



Public Works Commission

Application for Financial Assistance

IMPORTANT: Please consult "Instructions for Financial Assistance for Capital Infrastructure Projects" for guidance in completion of this form.

Applicant

Applicant: City of Oakwood Subdivision Code: 113-57764

District Number: 4 County: Montgomery Date: 08/29/2022

Contact: Kenneth Spitler Phone: (937) 298-0777
(The individual who will be available during business hours and who can best answer or coordinate the response to questions)

Email: spitler@oakwood.oh.us FAX: _____

Project

Project Name: Far Hills Storm Sewer Reconstruction Zip Code: 45419

Subdivision Type	Project Type	Funding Request Summary	
	<small>(Select single largest component by \$)</small>	<small>(Automatically populates from page 2)</small>	
<u>City</u>	1. Road	Total Project Cost:	<u>2,312,195</u> .00
	2. Bridge/Culvert	1. Grant:	<u>492,500</u> .00
	3. Water Supply	2. Loan:	<u>492,500</u> .00
	4. Wastewater	3. Loan Assistance/ Credit Enhancement:	<u>0</u> .00
	5. Solid Waste		
	x 6. Stormwater	Funding Requested:	<u>985,000</u> .00

District Recommendation (To be completed by the District Committee)

Funding Type Requested	SCIP Loan - Rate: _____ % Term: _____ Yrs	Amount: _____ .00
<small>(Select one)</small>		
<input type="checkbox"/> State Capital Improvement Program	RLP Loan - Rate: _____ % Term: _____ Yrs	Amount: _____ .00
<input type="checkbox"/> Local Transportation Improvement Program	Grant:	Amount: _____ .00
<input type="checkbox"/> Revolving Loan Program	LTIP:	Amount: _____ .00
<input type="checkbox"/> Small Government Program	Loan Assistance / Credit Enhancement:	Amount: _____ .00
District SG Priority: _____		

For OPWC Use Only

STATUS	Grant Amount: _____ .00	Loan Type: <input type="checkbox"/> SCIP <input type="checkbox"/> RLP
Project Number: _____	Loan Amount: _____ .00	Date Construction End: _____
_____	Total Funding: _____ .00	Date Maturity: _____
Release Date: _____	Local Participation: _____ %	Rate: _____ %
OPWC Approval: _____	OPWC Participation: _____ %	Term: _____ Yrs

1.0 Project Financial Information (All Costs Rounded to Nearest Dollar)

1.1 Project Estimated Costs

Engineering Services

Preliminary / Final Design:	<u>148,800</u>	.00	
Construction Administration:	<u>0</u>	.00	
Total Engineering Services:	a.) <u>148,800</u>	.00	<u>7.6</u> %
Right of Way:	b.) <u>0</u>	.00	
Construction:	c.) <u>1,966,722</u>	.00	
Permits, Advertising, Legal:	e.) <u>0</u>	.00	
Construction Contingencies:	f.) <u>196,673</u>	.00	
Total Estimated Costs:	g.) <u>2,312,195</u>	.00	

1.2 Project Financial Resources

Local Resources

Local In-Kind or Force Account:	a.) <u>0</u>	.00	
Local Revenues:	b.) <u>1,327,195</u>	.00	
Other Public Revenues:			
Local / ODOT - Let:	d.) <u>0</u>	.00	
ODOT PID:			
OEPA / OWDA:	e.) <u>0</u>	.00	
CDBG:	f.) <u>0</u>	.00	
Other:	g.) <u>0</u>	.00	
Subtotal Local Resources:	i.) <u>1,327,195</u>	.00	<u>57.4</u> %

OPWC Funds (Check all requested and enter Amount)

Grant: <u>50</u> % of OPWC Funds	j.) <u>492,500</u>	.00	
Loan: <u>50</u> % of OPWC Funds	k.) <u>492,500</u>	.00	<u>30</u> yrs
Loan Assistance / Credit Enhancement:	l.) <u>0</u>	.00	
Subtotal OPWC Funds:	m.) <u>985,000</u>	.00	<u>42.6</u> %
Total Financial Resources:	n.) <u>2,312,195</u>	.00	<u>100</u> %

1.3 Availability of Local Funds

Attach a statement signed by the Chief Financial Officer listed in section 5.2 certifying all local resources required for the project will be available on or before the earliest date listed in the Project Schedule section. The OPWC Agreement will not be released until the local resources are certified. Failure to meet local share may result in termination of the project. Applicant needs to provide written confirmation for funds coming from other funding sources.

2.0 Repair / Replacement or New / Expansion

2.1 Total Portion of Project New / Expansion: _____⁰.00

3.0 Project Schedule

3.1 Engineering / Design / Right of Way Begin Date: 04/01/2022 End Date: 12/09/2022

3.2 Bid Advertisement and Award Begin Date: 12/14/2022 End Date: 01/31/2023

3.3 Construction Begin Date: 07/31/2023 End Date: 05/31/2024

Construction cannot begin prior to release of executed Project Agreement and issuance of Notice to Proceed.

Failure to meet project schedule may result in termination of agreement for approved projects. Modification of dates must be requested in writing by project official of record and approved by the Commission once the Project Agreement has been executed.

4.0 Project Information

If the project is multi-jurisdictional, information must be consolidated in this section.

4.1 Useful Life / Cost Estimate / Age of Infrastructure

Project Useful Life: 33 Years Age: 1983 (Year built or year of last major improvement)

Attach Registered Professional Engineer's statement, with seal or stamp and signature confirming the project's useful life indicated above and detailed cost estimate.

4.2 User Information

Road or Bridge: Current ADT _____ Year _____

Water / Wastewater: Based on monthly usage of 4,500 gallons per household; attach current ordinances.

Residential Water Rate Current \$ _____⁰ Number of households served: _____

Residential Wastewater Rate Current \$ _____⁰ Number of households served: _____

Stormwater: Number of households served: _____¹⁰²

4.3 Project Description

A: SPECIFIC LOCATION (Supply a written location description that includes the project termini; a map does not replace this requirement.) 2000 character limit.

Far Hills Avenue (State Route 48) at Greenmount Boulevard; Dellwood Avenue between Far Hills Avenue and East Schantz Avenue; Forrer Boulevard between Far Hills Avenue and East Schantz Avenue; and a section of Devereux Drive north of Forrer Road

B: IDENTIFY THE PROBLEM (Describe the issue to be addressed) 2000 character limit.

Portions of the old storm sewer system, particularly under Far Hills Ave. (SR 48), are deteriorated with settled pipe crowns and spalled concrete with exposed reinforcing steel. A drainage study prepared by LJB Inc. in July 2019 noted several sections of public roadways in the drainage area experience flooding multiple times per year causing ponding water to depths of 1 to 2+ feet. This occurs on Far Hills Ave. (SR 48) and on adjacent local streets. Video inspection identified and documented deterioration of the existing storm sewer. The following excerpts are from the LJB study:

-'During the rain

event on Friday, June 8, 2018, Far Hills Ave. flooded at Greenmount Blvd. to a depth of approximately 2.5 feet. The ponded water eventually spilled down the asphalt driveway of the home at 1401 Far Hills Ave. just south of Greenmount Blvd. and flooded the back patio of the home to the north at 1329 Far Hills Ave.'

-'The west end of

Dellwood Ave. floods multiple times per year, including most recently on June 26, 2018, to a depth that ponds over the curb before eventually outletting over the pavement, sidewalk and curb into the northbound lane of Far Hills Ave.'

-'Flooding of Forrer Blvd.

between Far Hills Ave. and Schantz Ave. was also observed during the June 26, 2018 storm event.'

-'The box culvert in the area behind the

west curb line of Far Hills Ave. has a section where the concrete on the roof has spalled away, exposing the reinforcing steel and leaving it exposed and deteriorating.'

-'It is difficult to estimate the length of the damage from the video, but the entire width of the roof is clearly damaged and in poor condition.'

-'The bottom of the box

culvert is broken and heaved in the section of box culvert from its downstream connection to the 36" pipe to about 50 feet upstream from the rear yard manhole. It appears the floor of the culvert has failed, and may threaten the stability of the sides and top.

C: PROJECT SCOPE (Describe the work to be completed) 2000 character limit.

The project includes: +/-3,050 feet of storm sewer, including 683' of 12", 129' of 15", 366' of 18", 698' of 24", 205' of 30" and 967' of 42"; 26 catch basins/inlets; 33 manholes; 1,246' curb replacement; 4,000 square yards of pavement restoration; other associated items; and temporary and permanent easement acquisition as needed.

5.0 Project Officials

Changes in Project Officials must be submitted in writing from an officer of record.

5.1 Chief Executive Officer (Person authorized in legislation to sign project agreements)

Name: Norbert Klopsch
Title: City Manager
Address: 30 Park Avenue

City: Oakwood State: Ohio Zip: 45419
Phone: 937-298-0600
FAX: 937-297-2940
E-Mail: klopsch@oakwoodohio.gov

5.2 Chief Financial Officer (Can not also serve as CEO)

Name: Cindy Stafford
Title: Finance Director
Address: 30 Park Avenue

City: Oakwood State: OH Zip: 45419
Phone: 937-298-0402
FAX: 2937-297-2940
E-Mail: stafford@oakwoodohio.gov

5.3 Project Manager

Name: Chris Kuzma
Title: Staff Engineer
Address: 210 Shafor Boulevard

City: Oakwood State: Ohio Zip: 45419
Phone: 937-298-0777
FAX:
E-Mail: kuzma@oakwoodohio.gov

6.0 Attachments / Completeness review

Confirm in the boxes below that each item listed is attached (Check each box)

- x A certified copy of the legislation by the governing body of the applicant authorizing a designated official to sign and submit this application and execute contracts. This individual should sign under 7.0, Applicant Certification, below.

- x A certification signed by the applicant's chief financial officer stating the amount of all local share funds required for the project will be available on or before the dates listed in the Project Schedule section. If the application involves a request for loan (RLP or SCIP), a certification signed by the CFO which identifies a specific revenue source for repaying the loan also must be attached. Both certifications can be accomplished in the same letter.

- x A registered professional engineer's detailed cost estimate and useful life statement, as required in 164-1-13, 164-1-14, and 164-1-16 of the Ohio Administrative Code. Estimates shall contain an engineer's seal or stamp and signature.

A cooperative agreement (if the project involves more than one subdivision or district) which identifies the fiscal and administrative responsibilities of each participant.

Farmland Preservation Review - The Governor's Executive Order 98-IV, "Ohio Farmland Protection Policy" requires the Commission to establish guidelines on how it will take protection of productive agricultural and grazing land into account in its funding decision making process. Please include a Farm Land Preservation statement for projects that have an impact on farmland.

Capital Improvements Report. CIR Required by O.R.C. Chapter 164.06 on standard form.

- x Supporting Documentation: Materials such as additional project description, photographs, economic impact (temporary and/or full time jobs likely to be created as a result of the project), accident reports, impact on school zones, and other information to assist your district committee in ranking your project. Be sure to include supplements which may be required by your local District Public Works Integrating Committee.

7.0 Applicant Certification

The undersigned certifies: (1) he/she is legally authorized to request and accept financial assistance from the Ohio Public Works Commission as identified in the attached legislation; (2) to the best of his/her knowledge and belief, all representations that are part of this application are true and correct; (3) all official documents and commitments of the applicant that are part of this application have been duly authorized by the governing body of the applicant; and, (4) should the requested financial assistance be provided, that in the execution of this project, the applicant will comply with all assurances required by Ohio Law, including those involving Buy Ohio and prevailing wages.

Applicant certifies that physical construction on the project as defined in the application has NOT begun, and will not begin until a Project Agreement for this project has been executed with the Ohio Public Works Commission. Action to the contrary will result in termination of the agreement and withdrawal of Ohio Public Works Commission funding from the project.

Certifying Representative (Printed form, Type or Print Name and Title)

Original Signature / Date Signed

A RESOLUTION

BY: VICE MAYOR BYINGTON NO. 1896

TO AUTHORIZE AND DIRECT THE CITY MANAGER TO APPLY FOR AMENDMENT 2 GRANT FUNDS IN CONNECTION WITH THE FAR HILLS STORM SEWER RECONSTRUCTION PROJECT; AND TO PROVIDE SUCH RELATED INFORMATION AS MAY BE REQUESTED BY THE DISTRICT 4 PUBLIC WORKS INTEGRATING COMMITTEE OR BY THE OHIO PUBLIC WORKS COMMISSION, DIRECTOR OF ADMINISTRATORS.

WHEREAS, in 1987, voters of Ohio passed Amendment 2, an amendment to Article VIII of the Ohio Constitution, which authorized the State of Ohio to issue bonds for the purpose of financing or assisting local governments in financing public infrastructure capital improvements; and

WHEREAS, as authorized by Amendment 2, the 117th General Assembly adopted Amended Substitute House Bill 704, which established the State Capital Improvement Program and enabled its implementation by the Ohio Public Works Commission (OPWC), and the same has been renewed in 1995, 2005, and 2014 and remains in effect as the primary state program to assist with local infrastructure improvements; and

WHEREAS, it is the intent of the city of Oakwood to apply for Amendment 2 funds for Public Infrastructure Capital Improvements in connection with the planned Far Hills Storm Sewer Reconstruction Project; and

WHEREAS, the Far Hills Storm Sewer Reconstruction Project is considered to be a priority need for the community and for persons traveling along State Route 48 (Far Hills Avenue) through Oakwood, and is a qualified project under the terms of this OPWC program;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF OAKWOOD, OHIO, THAT:

SECTION I.

The City Manager is hereby authorized and directed to submit an Application for Financial Assistance for the City of Oakwood Far Hills Avenue Storm Sewer Reconstruction Project, a Capital Improvement Project as defined in Section 164.01(A) of the Ohio Revised Code; to provide such information as may be requested by the District 4 Public Works Integrating Committee or by the Ohio Public Works Commission, Director of Administrators; and to execute such contracts and agreements as may be necessary and appropriate to implement this project.

SECTION II.

The City of Oakwood hereby declares that it will make available matching funds as may be required under the terms of any grant awarded pursuant to this resolution, and commits to including these funds in the City Budget for the year of the grant award.

SECTION III.

It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its committees that resulted in such formal action were in compliance with all legal requirements including §121.22, Ohio Revised Code.

ADOPTED BY COUNCIL OF THE CITY OF OAKWOOD, this 1st day of August, 2022.



Mayor William D. Duncan


ATTEST:



Clerk of Council

TO THE CLERK:

Publication of this resolution is not required.



City Attorney Robert Jacques

**CHIEF FINANCIAL OFFICER'S CERTIFICATION OF LOCAL FUNDS /
LOAN REPAYMENT LETTER**

August 29, 2022

I, Finance Director of the City of Oakwood, Montgomery County, Ohio, hereby certify that the City of Oakwood, Montgomery County, Ohio has or will have the amount of \$1,327,195.00 in the 313- Local Fiscal Recovery Fund and 616 - Stormwater Improvement/ Equipment Replacement Fund and that these amounts will be used to pay the local share for the Far Hills Storm Sewer Reconstruction Project when it is required, subject to appropriation by Oakwood City Council in December 2022 as required by law.

I, Finance Director of the City of Oakwood, Montgomery County, Ohio , hereby certify that the City of Oakwood, Montgomery County, Ohio has / will have/ will collect the amount of \$492,500.00 in the 615 - Stormwater Operating and that this amount will be used to repay the Ohio Public Works Commission SCIP or RLP loan requested for the Far Hills Storm Sewer Reconstruction Project over a 30-year term.



Cindy S Stafford, CPA
Finance Director
City of Oakwood, Montgomery County, Ohio

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Cindy S Stafford, CPA
Finance Director
City of Oakwood, Montgomery County, Ohio



ENGINEER'S ESTIMATE
Far Hills Storm Sewer Reconstruction - Total

Client name: City of Oakwood

Date: August 29, 2022

Description	Pay Item	Total Estimated	Unit	Unit Cost	Total Cost
Removal Items					\$ 438,048.00
Concrete Pavement Removed	202a23000	2,908	SY	\$ 30.00	\$ 87,240.00
Asphalt Pavement Removed	202e23000	1,157	SY	\$ 20.00	\$ 23,140.00
Concrete Driveway Removed	202e23000	129	SY	\$ 20.00	\$ 2,580.00
Curb Removed	202e32000	471	LF	\$ 10.00	\$ 4,710.00
Curb & Gutter Removed	202e32000	80	LF	\$ 18.00	\$ 1,440.00
Roller Curb & Gutter Removed	202e32000	980	LF	\$ 18.00	\$ 17,640.00
House Demolished	202e56000	1	LS	\$ 50,000.00	\$ 50,000.00
Shed Demolished	202e56000	1	LS	\$ 1,500.00	\$ 1,500.00
Sidewalk Removed	202e30000	160	SY	\$ 15.00	\$ 2,400.00
Sawcut Existing Pavement	252e01500	1,416	LF	\$ 10.00	\$ 14,160.00
Tree Removed		15	EA	\$ 500.00	\$ 7,500.00
Bush Removed		17	EA	\$ 350.00	\$ 5,950.00
Manhole Removed (9 ft Deep)	202e58000	2	EA	\$ 2,000.00	\$ 4,000.00
Manhole Removed (9 ft Deep-Devereux)	202e58000	3	EA	\$ 1,500.00	\$ 4,500.00
Manhole Removed	202e58000	5	EA	\$ 700.00	\$ 3,500.00
Curb & Gutter Inlet Removed (Catch Basin 3)	202e58100	11	EA	\$ 500.00	\$ 5,500.00
Curb & Gutter Inlet Removed (I-2)	202e58200	3	EA	\$ 2,000.00	\$ 6,000.00
Storm Sewer Box Removed	202a35200	258	LF	\$ 400.00	\$ 103,200.00
Fill and Plug Existing Conduit - Storm Sewer Abandoned in Place	202e70000	574	LF	\$ 22.00	\$ 12,628.00
Fill and Plug Existing Conduit - Storm Sewer Abandoned in Place (Far Hills)	202e70000	239	LF	\$ 30.00	\$ 7,170.00
Fill and Plug Existing Conduit - 36" Storm Sewer Abandoned In Place	202e70000	260	LF	\$ 50.00	\$ 13,000.00
36" Storm Sewer Removed	202a35200	372	LF	\$ 80.00	\$ 29,760.00
Storm Sewer Removed (Dellwood)	202a35100	261	LF	\$ 50.00	\$ 13,050.00
Storm Sewer Removed (Far Hills)	202a35100	121	LF	\$ 25.00	\$ 3,025.00
Storm Sewer Removed	202a35100	295	LF	\$ 49.00	\$ 14,455.00
Roadway Items					\$ 756,664.44
City Standard Type A Intergral Curb (SCD 300-15) (Devereux)	609e12001	980	LF	\$ 40.00	\$ 39,200.00
Type A Intergral Curb (SCD 300-15)	609e12001	186	LF	\$ 45.00	\$ 8,370.00
Type C Intergral Curb (SCD 300-15)	609e12001	80	LF	\$ 40.00	\$ 3,200.00
ODOT Item 452 7" Concrete Pavement	452e11010	3,020	SY	\$ 75.00	\$ 226,500.00
ODOT Type 6 Barrier Curb	609e26000	285	LF	\$ 30.00	\$ 8,550.00
ODOT Item 442, 1.5" Asphalt Pavement Surface Course, 12.5 MM, Type A (449)	442e22100	9	CY	\$ 210.00	\$ 1,811.25
ODOT Item 442, 1.75" Asphalt Pavement Intermediate Course, 19 MM, Type A (449)	442e22400	10	CY	\$ 205.00	\$ 2,062.81
ODOT Item 441 - 1.5" Asphalt Concrete Surface Course, Type 1 (449), PG64-22	441e70000	40	CY	\$ 205.00	\$ 8,114.58
ODOT Item 441 - 1.75" Asphalt Concrete Intermediate Course, Type 2 (449)	441e70300	46	CY	\$ 195.00	\$ 9,005.21
ODOT Item 407, Non-Tracking Tack Coat (0.055 Gal/SY)	407e20000	127	GAL	\$ 3.00	\$ 381.81
ODOT Item 301, 6" Asphalt Concrete Base PG64-22 (449)	301e56000	204	CY	\$ 145.00	\$ 29,628.33
ODOT Item 304, 6" Aggregate Base	304e20000	193	SY	\$ 85.00	\$ 16,395.83
8" Concrete Driveway	452e12010	167	SY	\$ 80.00	\$ 13,360.00
4" Sidewalk	608e10000	1440	SF	\$ 7.00	\$ 10,080.00
4" Aggregate Base	304e20000	456	CY	\$ 85.00	\$ 38,741.11
Trees		20	EA	\$ 750.00	\$ 15,000.00
Bush		17	EA	\$ 500.00	\$ 8,500.00
Excavation	203e10000	2600	CY	\$ 40.00	\$ 104,000.00
Excavation (Devereux)	203e10000	1500	CY	\$ 45.00	\$ 67,500.00
Disposal (Excess Material)		500	CY	\$ 40.00	\$ 20,000.00
Disposal (Devereux)		350	CY	\$ 45.00	\$ 15,750.00
Maintenance of Traffic		1	LS	\$ 25,000.00	\$ 25,000.00
Mobilization		1	LS	\$ 85,518.50	\$ 85,518.50
Drainage Items					\$ 772,010.00
Catch Basin 3	611e98150	23	EA	\$ 3,000.00	\$ 69,000.00
Inlet, No. 2-12	611e98740	1	EA	\$ 12,000.00	\$ 12,000.00
Inlet, No. 2-20	611e98780	2	EA	\$ 16,000.00	\$ 32,000.00
Headwall - 42" Pipe		1	EA	\$ 5,000.00	\$ 5,000.00
Manhole, No. 3 (6' Storm Manhole - Doghouse)	611e99570	1	EA	\$ 5,000.00	\$ 5,000.00
Manhole, No. 3 (4' Storm Manhole - 5' Deep)	611e99570	1	EA	\$ 4,000.00	\$ 4,000.00
Manhole, No. 3 (4' Storm Manhole - 4' Deep)	611e99570	12	EA	\$ 3,000.00	\$ 36,000.00
Manhole, No. 3 (4' Storm Doghouse Manhole)	611e99570	4	EA	\$ 3,000.00	\$ 12,000.00
Manhole, No. 3 (6' Storm Manhole - 9' Deep) (Far Hills)	611e99570	12	EA	\$ 10,000.00	\$ 120,000.00
Manhole, No. 3 (4' Storm Manhole - 7' Deep)	611e99574	2	EA	\$ 5,000.00	\$ 10,000.00
Combined Curb Inlet & Manhole	611e99500	1	EA	\$ 9,000.00	\$ 9,000.00
42" Storm Sewer	611e19400	967	LF	\$ 245.00	\$ 236,915.00
30" Storm Sewer	611e13400	205	LF	\$ 150.00	\$ 30,750.00
24" Storm Sewer	611e10400	698	LF	\$ 125.00	\$ 87,250.00
18" Storm Sewer	611e07400	366	LF	\$ 110.00	\$ 40,260.00
15" Storm Sewer	611e05900	129	LF	\$ 90.00	\$ 11,610.00
12" Storm Sewer	611e44000	683	LF	\$ 75.00	\$ 51,225.00
Subtotal					\$ 1,966,722.44
Contingency (10%)					\$ 196,672.24
TOTAL ESTIMATED CONSTRUCTION COST					\$ 2,163,394.69



WEIGHTED USEFUL LIFE CERTIFICATION

FAR HILLS STORM SEWER RECONSTRUCTION

Weighted useful life of each component:

Component	Useful Life	Estimated Cost =	Weighted Useful Life
Full Depth Road	25 Years	\$ 961,087	\$ 24,027,175
Sidewalks	25 Years	\$ 58,866	\$ 1,471,650
Storm Sewers	40 Years	\$ 1,143,422	\$ 45,737,680
Total Project		\$ 2,163,395	\$ 71,236,505

Average weighted useful life of total project = $\$71,236,505 / \$2,163,395 = 32.9$ Years

I, hereby, certify that the **FAR HILLS STORM SEWER RECONSTRUCTION** project has an expected useful life of **32.9** years based on normal usage; in evidence, whereof, I have set my signature and seal as of this date.



LJB Inc.

Max Paton, P.E.
Ohio Engineer's License No. 82866

August 29, 2022

Date

OHIO PUBLIC WORKS COMMISSION DISTRICT 4

Round 2022-2023 Supplemental Questionnaire

Applicant: _____

Project Title: _____

Application Summary:

Briefly describe the project:

Addresses District Infrastructure Needs:

Is this project located in more than one community? (Circle One)		
Yes	No	
What percentage of the community will be served by this project? (Circle One)		
Less than 25%	25% to 40%	More than 40%

Economic Development

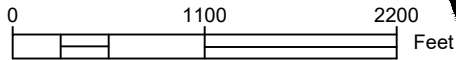
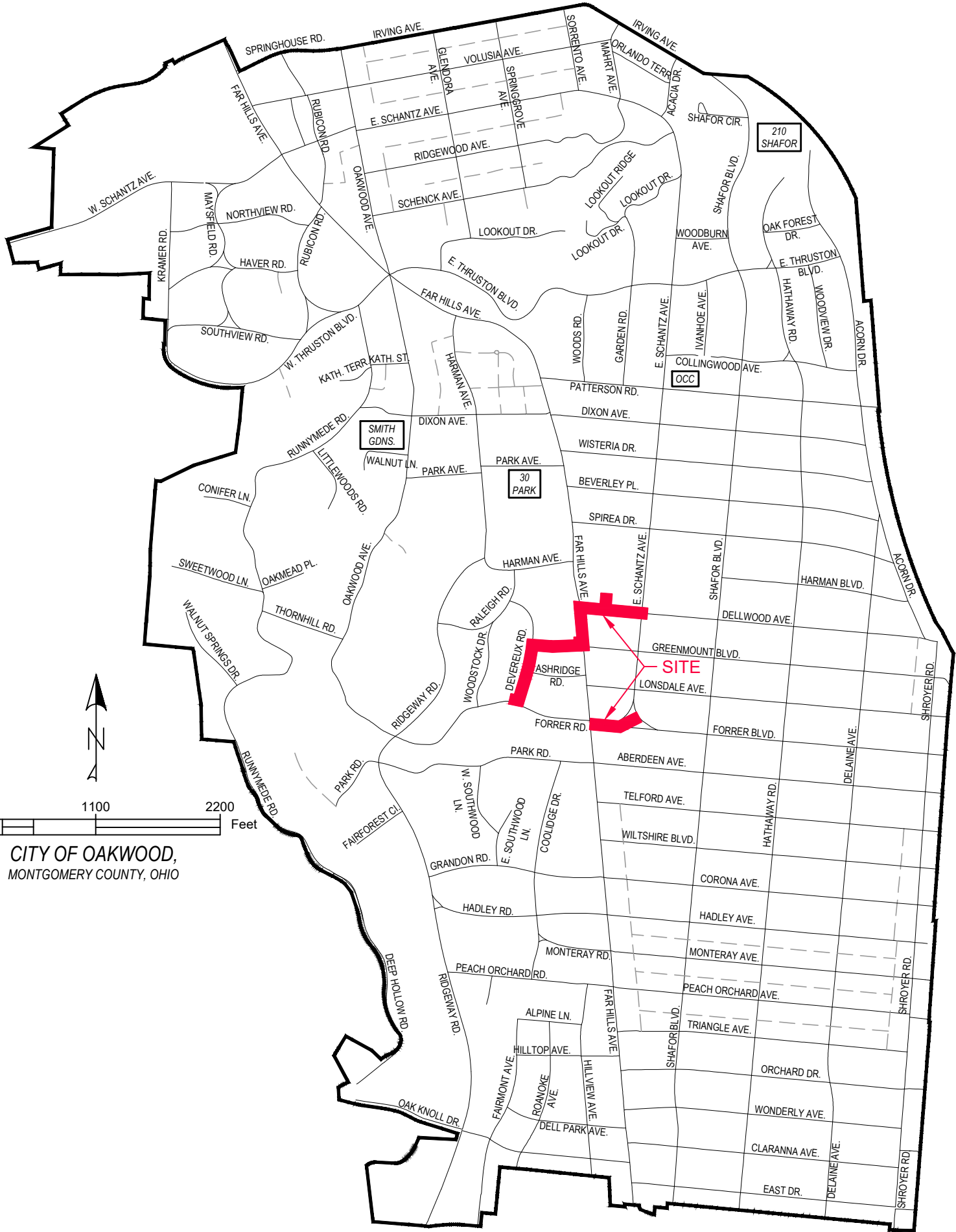
How many jobs are being created as a result of this project?	
How many jobs will be retained as a result of this project?	
Why is it necessary to fund this improvement to secure this development?	
What type of industry is proposed in this development?	

Relieve Existing Traffic Congestion:

What is the level of service?	
--------------------------------------	--

Other Factors

What other factors exist that make this project more important than other like projects?



CITY OF OAKWOOD,
MONTGOMERY COUNTY, OHIO

FAR HILLS STORM SEWER RECONSTRUCTION PROJECT
OVERALL PROJECT MAP

[Home](#)
[TMC](#)
[TCLS](#)
[TTDS](#)
[RSMS](#)
[NMDS](#)
[WOTS](#)
[TFMS](#)

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Record 1 of 1 Goto Record

Location ID	7157	MPO ID	
Type	SPOT	HPMS ID	000048010370
On NHS	Yes	On HPMS	Yes
LRS ID	SMOTSR00048**C	LRS Loc Pt.	10.53
SF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL ▶	Route Type	SR
AF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL ▶	Route	00048
GF Group	URBAN_OTHER_PRINCIPAL_ARTERIAL ▶	Active	Yes
Class Dist Grp	SMOTSR00048**C ▶	Category	State Program
Seas Class Grp	URBAN_OTHER_PRINCIPAL_ARTERIAL ▶		
WIM Group			
QC Group	Default		
Funct'l Class	3 - Other Principal Arterial	Milepost	
Located On	FAR HILLS AVE		
Loc On Alias			
	SR48 NW OF THURSTON BLVD, IN DAYTON		
More Detail ▶			

STATION DATA

Directions: **2-WAY**

AADT

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2021	14,690 ³		11	60	14,106 (96%)	584 (4%)	Grown from 2020



**DEVEREUX DRAINAGE STUDY
CITY OF OAKWOOD, OHIO
IMPROVEMENTS TO STORM DRAINAGE SYSTEM
DEVEREUX DR., DELLWOOD AVE.,
FAR HILLS AVE. and FORRER BLVD.**

July 03, 2019

PARTIAL REPORT ONLY

PREPARED FOR:

**City of Oakwood
Montgomery County, Ohio**

30 Park Avenue
Oakwood, Ohio 45419

PREPARED BY:

LJB Inc.

2500 Newmark Drive
Miamisburg, OH 45342
(937) 259-5000

Harry G. Herbst III P.E., P.S.
HHerbst@ljbinc.com

STUDY ASSESSMENT

GENERAL

Portions of the Devereux drainage area experience flooding several times a year and recent storms have led to increased flooding. Areas of focus for this study include the following:

- During the rain event on Friday, June 8, 2018, Far Hills Avenue flooded at Greenmount Blvd. to a depth of approximately 2.5 feet. The ponded water eventually spilled down the asphalt driveway of the home at 1401 Far Hills Avenue just south of Greenmount Blvd., and flooded the back patio of the home to the north at 1329 Far Hills Avenue.
- The west end of Dellwood Avenue floods multiple times per year, including most recently on June 26, 2018, to a depth that ponds over the curb before eventually outletting over the pavement, sidewalk and curb into the northbound lane of Far Hills Avenue.
- Flooding of Forrer Boulevard between Far Hills Avenue and Schantz Avenue was also observed during the June 26, 2018 storm event.

The existing drainage system for this part of the city outlets to the open ditch at the northwest corner of Forrer Road and Devereux Drive. To the knowledge of the city staff, the ditch has not overtopped its banks during any of these or other storm events in the past several years. Upstream of the outlet, the storm system consists of a 36" pipe, 3'x3' poured in place box conduits, various size box conduits in Far Hills Avenue Ave. and pipes upstream ranging in size from 12" diameter to 42" diameter. The city atlases include layout, size and grade information for many of these conduits. The city has also collected video data of the inside of the conduits and reports the pipes to be in fair to good condition. The alignment of the 3'x3' box conduit between Far Hills Avenue and Devereux Drive is also a concern for the city, as it passes under at least one house (at 1313 Far Hills Avenue) and one out building structure. Areas of concern revealed by the videos will be discussed later in this report.

BASIS OF MAPPING EXHIBITS

The base mapping for this drainage study is based upon aerial imagery and 2 foot contours downloaded from the Ohio Geographically Referenced Information Program (OGRIP). Lot and parcel lines are from Montgomery County GIS. To supplement the city storm sewer atlas and video data, depths and elevations at critical junctures in the storm sewer system were collected by field survey by LJB survey crews during August and September, 2018. Several of the manholes on private property between Far Hills Avenue and Devereux Drive are buried and are not accessible for field survey. The exact location of this section of the storm system is plotted based upon the easement dimensions in the two westernmost sections, and lengths along the conduits as shown by the videos. The locations are considered to be sufficiently accurate for the purposes of this study.

DRAINAGE DESIGN CRITERIA

The Oakwood storm sewer atlas shows pipe and catch basin locations of the city's storm sewer system. Local design criteria for storm pipes would be to carry a 10 year storm flowing "just full". Within the Devereux drainage area, catch basins are spaced farther apart than current drainage design criteria. In the era

that Oakwood developed, catch basin spacing was probably not rigorously designed. Along Far Hills Avenue, being a State Route and under ODOT jurisdiction, storm sewers are usually designed to carry a 10-year storm flowing "just full", and a 25-year storm under surcharged conditions. In sumps, such as Far Hills Avenue at Greenmount Blvd., the storm sewer criteria would be to not allow the 50-year storm to encroach onto more than 1 lane. Catch basin spacing would expect to be more rigorously designed, but the design criteria for basin spacing based upon the ODOT and local criteria would only be for the 5-year storm (20 percent chance of being equaled or exceeded in any year). Clearly, there is a disparity between the design guidelines for storm sewers versus catch basin spacing. Catch basins generally capture only a percentage of the flow on roadways on a continuous grade. During more intense storms, the flows that by-pass consecutive catch basins continue to add to surface flows on the pavement, and become a contributing factor to the flooding at low areas, such as Dellwood Avenue, Forrer Boulevard and Far Hills Avenue.

The focus for this drainage study is to assess the flooding at the areas of interest based upon inadequate catch basins, undersized storm sewer piping, and/or a combination thereof.

STRUCTURAL CONCERNS

The videos provided by the City of Oakwood show the inside of the storm sewer system for the reinforced concrete box culvert (RCB) that runs under Far Hills Avenue and then west through the part of the block toward Devereux Drive, and the 36" reinforced concrete pipe (RCP) beyond to its outlet, tributary to Houk stream. The RCB under the residence at 1313 Far Hills Avenue does appear to be in good condition structurally, as does the 36" RCP downstream running from the box culvert to Devereux Drive and along Devereux Drive to the outlet (See Exhibits 1 and 2). However, there are several other areas that are of concern.

The box culvert in the area behind the west curb line of Far Hills Avenue has a section where the concrete on the roof has spalled away, exposing the reinforcing steel and leaving it exposed and deteriorating (See Exhibit 3). This is symptomatic of salt intrusion into the concrete interacting with the steel reinforcement, which expands and pops the concrete cover off. It is difficult to estimate the length of the damage from the video, but the entire width of the roof is clearly damaged and in poor condition. This area coincides to the area where snow plows would deposit salted snow from the pavement during winter conditions. The construction of the box culvert probably included waterproofing for the section of box culvert under the roadway, but not beyond. The city should consider a temporary repair of this section if the box culvert cannot be replaced in the near future. There is also a large chunk of what appears to be concrete, estimated at 9" thick and 3.5 feet wide, immediately downstream (See Exhibit 4). It is recommended to be removed, if possible.

At the upstream end of the box culvert, close to the east curb line of Far Hills Avenue, there is an 18" pipe that discharges into the box culvert. In the video, it appears the pipe may be clay pipe. The crown and both spring lines are broken, and the top of the pipe has settled significantly, possibly 1" or 2" or more (See Exhibit 9). The 18" pipe is the larger pipe in the picture. The pipe is crushing, and has no strength in itself. It is only restrained from collapsing by the soil under and beside it up to the spring line of the pipe. The city should consider a repair of this section of pipe if the storm sewer from Dellwood Avenue cannot be replaced in the near future. The smaller pipe to the right is probably a 6" underdrain outlet. It has become misaligned, but does not appear broken, and appears to be at lesser risk of causing immediate problems.

The bottom of the box culvert is broken and heaved in the section of box culvert from its downstream connection to the 36" pipe to about 50 feet upstream from the rear yard manhole. It appears the floor of the culvert has failed, and may threaten the stability of the sides and top (See Exhibit 8). It appears the box culvert is nearing the end of its useful life.

DRAINAGE - FAR HILLS AVENUE TO DEVEREUX DRIVE OUTLET

The flooding of Far Hills Avenue at Greenmount Blvd. on June 8, 2018 has several contributing factors. These include a marginally sized storm drainage system from Far Hills Avenue to the Devereux Drive outlet, site conditions at Far Hills Avenue and Greenmount Blvd., and the stormwater collection system of catch basins and pipes upstream. These issues are discussed in further detail below.

Storm drainage system. The storm drainage system running from the east curb line of Far Hills Avenue west, southwest and then south along Devereux Drive to the outlet consists of various sizes of concrete box culvert, predominantly 3' x 3', leading to 36" diameter RCP, at various slopes. The individual sections of the storm system have varying hydraulic capacities in comparison with the other sections.

The sections with the least capacity are the two sections of 36" RCP in Devereux Drive, from the 36" coming from the rear yards and thence along Devereux Drive to southern manhole at the outlet to Houk stream. The 10-year design and 25-year check flows are 190 cubic feet per second (cfs) and 218 cfs, respectively, in the section north of Ashridge Road. The existing pipe has a just-full capacity of 93 cfs, or just 49 percent of the design flow. At Ashridge Road, additional flows from Far Hills Avenue south of Ashridge to Wiltshire and the first two blocks of Greenmount Blvd. east of Far Hills Avenue are added to the system. The combined 10- and 25-year design and check flows for the system from Ashridge Road to the outlet are 207 cfs and 242 cfs, respectively. The existing pipe has a just-full capacity of 93 cfs, or just 45 percent of the design flow.

The sections of 36" RCP and 3' x 3' RCB culvert between Devereux Drive and Far Hills Avenue, even though upstream from the 36" RCP in Devereux Drive, have greater capacities than the 36" RCP in Devereux Drive. The 10 and 25 year design and check flows are 160 cfs and 185 cfs, respectively. The 36" RCP is on a steeper slope than the 3' x 3' RCB, and the just-full capacities are 152 cfs and 142 cfs respectively, or 95 percent and 89 percent of the of the design flow, respectively.

The hydraulic capacity of the variously sized sections of RCB culvert under Far Hills Avenue are difficult to accurately assess. The sizes of RCB change from 5.9'x4.2' to 2.7'x3.5' to 4.0'x6.0' to 4'x4' in about 70 feet. At every change in size of RCB, the velocity of the flow in the RCB changes, resulting in what is normally termed minor energy losses. However, since these changes occur in relatively short distances, these minor losses become a larger portion of the energy losses in this section of culvert. In addition, many of the changes in size occur abruptly, which increase the magnitude of the energy lost at each change. Changes in direction also contribute to energy losses, and would be significant at the high velocity of the 42" RCP coming into the box culvert in the median of Far Hills Avenue.

Having said all of the above, approximating the capacity of the culvert system from Far Hills Avenue to the Devereux Drive outlet as a whole, we would expect the storm flows to surcharge the overall system and produce above ground flooding at or exceeding the 10-year recurrence interval (design) flow. In other

words, the chance that the capacity of this section of the storm the system would overflow would be once every ten years, on average, or a 10 percent risk in any one given year.

Site conditions. When a roadway is constructed across a creek, stream or drainage way, it usually is constructed above the open water carrier with a culvert or bridge under the roadway to carry storm water under the roadway up to a certain rainfall intensity. If a larger storm flow occurs in such open water carrier, water will generally flow over the roadway, but return to the creek, stream or drainage way once it flows past the roadway embankment. Flows along the roadway can usually flow into the open water carrier at such locations. However, at the site on Far Hills Avenue, the valley west of Far Hills Avenue, where the open water would normally flow, has also been filled to be able to construct the houses at 1313, 1329 and possibly 1401 Far Hills Avenue. During the June 8, 2018 storm event, storm flows not carried by the storm drainage system were blocked from flowing westwardly above ground, until water reached sufficient depths to flow around and or between the houses. Water reportedly reached a depth of 2.5 feet. This type of condition on a major highway such as Far Hills Avenue, where the stormwater in a sag is only drained by the stormwater system and will not flow overland into the downstream channel or piping, warrants upsizing the stormwater system to carry the 50-year frequency storm under surcharged conditions. (ref. Ohio Department of Transportation, Location and Design Manual, Volume Two, Drainage Design, section 1104.4.2 Hydraulic Grade Line.)

The portion of the storm drainage system that is the box culvert running west southwest from Far Hills Avenue passes under the house at 1313 Far Hills Avenue. The house is constructed on two platted lots and straddles the common lot line between the two lots, being Lots numbered 3353 and 3354 of the Elizabeth Gardens Plat as recorded in Plat Book "T" page 4 of the Montgomery County Plat Records. The Plat shows an easement running through these two lots (and also the two lots fronting on Devereux Drive), and the easement crosses the common Lot line between 3353 and 3354 under the approximate location of the house. The existing storm system appears to be within the dedicated easement based upon the preliminary mapping used for this study. The plat does not define the purpose for the easement. The Plat language does not include the easement in the Dedication Statement, only the streets. The presence of the house above the culvert renders maintenance, repair and/or replacement of the culvert in its present location very difficult, if not totally impractical.

Catch Basin capacities upstream. Catch basin spacing is usually designed on highways and freeways to limit the spread of water into driving lanes on major streets and highways. However, the design storm used is usually less than the design storm used for the storm pipes and culverts. On many local and subdivision streets, catch basins have not been formally designed, but just placed at intersections and low points. Most of the residential areas in Oakwood are older, and were built when catch basin spacing was not formally designed hydraulically. This results in the streets carrying significant amounts of water in the curbs and gutters and on the street pavement itself. Even using the smaller storms for catch basin design, catch basins on continuous grades are not designed to capture the entire flow coming to the catch basin. A certain amount of the water flowing in curbed gutters is expected to flow past basins on continuous grades. In flat terrain, such as downtown Dayton, there are generally a sufficient number of low points in each block to capture flows which by-pass upstream basins. In rolling terrain, there will periodically be sumps, or low points, where the by-passing water can finally be collected into the storm system.

However, on Far Hills Avenue, there is a long stretch of continuous grade from the north and from the south leading to the intersection at Greenmount Blvd. From the north, Far Hills Avenue carries drainage from 8 blocks, from 2400 feet north of Greenmount Blvd. Contributing to that flow are drainage areas including most of the blocks on the west side of Far Hills Avenue, and as much as 2 blocks to the east at Dellwood Avenue and Greenmount Blvd. From the south, Far Hills Avenue carries drainage from five blocks, from 1650 feet south of Greenmount Blvd. In the southernmost four blocks, from the high point at Wiltshire Avenue to Forrer Boulevard, Far Hills Avenue carries the runoff from the roadway itself plus the front yards of the houses along Far Hills Avenue. Along the east side of Far Hills Avenue, Lonsdale Avenue and Forrer Boulevard bring drainage from 2 blocks east to Far Hills Avenue. To further complicate the flows from the south, the storm drainage system turns west at Ashridge Road, but the surface flows that by-pass the catch basins continue north through the Ashridge Road intersection to the low point in Far Hills Avenue.

Catch basin capacities have been reduced in many cases by roadway overlays. Pavement overlays have restricted the catch basin openings to further inhibit roadway and gutter flows being able to get into the storm sewers. An example is the catch basin in the east curb line of Far Hills Avenue just south of Greenmount Blvd., at the side of #4 Greenmount Blvd. This is an ODOT type curb inlet, and the road pavement has been built up to almost level with the top of the curb opening, with just a narrow slit remaining for water to enter the basin (See Exhibit 5).

For the larger storms, a greater percentage of the stormwater is unable to enter the storm sewer pipes through the catch basins. Therefore, the surface portion of the storm sewer system, which includes the curb, gutter and streets that handle the normal storms, will be quickly overwhelmed when the infrequent storms occur, such as the June 8, 2018 storm event on Far Hills Avenue.

An example of a catch basin whose capacity has not been reduced is the catch basin in the west curb line of Devereux Drive south of #1501 Devereux Drive. This appears to be an ODOT Type 3 catch basin with curb and gutter inlets, with vane grates which enhance the basin's capacity to suck water into the grate opening (See Exhibit 7).

DRAINAGE – DELLWOOD AVENUE

The cause of the frequent flooding in the first block of Dellwood Avenue east of Far Hills Avenue is relatively easy to determine. This storm system carries storm drainage from the four blocks of Shafor Blvd. between Lonsdale Avenue and Spirea Drive, the block of Greenmount Blvd. between Shafor Blvd. and Schantz Avenue, Dellwood Avenue between Far Hills Avenue and Schantz Avenue, and includes the yards and homes fronting in these streets, and most of the high school football field. The acreage of this drainage area at Dellwood Avenue and Far Hills Avenue is 16.7 acres, and generates 39 cfs and 44 cfs during the 10-year and 25-year storms, respectively. By comparison, the storm pipe in the west block of Dellwood Avenue is a 15" concrete pipe at 0.92% slope, which has a just-full capacity of 6 cfs, or just 15 percent of design capacity. Statistically, the capacity of this pipe is exceeded multiple times per year.

The Dellwood Avenue storm pipe discharges to an 18" pipe in the northbound curb lane of Far Hills Avenue. At a grade of 2.66% slope, it has a capacity of 17 cfs, or only 44 percent of design capacity. Even under surcharged conditions when Dellwood Avenue is flooded, these two pipes are so under-sized, that just the four catch basins in Dellwood Avenue east of Far Hills Avenue can admit more water into the system than these pipes can carry.

DRAINAGE – FORRER BOULEVARD

Forrer Boulevard reportedly floods less frequently than Dellwood Avenue, but did experience ponded water, especially on the south side of the boulevard, during the June 26, 2018 storm event. The storm system in Forrer Boulevard from Schantz Avenue to Far Hills Avenue carries storm runoff from the houses and front yards along the south side of Forrer Boulevard and the west side of Schantz Avenue, and most of the block on the north side of Forrer Boulevard between Schantz Avenue and Shafor Blvd. The Forrer Boulevard drainage area at Far Hills Avenue is 16.7 acres and generates 22.5 cfs and 25.8 cfs during the 10-year and 25-year storms, respectively. By comparison, the 15" and 18" pipes in Forrer Boulevard west of Schantz Avenue have just-full capacities of about 7 cfs, or only 31 percent of design capacity.

Field investigation of the storm pipes and catch basins along this area of Forrer Boulevard and Schantz Avenue reveal several catch basins that are clogged with debris. The clogged catch basins are in the south curb line of Forrer Boulevard at #24 (Exhibit 6) and the north curb line of Forrer Boulevard just west of Schantz Avenue at #11 Forrer Boulevard. The basins and pipes in Forrer Boulevard should be checked and cleaned as necessary.

The Forrer Boulevard storm pipe discharges to a parallel pipe system in Far Hills Avenue. In the manhole at the intersection of Far Hills Avenue and Forrer Boulevard, lesser flows drop into a 21" pipe that carries them to a 27" sewer which runs north under the Far Hills Avenue median. Higher flows from Forrer Boulevard fill the 21", and additional flows can then enter a 15" storm sewer which runs north under the east curb lane of Far Hills Avenue. The storm flows from Forrer Boulevard combine with the storm flows from Far Hills Avenue south of Forrer Boulevard, and produce 36.7 cfs during the 10-year storm. The combined storm system has a just-full capacity of 30.1 cfs, or 81 percent of the design capacity. This section of sewer is under-sized, but under surcharged conditions and with some flow in the gutters, can probably handle the design year storm, but with no excess capacity.

RECOMMENDATIONS

FAR HILLS AVENUE TO DEVEREUX DRIVE OUTLET

The storm drainage system from Far Hills Avenue to the Devereux Drive outlet should be replaced with an enlarged culvert to increase the hydraulic capacity. Three alignments are presented in this report, Devereux Alternate A, Devereux Alternate B and Devereux Alternate C. An alignment following Ashridge Road was briefly considered, but has several problems:

1. This alignment is 125 feet longer.
2. The longer alignment length does not allow sufficient fall to achieve the same capacities as the three alignments studied.
3. The excavations needed to install the pipe at the top of the hill in Ashridge would reach more than 20 feet deep. Depths greater than about 16 feet are beyond the normal capabilities of the average contractor.

The preliminary sizing for the section of storm drainage system from Far Hills Avenue to the Devereux Drive outlet is 48" reinforced concrete pipe. This size concrete pipe will handle the 10-year storm when installed at grades ranging from 1.24% to 2.08% slopes. However, given the sump condition at Far Hills Avenue, consideration should be given to increasing the design to greater than the 10-year storm. The same size pipe, 48", can handle a 25-year storm with little increase in cost if installed at grades ranging from 1.68% to 3.00% slopes. There is sufficient fall from the approximate flowline elevation of the storm system at the east side of Far Hills Avenue to the Devereux Drive outlet along the three alignments considered. This should allow the passage of the 50-year storm from the sump with sufficient catch basins at the sump and surcharging the 48" pipe.

The amount of water coming in the streets and gutters to the low point at Far Hills Avenue cannot be calculated. To help alleviate this sump condition at Far Hills Avenue, the alternate designs include costs to install 5 additional large catch basins on Far Hills Avenue at and near the low point at Greenmount Blvd. The outlet pipes from these five, plus the one existing catch basin, should be up-sized from 12" to 24" in order to accept surcharged flows greater than the normal design depths at these basins.

The approximate depths of the 48" pipe in Devereux Drive will range from 8' to 10' for Alternate A and B and increase to 16' for the Alternate C section north of Alternates A and B. The approximate depths of the 48" pipe through the private property between Devereux Drive and Far Hills Avenue will vary 10' to 12.5' for Alternate A, 10' to 14' for Alternate B, and 11' to 16' for Alternate C. The approximate depths of the 48" pipe in Far Hills Avenue will vary from 10' to 12'.

DELLWOOD AVENUE

The storm drainage system in Dellwood Avenue should be replaced in the block of Dellwood Avenue east of Far Hills Avenue to Schantz Avenue, and along the east side of Far Hills Avenue from Dellwood Avenue south to the 48" pipe draining to the west of Far Hills Avenue at the low point at Far Hills Avenue and Greenmount Blvd. Catch basins in the Dellwood Avenue block should be replaced to provide effective drainage of the surface waters into the new pipe.

Preliminary sizing of the replacement system indicates reinforced concrete pipe in the sizes of 24", 27" and 30" as shown on Exhibits 10 and 11. The approximate depths of the replacement pipes along Delwood Avenue will vary from 4' to 7', and the approximate depths of the replacement pipes along Far Hills Avenue will vary from 8' to 9'.

FORRER BOULEVARD

The storm drainage system in Forrer Boulevard should be replaced in the block of Forrer Boulevard east of Far Hills Avenue to Schantz Avenue, including new catch basins.

Preliminary sizing of the replacement system indicates reinforced concrete pipe in the sizes of 24" and 27" as shown on Exhibits 10 and 11. The approximate depths of the replacement pipes for the Forrer sewer will vary from 4' to 7'.

CATCH BASINS

Moving forward with pavement overlays, the city should pay particular attention to preserving the catch basin openings to accept stormwater flows. Pavement grinding in the vicinity of catch basins should be considered so as to not raise the pavement at catch basins. Where existing pavement overlays have already compromised catch basin openings, the city should consider grinding the pavement down at the catch basins to restore the efficacy of the opening. If this proves unfeasible, the alternate would be to install a new catch basin with a proper opening set to the new pavement elevation.

The city should also consider extending the storm system further upstream to be able to install additional catch basins to pick up stormwater runoff from the streets and get more into underground storm sewers. A general rule of thumb would be to expect a catch basin spacing of 200 feet to 300 feet, but the spacing should be based upon a hydraulic design to accommodate a storm frequency determined by the city. The design storm for catch basin spacing should be less frequent for the major thoroughfares, where traffic volumes and speed limits may be higher, and could be a little more frequent for the collectors and local residential streets.

SHORT TERM CONTINGENCIES

If the box culvert cannot be replaced in the near future, the city should consider a temporary repair of the section of box culvert with the failing roof, (See Exhibit 3).

The large chunk of what appears to be concrete, estimated at 9" thick and 3.5 feet wide, immediately downstream, (See Exhibit 4), is also recommended to be removed, if possible.

If the Dellwood Avenue storm system down to the box culvert cannot be replaced in the near future, the 18" clay pipe that discharges into the box culvert should be repaired, (See Exhibit 9).

PICTURES OF EXISTING STORM SYSTEM

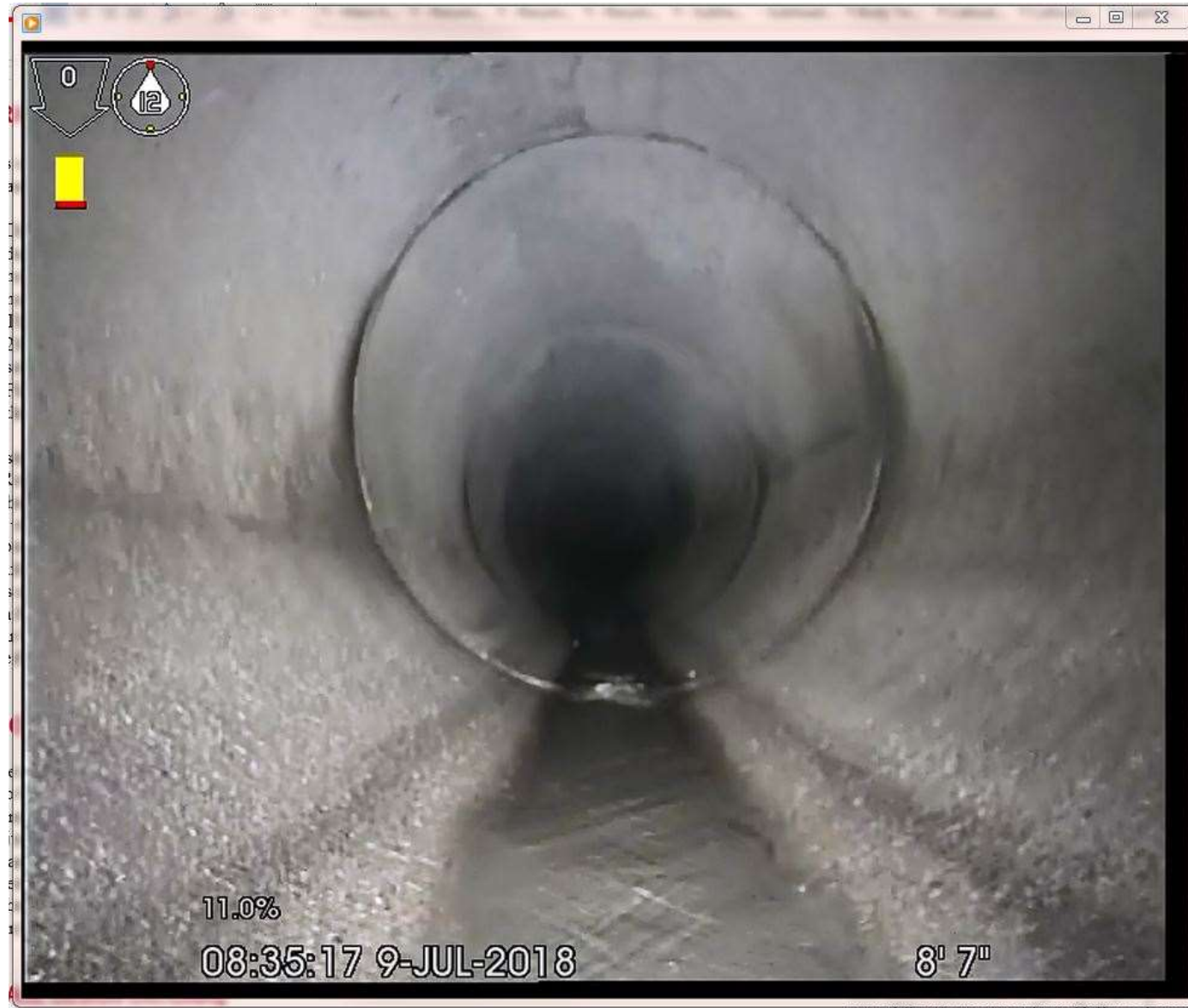


Exhibit 1

36" REINFORCED CONCRETE PIPE



Exhibit 2

3' x 3' REINFORCED CONCRETE BOX CULVERT
BENEATH THE HOUSE at FAR HILLS AVENUE



Exhibit 3

3' x 3' BOX CULVERT – WEST CURBLINE OF FAR HILLS AVENUE,
AND FLOWING WEST



Exhibit 4

CONCRETE DEBRIS in 3' x 3' BOX CULVERT



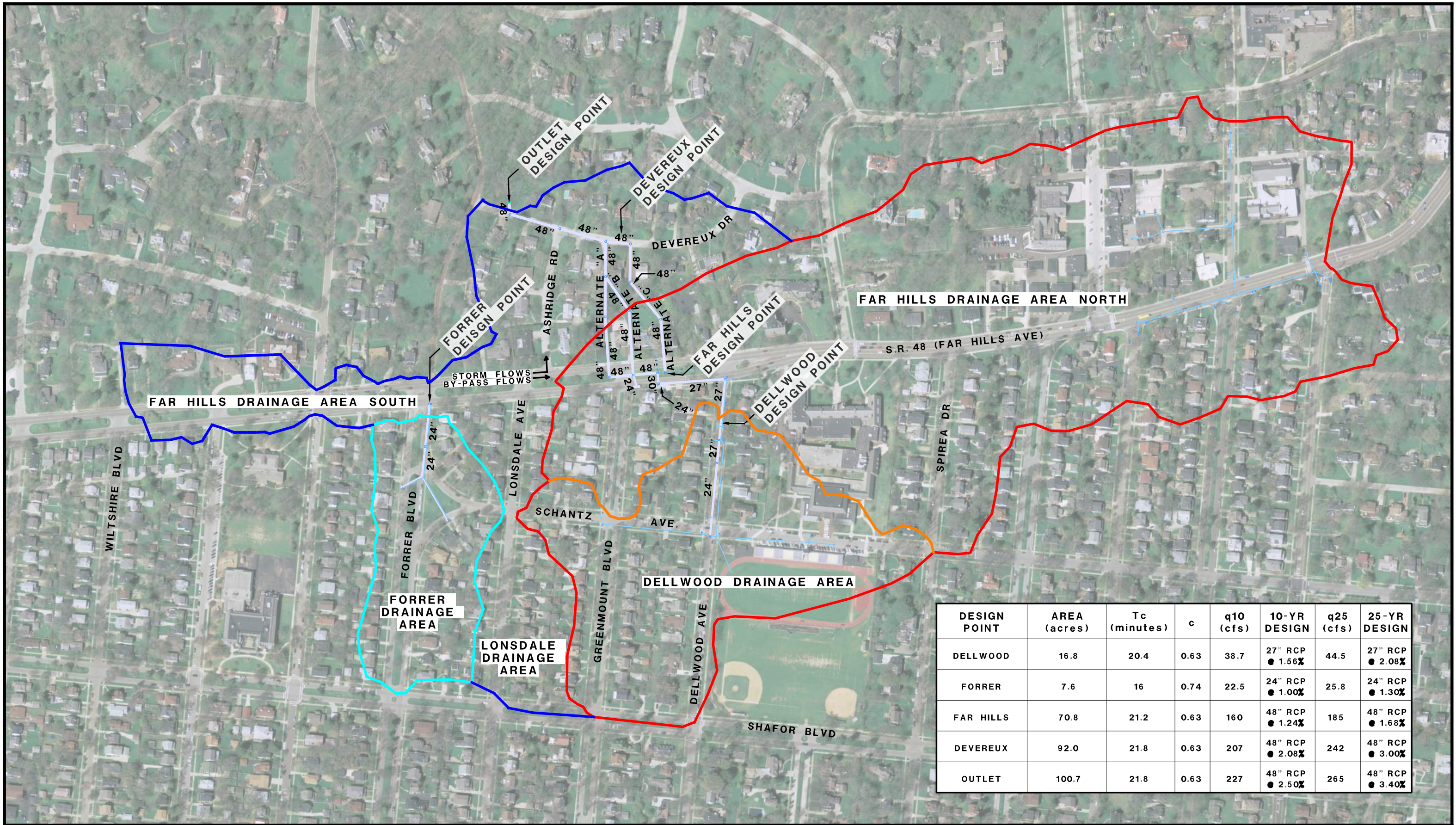
Exhibit 8

3' x 3' BOX CULVERT in STRUCTURAL FAILURE

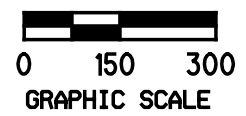


Exhibit 9

BROKEN 18" CLAY PIPE



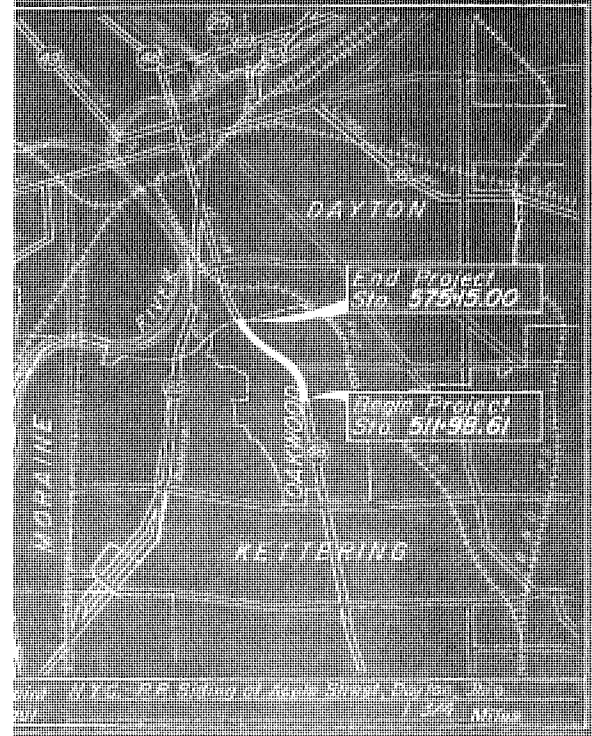
DESIGN POINT	AREA (acres)	T _c (minutes)	c	q ₁₀ (cfs)	10-YR DESIGN	q ₂₅ (cfs)	25-YR DESIGN
DELLWOOD	16.8	20.4	0.63	38.7	27" RCP ● 1.56%	44.5	27" RCP ● 2.08%
FORRER	7.6	16	0.74	22.5	24" RCP ● 1.00%	25.8	24" RCP ● 1.30%
FAR HILLS	70.8	21.2	0.63	160	48" RCP ● 1.24%	185	48" RCP ● 1.68%
DEVEREUX	92.0	21.8	0.63	207	48" RCP ● 2.08%	242	48" RCP ● 3.00%
OUTLET	100.7	21.8	0.63	227	48" RCP ● 2.50%	265	48" RCP ● 3.40%



OF OAKWOOD GOMERY COUNTY

1363 SPECIFICATIONS

The Standard Specifications of the State of Ohio, Department of Highways, including Supplemental Specifications listed in the proposal shall govern this improvement. The Right of Way for this improvement will be provided by the State of Ohio. I hereby approve these plans and declare that the making of this improvement will not closing of the highway to traffic and that provisions for the maintenance and safety of it as set forth on the plans and estimates.



NORTH

- Approved _____
Date: 1-23-63 Division Deputy Director
- Approved _____
Date: 2-26-64 Deputy Director of Planning and Programming
- Approved _____
Date: _____ Engineer of Bridges
- Approved _____
Date: 3-16-64 Engineer of Location and Design
- Approved _____
Date: 3-16-64 Deputy Director of Survey and Construction
- Approved _____
Date: 3-16-64 Deputy Director of Right of Way
- Approved _____
Date: _____ Chief Assistant Designer
- Approved _____
Date: 4/25/64 Director of Highways
- Approved _____
Date: _____

In flat files, left side, SR W8 drawer

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	U-1123 (2)

12
122

MONTGOMERY COUNTY

MOT-48 9.73

6" Loc.

18" Loc.

22" Loc.

8" Sanitary

16" Loc.

24" Loc.

3" Comp. Walk

3" Conc. Drive

36" Storm

5.8x4 Culvert

BEGIN WORK
Sta. 510+37

2.5' Brick Walk

8" Sanitary

3' Blacktop

Telephone Cables

2.8x3.5' Culvert

4" Water

15" Storm

9'x6' Culvert

5/11

N4°54'30"W

5/12

24" Storm

6" M.P. Gas

10" Water

Construction Limits

Construction Limits

18" Storm

20" Maple

20" Maple

Construction Limits

8" Sanitary

Shrub

Shrub

N

510

8" Sanitary

4" Culvert

3" Water

6" Sanitary

From: Bill Rieger <rieger.bill@gmail.com>
Sent: Sunday, July 31, 2022 5:01 PM
To: Klopsch, Norbert S. <Klopsch@oakwood.oh.us>
Subject: Re: Grant Application for Far Hills Storm Sewer Reconstruction Project

Norbert,

We have lived at 20 Dellwood Ave in Oakwood since 1985. Two or three times a year, during downpours, the street on our block floods significantly. The water easily covers the curbs and usually 1-2 foot deep. The pressure sometimes is so great, that it blows off the manhole cover across the street and gushes up out of the storm drains. Cars that try to go through it often stall out before they get through it because the water covers their exhaust pipes and the bottom of their engines. Tow trucks have to pull the abandoned vehicles out. Kids often run into the street which has turned into a river to wade, swim and splash. Not good when cars try to make a run for it and may not see a kid or two in the brown water.

The size of the instant lake from each deluge is not small. It spans both sides of the street in front of 8-10 homes. All of the neighbors are kind of stuck until the water recedes.

In the time we have lived here we have seen this happen 74-100 times. Please do what you can to fix this problem. It will be safer for all.

Thanks!

Bill Rieger
20 Dellwood Ave. Oakwood OH 45419
rieger.bill@gmail.com
937.776.5369



