with the Open Meetings Act.

**BUDGET HEARING NOTICE**

The Board of Directors of the Madison-Carver Academy School District is conducting its annual budget hearing on June 19, 2019 at 7:30 am at the Madison-Carver Academy 19900 McHenry, Detroit, MI 48219. The budget is available for public inspection at the same address.

The meeting will be conducted in accordance with the Open Meetings Act.

**BUDGET HEARING NOTICE**

The Board of Directors of the Washington-Parks Academy School District is conducting its annual budget hearing on June 26, 2019 at 7:30 am at the Lincoln-King Academy at the location 13436 Grove St, Detroit MI 48235. The budget is available for public inspection at the same address.

The meeting will be conducted in accordance with the Open Meetings Act.

**BUDGET HEARING**

**The Board of Directors**  
For the  
Detroit Edison Public School Academy  
1903 Wilkins  
Detroit, MI, 48207  
313-833-1100

Will hold the annual BUDGET HEARING on Wednesday, June 12, 2019 at 5:00p.m. in the Library/Media Center. Budget will be available for public inspection. The meeting will be conducted in accordance with the Open Meetings Act.

**NOTICE OF BUDGET HEARING**

The Conservator for Detroit Community Schools will hold a public hearing to review the 2019-20 proposed budget on Tuesday, June 18, 2019 at 1:00 P.M. in the HS Main Office Conference Room located at 12675 Burt Road, Detroit, MI 48223.

**FERNDALE**

Department: DDA  
Location: Ferndale City Hall  
Salary Range: \$20.00 - \$25.00 Hourly  
Employment Type: Temporary/Contractual

The City of Ferndale is seeking a Downtown Development Authority Business Consultant to lead outreach and retention efforts for the Ferndale business community. We're looking for a self-motivated individual who can successfully communicate with business owners, implement a robust business retention program, and act as the main contact for the City's mixed-use parking development project. The dot. This is a temporary contractual (1099) position with a salary range of \$20-25/hour. It is expected that the scope of work for this position will require between 25-29 hours per week. Candidates must possess a bachelor's degree from an accredited college. 2-3 years of experience in business engagement, recruiting, and retention services is preferred. For a full list of qualifications and to apply, visit [www.ferndalemi.gov/jobs](http://www.ferndalemi.gov/jobs)

**OAKLAND UNIVERSITY**

Seeking  
**ASSISTANT WOMEN'S BASKETBALL COACH**  
AT OAKLAND UNIVERSITY  
Athletics Administration

Assist in administering an educationally sound and competitive women's basketball program, consistent with the NCAA, League, and University rules, regulations, ordinances, policies, procedures and guidelines. Minimum Qualifications: Bachelor's Degree or an equivalent combination of education and/or experience. Minimum of three years NCAA collegiate coaching experience. Experience with NCAA rules and regulations. This is a full time, individual contract position, which includes evenings and weekends. Salary commensurate with experience. See online posting for additional position requirements. First consideration will be given to those who apply by June 3, 2019. Must apply on line to: <https://jobs.oakland.edu>

**OAKLAND UNIVERSITY**



1  
2 City of Detroit  
3 Water & Sewerage Department  
4 Capital Improvement  
5 Public Hearing Notice and  
6 SRF Project Plan  
7 1301 E. Warren  
8 Detroit, Michigan  
9 Wednesday, June 19, 2019  
10 6:00 p.m.  
11  
12

13  
14 Water & Sewerage Department Public Meeting  
15 before the Public at Unity Baptist Church, 7500  
16 Tireman, Detroit, Michigan on Wednesday, June 19, 2019.  
17  
18

19 ATTENDEES:

20 Debra Pospiech  
21 Jonathan Kinloch  
22 Jane Garcia  
23 Lane Coleman  
24 John Henry Davis  
25 Palencia Mobley  
Gary Brown  
Marian King Bell

CHAIRPERSON: Mary Blackman

Reported by:

Sherrayna Coleman, CSR-6485



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1 Detroit, Michigan

2 Wednesday, June 19, 2019

3 6:00 p.m.

4 --- --- ---

5 MS. BLACKMAN: Good evening. We welcome you  
6 to today's meeting of the Board of Water Commissioners.  
7 The pastor is here. We would like you to come  
8 forward, Reverend Pastor, and bring greetings on behalf  
9 of your church and bless us with a prayer that we might  
10 be able to do all things well in this house.

11 (Whereupon the Pastor conducted the  
12 welcome and prayer.)

13 VICE CHAIR BLACKMAN: Thank you very much,  
14 Reverend. The next item on the Agenda is the first  
15 meeting we're having is -- I'm sorry. Call to Order  
16 and now the roll call, please Madame Secretary.

17 MS. SECRETARY: Vice Chair Blackman.

18 VICE CHAIR BLACKMAN: Present.

19 MS. SECRETARY: Commissioner Davis.

20 COMMISSIONER DAVIS: Present.

21 MS. SECRETARY: Commissioner Coleman.

22 COMMISSIONER COLEMAN: Present.

23 MS. SECRETARY: Commissioner Garcia.

24 COMMISSIONER GARCIA: Present.

25 MS. SECRETARY: Commissioner Kinloch.

1 COMMISSIONER KINLOCH: Present.

2 MS. SECRETARY: Commissioner Forte.

3 COMMISSIONER FORTE: Present.

4 MS. SECRETARY: Chairman (inaudible)

5 VICE CHAIR BLACKMAN: And let me just say

6 that Chairman sends his best. He is not able to attend

7 today. He is attending the graduation of his nephew

8 and the meeting -- that event was planned long, long

9 ago. So he sends his greetings and his regrets that

10 he's not able to be here this evening.

11 The next item is the Approval of the Agenda.

12 And before we do that I would like to request the

13 Agenda be amended so that under our public hearing for

14 the regular meeting, we will move that to appear after

15 C1900188 just before the Directors Metrics. We will

16 hear our public comments for our regular meeting before

17 Item 11. Chair will entertain a motion.

18 COMMISSIONER COLEMAN: So moved.

19 COMMISSIONER KINLOCH: Support.

20 VICE CHAIR BLACKMAN: Its been properly moved

21 and supported. Any discussion?

22 (None responded.)

23 VICE CHAIR BLACKMAN: Hearing none, indicate

24 by the sign of aye.

25 (Several responded by indicating aye.)

1 VICE CHAIR BLACKMAN: Nay?

2 (None responded.)

3 VICE CHAIR BLACKMAN: Motion carries. I will  
4 now open the public hearing for the State regarding  
5 project plan. I don't know who's a presenter.

6 MS. DANIELS: Monica Daniels, Finance Asset  
7 Manager and I'm here for the public hearing for the SRF  
8 Project Plan. SRF is a State Revolving Fund. DWSD  
9 will be applying for a loan with MDQ, Michigan  
10 Department of Environmental Quality for sewer  
11 rehabilitation work. The replacement is of aging  
12 sewers in multiple areas located within the City of  
13 Detroit.

14 The construction will include in place  
15 rehabilitation of sewers and manhole structures and in  
16 limited instances excavation of existing sewer for  
17 replacement. Right away restoration will be performed  
18 on any destructed areas. Approximate value of the loan  
19 is 25,628,000 and we have broken it out into two  
20 projects. For everyone in the audience there is a  
21 handout in the hallway.

22 So as part of the public hearing we are  
23 required as an applicant of the loan and we do apply  
24 for this loan through GLWA, Great Lakes Water  
25 Authority, and that is because DWSD uses them as our

1 creditor when applying for loans. DWSD is considered a  
2 disadvantaged community and the determination was  
3 already made. And with that what it allowed for us to  
4 do as we are allowed a 30-year loan term instead of the  
5 20-year, which is typical on these loans and the loan  
6 rate is typically 2.5 percent, which also is to our  
7 advantage.

8 We also are often afforded the opportunity of  
9 loan forgiveness. We had water projects where we  
10 applied for loans and previously we received 4.7  
11 million in loan forgiveness. What that means is that  
12 we did not have to repay that amount of money. The  
13 areas, we were going to call them Project A and  
14 Project B. Project A is five high priority  
15 neighborhoods. These neighborhoods include Piety Hill,  
16 New Center Commons, Virginia Park, Brewster Douglass,  
17 Brewster Homes. Project B we call it four west side  
18 neighborhoods. These neighborhoods include Riverdale,  
19 Miller Grove, Minock Park and South Rosedale Park.

20 The other document that is available on-line  
21 is the Project Plan. All the board members, you have  
22 it in your book. So when I speak I'm addressing the  
23 Project Plan. I'm just highlighting some of the items  
24 in the project plan. What I just read off the study  
25 area of the project is on Page 7 of the Project Plan.

1 For everyone in the audience, the Project Plan can be  
2 found on our website. In the packet that I'm reviewing  
3 today there are highlights from that Project Plan.

4 The purpose of the Project Plan is to let  
5 everyone know what we're doing and where we're doing it  
6 at. It does go into detail with what type of work we  
7 are doing. There is a map included in the handout and  
8 the pink areas are the areas in which the work will  
9 take place. The need for the State Revolving Fund  
10 Project is pipe and manhole interventions determined by  
11 condition assessment. So what we do is we go in these  
12 neighborhoods and do condition assessment on the sewer  
13 lines and make a determination of what work will be  
14 needed.

15 So I do want to mention that although the  
16 project is greater than what we are applying for a loan  
17 it is because everything is not eligible for a loan.  
18 When I say everything is not eligible for a loan, is  
19 the structure damages of the sewer after we do the  
20 assessment, they're graded. And if they graded a four  
21 and five, meaning there is significant damages or like  
22 close to immediate collapse. Those items are eligible  
23 for the loan and the others are not. Although they are  
24 not DWSD will still make repairs to those.

25 For example, Project A, the five high



1 priority neighborhoods, there's ten miles of pipe in  
2 this project. In this project the neighborhood pipe  
3 sizes are 10 inches to 54 inches but only 4.5 miles is  
4 loan eligible. This is Page 9 of the Project Plan and  
5 Page 8 of the handout today. Of the four west side  
6 neighborhoods there's 28 miles. Of that 28 miles 11  
7 miles is loan eligible. This is from Page 11 of the  
8 Project Plan or Page 9 of the handout you have today.  
9 On Page 10, and I'm just going to hold it up briefly,  
10 but what I'm showing you is a brick sewer. And in that  
11 brick sewer there are some fracture damages. And this  
12 is just an example of what is seen when they do a  
13 condition assessment and some of the repairs that we  
14 do; although, I will note that most of our brick sewers  
15 are in very good shape and lining them is one of the  
16 -- is I'm going to say easiest ways to repair.

17 MS. MOBLEY: So the picture Monica just  
18 showed us is of a manhole. Most of the brick sewers  
19 are in very good condition as a manhole.

20 MS. DANIELS: There were some alternates  
21 pursued on this and DWSD came up with the best plan.  
22 I'm not going to go through the alternates here, but  
23 that information is available for you in the handout  
24 and also in the Project Plan. Part of, again, the  
25 application process, we do have to provide the public

1 notice. We had news publications that went -- that  
2 were published on Wednesday, May 29th. We do have --  
3 let's see, it went in the Detroit Legal News, Detroit  
4 News and Detroit Free Press, the Michigan Chronicle.  
5 It is on our website and there were some community  
6 meetings. In the high priority neighborhoods there  
7 were door-to-door notifications with door hangers. In  
8 the west side neighborhood there was association  
9 meetings. There was a meeting at the All Way Brewery  
10 (ph) on Grand River where along with our Public Affairs  
11 we went out to the public to explain to them the  
12 project.

13 I do need to make one correction because the  
14 publication was not made the 29th. I will follow up  
15 with that date but we are within our 30 days required  
16 for the 30-day notice. Also, part of the notice we  
17 sent mailings out to notify the public and other  
18 agencies and I'm going to list those agencies. The  
19 City of Detroit Mayor's Office, Wayne County Department  
20 of Health, Wayne County Department of Public Services,  
21 Wayne County Executive Offices, SEMCOG, U.S. Coast  
22 Guard, U.S. Army Corp of Engineers, U.S. Department of  
23 Homeland Security. And we sent this information out to  
24 them to see if they have any questions or concerns  
25 about the work that we will be doing and to see if they

1 have any comments as well. So that would conclude the  
2 public involvement.

3 What's next? Again, because we are applying  
4 for this loan with GLWA we will then forward the  
5 information from this public hearing. We have a court  
6 reporter here today taking transcripts so that we have  
7 documented proof that we did have a public hearing  
8 letting the public know about this meeting today. And  
9 then we -- GLWA will have a board meeting next week,  
10 June 26th. And we are asking them to submit that to  
11 their Board for approval so that we can have all of our  
12 approvals and certifications to be submitted along with  
13 the final project plan.

14 The project plan that you will see on-line is  
15 not quite complete because we have to include the ads  
16 that ran and we also have to include the transcript  
17 from today's public hearing to complete our plan and  
18 then it will be submitted. Our plan is to be submitted  
19 on June the 30th. The deadline is July 1st. And we  
20 can open it up for Public Comment regarding the public  
21 hearing.

22 VICE CHAIR BLACKMAN: Let me just state for  
23 the record that public comments will be limited to two  
24 minutes for this meeting and the subsequent meetings.  
25 We will entertain comment card submissions until 6:30

1 p.m., so if you wish to make a public comment please  
2 fill your card out and have it to us before 6:30. At  
3 the time of the public comments I will call three to  
4 five people at a time to come to the microphone. There  
5 will be a time keeper in view of the commenter who will  
6 have signs with an update on your remaining time.

7 While the commissioners and the Deputy Chief  
8 executive staff may respond to public comments, there  
9 will not be any back and forth engagement in order to  
10 allow ample time for each public comment. So if we're  
11 ready for -- I don't know if we started it for the  
12 regular meeting.

13 MS. DANIELS: Excuse me, Commissioner. I  
14 would like to add that I do need everyone to state your  
15 name. We do have a court reporter here recording your  
16 comments. So if you could, please, when you step to  
17 the podium, speak clearly your name so that it can be  
18 recorded and added to our transcript for this meeting.  
19 Thank you.

20 Ms. POSPIECH: Madame Chair, we're asking  
21 citizens to speak at this time only about the  
22 presentation regarding the State Revolving Fund Project  
23 Plan.

24 VICE CHAIR BLACKMAN: If there's anyone who  
25 would like to comment at this time regarding the State

1 Revolving Fund loan. Anyone from the public who would  
2 like to speak on the State Revolving Fund loan. I saw  
3 a hand who wants to speak on the SRF Fund. If you'd  
4 like to come forward to the microphone, please.

5 MR. BELAND: To the general project, I did  
6 want to speak-

7 MS. POSPIECH: Sir, please state your name  
8 first.

9 MR. BELAND: My name is Russ Beland. I  
10 turned in a card with my information on there. I  
11 wanted to speak in connection with this project because  
12 I see high priority neighborhoods, but we do have a  
13 collapsed manhole on my street that's been like that  
14 for 50 weeks as of today, exactly 50 weeks, and I'm  
15 hoping in its proper priority of getting it addressed  
16 that this need not get overlooked.

17 I have a picture of it and literally there's  
18 a hole in the street where you can see inside the sewer  
19 from the street and this has been sitting like this  
20 now, as I said, for 50 weeks, and I hope that it can  
21 start getting addressed. It's at 19444 Helner Street  
22 (ph). My other comments aren't directly related but I  
23 did want to thank the Department for the fact that Vac  
24 trucks came through and cleaned every one of our storm  
25 sewers on our street and the people were very

1 professional. And I sent a comment to the Director  
2 about it at the time because I think the work needed to  
3 be commended. A few other concerns will have to wait  
4 until the topic is appropriate. Thank you.

5 VICE CHAIR BLACKBURN: Thank you very much.  
6 Anyone else who would like to speak on the State  
7 Revolving Fund?

8 MS. TAYLOR: Good evening. My name is  
9 Matilda Taylor. I'm representing the Malvern Hill  
10 (ph) neighborhood in northwest Detroit. And my  
11 question is what criteria was used to determine the  
12 four west side neighborhoods for the project and were  
13 there originally more neighborhoods on the list; and  
14 if so, how were these four selected for designation?

15 COMMISSIONER MOBLEY: We will respond to you  
16 in writing at a very high level. There is an analysis  
17 done based on age and condition and year it was  
18 installed, materials of construction. And through  
19 that process various neighborhoods came up into a  
20 certain priority and the ones that came up via high  
21 priority are the ones we initially started condition  
22 assessments on.

23 VICE CHAIR BLACKMAN: Is there anyone else  
24 who would like to address this issue, the State  
25 Revolving Fund, please come to the microphone.



1                   (Inaudible unidentified audience member  
2                   speaks out of turn.)

3                   VICE CHAIR BLACKMAN: The State revolving  
4 fund; that was what this presentation was just given  
5 to let you know what we're going to be doing. The loan  
6 that we are getting from the Michigan Department of  
7 Environmental Quality that allows us to have a very,  
8 very low rate to address the issues that we have  
9 identified. They were all mentioned in the  
10 presentation, but go ahead.

11                  MS. PITTS: I guess that consists of the  
12 repairs -- my name is Dawn Pitts (ph). And I believe  
13 what you're speaking of consists of the repairs that's  
14 going to be done for the people, the residents, in the  
15 City of Detroit.

16                  VICE CHAIR BLACKMAN: This is for the  
17 projects that were identified in the State Revolving  
18 Fund application; just those projects. Not overall  
19 projects. Just the projects that were identified.

20                  MS. PITTS: Okay. I must have missed it.

21                  VICE CHAIR BLACKMAN: We have a handout for  
22 you and it will show you those projects.

23                  MS. PITTS: So it's the areas in the City  
24 that's been pointed out that ya'll gonna do repairs?

25                  VICE CHAIR BLACKMAN: Yes, absolutely. They

1 have to meet a certain criteria determined by Michigan  
2 Department of Environmental Quality, and so we have met  
3 all of the restrictions and the requirements for that  
4 and those projects will be undertaken after whatever  
5 the process is at the time.

6 MS. PITTS: Can I also ask you is people,  
7 citizens of the city of Detroit, going to be doing some  
8 of this work or is it all contract? Do people bid or  
9 do the people in the community get an opportunity for  
10 some of these jobs?

11 VICE CHAIR BLACKMAN: I'm going to refer that  
12 to the Director.

13 COMMISSIONER BROWN: 51 percent of the  
14 employees on the job are, on the contractor jobs, are  
15 Detroiters.

16 VICE CHAIR BLACKMAN: Anyone else who wants  
17 to address the State Revolving Fund only at this time?  
18 State your name and your address, please.

19 MS. ORDINU: Hello, Commissioners. Thank  
20 you for this opportunity. My name is Sylvia Ordinu  
21 (ph) and I'm with the Michigan Civil Rights  
22 Organization. I've spoken with you many times before  
23 about some of the issues that we have concerns about  
24 around affordability and we see this is also another  
25 affordability issue. What I'm here -- I'm also a

1 resident of the City living in the Baldwin Park  
2 neighborhood. What I wanted to actually learn more  
3 about from you all, and I think this is a concern to  
4 all of us, as this is what we understand to be the  
5 first of what's going to be many projects across the  
6 City. I don't think at this point we have an  
7 understanding of the scope of the work.

8 I'm glad to hear that there actually have  
9 been some assessments about what are the priorities and  
10 there's been some kind of MDQ evaluation for  
11 communities that are eligible for this type of sewage  
12 replacement work, but we've been having long time  
13 conversations in the City about the lead service line  
14 replacement needs.

15 Director Brown, you've talked about that many  
16 times about the thousands of miles of pipes that we've  
17 got to deal with in the City, but at this time this  
18 plan doesn't really tell us anything else about what's  
19 going to be happening citywide other than those two  
20 communities. If there's public data about the scope of  
21 the work we need to know it because you're also asking  
22 for a .06 percent increase. We don't know what other  
23 increases are coming down the road where we're assuming  
24 all of these other ones are going to have cost borne  
25 onto us as customers.

1           We cannot -- we need you to not approve  
2 anything at this point until there's full disclosure  
3 about what the whole scope of the work is going to be  
4 because we don't know what we're going to be asking to  
5 pay for in the end. We note infrastructure costs are  
6 going to be mostly borne by the residents through our  
7 bills. We want you to also if you haven't already  
8 thought of it, but I'm sure you have looked at  
9 principle forgiveness for any of these SRF funds.

10           We should not be paying as on environmentally  
11 impacted City for these types of loans when we know we  
12 have dire needs here; that would be one of them. But  
13 we need more data before you can even ask for increases  
14 because we don't know where else this work is going to  
15 happen, what else it's going to cost or what the health  
16 impacts are. Have you done health assessments; other  
17 things that are going to help us with supporting or  
18 asking you not to support these kinds of proposals.

19           VICE CHAIR BLACKMAN: Thank you. Anyone else  
20 who would like to address the Board at this time on the  
21 State Revolving Fund Projects? State Revolving Fund  
22 Projects. Your name and your address, please.

23           MS. RECTOR: Good evening. I'm Alexandria  
24 Rector (ph). I work for the Alliance for the Great  
25 Lakes and also a resident of the City. We're working

1 to create better water infrastructure in the City and  
2 we're hoping to incorporate more green infrastructure,  
3 which they're already doing a good job at. So we're  
4 hoping that within this project any time the roads are  
5 being torn up, which I reviewed the plan, it is not  
6 very widespread, but when you are tearing the roads up  
7 and rebuilding them we hope you will consider  
8 integrating green infrastructure as part of the  
9 redesign to integrate a better long term sustainable  
10 design of our roads and our water management in the  
11 city.

12 VICE CHAIR BLACKMAN: Thank you very much.  
13 That certainly is a part of our plan. Thank you.  
14 Anyone else on the State Revolving Fund issue only?  
15 And if you've spoken once I cannot let you speak again;  
16 not on this issue.

17 (Inaudible unidentified speaker speaking  
18 out of turn.)

19 VICE CHAIR BLACKMAN: We are still the owners  
20 of the system. So no I'm not going to go back and  
21 forth but if you want to stay behind and ask a question  
22 we will be happy to talk with you. Are you speaking  
23 regarding the State Revolving Fund or just the general  
24 meeting, ma'am?

25 MS. WEST: I'm not sure.

1           VICE CHAIR BLACKMAN: This is on the State  
2   Revolving fund and those projects that we have  
3   delineated that will be handled under this loan from  
4   the State.

5           MS. WEST: My name is Vernetta West (ph) and  
6   I just wanted to inform you when I came in there was a  
7   form, financial form, that I did not receive and  
8   probably others didn't receive. So I wanted to make  
9   sure that we receive the financial form. Is that  
10  possible?

11          VICE CHAIR BLACKMAN: I don't know what she's  
12  making reference to.

13          COMMISSIONER BROWN: We can have one of our  
14  staff-

15          VICE CHAIR BLACKMAN: If you can see someone  
16  in the back to try to find out what you need.

17          MS. WEST: Thank you very much.

18          VICE CHAIR BLACKMAN: We will call an end to  
19  the public comments on the State Revolving Fund.

20          COMMISSIONER POSPIECH: Madame Chair, now the  
21  Board must vote on the resolution.

22          VICE CHAIR BLACKMAN: Okay. Chairman will  
23  entertain a motion to vote on the Resolution for the  
24  State Revolving Fund.

25          COMMISSIONER DAVIS: So move.



1           VICE CHAIR BLACKMAN: You have to move on  
2 Page 176 of your Agenda.

3           COMMISSIONER POSPIECH: Page 50 in your  
4 booklet.

5           VICE CHAIR BLACKMAN: Under New Business on  
6 your Agenda Item A. Who was going to make the Motion?  
7 Commissioner Davis.

8           COMMISSION DAVIS: Madame Chair, on the  
9 recommendation of Thomas Knox (ph), Chief Financial  
10 Officer Board of Water for the City of Detroit Water  
11 and Sewage Department recommend adopting of the A,  
12 Final Project Plan for the Detroit Water and Sewage  
13 Department Sewer Rehabilitation Project and designating  
14 an authorized project representative FY 2020 State  
15 Revolving Fund; and also authorizes the Chief Financial  
16 Officer and the Director to take such other action  
17 which may be necessary to accomplish.

18           VICE CHAIR BLACKMAN: Is there a second to  
19 the Motion?

20           COMMISSIONER KINLOCH: Support.

21           VICE CHAIR BLACKMAN: Its been properly moved  
22 and supported. Any discussion on the Motion?

23                       (None responded.)

24           VICE CHAIR BLACKMAN: I think it should be  
25 noted that this item did come before the Finance

1 Committee and was discussed earlier at the Finance  
2 Committee as well.

3 (Inaudible unidentified speaker speaking  
4 out of turn.)

5 VICE CHAIR BLACKMAN: I don't know what data  
6 you're asking for -- excuse me. If you have a question  
7 please raise the question, but we have had opportunity  
8 for you to have public comment. We're voting on -- I'm  
9 sorry. But we are not going to -- you had an  
10 opportunity to raise your issues. You had an  
11 opportunity to raise your issues. We responded to  
12 those issues. We didn't change the question, ma'am.  
13 Do you have anything else you need to add, Ms. Daniels?

14 MS. DANIELS: As part of the public hearing  
15 notice that went out in May and also available on our  
16 website, I do have a few project plans here. There are  
17 some at the table in the hallway. It does explain to  
18 you what areas the work will be performed on. It does  
19 explain to you about the public notice. It does  
20 explain to you about how much we're asking for a loan.

21 Please understand that these projects are not  
22 the only projects that DWSD will be performing, and  
23 this project will not start until fiscal year 2021.  
24 Again, this is not all inclusive of all the projects.  
25 But there are handouts in the hallway. I will step out

1 and I will hand a few more people handouts if you would  
2 like.

3 (The proceedings concluded at 6:28 p.m.)

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C E R T I F I C A T E

I, Sherrayna Coleman, do hereby certify  
that I have recorded stenographically the proceedings  
had and testimony taken in the meeting, at the time and  
place forth, and I do further certify that the  
foregoing transcript, consisting of (23) pages, is a  
true and correct transcript of my said stenographic  
notes.

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June 27, 2019

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Sherrayna Coleman  
CSR-6485

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<b>term</b> 6:4 18:9 <b>things</b> 3:10 17:17 <b>Thomas</b> 20:9 <b>thought</b> 17:8 <b>thousands</b> 16:16 <b>time</b> 11:3,4,5, 6,10,21,25 13:2 15:5,17 16:12,17 17:20 18:4 <b>times</b> 15:22 16:16 <b>today</b> 4:7 7:3 8:5,8 10:6,8 12:14 <b>today's</b> 3:6 10:17 <b>topic</b> 13:4 <b>torn</b> 18:5 <b>transcript</b> 10:16 11:18 <b>transcripts</b> 10:6 <b>trucks</b> 12:24 <b>turn</b> 14:2 18:18 21:4 <b>turned</b> 12:10 <b>type</b> 7:6 16:11 <b>types</b> 17:11 <b>typical</b> 6:5 <b>typically</b> 6:6 <hr/> <b>U</b> <hr/> <b>U.S.</b> 9:21,22 <b>understand</b> 16:4 21:21 <b>understandin</b> <b>g</b> 16:7 <b>undertaken</b> 15:4	<b>unidentified</b> 14:1 18:17 21:3 <b>update</b> 11:6 <hr/> <b>V</b> <hr/> <b>Vac</b> 12:23 <b>Vernetta</b> 19:5 <b>Vice</b> 3:13,17, 18 4:5,20,23 5:1,3 10:22 11:24 13:5,23 14:3,16,21,25 15:11,16 17:19 18:12, 19 19:1,11,15, 18,22 20:1,5, 18,21,24 21:5 <b>view</b> 11:5 <b>Virginia</b> 6:16 <b>vote</b> 19:21,23 <b>voting</b> 21:8 <hr/> <b>W</b> <hr/> <b>wait</b> 13:3 <b>wanted</b> 12:11 16:2 19:6,8 <b>water</b> 3:6 5:24 6:9 18:1,10 20:10,12 <b>Wayne</b> 9:19, 20,21 <b>ways</b> 8:16 <b>website</b> 7:2 9:5 21:16 <b>Wednesday</b> 3:2 9:2 <b>week</b> 10:9 <b>weeks</b> 12:14, 20 <b>west</b> 6:17 8:5 9:8 13:12 18:25 19:5,17	<b>widespread</b> 18:6 <b>work</b> 5:11 7:6, 8,13 9:25 13:2 15:8 16:7,12, 21 17:3,14,24 21:18 <b>working</b> 17:25 <b>writing</b> 13:16 <hr/> <b>Y</b> <hr/> <b>ya'll</b> 14:24 <b>year</b> 13:17 21:23	
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# MAILING LIST FOR PUBLIC HEARING

Wayne County Executive Office  
The Guardian Bldg.  
500 Griswold, Ste. 1050  
Detroit, MI 48226

Department of Homeland Security—  
Detroit 211 W. Fort St.  
Detroit, MI 48226

Mayor's Office — City of Detroit CAYMC  
2 Woodward Ave., Ste. 1126  
Detroit, MI 48226

U.S. Army Corps of Engineers  
Detroit Office  
477 Michigan Ave., Ste. 600  
Detroit, MI 48226

Wayne County Department of Public Services  
400 Monroe, Ste. 300  
Detroit, MI 48226

SEMCOG  
1001 Woodward Ave., Ste. 1400  
Detroit, MI 48226

Wayne County Department of Health  
1600 W. Lafayette Blvd., Ste. 200  
Detroit, MI 48216

U.S. Coast Guard —  
Detroit 110 Mt. Elliott Ave.  
Detroit, MI 48207

Mayor's Office – City of Detroit  
CAYMC  
2 Woodward Avenue, Suite 1126  
Detroit, MI 48226

May 16, 2019

To Whom It May Concern,

Enclosed please find a notice of public hearing, issued by the Water & Sewerage Department of the City of Detroit, for sewer rehabilitation in the City of Detroit.

Representatives of your office are encouraged to attend this public hearing should they have interest in making public comment on this project.

The enclosed public notice identifies the date, time and location for the public hearing. It also identifies where information about the project can be obtained and contact information to ask questions or submit written statements for the Public Hearing Record.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "Robert Green", written in a cursive style.

Robert Green  
Task Manager  
AECOM  
M: 313-304-6614  
E: bob.green@aecom.com



SEMCOG  
1001 Woodward Avenue  
Suite 1400  
Detroit, MI 48226

May 16, 2019

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Department of Homeland Security - Detroit  
211 W. Fort Street  
Detroit, MI 48226

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110 Mt. Elliot Avenue  
Detroit, MI 48207

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U.S. Army Corps of Engineers  
Detroit Office  
477 Michigan Avenue, Suite 600  
Detroit, MI 48226

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Task Manager  
AECOM  
M: 313-304-6614  
E: bob.green@aecom.com

Wayne County Executive Office  
The Guardian Building  
500 Griswold, Suite 1050  
Detroit, MI 4822

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Robert Green  
Task Manager  
AECOM  
M: 313-304-6614  
E: bob.green@aecom.com

Wayne County Department of Health  
3245 E Jefferson Avenue, Suite 100  
Detroit, MI 48207

May 16, 2019

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AECOM  
M: 313-304-6614  
E: bob.green@aecom.com

Wayne County Department of Public  
Services  
400 Monroe Street, Suite 300  
Detroit, MI 48226

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# **CAPITAL IMPROVEMENT**

## **PUBLIC HEARING NOTICE**

## **AND SRF PROJECT PLAN**

**June 19, 2019**

# Public Hearing for Sewer Rehabilitation

## FY20 State Revolving Fund (SRF) Project Plan

The Detroit Water and Sewerage Department (DWSD) announces a Public Hearing regarding its Project Plan for proposed Sewer Rehabilitation in the city of Detroit. DWSD will be seeking low interest State Revolving Fund (SRF) loan assistance for FY2020. The project is comprised of rehabilitating/limited replacement of aging sewers in multiple areas located within the city. Construction will include in-place rehabilitation of sewers and manhole structures, and in limited instances, excavation of existing sewers for replacement. Right-of-way restoration will be performed on any disrupted areas. The impact of the project will be improved customer satisfaction and safe reliable service delivery of sewage sewer conveyance to the Water Resource Recovery Facility. The temporary impact of construction activities will be minimized largely through extensive use of trenchless technologies, along with mitigation measures specified in the contract documents. Adverse impacts on historical, archaeological, geographic, or cultural areas are not expected. This project is necessary to ensure that DWSD will consistently and reliably provide sewer conveyance to the Water Resource Recovery Facility. The total cost of the loan eligible portions of these two (2) projects is currently estimated at approximately **\$25,628,000**, which is being sought through the SRF low interest loan program. The Sewer Rehabilitation projects are eligible for participating under the State of Michigan low interest SRF loan program.

# Public Hearing for Sewer Rehabilitation

## FY20 State Revolving Fund (SRF) Project Plan

- The Public Hearing will present a description of the recommended project, estimated costs, as well as the estimated cost per household impact for customers for the loan eligible loan. The typical residential customer bill for sewer disposal in the city of Detroit is expected to increase by no more than 0.64% assuming that low interest loans can be obtained through the SRF loan program. The purpose of the hearing is not only to inform, but to seek and gather input from people that will be affected. Comments and viewpoints from the public are encouraged.

### THE MEETING WILL BE HELD ON:

**DATE:** WEDNESDAY, JUNE 19, 2019

**PLACE:** UNITY BAPTIST CHURCH

7500 TIREMAN AVENUE

DETROIT, MI 48204

**TIME:** 6 P.M.

### Information on the Project Plan will be available at the following locations:

City Website: [Detroitmi.gov/dwsd](http://Detroitmi.gov/dwsd) OR Detroit Water and Sewerage Department Water Board Building, 735 Randolph, First Floor Detroit, Michigan 48226

### If you have questions or want to submit written statements for the Public Hearing Record, call or write:

(313) 964-9269, Monica Daniels

Detroit Water and Sewerage Department 735 Randolph, 7th Floor Detroit, MI 48226

Written comments will be accepted at the above address if received prior to 1:00 p.m. EST, Tuesday, June 18, 2019.

# Advantages to DWSD



- Disadvantaged Community Determination based on debt service on the upcoming loan will be charged to the City customers
- DWSD's disadvantaged status allows for a 30-year term option instead of 20-year
- Possible principal forgiveness subsidy or other subsidy not yet defined
  - Last year DWSD applied for DWRF \$15.9M @ 2.5% rate with loan forgiveness offered \$4.7M.
  - 3 projects near completion funded by DWRF total of \$24.4M of which \$4M forgiven (incl: one joint project w/GLWA)

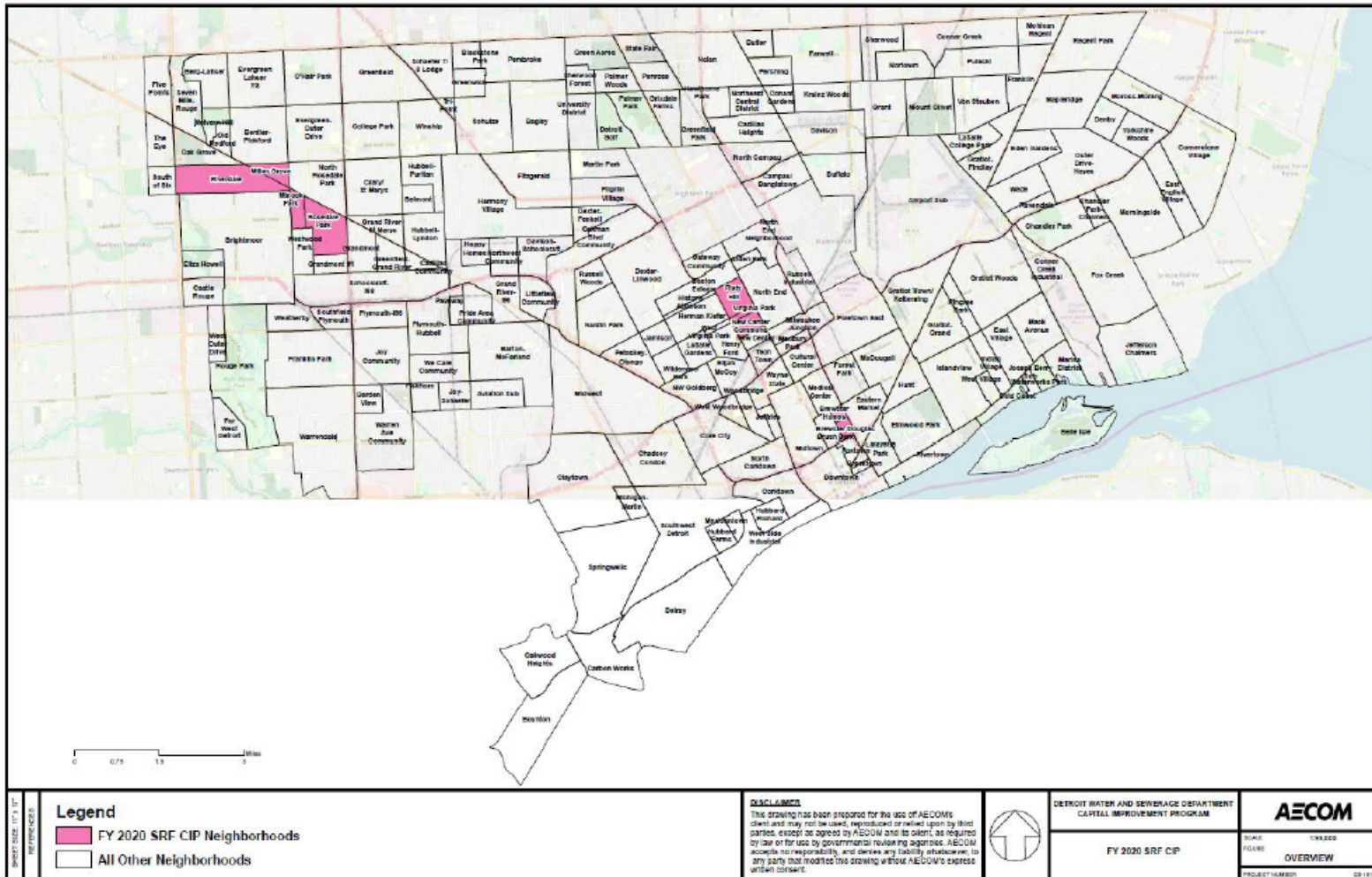
# Study Area and Project Zone

- **Location**
- **Project A – Five High Priority Neighborhoods**
- These neighborhoods comprise:
  - 1. Piety Hill
  - 2. New Center Commons
  - 3. Virginia Park
  - 4. Brewster Douglass
  - 5. Brewster Homes
- **Project B – Four Westside Neighborhoods**
- These neighborhoods comprise:
  - 1. Riverdale
  - 2. Miller Grove
  - 3. Minock Park
  - 4. South Rosedale Park

>>Excerpt from *page 7* of the Project Plan



DETROIT  
Water & Sewerage  
Department



>>Excerpt from [page 8](#) of the Project Plan

6/14/2019

## Need for the State Revolving Fund (SRF) Project

- Pipe and manhole interventions determined by condition assessment
- Field data collection and evaluation following National Association of Sewer Service Company (NASSCO) processes and ratings
  - Sewer pipes
  - Manholes
- Primary criterion used to determine candidates for rehabilitation and replacement is structural integrity
- Eligible assets for SRF funding must have been identified with the following structural defect classification:
  - Grade 4 (Significant)
  - Grade 5 (Most Significant)

>>Excerpt from *page 13* of the Project Plan



## Project A – Five High Priority Neighborhoods

- There are approximately **10 miles** of pipe in Project A neighborhoods in total needing an intervention, ranging in size from 10-inch to 54-inch.
  - Approximately **4.5 miles are loan eligible** based upon SRF structural defect requirements.
- The pipe material includes brick, concrete, crock, PVC, reinforced concrete, vitrified clay, unknown and CIPP lined.

>>Excerpt from **page 9** of the Project Plan

# Project B – Four Westside Neighborhoods



- It is estimated approximately 28 miles of pipe in Project B neighborhoods in total needing an intervention, ranging in size from 8-inch to 180-inch.
  - It is estimated approximately *11 miles are loan eligible* based upon SRF structural defect requirements.
- The pipe material includes brick, concrete, crock, PVC, vitrified clay, unknown and CIPP lined.
- Not all of the pipe in Project B has been televised.

>>Excerpt from *page 11* of the Project Plan

# Sample Manhole Defect from a Manhole in the Five High Priority Neighborhoods



>>Excerpt from *page 14* of the Project Plan

## Alternatives Considered

### Alternative 1 – Continued Repair of Existing Sewers

- Time consuming, costly and a drain on DWSD resources
- Pose a potential increase in public health risk
- Emergency repairs are not “pre-scheduled”, and crews must respond
- Emergency point repairs to fix the immediate failures do not address other “at risk” locations on the same pipe
- Continued repair is not a sustainable means for preserving an aging buried asset
- Alternative 1 is not considered a viable alternative

*>>Excerpt from [page 16](#) of the Project Plan*

## Alternatives Considered (continued)

### Alternative 2 – Sewer Main Selected Rehabilitation/Replacement

- Rehabilitation by cured-in-place (CIPP) methods have a 50 year useful life
- CIPP is a trenchless technology and is a cost effective intervention
- CIPP can be performed on entire pipe sections or point repairs
- Pipe replacements will be utilized where hydraulic modeling identifies a need for increased capacity to handle existing flows
- Alternative 2 is a viable alternative

>>Excerpt from *page 16* of the Project Plan

## Alternatives Considered (continued)

### Alternative 3 – Sewer Main Replacement Only

- Replacement would have a 50+ year useful life
- Replacement would be performed by traditional “open cut” construction
- Exclusive replacement would be the most expensive to implement
- Exclusive replacement would create the most disruption during construction
- Alternative 3 is a viable alternative

Based upon the alternative that can be most easily implemented with the least disruption to the utility and the rate payers, and the cost analysis, Alternative 2, selected rehabilitation/replacement is the recommended alternative.

>>Excerpt from *pages 16 and 17* of the Project Plan

# Public Notification

- News Publications-**Wednesday, May 29, 2019**
  - Detroit Legal News
  - Detroit News & Detroit Free Press
  - Michigan Chronicle
- DWSD Website



## Item 7 – Environmental Preview/ Review

- The environmental setting for the proposed project is within the city limits and will be done in local urban neighborhoods.
- There is minimal environmental impact as the majority of work will occur within the public right-of-way, where multiple utilities and infrastructure already exists.
- This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, and cementitious lining of manholes. Trenchless technologies will be used extensively on a majority of this project.
- The proposed project will not detrimentally affect the water quality of the area, air quality, wetlands, endangered species, wild and scenic rivers or unique agricultural lands.
- Noise and dust will be generated during construction of the proposed improvements. The contractor will be required to implement efforts to minimize noise, dust and related temporary construction byproducts.
- Street congestion and disruption of vehicular movement may occur for short periods of time on the roads where work is actively being done.

>>Excerpt from *page 41* of the Project Plan

## Notices Sent/Mailed

- Letters with the notice of public hearing were mailed to the following offices and:
  1. City of Detroit Mayor's Office
  2. Wayne County Dept of Health
  3. Wayne County Dept of Public Services
  4. Wayne County Executive Office
  5. SEMCOG
  6. US Coast Guard
  7. US Army Corp of Engineers
  8. US Department of Homeland Security

## Item 10 – Public Involvement

- The project team has pursued contact with the neighborhoods in the Project A and B areas during the initial planning and condition assessment phases leading up to the project plan development.
- Several of the techniques that have been progressively incorporated include: door-to-door outreach; door hangers; movable lawn signs while condition assessment work was being performed; informational meeting with neighborhood association presidents; information provided to the City's Department of Neighborhoods,
- Detroit Economic Growth Corporation District Liaisons and Detroit City Council. A key, required component of this public involvement will be a public hearing outlined in the following sections.
- Notice for the public hearing will be advertised in local publications and will be posted electronically on various websites, social media and through email.
- Comments from the public during the Public Hearing will be addressed and answered by the project team.

## Next Steps

- **May 29, 2019** Publish Public Notice
- **June 19, 2019** Public Hearing (ends 30 day public review)
- **June 26, 2019** Incorporate Public Hearing materials and BOWC approval certification; then submit final to GLWA
- **June 26-June 28, 2019** – Obtain GLWA CEO Signature on Project Plan Submittal form
- **June 26, 2019**-GLWA present to their Board
- **June 26-28, 2019** – Obtain GLWA Board approval certification
- **June 30, 2018** – Submit to MDEQ (via overnight mail)
- **July 1, 2019** –Deadline to submit to MDEQ

# Thank You



[facebook.com/DWSDDetroit](https://facebook.com/DWSDDetroit)



[@DetroitWaterDep](https://twitter.com/DetroitWaterDep)



[@detroitwatersewerage](https://instagram.com/detroitwatersewerage)



# Detroit Board of Water Commissioners Meeting Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

Unity Baptist Church  
 7500 Tireman • Detroit, MI 48204  
 June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
Doris Caswell	19450 Gainsborough	313 537 3211	DCaswell@aol.com
James A. Williams	2630 Richton	313 300 8821	
OSBERN	1526 EDISON	313 408 1285	15805BERN@GMAIL.COM
Freddie George	12717 Riverdale		maena492@gmail.com
Robert Bruce	3039 Montgomery	313-740-1066	
Herbald Tolson	13189 Morica	313-784-1599	
Chris McQu	4877 Braum St Apt 427	(313) 363-8976	
Christal Banner	5953 Bluehill Det	313 882 5475	bennerchar@yahoo.com
Swendolyn Finley-Quiss	71115 Lonsdale Det. 48204	313-930-2320	MSSpaulley@gmail.com
Robert Royall	8151 SIRCATHRON " 48228	313-558 9636	Robert.Royall1979@yahoo.com
Glenda Mc Gadeney	4070 Glendale Det 48238	313 460 7812	
Yvonne Finley	22726 West Chicago Det 48239	313 241-3322	





Detroit Board of Water Commissioners Meeting  
Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

Unity Baptist Church  
7500 Tireman • Detroit, MI 48204  
June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
Jesome Marcus	2286- W Grand Street	313-869-9386	
Connie Boyer	8132 Woodward Ave		
Donna Pitts	14900 Southfield	313-221-0067	
Shirley Johnson	8437 Fairlie	313-933-5196	ShirleySAJ10ATT.NET
Joe Williams	14917 Rosemont	313-836-1299	
Sylvia Ordum	110 W. Parkhurst Pl, Detroit 48203	734-846-9445	Smorduno@yahoo.com
Ed Osann	1152 15 <sup>th</sup> St, NW Wash. DC 20005	202-289-6865	osann@nrdc.org
Sarah Alvarez	4410 Bonanza Ave	734 358 6669	sarah@otticmedia.org
Debra Cummings		313 656-4329	
CHRISTA GRISWOLD	18500 HUBBELL	313 300-6352	
Lucille Smith	8223 Clayenda	313-283 1456	
Ann Solomon	14111 Mettetal Det 48227	313-719-5115	





Detroit Board of Water Commissioners Meeting  
Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

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7500 Tireman • Detroit, MI 48204  
June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
Tracey Teger	29429 Taurus Street Madison Heights	630-398-2326	tracey.teger@hotmail.com
Kelly Donnellan	1123 Midland Blvd #1 P.O.	2023412408	eu2264@wayne.edu
Matilda Taylor	22323 Pickford Detroit 48209	313-585-9397	tilletaylor@sbcglobal.net
Deeie Carter	7186 Alameda Rd. 48204	313-935-1284	RhondaCarter@att.net
Ryan Ruggero	35720 Rutherford Clinton Twp. 48035	586-630-8352	RyanRuggero@gmail.com
Erin Mette	4176 Audubon, Detroit 48224	616-915-9771	erin.mette@glelc.org
Densie Fawkes	2541 N. LaSalle St. Detroit MI 48206	3138943966	
Ajia Mitchell	←	(313)208-3293	aj.nettel@gmail
Robert H Brown	12445 Mackenzie	(313) 258 6802	—
James Smith	—	712-421-1536	—
Jallie Stanford	12315 Elsie Detroit MI 48204	313 658-4356	Stanford433@gmail
Thomas Roberts	2141 S. Tharby Westland MI 48086	734-233-7644	ATRoberts@westlandmi.org





Detroit Board of Water Commissioners Meeting  
Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

Unity Baptist Church  
7500 Tireman • Detroit, MI 48204  
June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
Jim Alexander			
C. Meadows	8542 Boulder	313 955 3150	Chadmeadows@aol.com
Wm M. Davis	8557 Appolinian	313 602-6136	NAN4detroit@gmail.com
B Walls	8541 Bryden	313-718-7930	belinda@bills@gmail.com
Lisa Gonzalez	5800 Concho	313502 7881	Lisa Gonzalez 313644100.com
Ada Edwards	5161 Maxwell	313 923-3951	
Rosetta T. Sharp	4530 N. Lasalle Gardens	313 1330 6803	thebigbadp@earthlink.net
Willie Mae Martin	5530 Greenway St. Detroit, MI 48204	313 933 8493	none
Connie L. Mitchell	5525 Greenway St. Detroit, MI 48204	313 701 1187	dreamie50@gmail.com
Melissa Reed	6057 Franklin Pte Grand Blanc 48437		Melissa.Reed.veil@gmail.com
Audrey Ayala	700 Pingree, Detroit, MI 48202	248-982-8243	ayala883@gmail.com
Thomas Hardiman	620 Clairpinto Wds, DC	313 515-1086	Thomas.Hardiman@ecorp.com





Detroit Board of Water Commissioners Meeting  
Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

Unity Baptist Church  
7500 Tireman • Detroit, MI 48204  
June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
K. Green	PO Box 10023 Det 48210	313 933 8366	CUTTLECAP 313@gmail
Shann Long	7697 Braden 48210	313 212-4545	
Vince Battaglia	528 W. Woodward st ne 48220	—	—
LES CITTE	18949 PLAINFIELD Det 48219		
GARY JERRY	11420 94th Det 48221	208-3417	—
Sylvia Belle	8855 E. Green Dr. 48213	313-657-2893	Sylvia Belle@ol.com
Ch. Hall	1182 W. Boston BLVD 48202	313 442.3932	Challene@ol.com
Christopher Hood	<del>6222 Steward</del> Compass Strategies	313-728-4788	christopher@ol.com
Gloria J Killersum	14200 Rosemont - Det 48223	313-318-1253	gloria.killersum@ol.com
Beth S BARROW	11343 Robson Det 48227	313-272-9175	beth.barrow@ol.com
Edward Becker	1260 Colonial Dr Inkster MI 48141	313-322-9541	
Rayland Hargis	28 Breen Irvington NJ	929 258 5444	Jeybe Supreme





Detroit Board of Water Commissioners Meeting  
Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project

Unity Baptist Church  
7500 Tireman • Detroit, MI 48204  
June 19, 2019 • 6:00 p.m.

NAME	ADDRESS	PHONE	EMAIL
Ross Bellant	19619 Helen	368 2148	
Stephanie Hopson	13212 Ardmore		handguest@aol.com
Alancee L. Alston	<del>1888</del> 5031 Oakman Blvd	313-935-5008	
Cass Charrette			casscharrette@gmail.com
Alex Novak	663 Prentiss St.	313-447-0132	anovak@greatlakes.org
Vernetta West	9590 Ward 48227	313-397-8734	westverneta@yahoo.com
Andre Brooks	440 Bouverie St 48202	313 4752549	
Amie Jacobs	8088 American 48204	313 354-6759	
Jerome Train	7310 Woodward 48202	313 524-7925	
Kenneth Leonard	14177 Rosemont Det MI 48223	313 2201369	kenlow77@yahoo.com
Tanya Glover	2677 Leona Det 48238	313 5981244	<del>Tanya Glover</del> <i>Tanya Glover family@tanyaglover.com</i>
Joseph H. Dillions	8141 Central	(313)934-4505	



**Detroit Board of Water Commissioners Meeting**

**Detroit Water & Sewerage Department Public Hearing for Sewer Rehabilitation FY20 State Revolving Fund (SRF) Project**

**Unity Baptist Church**  
**7500 Tireman • Detroit, MI 48204**  
**June 19, 2019 • 6:00 p.m.**

[illegible]

MEDIA SIGN-IN

Detroit Board of Water Commissioners Meeting and Public Hearing on State Revolving Fund Proposed Sewer Upgrade Projects

Unity Baptist Church  
7500 Tireman • Detroit, MI 48204  
June 19, 2019  
6:00 p.m.

YOUR NAME	MEDIA OUTLET	PHONE	EMAIL
Stephanie V. Davis	WWJ 9500	248-945-9950	Stephanie.J.Davis@wwj.com

## APPENDIX C

### PROJECT PLAN CORRESPONDENCE



June 5, 2019

Ms. Paula Carrick, THPO  
Bay Mills Indian Community  
12140 W. Lakeshore Drive  
Brimley, MI 49715

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Ms. Carrick:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

Enclosed is a draft Project Plan of the proposed improvements. This notice and opportunity to comment is being sent to you to fulfill Section 106 of the National Historic Preservation Act review process, which requires a federal agency or applicant to consult with THPOs and federally recognized Indian tribes. The purpose of this notice is to give you an opportunity to have your interests and concerns considered. We request that your review the attachments and provide comments regarding impact to religious or culturally significant tribal lands to our office within 30 days.

If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Ms. Cindy Winslow  
Grand Traverse Band of Ottawa and Chippewa Indians  
2605 NW Bayshore Drive  
Peshawbetown, MI 49682

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Ms. Winslow:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. Earl Meshigaud  
Hannahville Potawatomi Indian Community  
N-14911 Hannahville B-1 Road  
Wilson, MI 49896

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State  
Revolving Fund (CWSRF) Draft Project Plan

Dear Mr. Meshigaud:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. Gary Loonsfoot, Jr., THPO  
Keweenaw Bay Indian Community  
16429 Bear Town Road  
Baraga, MI 49908

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Loonsfoot:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. Giiwegiizhigookway Martin, THPO  
Lac Vieux Desert Band of Lake Superior Chippewa Indians  
P.O. Box 249  
Watersmeet, MI 49969

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Martin:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. Jay Sam, Director  
Little River Band of Ottawa Indians  
2608 Government Center Drive  
Manistee, MI 49660

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Sam:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)



June 5, 2019

Mr. Wes Andrews  
Little Traverse Bay Band of Odawa  
7500 Odawa Circle  
Harbor Springs, MI 49740

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Andrews:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Ms. Heather Bush  
Match-e-be-nash-shee-wish Band of Potawatomi Indians  
2872 Mission Drive  
Shelbyville, MI 49344

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Ms. Bush:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mon-ee Zapata, Cultural Specialist  
Nottawaseppi Band of Huron Potawatomi  
1485 Mno-Bmadzewen Way  
Fulton, MI 49052

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mon-ee Zapata:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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Robert Green, PE  
Task Manager  
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[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. Marcus Winchester, THPO  
Pokagon Band of Potawatomi  
58620 Sink Road  
Dowagiac, MI 49047

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Winchester:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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Task Manager  
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[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Mr. William Johnson, Interim THPO  
Saginaw Chippewa Indian Tribe of MI  
6650 E. Broadway  
Mt. Pleasant, MI 48858

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Mr. Johnson:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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Task Manager  
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[bob.green@aecom.com](mailto:bob.green@aecom.com)

June 5, 2019

Colleen Medicine  
Sault Ste. Marie Tribe of Chippewa  
523 Ashmun  
Sault Ste. Marie, MI 49783

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
Fund (CWSRF) Draft Project Plan

Dear Ms. Medicine:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

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Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)

Green, Bob

---

From: Jay Sam <jsam@lrboi-nsn.gov>  
Sent: Tuesday, June 11, 2019 3:54 PM  
To: Green, Bob  
Subject: Detroit Water and Sewer plan

Mr. Green,

I have received your notification requesting a determination as to whether or not the proposed water and sewer project will affect Indian religious, historic or cultural sites. This is the Tribe's formal answer.

Referencing the mail, I can reply by stating that the site listed is located in a region of the state of Michigan that Little River Band of Ottawa Indians did not occupy significantly.

Further, after a careful review of our information the Little River Band of Ottawa Indians has determined there that this project will not affect any religious, cultural or historic sites of which we are currently aware.

The Tribe would, however, appreciate work stopping and being contacted should there be something cultural or historic discovered.

Signed

A handwritten signature in blue ink, appearing to read "Jonnie Sam II", with a stylized flourish at the end.

Jonnie Sam II, Director  
Little River Band of Ottawa Indians  
Historic Preservation Department

Jonnie JSam II  
Director, Historic Preservation Department  
Little River Band of Ottawa Indians  
2608 Government Center Drive  
Manistee MI 49660



*Little Traverse Bay Bands of Odawa Indians  
Tribal Historic Preservation Office  
7500 Odawa Circle  
Harbor Springs, MI 49740*

Date: 6-25-19

AECOM  
27777 Franklin Road  
Southfield, MI 48034

Re: **Detroit water and sewerage departments FY2020 Clean water state revolving fund draft project plan  
Contract CS-1812**

Aanii (Hello),

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above cited undertaking at the location provided. Based on the information the notice of undertaking for the project the Little Traverse Bay Bands of Odawa Indians Tribal Historic Preservation Office is pleased to offer a finding of “**No Known historic, traditional religious, and cultural significance properties that will be affected**”. In the event that human remains or archaeological materials are exposed as a result of project activities work must halt and the Tribes must be included in any consultation regarding treatment and disposition of the find prior to removal.

This letter evidences the AECOM compliance with 36 CFR 800.2(c)(2)(ii) “Consultation on historic properties of significance to Indian tribes and Native Hawaiian organizations” and the fulfillment of the AECOM responsibility to notify THPO/SHPO, as a consulting party in Section 106 process.” **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify SHPO/THPO office immediately.**

Your interest in protecting Michigan’s cultural and historic properties is appreciated. If you have any questions, please contact me at 231-242-1408 or by email at [mwiatrolik@ltbbodawa-nsn.gov](mailto:mwiatrolik@ltbbodawa-nsn.gov).

Miigwech (Thank you) for the opportunity to review and comment, and for your cooperation.

Melissa Wiatrolik  
LTBB Interim Tribal Historic Preservation Officer  
NAGPRA Representative/MACPRA Treasurer



Pokégnek Bodéwadmik • Pokagon Band of Potawatomi  
Department of Language and Culture

---

59291 Indian Lake Road • Dowagiac, MI 49047 • [www.PokagonBand-nsn.gov](http://www.PokagonBand-nsn.gov)  
(269) 462-4316 • (269) 782-2499 fax

6/27/2019

Robert Green, PE  
Task Manager  
Phone: 1-248-204-4140  
E-mail: [Bob.green@aecom.com](mailto:Bob.green@aecom.com)

AECOM – Detroit Water and Sewerage Departments FY2020 Clean Water State  
Revolving Fund Draft Project Plan

Dear Responsible Party:

Migweth for contacting me regarding these projects. As THPO, I am responsible for handling Section 106 Consultations on behalf of the tribe. I am writing to inform you that after reviewing the details for the project referenced above, I have made the determination that there will be No Historic Properties in Area of Potential Effects (APE) significant to the Pokagon Band of Potawatomi Indians. However, if any archaeological resources are uncovered during this undertaking, please stop work and contact me immediately. Should you have any other questions, please don't hesitate to contact me at your earliest convenience.

Sincerely,

Matthew J.N. Bussler  
Tribal Historic Preservation Officer  
Pokagon Band of Potawatomi Indians  
Office: (269) 462-4316  
Cell: (269) 519-0838  
[Matthew.Bussler@Pokagonband-nsn.gov](mailto:Matthew.Bussler@Pokagonband-nsn.gov)

June 5, 2019

Sir or Madam  
Michigan Natural Features Inventory Environmental Review  
P.O. Box 30444  
Lansing, MI 48909-7944

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving  
(CWSRF) Fund Draft Project Plan

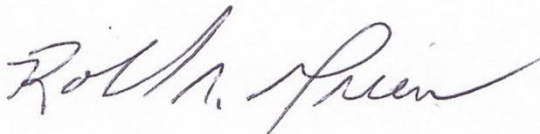
Dear Sir or Madam:

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

Enclosed is a draft Project Plan of the proposed improvements. We request that comments regarding impacts to natural feature inventory environmental review be returned to our office within 30 days.

If you should have any questions on the enclosed information, please contact our office.

Sincerely,



Robert Green, PE  
Task Manager  
D +1-248-204-4140  
M +1-313-304-6614  
[bob.green@aecom.com](mailto:bob.green@aecom.com)



# MICHIGAN STATE UNIVERSITY | Extension

## Information Agreement

The Michigan Natural Features Inventory (MNFI) is a member of the Natural Heritage Program Network and is part of Michigan State University Extension. MNFI is an organization of professionals dedicated to the conservation of Michigan's special natural features. MNFI has the responsibility for inventorying and collecting information about the state's "elements of biological diversity". These data are used to guide conservation and land management activities throughout the state.

MNFI manages an ongoing and continuously updated information and research database. The database is proprietary and the most comprehensive single source of existing information on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. This database cannot provide a definitive statement on the presence, absence, or condition of the natural features in any given locality, since most sites have not been specifically or thoroughly surveyed. Furthermore, plant and animal populations and natural communities change with time. Therefore, the information services provided should not be regarded as a complete statement on the occurrence of special natural features of the area in question. In many cases the information may require the interpretation of a trained scientist.

The recipient(s) of the information understand that state endangered and threatened species are protected under state law (Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection). Any questions, observations, new findings, violations or permitting of project activities should be conducted with the Michigan Department of Natural Resources, Wildlife Division. Contact the Endangered Species Coordinator at (517) 284-6194. The recipient(s) of the information understand that federally endangered and threatened species are protected under federal law (Endangered Species Act of 1973). Any questions, observations, new findings, violations or permitting of project activities should be conducted with the U.S. Fish and Wildlife Service in East Lansing. Their phone number is (517) 351-2555. Recipients of the information are responsible for ensuring the protection of protected species before project activities begin.

MNFI is a not-for-profit entity and fees for the data are turned back into database maintenance and program support. The costs for information can be obtained on our website [MNFI.ANR.MSU.EDU](http://MNFI.ANR.MSU.EDU) under the services heading.

By acceptance of the information services made available through MNFI, the recipient understands that access to the information is provided for primary use only. MNFI requests that the user respect the confidential and sensitive nature of the information and restrict access to only those individuals requiring the information for the primary use. There should be no redistribution of the information. Distribution of information regarding locations of many rare species represents a threat to their protection. Additionally, since the information is constantly being updated MNFI requests that any information service provided by MNFI is destroyed upon completion of the primary use. This information should be considered valid for one year only.

The user should identify MNFI as information contributors on any map or publication using MNFI information, as follows: **Michigan Natural Features Inventory. [Year]. Biotics 5 - Michigan's Natural Heritage Database. Lansing, Michigan. (Accessed: Month Day, Year).** Abbreviations are acceptable on maps if referenced in full on accompanying documents.

Rare Species Review #2415, Detroit Water/Sewerage Dept. FY20 CWSRF Project Plan, Wayne County, MI

- ☒ Standard turn around  
☐ Eight-day turn around

Project or primary use of Information: Review of data for potential impacts to protected and rare species

Description of information: For the intended project area and 1.5 miles surrounding.

Recipient (Please Print)

ROBERT A. GREEN

Signature

*Robert A. Green*

Organization/Association

AECOM

Date

6/17/2019



### MSU EXTENSION

#### Michigan Natural Features Inventory

P.O. Box 13036  
Lansing, MI 48901

(517) 284-6200  
fax: (517) 373-9566

[mnfi.anr.msu.edu](http://mnfi.anr.msu.edu)

## Michigan Natural Features Inventory

Michigan Natural Features Inventory  
P.O. Box 13036  
Lansing MI., 48901-3036  
517-284-6200  
mnfi@msu.edu

Receipt Number: 3659975

MSU Online  
Current Date: 06/17/2019

Name: AECOM - Robert Green  
Address: 27777 Franklin Road, Ste 2000  
City: Southfield  
Zip Code/Postal Code: 48243  
e-mail: bob.green@aecom.com

Description	Amount	Tax
Standard Rare Species Review	\$330.00	
Company or Agency Name: AECOM		
<b>Total</b>	<b>\$330.00</b>	

Payments Received	Amount
MSU CC Payment	\$330.00
MasterCard XXXXXXXXXXXX6105	
Authorization # 07227Z	
<b>Total</b>	<b>\$330.00</b>

This payment will appear on your statement as Michigan State University



Mr. Robert Green, PE  
AECOM  
27777 Franklin Road, Suite 2000  
Southfield, MI 48034  
(248) 204-4140

June 20, 2019

**Re: Rare Species Review #2415 – Detroit Water and Sewerage Department's FY2020  
Clean Water State Revolving Fund Draft Project Plan, City of Detroit, Wayne County, MI.**

Mr. Green:

The location for the proposed project was checked against known localities for rare species and unique natural features, which are recorded in the Michigan Natural Features Inventory (MNFI) natural heritage database. This continuously updated database is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features. The absence of records in the database for a particular site may mean that the site has not been surveyed. The only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ...fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Michigan Department of Natural Resources (MDNR), Wildlife Division. Responsibility to protect endangered and threatened species is not limited to the lists below. Other species may be present that have not been recorded in the database.



**MSU EXTENSION**

**Michigan Natural  
Features Inventory**

PO Box 13036  
Lansing MI 48901

(517) 284-6200  
Fax (517) 373-9566

mnfi.anr.msu.edu

Several legally protected and rare species have been documented within 1.5 miles of the project site. However, due to the nature and urban location of this activity, **it is not likely** that negative impacts will occur. Keep in mind that MNFI cannot fully evaluate this project without visiting the project site. MNFI offers several levels of [Rare Species Reviews](#), including field surveys which I would be happy to discuss with you.

Sincerely,

*Michael A. Sanders*

Michael A. Sanders  
Environmental Review Specialist/Zoologist  
Michigan Natural Features Inventory

**Comments for Rare Species Review #2415:** It is important to note that it is the applicant's responsibility to comply with both state and federal threatened and endangered species legislation. Therefore, if a state listed species occurs at a project site, and you think you need an endangered species permit please contact: Casey Reitz, Wildlife Division, Michigan Department of Natural Resources, 517-284-6210, or [ReitzC@michigan.gov](mailto:ReitzC@michigan.gov). If a federally listed species is involved and, you think a permit is needed, please contact Ms. Carrie Tansy, Endangered Species Program, U.S. Fish and Wildlife Service, East Lansing office, 517-351-8375, or [Carrie\\_Tansy@fws.gov](mailto:Carrie_Tansy@fws.gov).

Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Species classified as special concern are species whose numbers are getting smaller in the state. If these species continue to decline they would be recommended for reclassification to threatened or endangered status.

Please consult MNFI's [Rare Species Explorer](#) for additional information regarding the listed species.

**Table 1: Occurrences of threatened & endangered species within 1.5 miles of RSR #2415**

ELCAT	SNAME	SCOMNAME	USESA	SPROT	G_RANK	S_RANK	FIRSTOBS	LASTOBS
Animal	<i>Moxostoma carinatum</i>	River redhorse		T	G4	S2	1984	1984-09
Animal	<i>Falco peregrinus</i>	Peregrine falcon		E	G4	S3	1993	2018
Animal	<i>Obovaria subrotunda</i>	Round hickorynut		E	G4	S1	1933-07-12	1933-07-12
Animal	<i>Alasmodonta viridis</i>	Slippershell		T	G4G5	S2S3	1933-07-12	1933-07-12
Animal	<i>Euphyes dukesi</i>	Dukes' skipper		T	G3	S2	1951	1951
Animal	<i>Pantherophis gloydi</i>	Eastern fox snake		T	G3	S2	2011-06-01	2011-06-01
Animal	<i>Pantherophis gloydi</i>	Eastern fox snake		T	G3	S2	2005-05-27	2014-05-25
Plant	<i>Galearis spectabilis</i>	Showy orchis		T	G5	S2	1916	1916-05-26
Plant	<i>Galearis spectabilis</i>	Showy orchis		T	G5	S2	1870	1870-05-15
Plant	<i>Galearis spectabilis</i>	Showy orchis		T	G5	S2	1929	1933-07-11
Plant	<i>Galearis spectabilis</i>	Showy orchis		T	G5	S2	1916	1928-06-28

**Of concern from Table 1:** No concerns.

**Table 2: Occurrences of special concern species & other rare natural features within 1.5 miles of RSR #2415**

ELCAT	SNAME	SCOMNAME	USESA	SPROT	G_RANK	S_RANK	FIRSTOBS	LASTOBS
Animal	<i>Pleurobema sintoxia</i>	Round pigtoe		SC	G4G5	S3	1933-07-12	1933-07-12
Animal	<i>Villosa iris</i>	Rainbow		SC	G5Q	S3	1933-07-12	1933-07-12
Animal	<i>Cincinnatia cincinnatiensis</i>	Campeloma spire snail		SC	G5	S3		
Animal	<i>Bombus affinis</i>	Rusty-patched bumble bee	LE	SC	G1	SNR	1914-08-30	1914-08-30
Plant	<i>Adlumia fungosa</i>	Climbing fumitory		SC	G4	S3	1929	1929-07-09
Plant	<i>Jeffersonia diphylla</i>	Twinleaf		SC	G5	S3	188?	1933-SP
Plant	<i>Scleria triglomerata</i>	Tall nut rush		SC	G5	S3	1860-06-21	1860-06-21
Plant	<i>Angelica venenosa</i>	Hairy angelica		SC	G5	S3	1934	1934-08-09
Plant	<i>Prosartes maculata</i>	Nodding mandarin		X	G3G4	SX	1922	1922-05-07



Plant	<i>Hybanthus concolor</i>	Green violet		SC	G5	S3	1921	1921-09-28
Plant	<i>Penstemon pallidus</i>	Pale beard tongue		SC	G5	SX	1939-07	1939-07
Plant	<i>Penstemon pallidus</i>	Pale beard tongue		SC	G5	SX	1916	1920-08-21
Plant	<i>Liatris squarrosa</i>	Plains blazing star		X	G5	SX	1904	1904-08-24
Plant	<i>Cerastium velutinum</i>	Field Chickweed		X	G5T4?	SX	1867-05	1867-05

**Of concern from Table 2:** No concerns.

Special concern species and natural communities are not protected under endangered species legislation, but efforts should be taken to minimize any or all impacts. Species classified as special concern are species whose numbers are getting smaller in the state. If these species continue to decline they would be recommended for reclassification to threatened or endangered status.

## **Codes to accompany Tables:**

### **State Protection Status Code Definitions (SPROT)**

E: Endangered

T: Threatened

SC: Special concern

### **Federal Protection Status Code Definitions (USES)**

LE = listed endangered

LT = listed threatened

LELT = partly listed endangered and partly listed threatened

PDL = proposed delist

E(S/A) = endangered based on similarities/appearance

PS = partial status (federally listed in only part of its range)

C = species being considered for federal status

### **Global Heritage Status Rank Definitions (GRANK)**

The priority assigned by [NatureServe](#)'s national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3: Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4: Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5: Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

Q: Taxonomy uncertain

### **State Heritage Status Rank Definitions (SRANK)**

The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

S1: Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.

S2: Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3: Rare or uncommon in state (on the order of 21 to 100 occurrences). S4 = apparently secure in state, with many occurrences.

S5 = demonstrably secure in state and essentially ineradicable under present conditions. SX = apparently extirpated from state.

## Section 7 Comments for Rare Species Review #2415

AECOM

DWSD FY2020 Clean Water SRF Draft Project Plan

City of Detroit

Wayne County, MI

June 20, 2019

### For projects involving Federal funding or a Federal agency authorization

The following information is provided to assist you with Section 7 compliance of the Federal Endangered Species Act (ESA). The ESA directs all Federal agencies “to work to conserve endangered and threatened species. Section 7 of the ESA, called “Interagency Cooperation, is the means by which Federal agencies ensure their actions, including those they authorize or fund, do not jeopardize the existence of any listed species.”

The proposed project falls within the range of eight (8) federally listed which have been identified by the U.S. Fish and Wildlife Service (USFWS) to occur in Wayne County, Michigan:

### Federally Endangered

**Indiana bat** – there appears to be suitable habitat within the 1.5-mile search buffer. Indiana bats (*Myotis sodalis*) are found only in the eastern United States and are typically confined to the southern three tiers of counties in Michigan. Indiana bats that summer in Michigan winter in caves in Indiana and Kentucky. This species forms colonies and forages in riparian and mature floodplain habitats. Nursery roost sites are usually located under loose bark or in hollows of trees near riparian habitat. Indiana bats typically avoid houses or other artificial structures and typically roost underneath loose bark of dead elm, maple and ash trees. Other dead trees used include oak, hickory and cottonwood.

Foraging typically occurs over slow-moving, wooded streams and rivers as well as in the canopy of mature trees. Movements may also extend into the outer edge of the floodplain and to nearby solitary trees. A summer colony's foraging area usually encompasses a stretch of stream over a half-mile in length. Upland areas isolated from floodplains and non-wooded streams are generally avoided.

*Conservation and Management:* the suggested seasonal tree cutting range for Indiana bat is between October 1 and March 31 (i.e., no cutting April 1-September 30). This applies throughout the Indiana bat range in Michigan.

**Northern riffleshell** – there does not appear to be suitable habitat within the 1.5-mile search buffer. The northern riffleshell (*Epioblasma torulosa rangiana*) mussel inhabits medium to large rivers in gravel riffles, where the water is highly oxygenated. This species was formerly widespread in the Midwest, but it has declined in range by more than 95% and now exists in only eight to ten isolated populations, most of which are small and peripheral.

*Conservation and Management:* members of the genus *Epioblasma* seem to be particularly sensitive to impacts from impoundment, which include population fragmentation and streamflow alteration. Other threats include habitat destruction (e.g. channelization, dredging, bulkheading), exotic species introductions, siltation, pollution, and modified streamflows due to wetland loss, dam operation, and intensive landscape modification. The other two subspecies of *E. torulosa*, *E. torulosa torulosa* and *E. torulosa gubernaculum*, appear to have already gone extinct due to modification and degradation of river systems.

**Rayed bean mussel** – there does not appear to be suitable habitat within the 1.5-mile search buffer. The federally and state endangered rayed bean mussel (*Villosa fabalis*) typically occurs in fine mud substrates and riffles among roots of aquatic vegetation. Limits of the breeding season are not known but gravid specimens have been found in May.

*Conservation and Management:* like other mussels, threats to the rayed bean include: natural flow alterations, siltation, channel disturbance, point and non-point source pollution, and exotic species. Maintenance or establishment of vegetated riparian buffers can help protect mussel habitats from many of their threats. Control of zebra mussels is critical to preserving native mussels. And as with all mussels, protection of their hosts habitat is also crucial.

**Snuffbox mussel** – there does not appear to be suitable habitat within the 1.5-mile search buffer. The state and federally endangered snuffbox mussel (*Epioblasma triquetra*) inhabits rivers and streams with cobble, gravel, or sand bottoms in swift currents and usually is deeply buried in the substrate. Glochidia, the parasitic larval stage of the mussel, are released from May to mid-July. In Michigan, the only host fish known for snuffbox is the log perch (*Percina caprodes*). In other parts of their range the banded sculpin (*Cottus caroliniae*) is also a known host. After completing the parasitic stage and reaching adulthood, snuffbox remain relatively sessile on the river bottom, living between 8-10 years. The best time to survey for snuffbox is April through September.

*Conservation and Management:* the snuffbox mussel is sensitive to river impoundment, siltation and disturbance, due to its requirement for clean, swift current and relative immobility as an adult. To maintain the current populations in Michigan, rivers need to be protected to reduce silt loading and run-off. Maintaining or establishing vegetated riparian buffers can aid in controlling many of the threats to mussels. Control of zebra mussels is critical to preserving native mussels. And as with all mussels, protection of their hosts habitat is also crucial. Because the life cycle of the snuffbox is inherently linked with that of the logperch in Michigan, conservation and management of this fish species is needed to ensure that of the snuffbox.

### **Federally Threatened**

**Northern long-eared bat** - although no known hibernacula or roost trees have been documented within 1.5 miles of the project area, this activity occurs within the designated [WNS zone](#) (i.e., within 150 miles of positive counties/districts impacted by WNS). In addition, suitable habitat does exist in and outside of our 1.5-mile search buffer. The USFWS has prepared a [dichotomous key](#) to help determine if this action may cause prohibited take of this bat. Please consult the USFWS [Endangered Species Page](#) for more information.

Northern long-eared bat (*M. septentrionalis*) numbers in the northeast US have declined up to 99 percent. Loss or degradation of summer habitat, wind turbines, disturbance to hibernacula, predation, and pesticides have contributed to declines in Northern long-eared bat populations. However, no other threat has been as severe to the decline as White-nose Syndrome (WNS). WNS is a fungus that thrives in the cold, damp conditions in caves and mines where bats hibernate. The disease is believed to disrupt the hibernation cycle by causing bats to repeatedly awake thereby depleting vital energy reserves. This species was federally listed in May 2015 primarily due to the threat from WNS.

Also called northern bat or northern myotis, this bat is distinguished from other *Myotis* species by its long ears. In Michigan, northern long-eared bats hibernate in abandoned mines and caves in the Upper Peninsula; they also commonly hibernate in the Tippy Dam spillway in Manistee County. This species is a regional migrant with migratory distance largely determined by locations of suitable hibernacula sites.

Northern long-eared bats typically roost and forage in forested areas. During the summer, these bats roost singly or in colonies underneath bark, in cavities or in crevices of both living and dead trees. These bats seem to select roost trees based on suitability to retain bark or provide cavities or crevices. Common roost trees in southern Lower Michigan included species of ash, elm and maple. Foraging occurs primarily in areas along woodland edges, woodland clearings and over small woodland ponds. Moths, beetles and small flies are common food items. Like all temperate bats this species typically produces only 1-2 young per year.

*Conservation and Management:* when there are no known roost trees or hibernacula in the project area, we encourage you to conduct tree-cutting activities and prescribed burns in forested areas during October 1 through March 31 when possible, but you are not required by the ESA to do so. When that is not possible, we encourage you to remove trees prior to June 1 or after July 31, as that will help to protect young bats that may be in forested areas, but are not yet able to fly.

**Eastern prairie fringed orchid** – there does not to be suitable habitat within the 1.5-mile search buffer. The eastern prairie fringed orchid (*Platanthera leucophaea*) occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering and a grassy habitat with little or no woody encroachment. The white blossoms produce a heavy fragrance at dusk that attracts many moths, including the primary pollinators of *P. leucophaea*, hawkmoths (Lepidoptera: Sphingidae). Hawkmoths are likely co-adapted pollinators, since their tongues are long enough to reach the nectar that lies deep in the spur of the flower. Capsules mature in September, releasing hundreds of thousands of airborne seeds. Plants may not flower every year but frequently produce only a single leaf above ground, possibly even becoming dormant when conditions are unsuitable, such as the onset of drought.

*Conservation and Management:* this species requires the maintenance of natural hydrological cycles and open habitat. Activities such as shrub removal are likely to benefit the species, but other management such as prescribed fire is not well understood. Caution and proper monitoring should be employed if using prescribed fire in occupied habitat. Spring fires should be conducted prior to emergence (mid-April). Poaching is also a threat.

**Rufa red knot** – there does not appear to be suitable habitat within the 1.5-mile search buffer. The rufa red knot (*Calidris canutus rufa*) is one of the longest-distance migrants in the animal kingdom, flying some 18,000 miles annually between its breeding grounds in the Canadian Arctic to the wintering grounds at the southernmost tip of South America. Primarily occurring along the Atlantic and Gulf coasts, small groups of this shorebird regularly use the interior of the United States such as the Great Lakes during the annual migration. The Great Lakes shorelines provide vital stopover habitat for resting and refueling during their long annual journey.

The largest concentration of rufa red knots is found in May in Delaware Bay, where the birds stop to gorge on the eggs of spawning horseshoe crabs; a spectacle attracting thousands of birdwatchers to the area. In just a few days, the birds nearly double their weight to prepare for the final leg of their long journey to the Arctic. This species may be especially vulnerable to climate change which affects coastal habitats due to rising sea levels.

*Conservation and Management:* applies to actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30.

**Eastern massasauga rattlesnake (EMR)** – this project falls outside of Tier 1 and Tier2 EMR habitat as designated by the US Fish and Wildlife Service. The federal and state threatened eastern massasauga rattlesnake (*Sistrurus catenatus*) is Michigan's only venomous snake and found in a variety of wetland habitats

including bogs, fens, shrub swamps, wet meadows, marshes, moist grasslands, wet prairies, and floodplain forests. Eastern massasaugas occur throughout the Lower Peninsula but are not found in the Upper Peninsula. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are better known from lowland coniferous forests, such as cedar swamps. These snakes normally overwinter in crayfish or small mammal burrows often close to the groundwater level and emerge in spring as water levels rise. During late spring, these snakes move into adjacent uplands they spend the warmer months foraging in shrubby fields and grasslands in search of mice and voles, their favorite food.

Often described as “shy and sluggish”, these snakes avoid human confrontation and are not prone to strike, preferring to leave the area when they are threatened. However, like any wild animal, they will protect themselves from anything they see as a potential predator. Their short fangs can easily puncture skin and they do possess potent venom. Like many snakes, the first human reaction may be to kill the snake, but it is important to remember that all snakes play vital roles in the ecosystem. Some may eat harmful insects. Others like the massasauga consider rodents a delicacy and help control their population. Snakes are also a part of a larger food web and can provide food to eagles, herons, and several mammals.

*Conservation and Management:* any sightings of these snakes should be reported to the Michigan Department of Natural Resources, Wildlife Division. If possible, a photo of the live snake is also recommended.

USFWS Section 7 Consultation Technical Assistance can be found at:

<https://www.fws.gov/midwest/endangered/section7/s7process/index.html>

The website offers step-by-step instructions to guide you through the Section 7 consultation process with prepared templates for documenting “no effect.” as well as requesting concurrence on “may affect, but not likely to adversely affect” determinations.

Please let us know if you have questions.

Mike Sanders  
Environmental Review Specialist/Zoologist  
[Sander75@msu.edu](mailto:Sander75@msu.edu)  
517-284-6215





[Conserving the nature of America](#)

## S7 Consultation Technical Assistance Decision Process for "No Effect" Determinations

### Projects within a Developed Area - Step 5

#### Step 5: "No Effect" Determination and Documentation

[In the Midwest](#)

[USFWS Midwest](#)

[Midwest Ecological  
Services](#)

[Contact Us](#)

Your project will have "no effect" on federally listed species. A "No Effect" determination is appropriate because your project is:

- within a Developed Area (an area that is already paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping), and
- is not within or adjacent to any unlandscaped areas that support native vegetation (trees, shrubs, or grasses).

Since your project is not within suitable habitat for listed species, no listed species or designated critical habitat is anticipated to be directly or indirectly affected by this action.

#### Section 7 Consultation

[Midwest Endangered  
Species Home](#)

[Section 7 Home](#)

[Section 7: A Brief  
Explanation](#)

[Section 7: Technical  
Assistance](#)

[Biological Assessment  
Guidance](#)

[Section 7 Consultation  
Handbook](#)

[Contact Us](#)

To document your section 7 review and "no effect" determination, we recommend that you print this page (go to [File > Print Preview](#)), fill-in the project name and date, attach your [species list](#), and file in your administrative record.

**Project Name:** CIPMO Sewer Rehabilitation Project

**Date:** 6-11-2019

[Back](#)  
[Home - "No Effect" Determination Process](#)

#### Endangered Species Program

*The mission of the U.S. Fish and Wildlife Service's Endangered Species program is conserving and restoring threatened and endangered species and their ecosystems.*

**U.S. Fish and Wildlife  
Service in the Midwest**



*The Midwest Region  
includes Illinois, Indiana,  
Iowa, Michigan,  
Minnesota, Missouri, Ohio  
and Wisconsin.*

[Find a location near you »](#)

## SPECIES LIST FOR WAYNE COUNTY

<b>Wayne</b>	<a href="#"><u>Indiana bat</u></a> ( <i>Myotis sodalis</i> )	Endangered	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
	<a href="#"><u>Northern long-eared bat</u></a> <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer.
	<a href="#"><u>Rufa Red knot</u></a> ( <i>Calidris canutus rufa</i> )	Threatened	Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30
	<a href="#"><u>Eastern massasauga</u></a> ( <i>Sistrurus catenatus</i> )	Threatened	
	<a href="#"><u>Northern riffleshell</u></a> ( <i>Epioblasma torulosa rangiana</i> )	Endangered	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie
	<a href="#"><u>Eastern prairie fringed orchid</u></a> ( <i>Platanthera leucophaea</i> )	Threatened	Mesic to wet prairies and meadows

Mr. William Parkus  
SEMCOG  
1001 Woodward Avenue  
Suite 1400  
Detroit, MI 48226

June 4, 2019

Re: Detroit Water and Sewerage Department's FY2020 Clean Water State Revolving Fund (CWSRF)  
Draft Project Plan

Mr. Parkus,

The Detroit Water and Sewerage Department (DWSD) is preparing a Project Plan to be submitted to the Michigan Department of Environment, Great Lakes and Energy for the CWSRF program. The Project Plan proposes to rehabilitate in place and do limited replacement of sewer lines. The proposed improvements are located under various street and ally right-of ways within the City of Detroit corporate boundary.

Enclosed please find the draft of the FY2020 SRF Project Plan for rehabilitate in place and do limited replacement of sewer lines for SEMCOG's review and comment. We respectfully request that SEMCOG's comments be returned to our office within 30 days.

If you should have any questions on the enclosed information, please contact our office.

Yours sincerely,



Robert Green  
Task Manager  
AECOM  
M: 313-304-6614  
E: [bob.green@aecom.com](mailto:bob.green@aecom.com)

Enclosures

Cc: Eg Hug, SEMCOG  
Monica Daniels, DWSD

# **CITY OF DETROIT**

## **Water and Sewerage Department**



### **Sewer Rehabilitation Project**

### **DRAFT Streamlined Project Plan**

**April 2019**

**Mike Duggan  
Mayor**

Gary Brown  
Director

Michael Einheuser  
Chairperson  
Board of Water Commissioners



**City of Detroit**  
**Mike Duggan, Mayor**  
**Detroit City Council**

Brenda Jones, President

Mary Sheffield, President Pro Tem

Janeé Ayers

Scott Benson

Raquel Castañeda-López

Gabe Leland

Roy McCalister, Jr.

André L. Spivey

James Tate

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# Item 1 - Project Definition and Overview

A task being performed by AECOM under the Detroit Water and Sewerage Department (DWSD) contract CS-1812, Capital Improvement Program Management Organization (CIPMO), is the assessment and evaluation of existing sewer collection mains and manholes in targeted locations within the City of Detroit. The primary criterion being used to determine if sewer collection mains and manholes will be scheduled for either rehabilitation or replacement is the structural integrity of the assets based upon National Association of Sewer Service Companies (NASSCO) PACP CCTV and MACP ratings respectively.

Work planned for FY2020 (07/01/2019 – 06/30/2020) through FY 2023 capital expenditure is derived from the assessments/evaluations performed in the five City of Detroit neighborhoods known as the Five High Priority Neighborhoods of Brewster Homes, Brewster-Douglass, New Center Commons, Virginia Park and Piety Hills (Project A) and the Four Westside Neighborhoods of Riverdale, Miller Grove, Minock Park and South Rosedale Park (Project B). It is anticipated that construction will commence in May 2020 and be completed by October 2022.

## Project A – Five High Priority Neighborhoods

### Project Status

All CCTV and manhole inspections have been completed in the project area and preliminary intervention recommendations have been provided to DWSD. It is expected that minor changes will be made to the proposed interventions as project design begins.

### Full Project

From the assessments/evaluations in these neighborhoods, AECOM has recommended to DWSD the rehabilitation or replacement of approximately 51,281 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter in addition to 82 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$7,750,000.

### Loan-Eligible Portion of the Project

As only repairs to address defects that had a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 23,125 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter and 23 manhole repairs appear to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$5,000,000.

## Project B – Four Westside Neighborhoods

### Project Status

CCTV inspection and manhole surveys are currently being performed by an inspection company through an existing contract with DWSD. 53% of CCTV inspections and no manhole inspections in the project area have been provided to AECOM. As a result, no preliminary intervention recommendations have been provided to DWSD. The available CCTV data collected to-date in the last 18 months for the Pilot Project

areas of North Rosedale Park and Cornerstone Village, the Five High Priority Neighborhoods (Project A), and the Westside Four (Project B) Neighborhoods indicates an average percentage of CCTV with Grade 4 or 5 Defects of 30%. As the total footage is 250,000 LF in Project B and the cost per inch per foot was available based upon the analyzed data in Project A, it was possible to extrapolate estimated repairs and costs from the available data.

#### Full Project

From the assessments/evaluations in these neighborhoods, AECOM expects to recommend to DWSD the rehabilitation or replacement of approximately 150,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to 330 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes, and specialized cleaning. The total estimated cost of these repairs is approximately \$32,000,000.

#### Loan-Eligible Portion of the Project

As only repairs to address defects that have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, approximately 59,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to over 100 manhole repairs are expected to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$21,000,000.

## Item 2 - Study Area and Project Zone

The locations of the proposed projects are provided in the general map below (Figure 1).

### Location

#### Project A – Five High Priority Neighborhoods

These neighborhoods comprise:

1. Piety Hill
2. New Center Commons
3. Virginia Park
4. Brewster Douglass
5. Brewster Homes

#### Project B – Four Westside Neighborhoods

These neighborhoods comprise:

1. Riverdale
2. Miller Grove
3. Minock Park
4. South Rosedale Park

### Population

The population projections presented in the 2015 Water Master Plan Update report prepared by CDM/Smith for DWSD indicate a forecasted decline in population for the City of Detroit. The City of Detroit population is expected to decrease from 713,777 (2010 Census) to 613,709 by the year 2035. The July 1, 2017 estimated population on the U.S. Census website is 673,104. The estimated 2018 population is not available on this website. The report also indicates a forecasted decline in the overall population in the DWSD service area in the suburban communities.

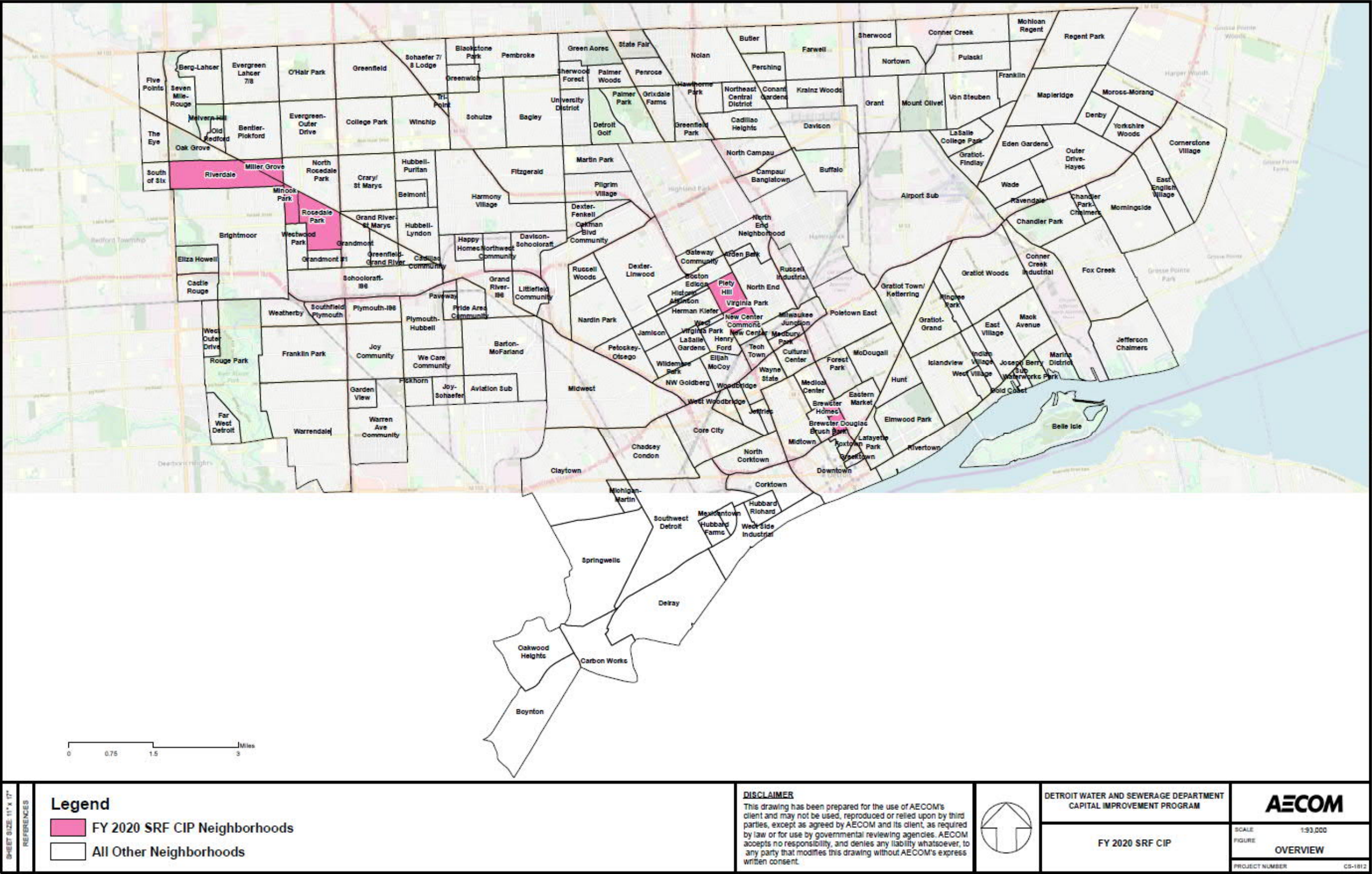


Figure 1 – CIP Neighborhoods

# 3 - Existing Facilities

## General

The gravity and force main system managed by DWSD comprises approximately 2,819 miles of pipe, of which nearly 15 percent has been rehabilitated or reconstructed by lining. 2,424 miles of Detroit's sewers were constructed prior to the 1940s. This infrastructure has an average age of 95 years. Cementitious material represents the largest portion of inventory. The number of reports for sinkholes and cave-ins associated with defects in the sewer infrastructure has averaged about 200 per year over the last 5 years. The structural condition of this infrastructure requires significant rehabilitation to prevent even more costly repairs and claims due to possible collapses.

## Project A – Five High Priority Neighborhoods

There are approximately 21 miles of pipe in Project A neighborhoods in total ranging in size from 10-inch to 54-inch. The pipe material includes brick, concrete, crock, PVC, reinforced concrete, vitrified clay, unknown and CIPP lined. Figure 2 identifies pipe mileage by material type in Project A neighborhoods. Figure 3 is a map of the sewer assets in the northern three neighborhoods of Project A. Figure 4 is a map of the sewer assets in the southern two neighborhoods of Project A.

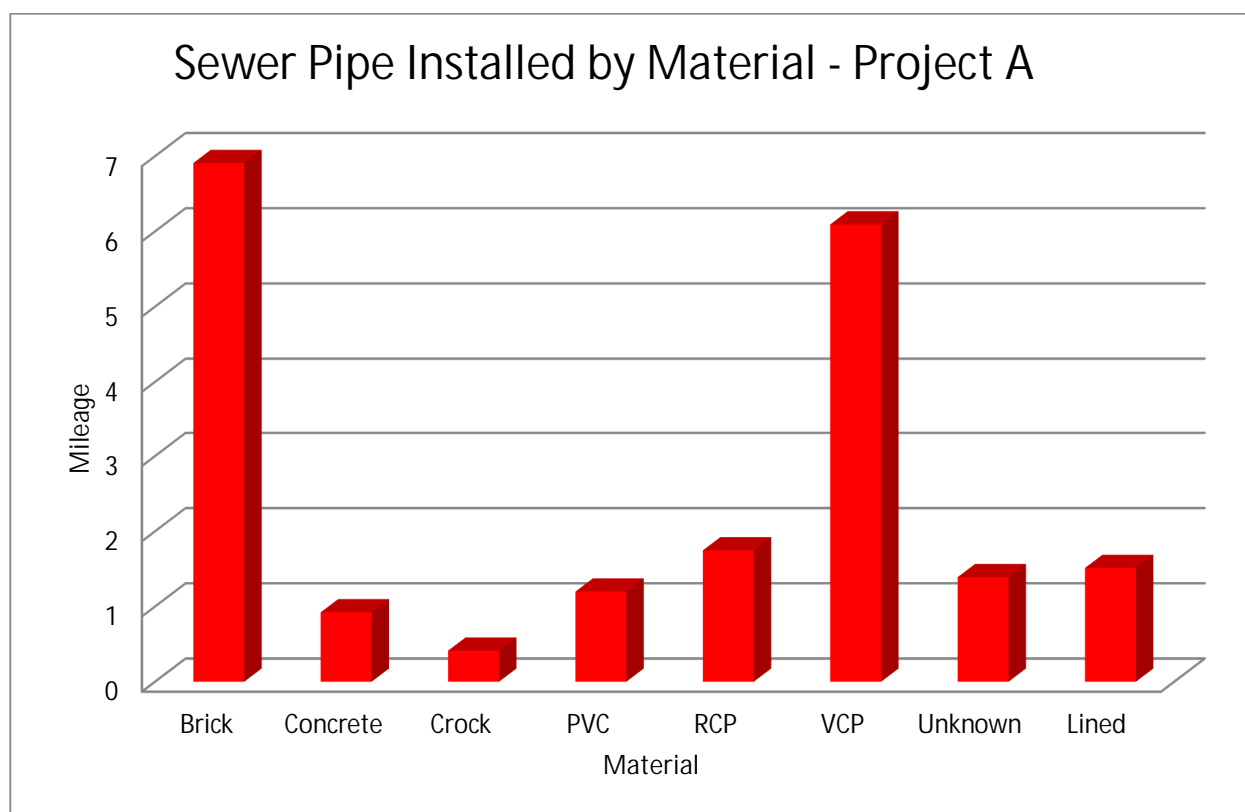


Figure 2 – Pipe Mileage by Material – Project A Neighborhoods





Figure 3 – Map of Assets in Northern Neighborhoods from Project A – Piety Hill, New Center Commons and Virginia Park



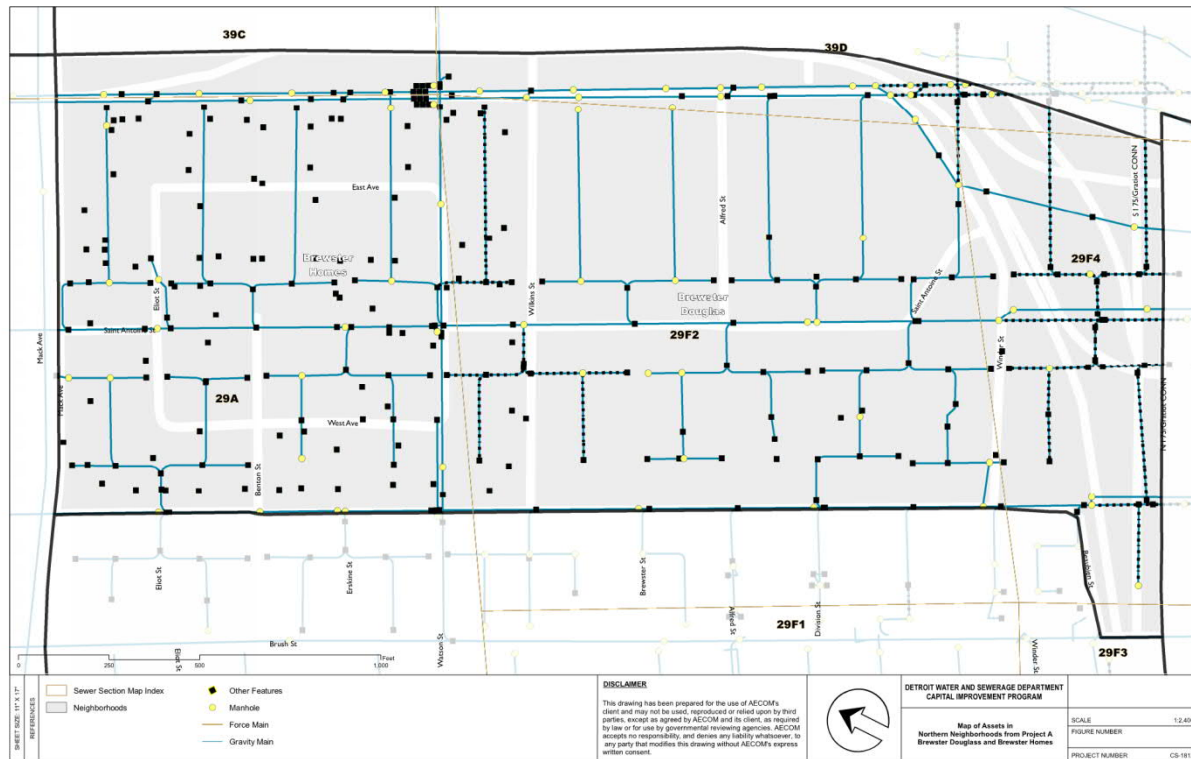


Figure 4 – Map of Assets in Southern Neighborhoods from Project A – Brewster Douglass and Brewster Homes

## Project B – Four Westside Neighborhoods

There are approximately 47 miles of pipe in Project B neighborhoods in total ranging in size from 8-inch to 180-inch. The pipe material includes brick, concrete, crock, PVC, vitrified clay, unknown and CIPP lined. Figure 5 identifies pipe mileage by material type in Project B neighborhoods. Not all of the pipe in Project B has been televised, so it is expected that the unknown quantity identified in Figure 5 will reduce once inspection is complete. Figure 6 is a map of the sewer assets in the neighborhoods of Project B.

## Sewer Pipe Installed by Material - 4 Westside

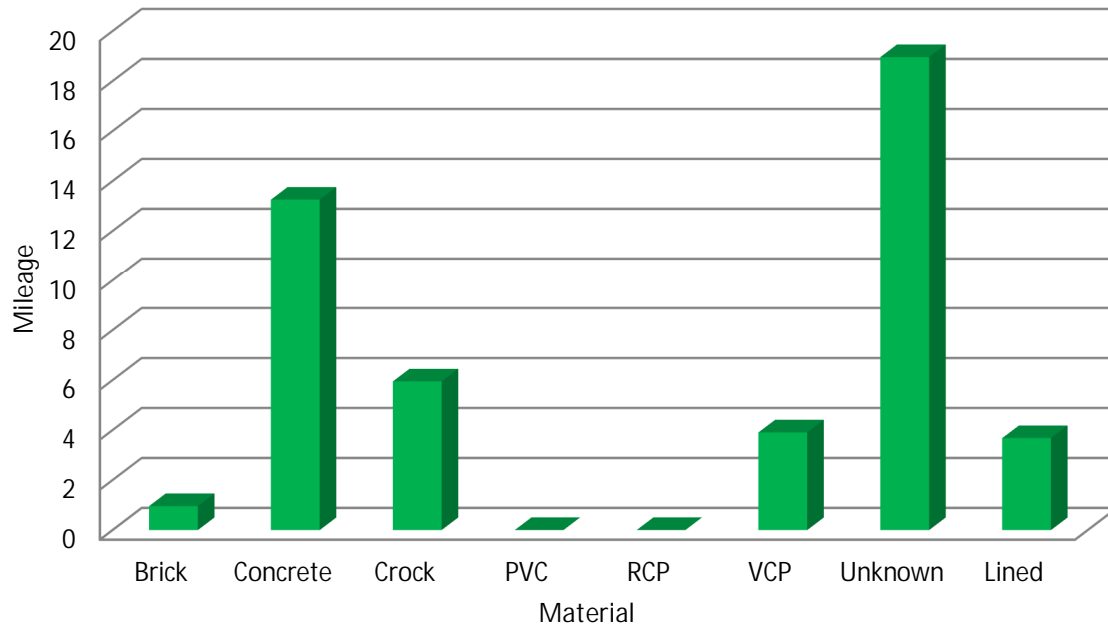


Figure 5 – Pipe Mileage by Material – Four Westside Neighborhoods

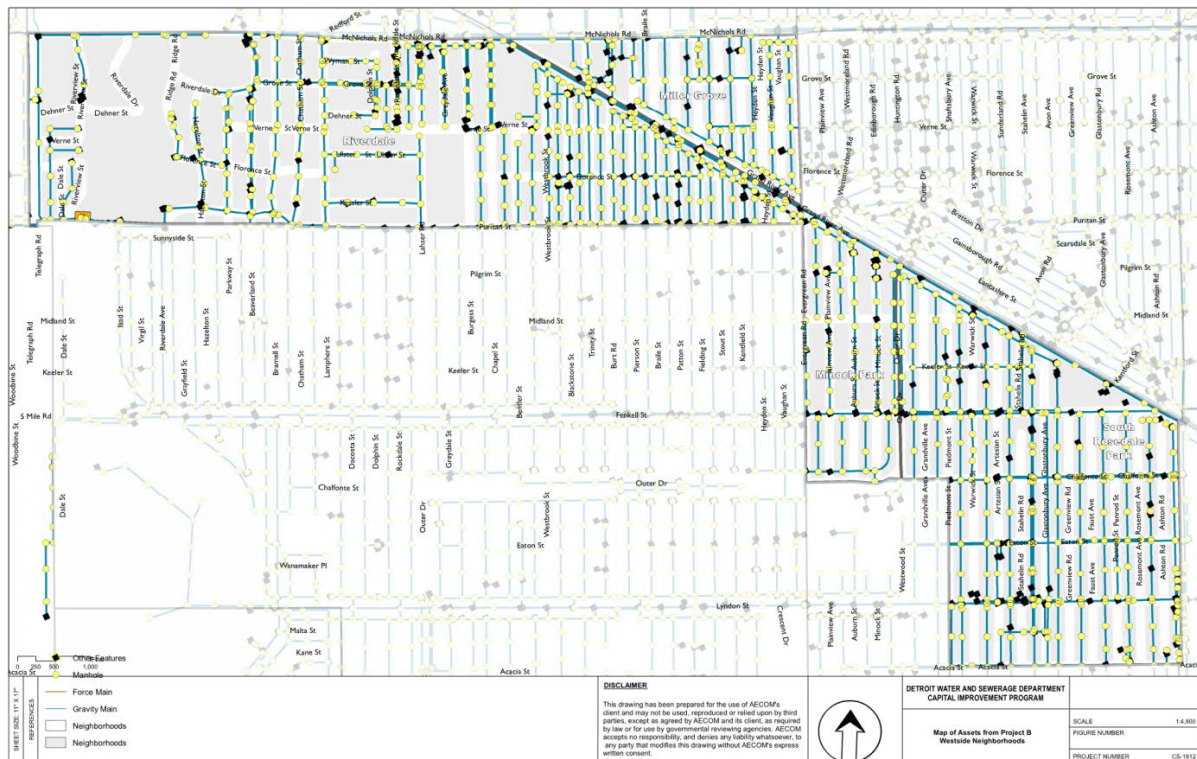


Figure 6 – Map of Assets from Project B - Four Westside Neighborhoods

## Item 4 – Project Need

### General

As a result of the CCTV and manhole inspection performed to-date, multiple defects requiring intervention have been identified. The primary structural defects encountered are fractures (spiral, hinge, longitudinal and circumferential), holes, continuous cracks, voids outside the pipe and deformation. Some of the defects have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5). To avoid sinkholes, back-ups in buildings and disruption to customers, it is recommended that interventions be made to prevent asset failure. Furthermore, based on the average age of the infrastructure at 95 years, the observed condition and the risk to public health, it is felt that the selected pipes and manholes are defensible candidates for intervention.

### Project A – Five High Priority Neighborhoods

53% of the pipes televised have defects requiring interventions with 24% of these having a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5). An example of one of these (a deformation with a Grade 5 structural rating) is shown in Figure 7. A significant crack in a manhole is shown in Figure 8.


CCTV survey : WWMH0000033216A\_U\_20181010\_1351

Defects Internal View

	Distance (ft)	PACP Code	Continuous	Value %	Value 1st Dim	Value 2nd Dim	Clock At/From	Clock to	Band	Material	Joint	Remarks	O and M Grade	Structural Grade	Video file	Counter
	82.40	DAE		5			7				<input checked="" type="checkbox"/>		2.00	0.00		565.1
	86.30	DAE		5			7	5			<input checked="" type="checkbox"/>		2.00	0.00		576.1
	89.00	CL					12				<input checked="" type="checkbox"/>	AECOM	0.00	2.00		587.1
	90.60	DAE		5			12	5			<input checked="" type="checkbox"/>		2.00	0.00		598.1
	102.30	DAE		5			7	10			<input checked="" type="checkbox"/>		2.00	0.00		623.1
	108.80	DAE		5			7	12			<input checked="" type="checkbox"/>		2.00	0.00		637.1
	113.20	DAE		5			7	5			<input checked="" type="checkbox"/>		2.00	0.00		656.1
▶	113.90	TFA			6		2				<input type="checkbox"/>		0.00	0.00		667.1
	120.00	DR		20							<input type="checkbox"/>		0.00	5.00		849.1
	121.20	B					12	12			<input type="checkbox"/>		0.00	4.00		710.1

< >

Observation: TFA (Tap Factory Activity)  
 From: 02  
 Counter: 113.9  
 Remarks:



15:31 10.10.18 LC1: +0118.16 ft

Add Defect ▶

738/3147

No picture

OK Cancel Help

Figure 7. Sample CCTV Data from a Pipe in the Five High Priority Neighborhoods



Figure 8. Sample Manhole Defect from a Manhole in the Five High Priority Neighborhoods

## Project B – Four Westside Neighborhoods

While the CCTV inspections for the Project B area is approximately 50% completed, this data along with the 100% completed CCTV data for the Pilot Project areas of North Rosedale Park, Cornerstone Village and the Project A - Five High Priority neighborhoods indicates an average percentage of CCTV with Grade 4 or 5 Defects of 30% as shown in Table 1.

Table 1 - Cost Summary - Wastewater Interventions by Type for 4 Westside Neighborhoods

Area	Total Televised Footage (LF)	Footage with Grade 4 or 5 Structural Defects (LF)	Percentage with Grade 4 or 5 Structural Defects	Actual Repair Footage of Just Structural Interventions (LF)
North Rosedale	125,669	42,813	34%	31,379
Cornerstone Village	163,154	68,815	42%	54,530
Project A - Five High Priority	108,053	26,399	24%	23,125
Westside Four (As of 03/28/2019)	133,070	20,771	16%	16,855
Total/Average	529,946	158,798	30%	125,443
Westside Four (When inspections completed)	249,979	74,906	30%	59,172

While only 53% of pipes in the Four Westside Neighborhoods have been televised thus far with 16% having a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5), it has been assumed based on the completed inspections of all surveyed neighborhoods that the average percentage of footage with Grade 4 or 5 defects of 30% will be allocated to the Four Westside Neighborhoods. An external point repair (EPR) or trenchless point repair (TPR) will be shorter than the entire length of pipe where Grade 4 or 5 defects were observed hence the actual repair length of interventions is estimated to be 59,172 LF.

## Item 5 - Alternatives Analysis

### General

There are three options for addressing the problems associated with aged sewer mains. DWSD can either continue to repair the old pipes (Alternative 1), selected replace or rehabilitate the old pipes (Alternative 2), or replace the pipes using standard open-cut replacement (Alternative 3). As a part of Alternative 2, rehabilitation through CIPP lining of a majority of sewer main will be incorporated.

#### A. Alternative 1 – Repair of Existing Sewer Mains

Sewer main repair is conducted throughout the system, particularly in those areas where problems have not escalated to the point which would warrant replacement. Nevertheless, sewer main repairs are time consuming, costly, constitute a drain on DWSD resources needed to carry out the repairs, and pose a potential increase in public health risk. Sewer main repairs can require shutting off sewer service to multiple customers while the defect is repaired and returned to service. Repair activities cannot be pre-scheduled, and field crews must respond on an “as needed” basis at any time of year. As typically only point repairs are performed during emergency repairs, other locations along the same pipe may also be at risk of failure but are not repaired. Hence this alternative should not be considered as a viable alternative.

#### B. Alternative 2 – Sewer Main Selected Replacement/Rehabilitation

Sewer main replacement/rehabilitation of aged sewer main pipes is based on the criteria described under Item 4 - Project Need. The replacement pipe is sized to meet the service area needs, which may in some cases result in an increase of pipe size, depending on the changes in flow, customer base, including commercial, business and residential demographics. Rehabilitation of aged sewer mains also provides for the use of CIPP lining, which is considered superior because it has an expected useful life greater than that of damaged vitrified clay pipe and deteriorated concrete pipe and can be installed by trenchless means.

In addition to full replacement and full rehabilitation through CIPP lining, both external and trenchless point repairs are recommended as appropriate if the defects are localized and the remainder of the pipe is in generally good condition.

#### C. Alternative 3 – Sewer Main Replacement Only

Full sewer main replacement of aged sewer main pipes is based on the criteria described under Project Need. The replacement pipe is sized to meet the service area needs, which may in some cases result in an increase of pipe size, depending on the changes in flow, customer base, including commercial, business and residential demographics. This methodology suggests standard open-cut replacement of mains and not rehabilitation of the mains through the use of trenchless methodologies such as CIPP lining. Alternative 3 may be considered extreme but represents a viable alternative.

Based upon the alternative that can be most easily implemented with the least disruption to the utility and the rate payers, and the cost analysis that will be discussed below, Alternative 2, selected replacement and rehabilitation is the recommended alternative.



## Item 6 - Proposed Project

### Project A – Five High Priority Neighborhoods

#### Full Project – Alternative 2

From the assessments/evaluations in these neighborhoods, AECOM has recommended to DWSD, the rehabilitation or replacement of approximately 51,281 feet of sewer collection mains ranging in size from 10-inch through 54-inch in diameter in addition to 82 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$7,750,000. Maps of the proposed improvements for Project A are shown in Figures 9 to 20, and are separated by neighborhoods, and by intervention type (O&M and structural). It should be noted that the Virginia Park neighborhood is a narrow strip of land included in the New Center Commons and Piety Hill neighborhood maps. As design is commencing on these projects and hydraulic modeling results are being reviewed, it is possible that some upsizing of pipes may be recommended that would increase these costs.

#### Cost Summary – Full Project – Alternative 2

Rehabilitation and replacement cost estimates have been developed, based on previous work completed to date. The pre-design total capital cost estimates and costs with contingencies for pipes and manholes in all Five High Priority Neighborhoods areas are shown in Table 2.

Table 2 - Cost Summary – Full Project A Interventions for Alternative 2

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	15	122	\$134,735
CIPP Lining	Structural	Pipe	170	31,462	\$4,842,987
Full Segment Replacement	Structural	Pipe	3	241	\$197,457
TPR-Liner	Structural	Pipe	21	103	\$139,362
TPR-Pointing	Structural	Pipe	12	28	\$70,780
TPR-Tyger	Structural	Pipe	7	23	\$43,855
Clean	O&M	Pipe	93	19,263	\$366,003
Cutting/grinding of Taps	O&M	Pipe	18	39	\$17,334
Replace Adjusters	Structural	Manhole	2		\$1,522
Replace Chimney Only	Structural	Manhole	4		\$12,120
Manhole Cleaning	O&M	Manhole	40		\$15,200
General and/or Spot Repairs	Structural	Manhole	32		\$16,800
Benching and Channel Reconstruction	Structural	Manhole	2		\$3,276
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$5,866,423
10% Contingency					\$586,642
Sub-total					\$6,453,065
20% Design Contingency					\$1,290,613
Total					\$7,743,678

#### Loan-Eligible Portion of the Project – Alternative 2

As only repairs to address defects that had a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 23,125 feet of sewer collection mains ranging in size from 10-inch through 42-inch in diameter in addition to 23 manhole repairs appear to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$5,000,000. Again, maps of the proposed improvements for Project A are shown in Figures 9 to 20, and are separated by neighborhoods, and by intervention type. It should be noted that the Virginia Park neighborhood is a narrow strip of land included in the New Center Commons and Piety Hill neighborhood maps. As design is commencing on these projects and hydraulic modeling results are being reviewed, it is possible that some upsizing of pipes may be recommended that would raise these costs.

### Cost Summary – Loan Eligible Portion – Alternative 2

Rehabilitation and replacement cost estimates have been developed, based on previous work completed to date. The pre-design total capital cost estimates and costs with contingencies for pipes and manholes in Project A Five High Priority Neighborhoods areas are shown in Table 3.

Table 3 - Cost Summary – Loan Eligible - Project A Interventions for Alternative 2

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	15	122	\$134,735
CIPP Lining	Structural	Pipe	100	22,729	\$3,391,361
Full Segment Replacement	Structural	Pipe	3	241	\$197,457
TPR-Liner	Structural	Pipe	5	23	\$33,855
TPR-Tyger	Structural	Pipe	3	10	\$18,850
General and/or Spot Repairs	Structural	Manhole	20		\$10,500
Benching and Channel Reconstruction	Structural	Manhole	1		\$1,638
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$3,793,388
10% Contingency					\$379,339
Sub-total					\$4,172,727
20% Design Contingency					\$834,545
Total					\$5,007,273

### Cost Summaries – Alternative 3 – Full Replacement

To illustrate the expected increase in cost if full replacement (Alternative 3) is assumed instead of rehabilitation (Alternative 2) of pipes using trenchless methodologies, Tables 4 and 5 were developed. The CIPP and TPR lining items have been removed and full replacement and EPR quantities have been increased accordingly. As shown, the costs for Alternative 3 are significantly higher than those for Alternative 2.

Table 4 - Cost Summary – Full Project – Project A for Alternative 3

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	43	248	\$387,014
Full Segment Replacement	Structural	Pipe	173	31,702	\$14,374,646
TPR-Pointing	Structural	Pipe	12	28	\$70,780
Clean	O&M	Pipe	93	19,263	\$366,003
Cutting/grinding of Taps	O&M	Pipe	18	39	\$17,334
Replace Adjusters	Structural	Manhole	2		\$1,522
Replace Chimney Only	Structural	Manhole	4		\$12,120
Manhole Cleaning	O&M	Manhole	40		\$15,200
General and/or Spot Repairs	Structural	Manhole	32		\$16,800
Benching and Channel Reconstruction	Structural	Manhole	2		\$3,276
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$15,269,687
10% Contingency					\$1,526,969
Sub-total					\$16,796,656
20% Design Contingency					\$3,359,331
Total					\$20,155,987

Table 5 - Cost Summary – Loan Eligible – Project A for Alternative 3

Intervention	Type	Asset	Count	Length	Estimated Cost
External Point Repair	Structural	Pipe	23	155	\$192,207
Full Segment Replacement	Structural	Pipe	103	22,970	\$10,224,569
General and/or Spot Repairs	Structural	Manhole	20		\$10,500
Benching and Channel Reconstruction	Structural	Manhole	1		\$1,638
Structural Spray Lining	Structural	Manhole	2		\$4,992
Total Intervention Cost					\$10,433,906
10% Contingency					\$1,043,391
Sub-total					\$11,477,297
20% Design Contingency					\$2,295,459
Total					\$13,772,756

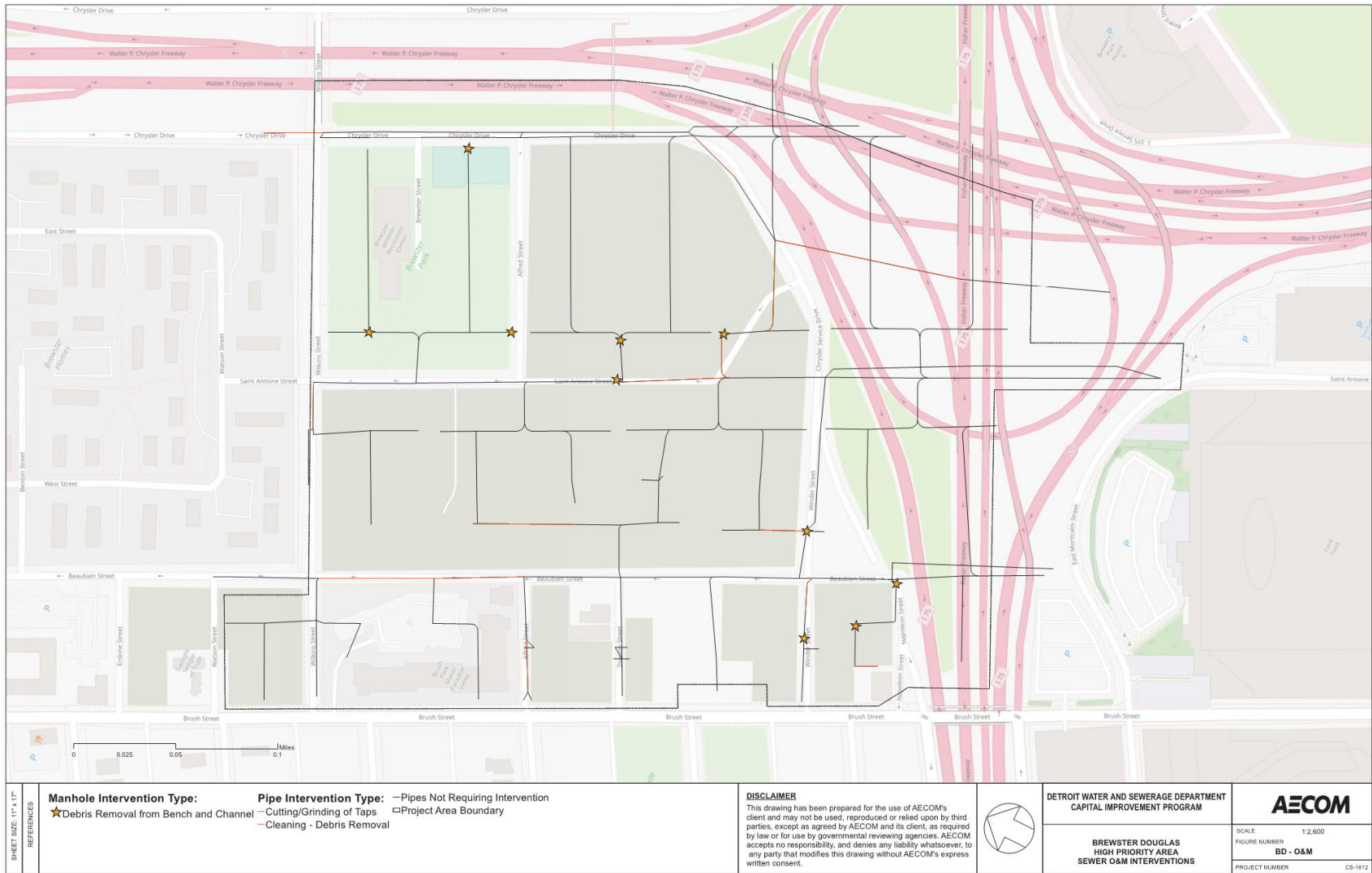


Figure 9 – Brewster – Douglas Sewer O&M Repairs

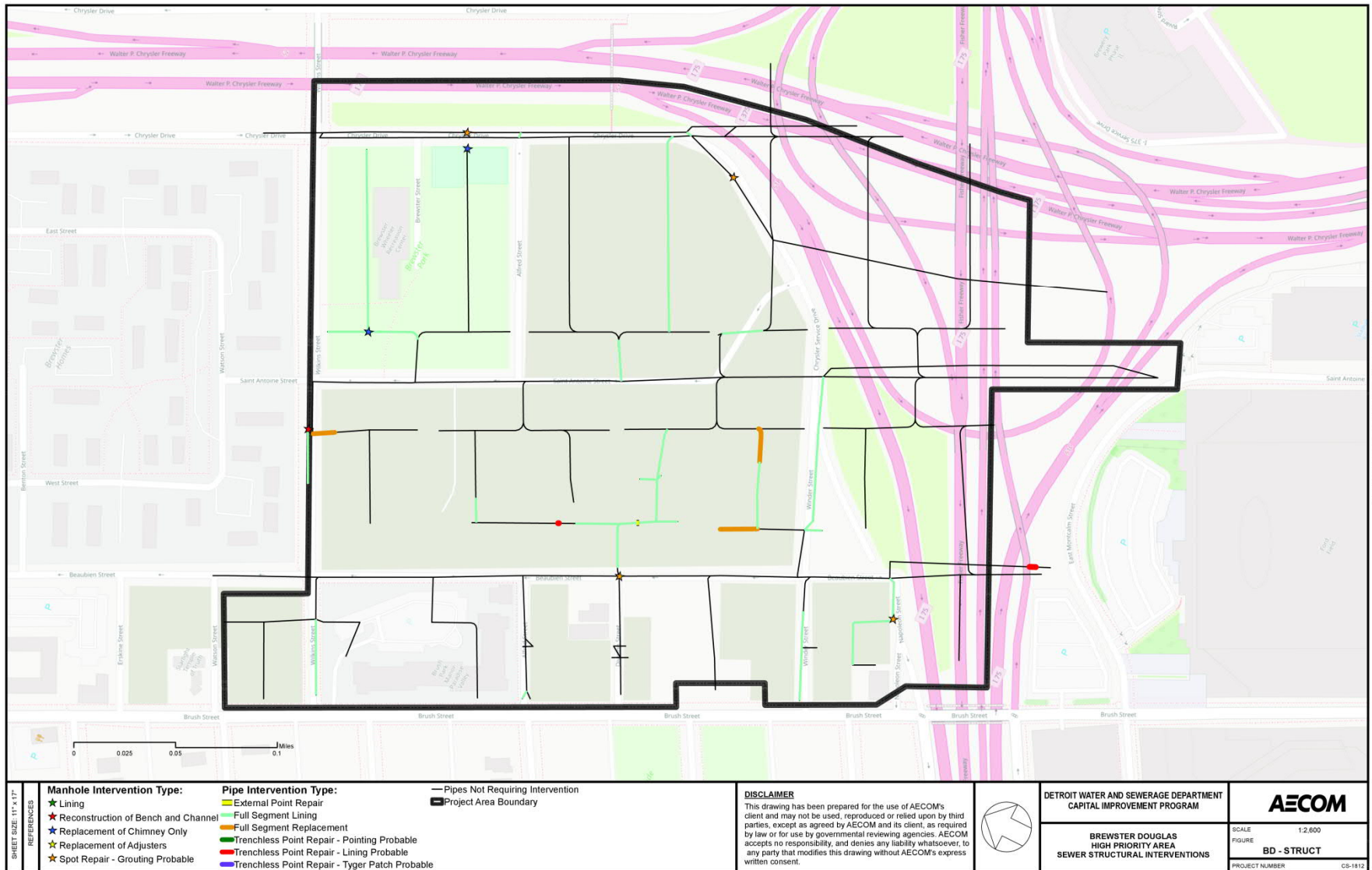


Figure 10 – Brewster – Douglas Sewer Structural Repairs



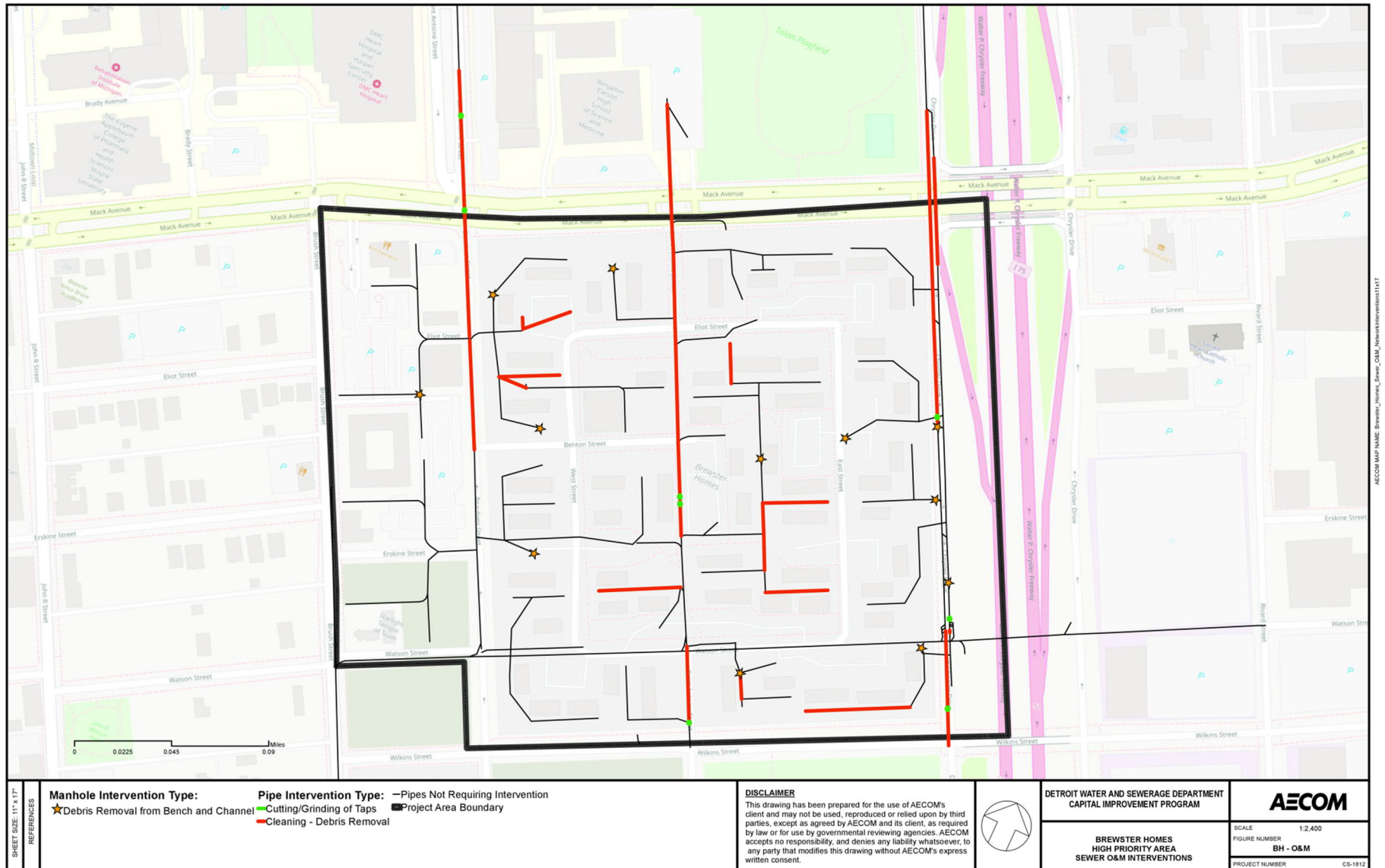


Figure 11 – Brewster Homes Sewer O&M Repairs



Figure 12 – Brewster Homes Sewer Structural Repairs

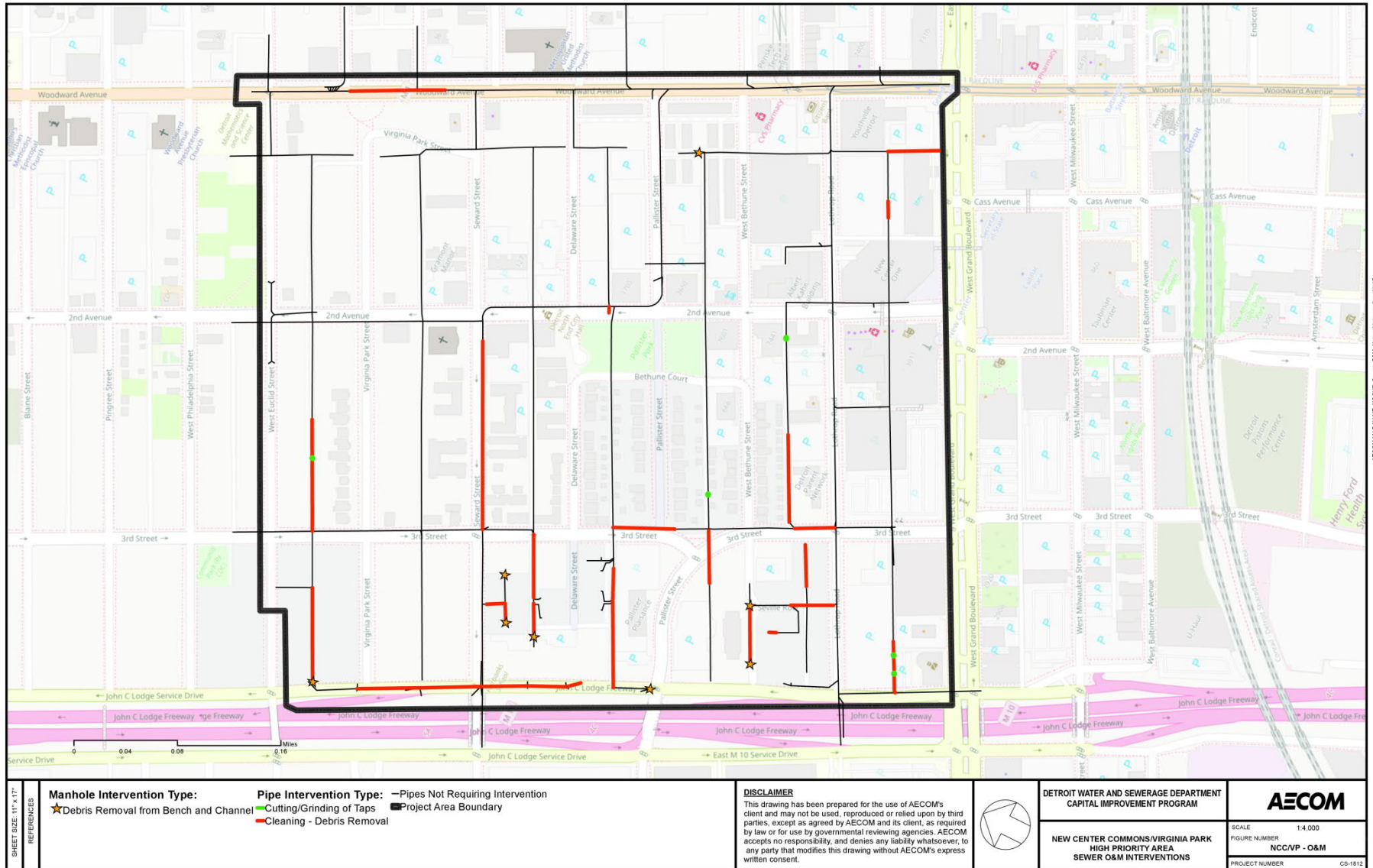


Figure 13 – New Common Center/Virginia Park Sewer O&M Repairs



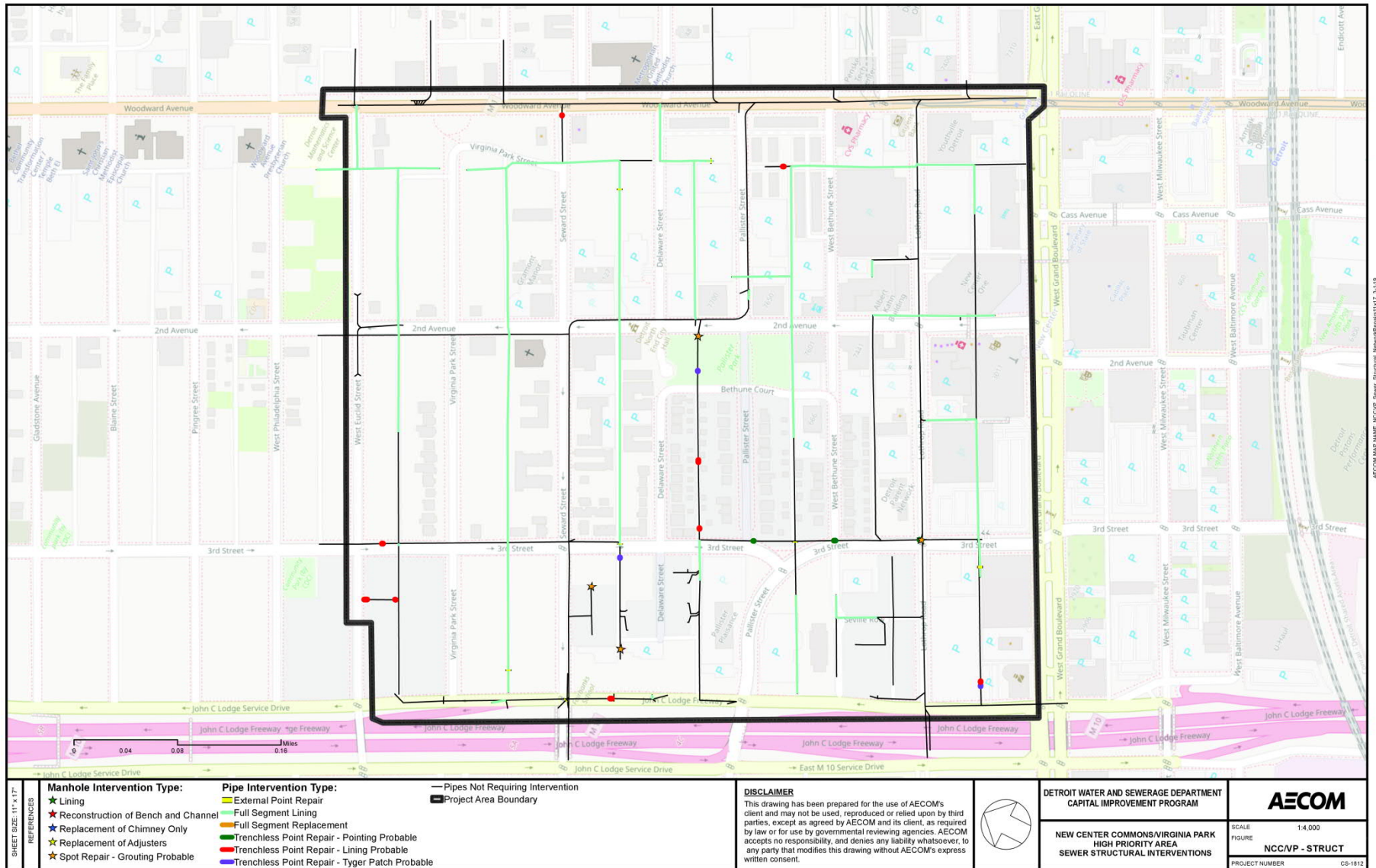


Figure 14 – New Common Center/Virginia Park Sewer Structural Repairs

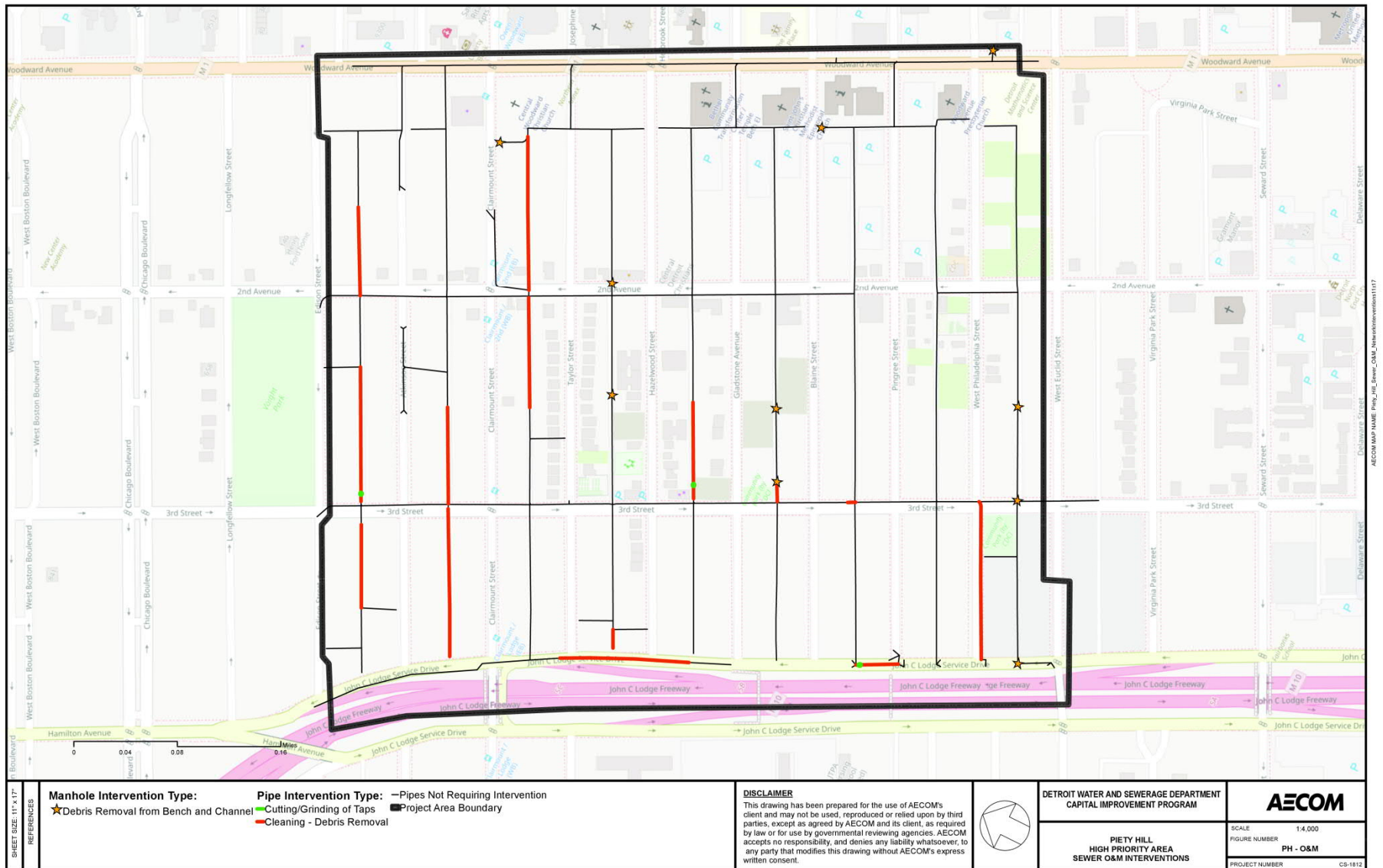


Figure 15 – Piety Hill Sewer O&M Repairs

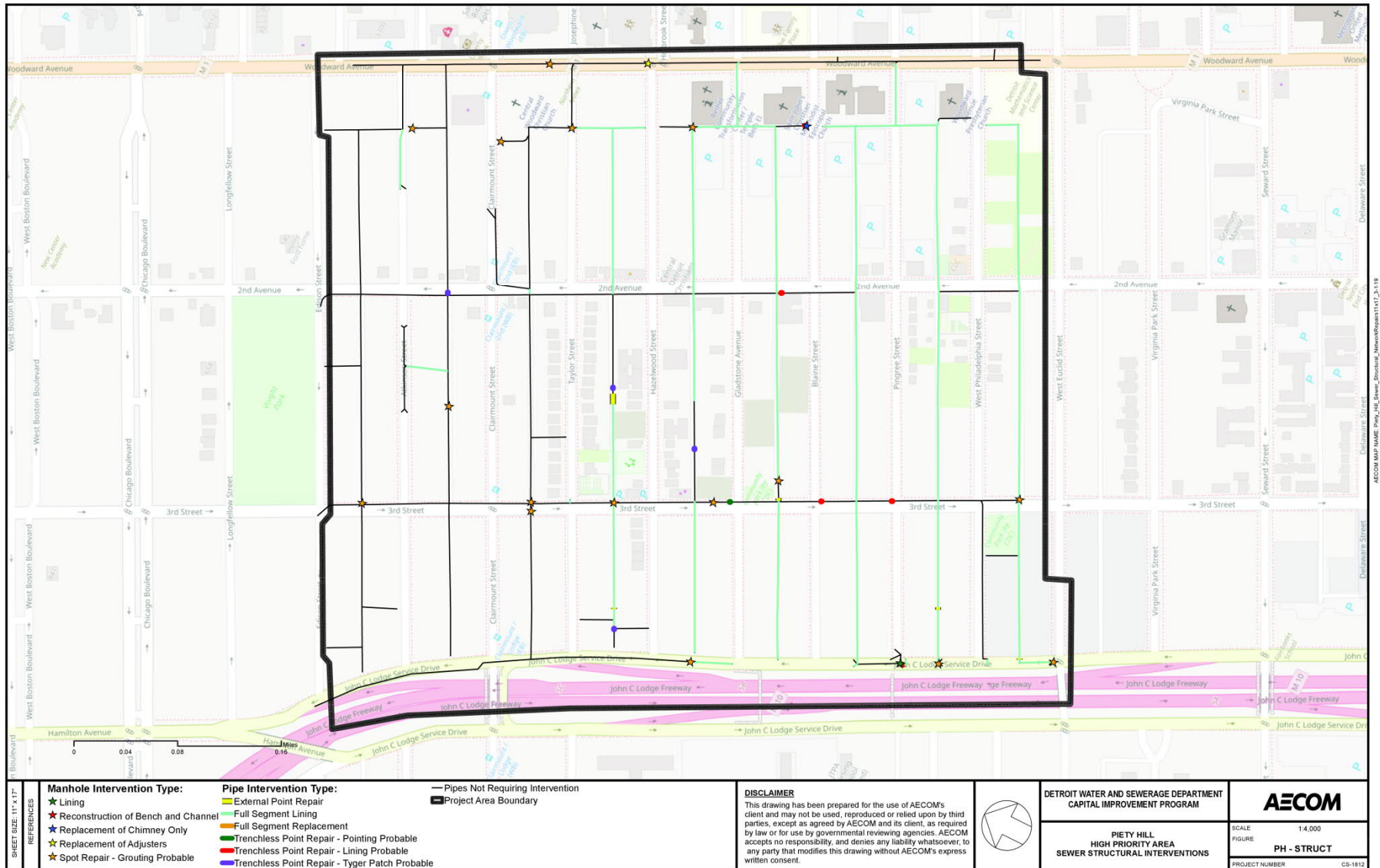


Figure 16 – Piety Hill Sewer Structural Repairs



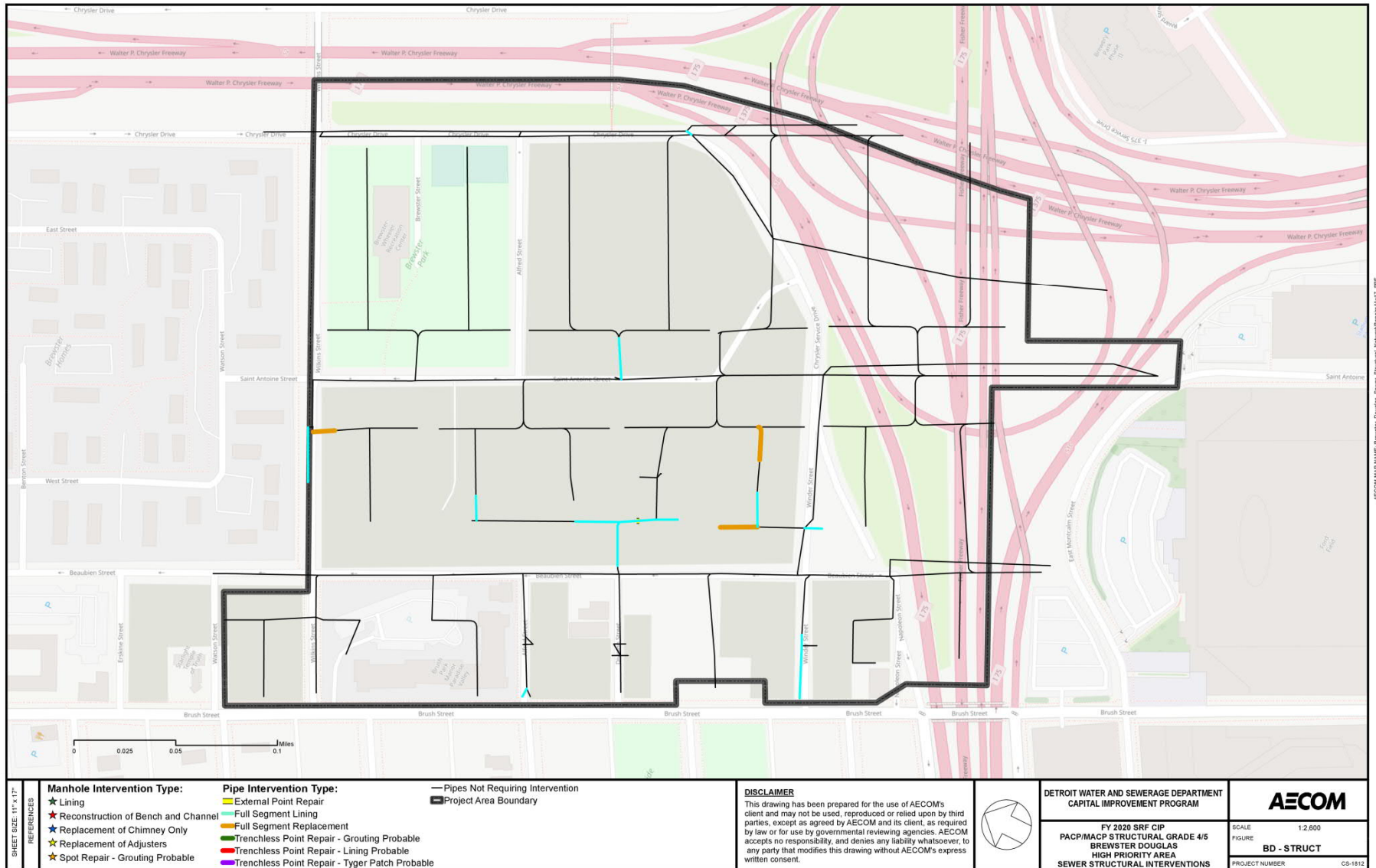


Figure 17 – Brewster – Douglas Sewer Structural Network Repairs





Figure 18 – Brewster Homes Sewer Structural Network Repairs

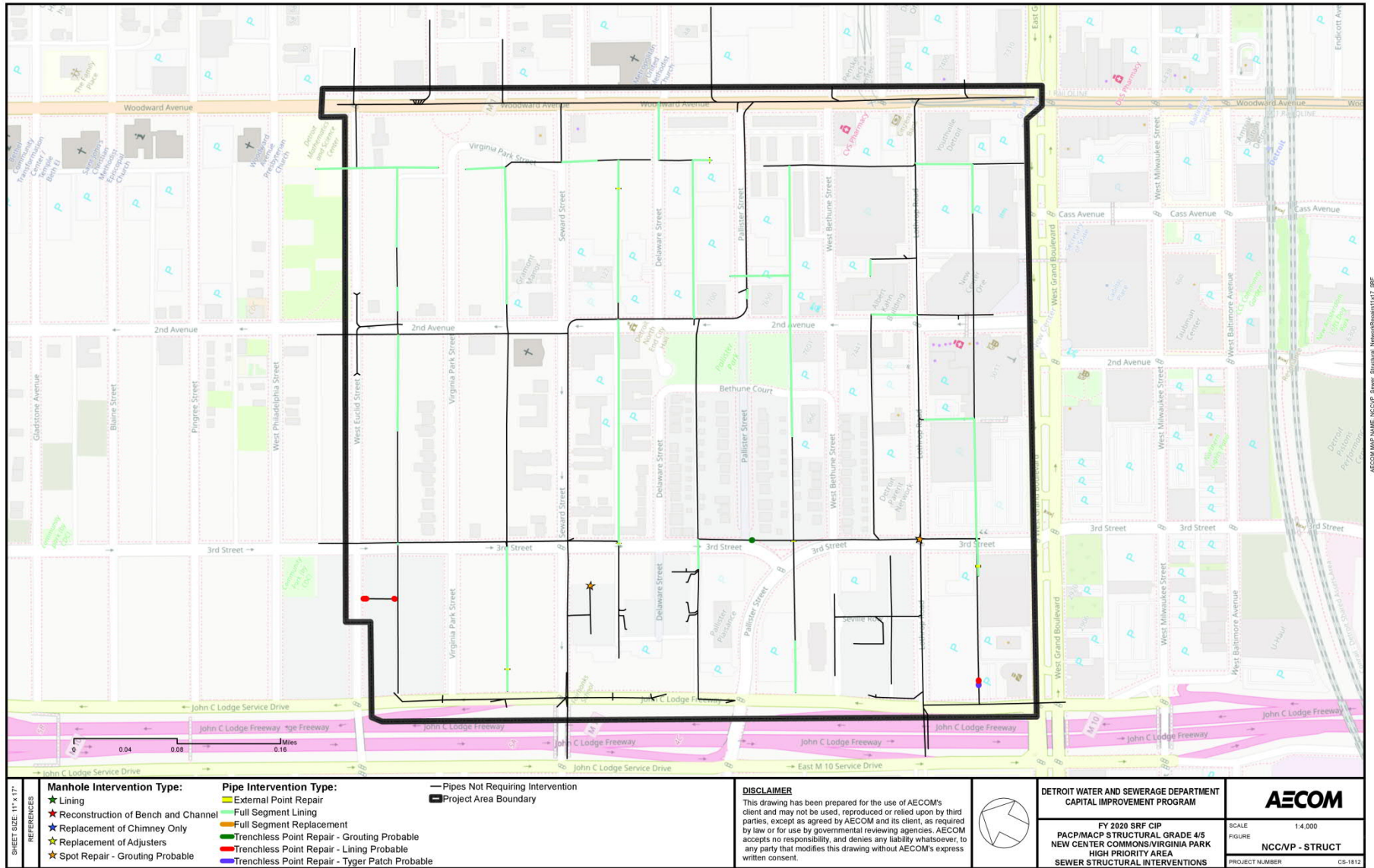


Figure 19 – New Center Commons/Virginia Park Sewer Structural Network Repairs 11x17

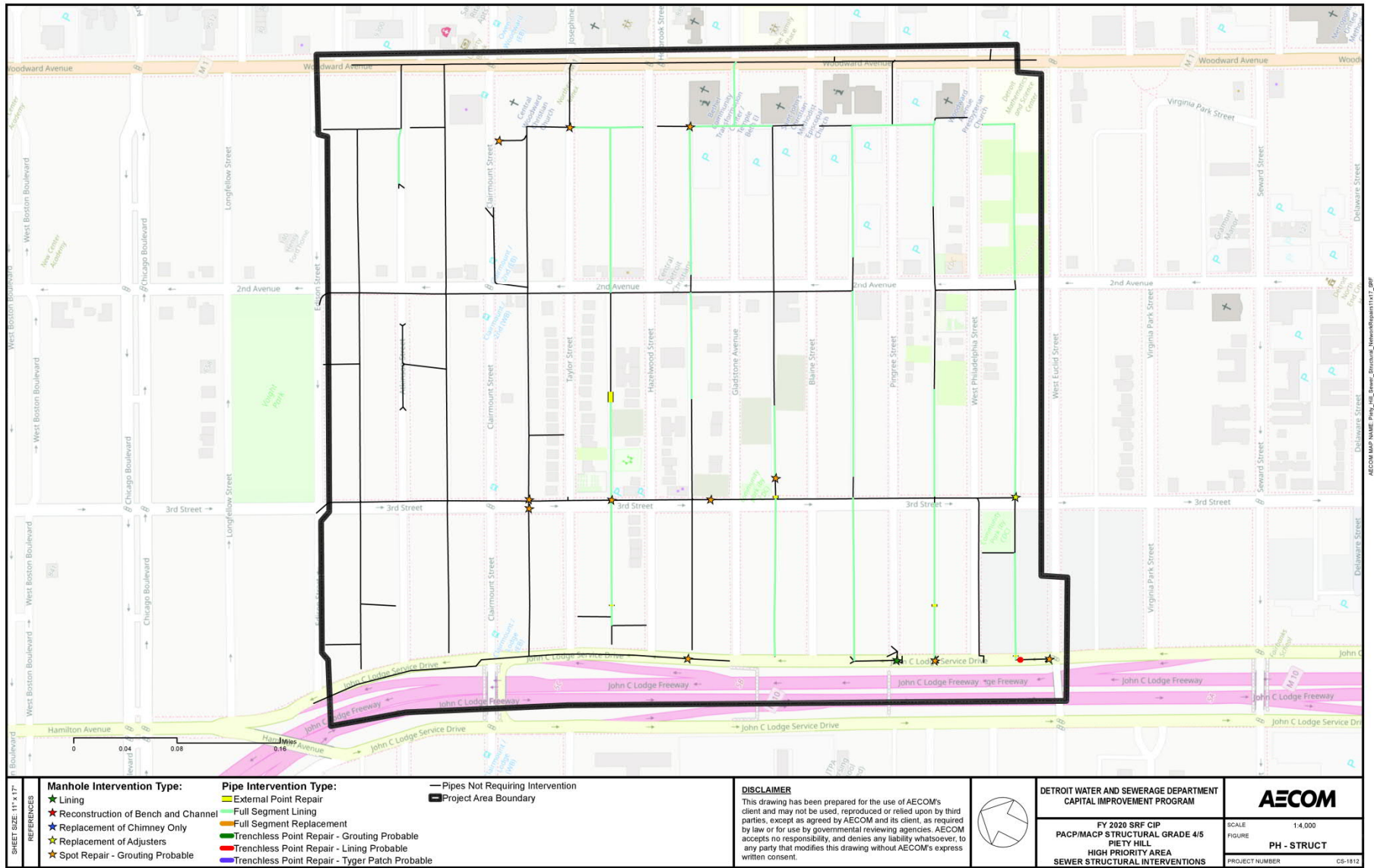


Figure 20 – Piety Hill Sewer Structural Network Repairs



## Project B – Four Westside Neighborhoods

### Data Interpolation – Alternative 2

The available CCTV data for the Pilot Project areas of North Rosedale Park, Cornerstone Village in addition to the Project A - Five High Priority and the Project B - Westside Four Neighborhoods indicates an average percentage of CCTV with grade 4 or 5 defects of 30%. Table 1 indicated that the actual repair length of interventions is estimated to be 59,172 LF for the Westside Four Neighborhoods.

As Table 6 below indicates, the available data also indicates that the cost per inch per foot to repair the grade 4 or 5 defects for Project A is estimated to be approximately \$10.80. This includes manhole repair costs. The average diameter of repairs was 15-inches for Project A, while for Project B based on the defects identified thus far it is 24-inches.

As the total footage is 250,000 LF in Project B and the cost per inch per foot is available based upon the analyzed data in Project A, it is possible to extrapolate estimated repairs and costs from the available data. As some upsizing of pipes is possible due to hydraulic capacity issues in the Project B area, the cost per inch per foot was rounded to \$11. Hence, for an estimated 59,172 LF of repairs with an average diameter of 24-inches, the expected repair cost is estimated to be \$15.6 MM as shown in Table 6. Adding a general 10% contingency and 20% for design/administration, the expected cost for the grade 4/5 defects is approximately \$21 MM as shown in Table 7.

Table 6 - Cost Interpolation – Loan Eligible – Project B for Alternative 2

Area	Total Televised Footage (LF)	Actual Repair Footage of Just Structural Interventions (LF)	Average Diameter of Repaired Pipes (Inches)	Cost per Inch per Foot	Cost per Foot	Estimated Repair Cost
Project A Estimate	108,053	23,125	15	\$10.8	\$164	\$3,793,388
Project B Interpolated	249,979	59,172	24	\$11.0	\$264	\$15,621,447

Table 7 - Cost Summary – Loan Eligible – Project B for Alternative 2

Intervention	Estimated Cost
Total Estimated Intervention Cost	\$15,621,447
10% Contingency	\$1,562,145
Sub-total	\$17,183,592
20% Design Contingency	\$3,436,718
Total	\$20,620,310

## Loan-Eligible Portion of the Project Summary – Alternative 2

As only repairs to address defects that have a NASSCO structural rating of either Significant (Grade 4) or Most Significant (Grade 5) are eligible for loan funding, 59,172 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to over 100 manhole repairs are expected to meet these criteria. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, cementitious lining of manholes but does not include any type of specialized cleaning or pointing of brick sewers. The total estimated cost of these repairs is approximately \$21,000,000 from Table 7 above. As full analysis of the infrastructure has not begun yet, maps of the proposed interventions for Project B cannot be provided in this Project Plan.

## Full Project Summary – Alternative 2

As shown in Table 8, the ratio of grade 4/5 repair costs to the total cost of the project is 1.55. Applying the same ratio to the Westside Four yields a total repair cost of \$24 MM for the Westside Four. Applying the same contingency figures as before, the total expected cost of the full project is estimated to be just under \$32 MM.

From the assessments/evaluations in these neighborhoods and the ratio of grade 4/5 defects to full interventions for Project A, AECOM expects to recommend to DWSD, the rehabilitation or replacement of approximately 150,000 feet of sewer collection mains ranging in size from 8-inch through 180-inch in diameter in addition to 330 manhole repairs. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, cementitious lining of manholes and specialized cleaning. The total estimated cost of these repairs is approximately \$32,000,000 as detailed in Table 9. As full analysis of the infrastructure has not begun yet, maps of the proposed interventions cannot be provided.

Table 8 – Ratio between Grade 4/5 Costs and Full Project Costs

Area	Grade 4/5 Defect Cost	Estimated Full Project Total Cost	Ratio
Project A	\$3,793,388	\$5,866,423	1.55
Project B	\$15,621,447	\$24,158,356	1.55

Table 9 - Cost Summary – Full Project – Project B for Alternative 2

Intervention	Estimated Cost
Total Intervention Cost	\$24,158,356
10% Contingency	\$2,415,836
Sub-total	\$26,574,191
20% Design Contingency	\$5,314,838
Total	\$31,889,030

### Cost Summaries – Alternative 3 – Full Replacement

As tables 4 and 5 showed earlier for Project A - Five High Priority Neighborhoods, the costs for Alternative 3 are significantly higher than those for Alternative 2. As minimal data is available for the Project B - Westside Four Neighborhoods, it can be assumed that Alternative 3 - full replacement would also be significantly higher for Project B than would Alternative 2, which utilizes trenchless methodologies for much of the recommended pipe interventions.

### Monetary Evaluation of Alternative 2 and 3

A monetary evaluation of the feasible alternatives, Alternatives 2 and 3 was prepared using MDEQ guidelines for SRF Project Plans, including the present worth formulas and discount interest rate of 0.200%. Under this analysis, the useful life is assumed to be 50 years for pipelines. The salvage value of pipes at the end of the 20 or 30-year planning period was computed on the basis of a straight-line depreciation over the useful life of the item. Therefore, the salvage value of the pipes at the end of the 20 or 30-year planning period is estimated to be 60% or 40%, respectively, of the initial cost.

The present worth of salvage value was then computed by multiplying the salvage at the end of the 20 or 30 years by the conversion factor 0.9608 or 0.9418, respectively, based on the following formula:

$PW = F \times 1/(1 + i)^n$ , Where:

PW = Present Worth (Salvage)

F = Future Value (Salvage)

i = Discount Interest Rate (0.200%)

n = Number of Years (20 or 30)

$1/(1 + i)^n$  = Conversion Factor

Interest during the construction period was computed using the formula:

$I = i \times 0.5 \times P \times C$

Where:

I = Interest Value

i = Discount Interest Rate (0.200%)

P = Period of Construction in Years (assumed to be two and a half years)

C = Capital Cost of the Project

For each of Alternatives 2 and 3, the total Present Worth was computed from the estimated cost (including construction, engineering, and administrative costs), salvage value, and interest during construction. This equates to the amount which would be needed at the start of the project to cover design and construction costs over the 20 or 30-year planning period if interest were to accrue at the discount rate 0.200% annually.



The Present Worth of each alternative was then converted to an Equivalent Annual Cost, which is the amount which would be paid uniformly over a 20 or 30-year period based on the Present Worth value. This amount was obtained by the using the following formula and capital recovery factor of 0.0511 or 0.0344, respectively:

$$A = PW \times [(i(1 + i)^n)/((1 + i)^n - 1)]$$

Where:

A = Equivalent Annual Cost PW = Present Worth

i = Discount Interest Rate (0.200%) n = Number of Years (20 or 30)

$[(i(1 + i)^n)/((1 + i)^n - 1)]$  = Capital Recovery Factor

The cost effective analysis and present worth determination for Alternatives 2 and 3 for Project A is presented in Table 10. From the equivalent annual cost below, Alternative 2 minimizes the impact to the users more than does Alternative 3. This analysis has not been performed for Project B as those results would yield a similar outcome with Alternative 2 being more favorable.

Table 10 – Cost Effective Analysis/Present Worth Determination – Project A Loan Eligible

	Project A Alternative 2 Rehabilitation/Limited Section Replacement for Loan Eligible Grade 4/5	Project A Alternative 3 Full Replacement for Loan Eligible Grade 4/5	Comments
Initial Cost	\$5,007,272	\$13,772,756	
O&M Costs	\$0	\$0	
Replacement Costs	\$0	\$0	
Salvage Value 20-year Anal.	\$2,186,876	\$6,015,113	50 year asset
Salvage Value 30-year Anal.	\$1,429,077	\$3,930,748	50 year asset
Interest during Construction	\$10,015	\$27,546	2 year const.
Total Present Worth	\$2,830,411	\$7,785,189	20 year analysis
Total Present Worth	\$3,588,210	\$9,869,553	30 year analysis
Equivalent Annual Cost	\$144,511	\$397,486	20 year analysis
Equivalent Annual Cost	\$123,351	\$339,282	30 year analysis

Total Cost and Loan-Eligible Cost for Project A and B, Alternative 2

From Tables 2 and 9 the combined total cost for the full project for Alternative 2 for Projects A and B is \$39,632,708.

From Tables 3 and 7 above, the combined total loan eligible cost for Alternative 2 for Projects A and B is \$25,627,583.

Alternative 2 is recommended and DWSD anticipates paying for the entire Projects A and B Alternative 2 with SRF loan for the loan eligible portion, and cash and bonds for the non-loan eligible portion.

User Cost

Repayment of the SRF loan through annual debt retirement payments will impact the residential customer rates resulting in increased user costs. The annualized equivalent costs for the loan eligible portions of Projects A and B are:

- Project A = \$144,511 (20-year); \$123,351 (30-year)
- Project B = \$595,108 (20-year); \$507,967 (30-year)
- Total Annualized Equivalent Cost for Projects A and B = \$739,619 (20-year); \$631,317 (30-year)

This impact to customer rates is generally determined by dividing the additional expenses among the users in the service area as summarized in Table 11. The annualized cost of the loan eligible portion of the project was calculated using the capital recovery factor 0.0511(20-year) or 0.0344 (30-year) following formula:

$$A = PW \times [(i(1 + i)^n)/((1 + i)^n - 1)]$$

Where:

A = Equivalent Annual Cost PW = Present Worth

i = Interest Rate through SRF Loan (2.0%)

n = Number of Years (20 or 30)

$[(i(1 + i)^n)/((1 + i)^n - 1)]$  = Capital Recovery Factor

Table 11 – Loan Eligible User Cost Impact for Alternative 2 (Sewer Rehabilitation/Limited Replacement)

Projects A and B

Item	Sewer Rehabilitation/Limited Replacement	
	20-year Analysis	30-year Analysis
Total Cost of Projects A and B	\$25,628,000	\$25,628,000
Annualized Cost of Projects A and B (Assuming SRF interest rate 2.0%)	\$739,619	\$631,317
Number of User Accounts (households) in City of	178,791	178,791
Average Sewage Disposal Based upon Water Consumption per Household (industry average)	7,333 gallons/month (approx. 980 ft <sup>3</sup> /month)	7,333 gallons/month (approx. 980 ft <sup>3</sup> /month)
Current DWSD Sewage Disposal Rate	\$54.84 per 1,000 ft <sup>3</sup>	\$54.84 per 1,000 ft <sup>3</sup>
Current Estimated Monthly DWSD Sewage	\$53.74	\$53.74
Current Estimated Annual DWSD Sewage Disposal Rate per Household	\$644.92	\$644.92
Estimated Increase in Cost per Household (Year 1)	\$4.14	\$3.53
Proposed Estimated Annual DWSD Sewage Disposal Rate per Household (Year 1)	\$649.06	\$648.45
Proposed Percent Increase in Cost per Household per Year	0.64%	0.55%

### Non-Monetary Evaluation of Alternative 2 and 3

The end result of constructing either Alternative 2 or 3 will provide the end user the same level of service. Constructing Alternative 2, rehabilitation/limited replacement, can achieve that level of service more efficiently and with the least disruption to the user, natural or cultural features and the environment by the extensive use of trenchless technologies for a majority of the piping work. Rehabilitating manholes will also be less disruptive as opposed to excavations required for replacement. By use of trenchless technologies, restoration of the visible landscape is also minimized. It is also anticipated that Alternative 2 can be constructed in a shorter time period than Alternative 3.

### Disadvantaged Community Status

The SRF program includes provisions for qualifying the applicant community as a disadvantaged community. The benefits for communities with a population of 10,000 or more that qualify for the disadvantaged community status consist of:

- Award of 30 additional priority points.
- Possible extension of the loan term to 30 years or the useful life of the components funded, whichever is earlier. The estimated useful life of the sewer rehabilitation/limited replacement is 50 years. DWSD is aware that the SRF program offers both 20 and 30 year loan terms and will evaluate which term is the most appropriate for DWSD and its customers.

MDEQ requires submittal of a Disadvantaged Community Status Determination Worksheet to determine if the community qualifies for this status. A completed worksheet will be included in the final plan.

## Item 7 – Environmental Preview/ Review

The environmental setting for the proposed project is within the city limits and will be done in local urban neighborhoods. There is minimal environmental impact as the majority of work will occur within the public right-of-way, where multiple utilities and infrastructure already exists. This work includes interventions such as cured-in-place lining (CIPP), trenchless point repairs, external point repairs, full section replacements, pointing of brick sewers, and cementitious lining of manholes and specialized cleaning. Trenchless technologies will be used extensively on a majority of this project. The proposed project will not detrimentally affect the water quality of the area, air quality, wetlands, endangered species, wild and scenic rivers or unique agricultural lands.

The anticipated environmental impacts resulting from implementing the recommendations of this Project Plan include beneficial and adverse; short and long-term; and irreversible and irretrievable. The following is a brief discussion of the anticipated environmental impacts of the selected alternative.

### Beneficial and Adverse

The proposed improvements will significantly improve DWSD's capability to operate a reliable sewer collection system, reducing sewer backups into homes, avoiding catastrophic sinkholes from sewer collapses and increase efficiency at Detroit WRRF. Implementation of the improvements will also generate construction-related jobs, and local contractors will have an opportunity to bid contract work. The majority of the work to be constructed with this project will be performed by use of trenchless technologies; minimizing disruption to the existing natural and cultural features, and to the end users.

Noise and dust will be generated during construction of the proposed improvements. The contractor will be required to implement efforts to minimize noise, dust and related temporary construction byproducts. Street congestion and disruption of vehicular movement may occur for short periods of time on the roads where work is actively being done. For work resulting in the need to have open trenches, and spoils from open trenches will be subject to erosion; the contractor will thereby be required to implement a Soil Erosion and Sedimentation Control (SESC) Program as described and regulated under Michigan's Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act (NREPA). Underground utility service inside the project area may be interrupted occasionally for short periods of time. The aesthetics of the area will be temporarily affected until restoration is complete.

### Short and Long Term

The short-term adverse impacts associated with construction activities will be minimal, and will be mitigated, in comparison to the resulting long-term beneficial impacts. Short-term impacts include traffic disruption, dust, noise and site aesthetics. No adverse long-term impacts are anticipated.

### Irreversible and Irretrievable

The impact of the proposed project on irreversible and irretrievable commitment of resources includes materials utilized during construction and fossil fuels utilized to implement project construction.

## Item 8 – Other Impacts or Concerns

### Direct Impacts

Construction of the proposed project is not expected to have an adverse effect on historical, archaeological, geographic or cultural areas, as the construction activities will occur underground and will require minimal disturbance of the project area soils due to much of the work being performed by use of trenchless technologies. The proposed project will not detrimentally affect the water quality of the area, air quality, wetlands, endangered species, wild and scenic rivers or unique agricultural lands. The construction activities associated with this project will not permanently impact the visible landscape.

### User Rates

As discussed in Item 6 above, the impact of financing the Projects A and B, Alternative 2 through the SRF loan program is expected to increase by no more than 0.64% the cost of sewer disposal to a typical City of Detroit customer due to the impact of construction cost. However, the actual rate determination will be based on factors that encompass the delivery of comprehensive services by DWSD to its customers. The increase is based on repayment of the SRF loan over a 20-year period.

### Indirect Impacts

It is not anticipated that DWSD's proposed improvements to the sewer collection system will alter the ongoing pattern of growth and development in the study area as these neighborhoods are fully developed. Growth patterns in the service area are subject to local use and zoning plans, thus providing further opportunity to minimize indirect impacts.

### Cumulative Impacts

Improved reliability, efficiency and the ability to safely convey storm water and sanitary flows to the WRRF are the primary cumulative beneficial impacts anticipated from the implementation of the proposed project.

## Item 9 – Mitigation

Where adverse impacts cannot be avoided, mitigation methods will be implemented. Mitigating measures for the projects such as soil erosion control, if required, will be utilized as necessary and in accordance with applicable laws. Details will be further specified in the construction contract documents used for the project.

### Mitigation of Short Term Impacts

Short-term impacts due to construction activities such as noise, dust and minor traffic disruption cannot be avoided. However, efforts will be made to minimize the adverse impacts by use of thorough design and well planned construction sequencing. Noise from equipment cannot be avoided, but hours of work can be controlled. Dust and soil deposits on the streets can be controlled through watering and construction area sweeping. Construction area footprints will be minimized, and traffic control measures can be utilized. Site restoration will minimize the adverse impacts of construction, and adherence to the Soil Erosion and Sedimentation Act will minimize the impacts due to disturbance of the soil structure, if such disturbance is found to be necessary. Specific techniques will be specified in the construction contract documents.

### Mitigation of Long Term Impacts

Adverse long term impacts due to the proposed project are not anticipated. The aesthetic impacts of construction within the boundaries of the project area will be mitigated by site restoration.

### Mitigation of Indirect Impacts

In general, it is not anticipated that mitigative measures to address indirect impacts will be necessary for the recommended improvements addressed in this Project Plan. The proposed improvements are located within the project area so they do not promote growth in areas not currently served by DWSD. Therefore, indirect impacts are not likely to be a concern for these improvements.



## Item 10 – Public Involvement

The project team has pursued contact with the neighborhoods in the Project A and B areas during the initial planning and condition assessment phases leading up to the project plan development. Several of the techniques that have been progressively incorporated include: door-to-door outreach; door hangers; movable lawn signs while condition assessment work was being performed; informational meeting with neighborhood association presidents; information provided to the City's Department of Neighborhoods, Detroit Economic Growth Corporation District Liaisons and Detroit City Council. A key, required component of this public involvement will be a public hearing outlined in the following sections. Notice for the public hearing will be advertised in local publications and will be posted electronically on various websites, social media and through email.

### Public Hearing Advertisement and Notice

A notice will be published no less than 30 days in advance to alert parties interested in this Project Plan and request input at a public hearing prior to its adoption. In addition, a direct mail notification of the notice will be sent to the potentially interested local and federal agencies. This direct mail notice includes an invitation to comment.

### Public Hearing Transcript

A formal public hearing on the draft Project Plan will be held before the DWSD Board of Water Commissioners at 6:00 PM on June 19, 2019 at Unity Baptist Church, located at 7500 Tireman, Detroit, MI 48204. The hearing will include a presentation on the project, as well as an opportunity for public comment. The hearing transcript will be provided with the submission, along with a list of attendees.

### Public Hearing Comments Received and Answered

Comments from the public during the Public Hearing will be addressed and answered by the project team.

### Adoption of the Project Plan

Upon approval and certification of resolution by the DWSD Board of Water Commissioners, the GLWA Board of Water Commissioners will certify a resolution at its regular monthly meeting on June 26, 2019, authorizing GLWA to proceed with official filing of the Project Plan for purposes of securing low interest loan assistance under the SRF Program. Executed copies of both Boards of Water Commissioners' Resolutions and certifications for the Project Plan will be provided with the submission.