

2016-2020

**FIVE-YEAR CAPITAL IMPROVEMENTS PROGRAM
 SANITARY PROJECTS TOTALS**

	2016	2017	2018	2019	2020	Category Totals
Design/Engineering	\$254,800	\$365,200	\$185,600	\$191,300	\$397,300	\$1,394,200
Right-of-Way	\$0	\$402,000	\$0	\$0	\$30,000	\$432,000
Utilities	\$0	\$116,000	\$0	\$0	\$18,000	\$134,000
Construction	\$1,166,100	\$2,022,100	\$2,155,000	\$803,500	\$827,800	\$6,974,500
Contract Admin./Inspection	\$69,100	\$208,700	\$233,200	\$70,400	\$72,500	\$653,900
Yearly Totals	\$1,490,000	\$3,114,000	\$2,573,800	\$1,065,200	\$1,345,600	

Source of Funding Sanitary Sewer Funds 267/268

Grand Total = \$9,588,600

Portion of Cost to be funded by Development

	2016	2017	2018	2019	2020	Category Totals
Design/Engineering	\$80,000	\$185,000	\$0	\$0	\$200,000	\$465,000
Right-of-Way	\$0	\$402,000	\$0	\$0	\$30,000	\$432,000
Utilities	\$0	\$116,000	\$0	\$0	\$18,000	\$134,000
Construction	\$0	\$800,000	\$1,375,000	\$0	\$0	\$2,175,000
Contract Admin./Inspection	\$0	\$96,000	\$165,000	\$0	\$0	\$261,000
Yearly Totals	\$80,000	\$1,599,000	\$1,540,000	\$0	\$248,000	

Source of Funding Sanitary Sewer Funds 267 & 268

Grand Total = \$3,467,000

Percentage **36%**

Sanitary projects required due OEPA Findings & Orders or NPDES II

	2016	2017	2018	2019	2020	Category Totals
Design/Engineering	\$254,800	\$180,200	\$185,600	\$191,300	\$197,300	\$1,009,200
Right-of-Way	\$0	\$375,000	\$0	\$0	\$0	\$375,000
Utilities	\$0	\$100,000	\$0	\$0	\$0	\$100,000
Construction	\$735,000	\$1,557,100	\$780,000	\$803,500	\$827,800	\$4,703,400
Contract Admin./Inspection	\$28,200	\$29,100	\$30,000	\$31,000	\$31,900	\$150,200
Yearly Totals	\$1,018,000	\$2,241,400	\$995,600	\$1,025,800	\$1,057,000	

Source of Funding Sanitary Sewer Funds 267 & 268

Grand Total = \$6,337,800

**2016-2020
 FIVE-YEAR CAPITAL IMPROVEMENTS PROGRAM
 SANITARY PROJECTS TOTALS**

Project	Total Cost	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020	Fund Name	Fund Number
S-20 Comprehensive Maintenance and Operations Plan Including Annual Inflow & Infiltration Abatement Program								
Design/Engineering	\$478,000	\$90,000	\$92,700	\$95,500	\$98,400	\$101,400		
Right-of-Way								
Utilities								
Priority Construction								
I Contract Admin./Inspection								
TOTAL	\$478,000	\$90,000	\$92,700	\$95,500	\$98,400	\$101,400	Sewer Revenue	304
S-28(D) Upper Scioto West (Hayden Run) Sub S-20 Trunk Sanitary Sewer								
Design/Engineering	\$80,000	\$80,000						
Right-of-Way	\$375,000		\$375,000					
Utilities	\$100,000		\$100,000					
Priority Construction	\$800,000		\$800,000					
I Contract Admin./Inspection	\$96,000		\$96,000					
TOTAL	\$1,451,000	\$80,000	\$1,371,000				Sewer Revenue	268
S-31 Lift Station Rehabilitation and Replacement Program								
Design/Engineering	\$239,300	\$45,000	\$46,400	\$47,800	\$49,300	\$50,800		
Right-of-Way								
Utilities								
Priority Construction	\$2,389,600	\$450,000	\$463,500	\$477,500	\$491,900	\$506,700		
I Contract Admin./Inspection	\$191,300	\$36,000	\$37,100	\$38,200	\$39,400	\$40,600		
TOTAL	\$2,820,200	\$531,000	\$547,000	\$563,500	\$580,600	\$598,100	Sewer Revenue	268

**2016-2020
 FIVE-YEAR CAPITAL IMPROVEMENTS PROGRAM
 SANITARY PROJECTS TOTALS**

Project	Total Cost	Fiscal Year 2016	Fiscal Year 2017	Fiscal Year 2018	Fiscal Year 2019	Fiscal Year 2020	Fund Name	Fund Number
S-32(D) Big Darby Lift Stations and Force Main								
Design/Engineering	\$385,000		\$185,000			\$200,000		
Land and Easements	\$57,000		\$27,000			\$30,000		
Utilities	\$34,000		\$16,000			\$18,000		
Priority Construction	\$1,375,000			\$1,375,000				
I Contract Admin./Inspection	\$165,000			\$165,000				
TOTAL	\$2,016,000		\$228,000	\$1,540,000		\$248,000	Sewer Revenue	268
S-33 Annual Sanitary Sewer Cleaning & CCTV & Rehabilitation Program								
Design/Engineering	\$129,600	\$24,300	\$25,100	\$25,900	\$26,700	\$27,600		
Right-of-Way								
Utilities								
Priority Construction	\$717,100	\$135,000	\$139,100	\$143,300	\$147,600	\$152,100		
I Contract Admin./Inspection	\$86,200	\$16,200	\$16,700	\$17,200	\$17,800	\$18,300		
TOTAL	\$932,900	\$175,500	\$180,900	\$186,400	\$192,100	\$198,000	Sewer Revenue	268/304
S-37 Annual Sanitary Sewer Lining Program								
Design/Engineering	\$82,300	\$15,500	\$16,000	\$16,400	\$16,900	\$17,500		
Right-of-Way								
Utilities								
Priority Construction	\$796,700	\$150,000	\$154,500	\$159,200	\$164,000	\$169,000		
I Contract Admin./Inspection	\$64,000	\$12,000	\$12,400	\$12,800	\$13,200	\$13,600		
TOTAL	\$943,000	\$177,500	\$182,900	\$188,400	\$194,100	\$200,100	Sewer Revenue	268
S-40 RIGGINS ROAD SANITARY SEWER EXTENSION - HAYDEN RUN TRUNK								
Design/Engineering								
Right-of-Way								
Utilities								
Construction	\$431,100	\$431,100						
Contract Admin./Inspection	\$4,900	\$4,900						
TOTAL	\$436,000	\$436,000					CIP	304

C.I.P. No. S-20

**Comprehensive Maintenance and Operations Plan
Including Annual Inflow & Infiltration Abatement Program**

This project is an annual program necessary to identify sources of storm water/clean water infiltration and inflow (I & I) into the sanitary sewer system in areas of the City developed prior to 1980. Increased amounts of clean water introduced into the sanitary sewers during and after a rain event reduce the capacity of the sewers for sewage, increases the likelihood for basement backups to occur, and increases the volume of wastewater to be treated. Columbus Wet Management Program will drive the need for this as well as Capacity Management and Operation Maintenance (CMOM).

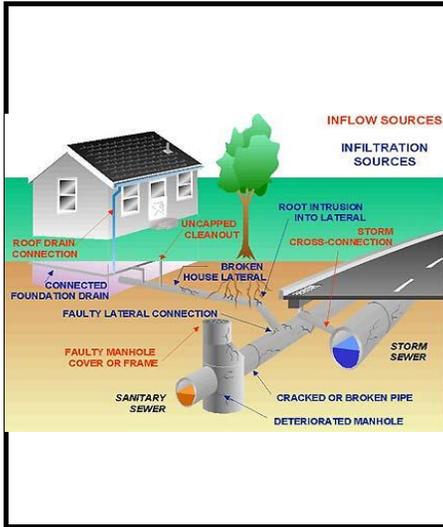
Since 1995, this project has attempted to mitigate some of the problems in sections of the City developed prior to 1980. These efforts have consisted of cleaning and televising sanitary sewers, sealing all manholes and deficient pipe joints, repairing cracks in pipes, treating & cutting roots, and eliminating illegal connections to the sanitary sewer system. However, persistent sanitary sewer backups into basements are still occurring. In 2003, a consultant was hired to study the sanitary sewers in Old Hilliard, and the Conklin, Roman Hill, and Williamsburg subdivisions. This study consisted of reviewing past incidents of basement backups, an on-site review of the sanitary sewer system in these subdivisions, and the monitoring of sewage flow in the sewer system in the spring of 2004 and summer 2005. Results of the sewer flow monitoring detected increased flows in the system during and after rainfall events. Based upon the nature and characteristic of these flow increases, the consultant has a good understanding of the source of the I & I into the sanitary sewer system. However, additional testing and studies are necessary to definitively identify these sources.

The proposed program established for identifying and mitigating some of these storm water I & I sources consists of preliminary studies (such as those undertaken in 2003 as described above), follow-up studies, and capital improvement projects to mitigate the clean water sources that are identified. It is the City's intent to undertake follow-up studies and begin some capital improvement mitigation projects in 2009 for the above subdivisions studied in 2004-05, while also proceeding with preliminary studies in some additional older subdivisions. Each successive year of the program would follow this plan, with follow-up studies and capital improvement projects being undertaken in subdivisions that have had preliminary studies conducted previously, as well as proceeding with preliminary studies on additional subdivisions. 2009 included \$27,000 for sanitary drain fix for Hilliard City Pools. 2015 includes design funds to develop plans for necessary sanitary sewer projects.

2016 - \$90,000

2017-20 - 3 percent increase per year.

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$478,000
Right-of-Way	\$0
Utilities	\$0
Construction	\$0
Contract Admin./Inspection	\$0
Total	\$478,000

Companion C.I.P.'s
S-31; S-33

Authorizing Legislation
09-21

Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	304

Project Origin
Priority Level: I

	Fiscal Year = 2016				
	2016	2017	2018	2019	2020
Design/Engineering	\$90,000	\$92,700	\$95,500	\$98,400	\$101,400
Right-of-Way					
Utilities					
Construction					
Contract Admin./Inspection					

C.I.P. No. S-28(D)

Upper Scioto West (Hayden Run) Sub Trunk Sanitary Sewer

In 2005, this project constructed a portion of a new sanitary sewer trunk line from its existing terminus within the Scioto West/Hayden Run tributary area at the northeast corner of Hayden Run Road and Edwards Farms Drive west and north to the intersection of Britton Parkway and Riggins Ct. Private development along Riggins Road has now extended this trunk sewer to the west right-of-way of Wilcox Road.

In 2015-16, this sewer will be extended westward to the City corporation line as part of the Riggins Road Extension (CIP T-135). From the City corporation line, development in the City of Columbus (White parcel) will extend the sewer to a point on the east side of Avery Road just north of the CSX Railroad.

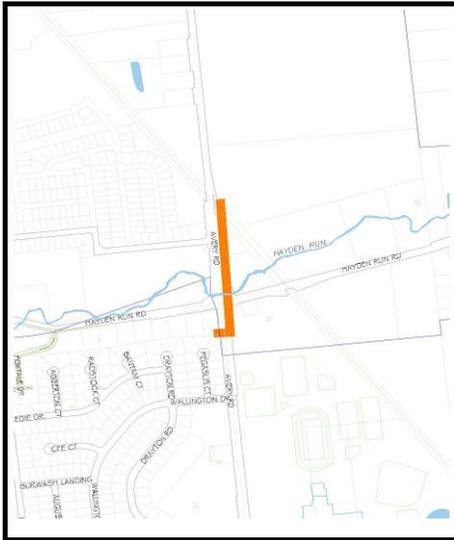
The Upper Scioto West Sanitary Sub Trunk will serve areas west of the above terminus at Avery Road and the railroad track. This Sub Trunk will serve proposed developments along Leppert, Cosgray, and Elliott Roads. Extension of this sanitary trunk line will likely be done in phases and portions may be built by private developers or by the City. A new regional lift station will be needed on the east side of Leppert Road, and will pump to the existing lift station on Avery Road just south of Hayden Run Road (Hayden Run lift station).

This project includes replacing the existing 25-year old Hayden Run lift station to accommodate the growth to the west, as well as constructing a new force main to pump sewer to the terminus of the Upper Scioto West Sub Trunk just north of the railroad on the east side of Avery Road. This force main will need to be bored under Hayden Run Road, Hayden Run Creek, and the CSX Railroad.

2016 \$115,000\$

Design of Hayden Run lift station replacement and new force main

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$80,000
Right-of-Way	\$375,000
Utilities	\$100,000
Construction	\$800,000
Contract Admin./Inspection	\$96,000
Total	\$1,451,000

Companion C.I.P.'s
T-65, T-117, & T-135; S-31

Authorizing Legislation
[Redacted]

Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	268

Project Origin
[Redacted]

Priority Level: I

	Fiscal Year =					2016
	2016	2017	2018	2019	2020	
Design/Engineering	\$80,000					
Right-of-Way		\$375,000				
Utilities		\$100,000				
Construction		\$800,000				
Contract Admin./Inspection		\$96,000				

C.I.P. No. S-31

Lift Station Rehabilitation and Replacement Program

The City of Hilliard has 15 lift/pump stations operating to allow for passage of both storm and sanitary sewer water where a gravity fall sewer is not possible or practical. These lift stations are typically very large, with deep wet wells that periodically require maintenance. The typical life of such stations does not exceed 25 years, and may be even less. Very large pumps, floats, and other mechanical items require maintenance or replacement on even more aggressive schedules. As the stations age, the City anticipates more maintenance and replacement dollars will be necessary to keep the systems in operation.

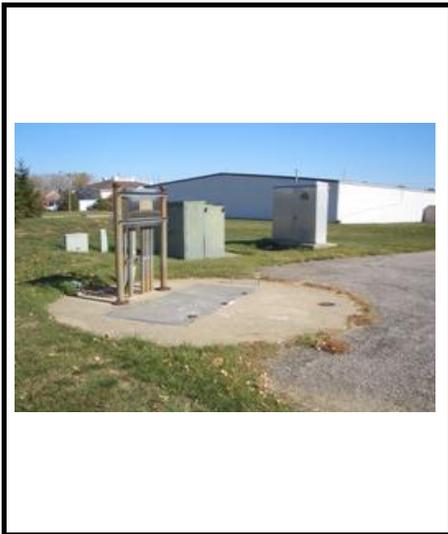
The Parkway Lane lift station near Buckeye Nissan was reconstructed as part of this program in 2009 at a cost of \$340,000. Design of the Heritage Lakes No. 2 lift station will be completed in 2015.

This sanitary sewer CIP program provides for one lift station rehabilitation per year.

2015 - Construction began in late 2015
Heritage Lakes Lift Station No. 2

2016 - \$504,000
Upgrades to Heritage Lakes Lift Station No. 1

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$239,300
Right-of-Way	\$0
Utilities	\$0
Construction	\$2,389,600
Contract Admin./Inspection	\$191,300
Total	\$2,820,200

Companion C.I.P.'s
S-20 & S-28D

Authorizing Legislation

Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	268

Project Origin
Priority Level: I

	Fiscal Year = 2016				
	2016	2017	2018	2019	2020
Design/Engineering	\$45,000	\$46,400	\$47,800	\$49,300	\$50,800
Right-of-Way					
Utilities					
Construction	\$450,000	\$463,500	\$477,500	\$491,900	\$506,700
Contract Admin./Inspection	\$36,000	\$37,100	\$38,200	\$39,400	\$40,600

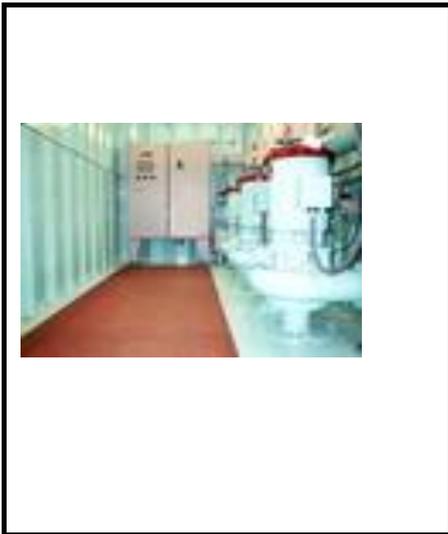
C.I.P. No. S-32(D)

Big Darby Lift Stations and Force Main

The Big Darby area of Brown Township is the current limits of the Hilliard Contract Service Area. In order to develop this area three regional lift stations will be required. This program provides for the design and construction of these necessary improvements. These can be paid for with developer contributions, an add on capacity charge, and/or sewer capacity fee increases.

The current plan is now for 3 lift stations with the first built as part of the Heritage Preserve Development in 2014 with the second not likely before 2017-18. The third is likely not needed until 2019 or after. The need for these lift stations will be driven by development.

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$385,000
Land and Easements	\$57,000
Utilities	\$34,000
Construction	\$1,375,000
Contract Admin./Inspection	\$165,000
Total	\$2,016,000

Companion C.I.P.'s



Authorizing Legislation



Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	268

Project Origin



Priority Level: I

	Fiscal Year =				
	2016	2017	2018	2019	2020
Design/Engineering		\$185,000			\$200,000
Land and Easements		\$27,000			\$30,000
Utilities		\$16,000			\$18,000
Construction			\$1,375,000		
Contract Admin./Inspection			\$165,000		

C.I.P. No. S-33

Annual Sanitary Sewer Cleaning & CCTV & Rehabilitation Program

This program is an annual maintenance program in which a portion of the City's sanitary sewer system will be cleaned and closed-circuit televised. The program has been set up to enable the City's entire sanitary sewer system to be cleaned and televised over a 7-year period. The program will be an on-going annual program, with one 7-year cycle being followed by another. The cost for each annual program takes into account that a portion of the sewers may need heavy cleaning (cleaning in excess of standard, normal cleaning methods). The annual program cost also allows for a fixed number of pipe repairs to be made at specific locations in the sewer as necessary.

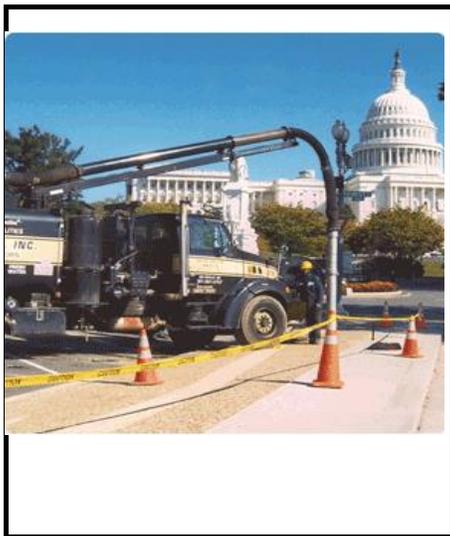
With this program the City will identify sanitary sewers that need work beyond minor spot repairs. The program will then design the necessary sanitary sewer lining projects or other rehabilitation of the system as necessary.

2008-09 had \$200,000 for the first year of this program.
 2010 & 2011 \$155,000; 2012 & 2013 \$160,000, 2014 \$162,500, 2015 \$167,500

2016 - \$175,500

2017-20 a 3% inflation cost for future years.

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$129,600
Right-of-Way	\$0
Utilities	\$0
Construction	\$717,100
Contract Admin./Inspection	\$86,200
Total	\$932,900

Companion C.I.P.'s

S-20

Authorizing Legislation

Ord. 09-21

Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	268/304

Project Origin

Priority Level: I

	Fiscal Year =				
	2016	2017	2018	2019	2020
Design/Engineering	\$24,300	\$25,100	\$25,900	\$26,700	\$27,600
Right-of-Way					
Utilities					
Construction	\$135,000	\$139,100	\$143,300	\$147,600	\$152,100
Contract Admin./Inspection	\$16,200	\$16,700	\$17,200	\$17,800	\$18,300

C.I.P. No. S-37
Annual Sanitary Sewer Lining Program

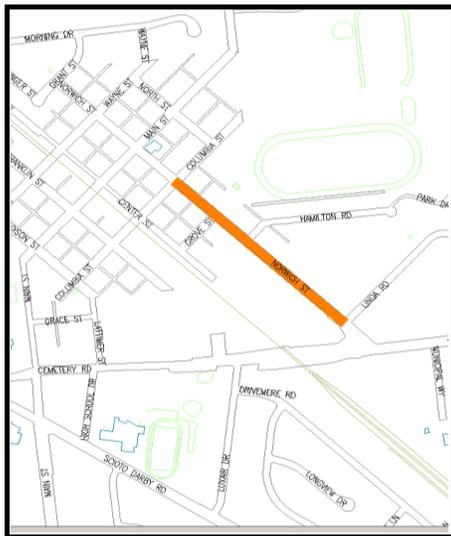
This project includes lining of aging, damaged sanitary sewers that have been identified in our annual cleaning & televising program (S-33) as needing repair. The sewers identified for lining contain class 4 & 5 defects on a scale of 1-5, with 5 being the most severe defects. Sanitary sewer lining is a less intrusive and often less expensive alternative to excavating and replacing the existing sewer. Lining not only structurally rehabilitates the sewer, but it also abates any clean water inflow and infiltration currently entering the sanitary sewer through the pipe joints.

A specific project is lining a 10-inch sewer trunk along Norwich Street. This project is a result of the Norwich Street Improvements Project. As a result of the Norwich Street Improvements, this sanitary sewer trunk is now located under the curb and gutter on the east side of Norwich Street. A failure of this sewer trunk line in the future would require the removal of the curb and gutter and possibly some street lights on the east side of Norwich Street, resulting in a costly repair. The purpose of this specific lining project is to rehabilitate the sewer and add structural strength to the pipe in order to avoid repairs to the line in the future. An additional benefit of this project is the abatement of any inflow and infiltration of clean water that is currently entering this sewer through the existing pipe joints.

2016: \$177,500 Lining of Class 4 & 5 defects in sewers

2017: \$182,900 Design of 2018 lining project & Lining Norwich Street sewer

Location Map
(No Scale)



Figures below are for 5 year program
uses current year dollars

Design/Engineering	\$82,300
Right-of-Way	\$0
Utilities	\$0
Construction	\$796,700
Contract Admin./Inspection	\$64,000
Total	\$943,000

Companion C.I.P.'s

S-20

Authorizing Legislation

Funding Source

Department	408
Fund Name	Sewer Revenue
Fund Number	268

Project Origin

Priority Level: I

	Fiscal Year =				
	2016	2017	2018	2019	2020
Design/Engineering	\$15,500	\$16,000	\$16,400	\$16,900	\$17,500
Right-of-Way					
Utilities					
Construction	\$150,000	\$154,500	\$159,200	\$164,000	\$169,000
Contract Admin./Inspection	\$12,000	\$12,400	\$12,800	\$13,200	\$13,600

C.I.P. No. S-40

RIGGINS ROAD SANITARY SEWER EXTENSION - HAYDEN RUN TRUNK

Riggins Road was extended to Wilcox Road in 2011 as part of a development project. An interim 2-lane connection to Wilcox Road was temporarily built, which will function adequately in the short term.

The City of Columbus is working to complete the extension of Hayden Run Boulevard between Cosgray Road and Avery Road, including an overpass of the railroad. In 2013, the Franklin County Engineer's Office applied for and obtained a grant through the Ohio Public Works Commission to design and construct the extension of Hayden Run Boulevard/Riggins Road between Avery Road & Wilcox Road, including a roundabout at the intersection of Riggins Road/Wilcox Road.

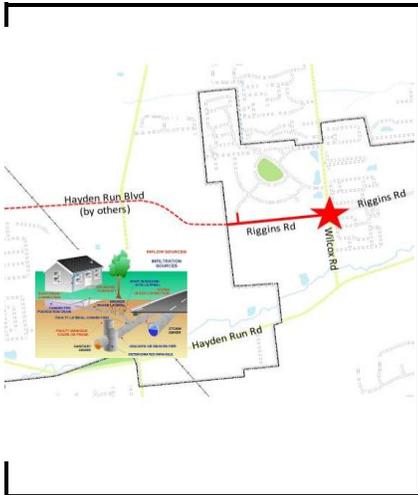
This project is an extension of the sanitary sewer along the Hilliard portion of Riggins Road to provide for sanitary sewer service to the adjacent land and to meet the needs of continued sanitary sewer service to the west in the Hayden Run sewer service area. The City is also responsible for the upsizing of the sanitary sewer through the Columbus section to have adequate capacity to serve properties west of this location that are tributary to the Hayden Run Trunk in Hilliard.

Design of this improvement began in 2014. Construction will likely begin in early 2016 and continue through 2016.

2016 - \$ 436,000

Projects consists of 1,750 lin ft. of 24-inch Sanitary Sewer. This project is funded using carryover funds from the 2015 CIB CIP line item – 304.532.55680.

Location Map
(No Scale)



<u>Figures below are for 5 year program</u> uses current year dollars	
Design/Engineering	\$0
Right-of-Way	\$0
Utilities	\$0
Construction	\$431,100
Contract Admin./Inspection	\$4,900
Total	\$436,000

Companion C.I.P.'s
T-135 & W-50

Authorizing Legislation

<u>Funding Source</u>	
Department	532
Fund Name	CIP
Fund Number	304

Project Origin
Priority Level: I

	Fiscal Year = 2016				
	2016	2017	2018	2019	2020
Design/Engineering					
Right-of-Way					
Utilities					
Construction	\$431,100				
Contract Admin./Inspection	\$4,900				

C.I.P. No. S-41

Scioto Darby Road Sanitary Force Main

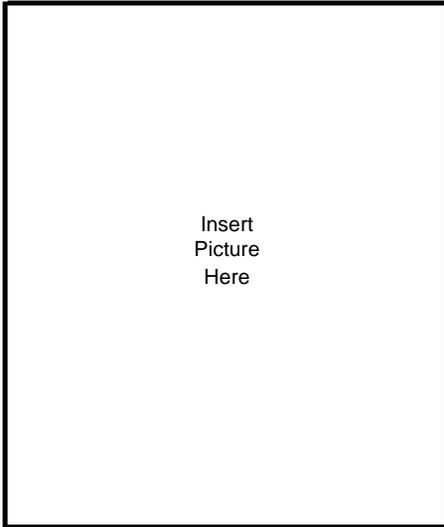
This project constructs a 10-inch sanitary sewer force main on the south side of Scioto Darby Road between Cosgray Road and Leppert Road. The sewer crosses to the north side of Scioto Darby Road at Leppert Road and connects to the Hoffman Farms sanitary lift station located at the northwest corner of the intersection.

This force main will support new development on the western side of Hilliard.

Design of this project was initiated as a contract modification to the existing professional services contract with Burgess & Niple for the Scioto Darby & Leppert Improvement Project (CIP T21/T129)

This project needs to be constructed prior to or concurrent with the Scioto Darby Road & Leppert Road Improvement project to avoid damaging new infrastructure that will be built with the street project.

Location Map
(No Scale)



Figures below are for 5 year program
using 2009 dollars

Design/Engineering	\$0
Right-of-Way	\$0
Utilities	\$0
Construction	\$465,000
Contract Admin./Inspection	\$46,500
Total	\$511,500

Companion C.I.P.'s

T21 & T129

Authorizing Legislation

Funding Source

Department	
Fund Name	
Fund Number	

Project Origin

Priority Level: I

	Fiscal Year = 2016				
	2016	2017	2018	2019	2020
Design/Engineering					
Right-of-Way					
Utilities					
Construction		\$465,000			
Contract Admin./Inspection		\$46,500			