



CITY OF DUBLIN™

UTILITY INFRASTRUCTURE

Prepared for the Joint Meeting of
Dublin City Council
And
Planning and Zoning Commission

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City of Dublin – Engineering

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APPENDIX A

APPENDIX B

Introduction

The 1997 Community Plan provides the following as Principles (or building blocks) for the plan regarding Public Services:

Public Services. The City provides a full range of public services, ranging from snow removal and traffic management, to waste collection and street tree maintenance. Dublin should continue to be a safe, well-maintained and tidy community with excellent public services that further the City's positive image. Dublin residents are encouraged to further reduce, reuse and recycle waste, thus continuing the City's pioneering environmental efforts. Human service needs must be met as well, through quality programs and facilities that meet the community's various needs. Public services also help to define Dublin's quality of life. Providing them within a fiscally responsible framework is important to maintaining and enhancing the quality of life.

These principles are still valid today. The utility portion of Public Services can be modeled and analyzed to demonstrate that these services are being provided safely, efficiently, and in a fiscally responsible manner. Staff has been working to update the modeling using the proposed land use scenarios. The understanding of how our utility systems exist and the preliminary modeling results for the sanitary sewer and water distribution systems provide additional information for planning level decisions.

Inter-municipal Agreements

The City of Dublin does not own or operate either a wastewater treatment facility or a water treatment facility. Therefore, other means of providing these services have been arranged. The City currently provides for sanitary sewer and water treatment services mainly through contracts between the City of Dublin and the City of Columbus. These agreements are comprehensive in nature and ensure the City of Dublin's ability to provide sewer and water service to our community as it grows. The City also has agreements with Shawnee Hills and Delaware County for sanitary sewer services.

City of Columbus Agreements

Service Area

The service areas for the City of Dublin and City of Columbus have been delineated in the contracts and are presented on Exhibit A of the agreement. Areas within the service boundary have been designated as Exclusive Columbus Expansion Area, Exclusive Dublin Expansion Area and the Negotiated Expansion Area. The Exclusive Expansion Areas are areas within the service area that will be annexed to that particular municipality and served by that municipality. The Negotiated Expansion Area is considered to be a "shared future growth area". The service agreements stipulate neither Columbus nor Dublin shall annex area within the Negotiated Expansion Area without mutual agreement of both communities' City Councils. The service areas specified in the water and sanitary sewer agreements were used to develop water demand and sanitary sewer flow projections for the purpose of modeling the City of Dublin utility infrastructure.

Sanitary Sewer Service Agreement

The sanitary sewer service agreement, entered into on April 13, 1993, provides the City of Dublin with the ability to dispose of wastewater through the City of Columbus wastewater collection and treatment system until the contract expires in 2043. The agreement between the City of Dublin and the City of Columbus allows Dublin to construct sanitary sewers necessary to serve developing areas of the City of Dublin. The operation and maintenance of the sanitary sewer collection system within the City of Dublin is the responsibility of the City of Dublin.

Either Dublin or Columbus is required to provide written notification, 5 years prior to the end of the contract period, to inform the other of its intentions regarding the contract. If written notification by either city does not occur, the contract is automatically extended for a period of 3 years. The sanitary sewer service agreement ensures the City of Dublin will have a reliable source of wastewater disposal for years to come.

Water Service Agreement

The water service agreement, entered into on April 13, 1993 provides the City of Dublin access to drinking water until the contract expires in 2043. Under the water service agreement, Dublin is permitted to construct water distribution infrastructure and connect to City of Columbus infrastructure for the purpose of providing or improving water supply to Dublin. The City of Columbus is responsible for routine maintenance and operation of the water distribution system within the City of Dublin. The cost related to excessive maintenance, as defined by a formula within the contract, is the responsibility of the City of Dublin. The maintenance of fire hydrants, water storage facilities and vault structures for pressure reducing valves are also the responsibility of the City of Dublin.

Either Dublin or Columbus is required to provide written notification, 10 years prior to the end of the contract period, to inform the other of its intentions regarding the contract. If written notification by either city does not occur, the contract is automatically extended for a period of 3 years. The water service agreement ensures the City of Dublin will have a reliable source of drinking water for years to come.

Shawnee Hills Sanitary Agreement

The City of Dublin entered into an agreement with the Village of Shawnee Hills to provide the village with access to sanitary sewer service on March 18, 2000. Dublin provided access to the City's sewer system in order to transport sewage and other wastes from the Village of Shawnee Hills to the City of Columbus system for treatment and disposal.

Shawnee Hills made a one time payment for the transportation access for 120,000 gallons per day (gpd). If the flows exceed the 120,000 gpd, Dublin is entitled to additional payment based on the excess flows. Also, the City of Columbus installed an odor-control facility at their cost.

The agreement is to last for forty years (2040) unless written notice is given by either party at least five years in advance of termination. If notification does not occur, the agreement will in effect for successive three year periods.

The agreement was amended in 2003 regarding sanitary sewer service to the South Heidelberg Property (the Bogey Inn site). This property is to be served by Shawnee Hills and is subject to their regulations and rules pertaining to sanitary sewer services. The flows from this site are not to be accounted for in the measurement of the excess above 120,000 gpd.

Delaware County Sanitary Agreement

The City of Dublin entered into an agreement with Delaware County to provide certain areas of the city with sanitary sewerage treatment. This agreement was signed on August 22, 1994. There were two service areas identified: (1) north of Summit View Road and (2) the Village of Shawnee Hills.

From Service Area 1, the City of Dublin can collect all sewage and wastewater and discharge it into the Delaware County sewer for treatment and discharge. This area is now fully developed and contains the Wedgewood Hills, Campden Lakes, and Wedgewood Glen subdivisions. These projects were developed at the prescribed density of 1.25 units per acre. Dublin performed inspections on the installation of the sewer system and is required to maintain the infrastructure in these subdivisions. Capacity fees and usage fees are paid to Delaware County in this area.

The previously discussed Shawnee Hills Agreement fulfills the requirements for providing transportation of the sewer flows from Service Area 2. Delaware County is responsible for inspection and maintenance of the sewer collection system in this area. Capacity fees and usage fees are paid to the City of Columbus in this area.

City of Marysville Service Area

Areas of the Negotiated Expansion Area are currently served (both sanitary sewer and water) by the City of Marysville. This area is mainly along Industrial Parkway. These services were originally installed under the jurisdiction of Union County. Union County and the City of Marysville entered into a contract that began on February 1, 2006 that transferred the operation and maintenance of the systems to the City of Marysville. Union County and the City of Marysville have stated the following benefits for this arrangement:

- Enhanced economic stability for Union County, creating jobs and expanding tax base for future generations
- Townships and City can work cooperatively to properly manage their own development
- No annexation requirement outside City's Growth Area to receive water/sewer service
- Existing township residences within the City's Growth Area will be allowed water or sewer service without any requirement to annex
- City of Marysville will be the exclusive service provider in the Growth Area and Exclusive Service Area

- Existing county customers will increase City of Marysville customer base and City revenues
- Expanded City of Marysville customer base will help support the new wastewater treatment plant and sewer improvements which will help to stabilize the City of Marysville's long-term sewer/water rate structure

The City of Marysville has already begun the construction of their new wastewater treatment facility. It is located on the northeast side of US 33 after the SR 42 exit. Staff understands from the City of Marysville staff, that while they are obligated to continue service to those existing county customers, the Marysville corporation boundary is currently envisioned to stop at SR 42. Staff recommends coordination with the City of Marysville as development progresses in the Negotiated Expansion Area.

Inter-municipal Agreement Recommendation

Copies of all of these agreements are within Appendix A for your reference. These agreements have been the basis for providing sustainable public water and sewer service for the City of Dublin. Staff recommends:

- For the Community Plan, to continue the current policy of providing safe and efficient collection of wastewater generated by the community and distribution of potable water for consumption and fire protection by remaining committed to these agreements.
- For operational purposes, to consider another amendment to the Shawnee Hills agreement to include their participation in maintenance efforts in the sewers that transport their flows to the City of Columbus system.

Water and Sewer Infrastructure

Introduction

The City of Dublin's current service area is approximately 12,900 acres, or 20.2 square miles in size. The City's water and sewer service is maintained through inter-municipal agreement with the City of Columbus. The current policy of the City of Dublin is to maintain the safe and reliable transport of wastewater and potable water to Dublin residents.

Sanitary Sewer System

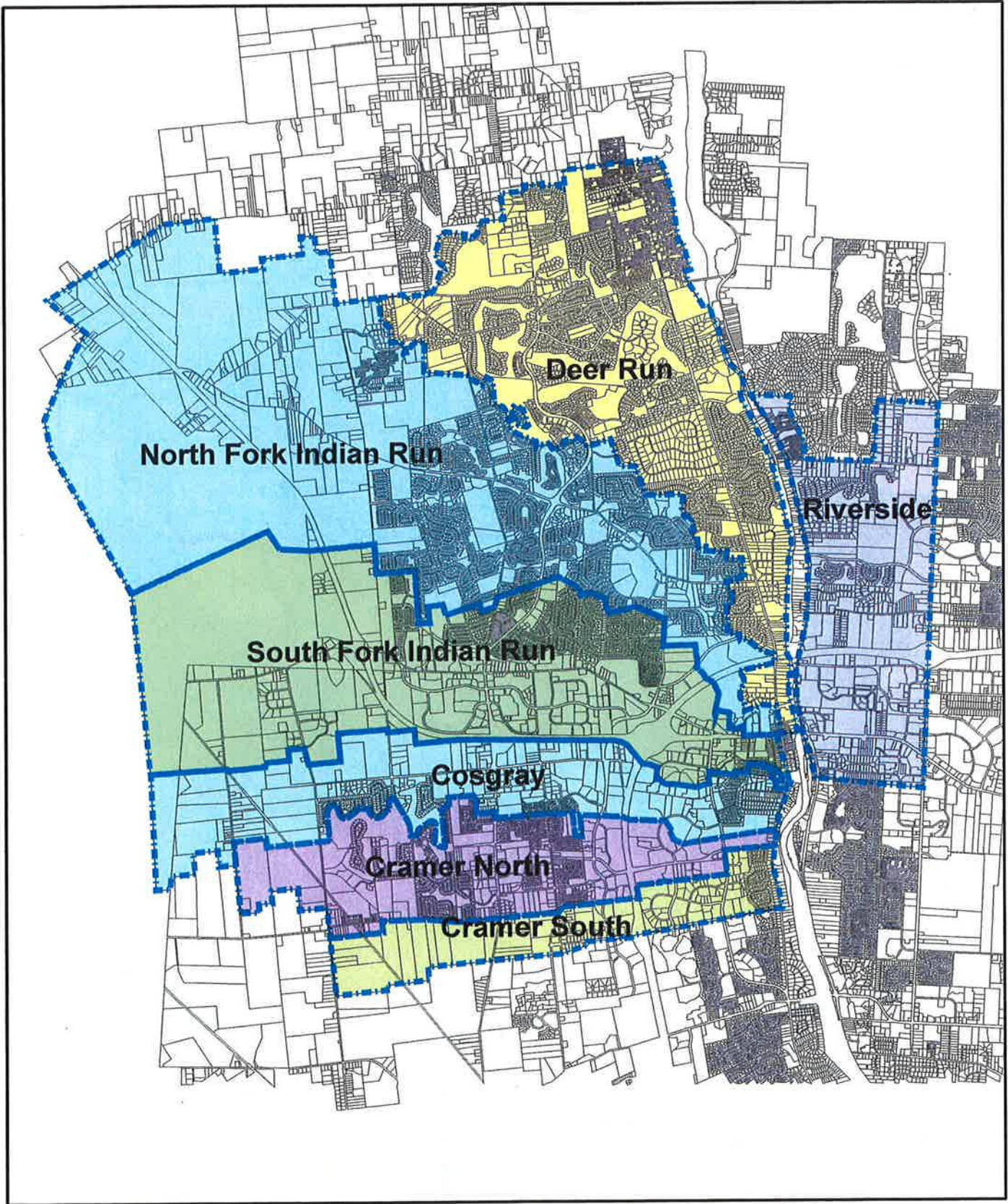
The sanitary sewer collection system for the City of Dublin contains seven major sanitary trunk sewers. The seven major trunk sewers divide the system into seven sanitary sewer tributary areas. The City of Dublin sanitary sewer tributary areas are represented on FIGURE 1. The major trunk sewers are as follows:

- Deer Run Sanitary Trunk Sewer
- North Fork Indian Run Sanitary Sewer
- South Fork Indian Run Sanitary Sewer
- Cosgray Sanitary Trunk Sewer
- North Cramer Sanitary Trunk Sewer
- South Cramer Sanitary Trunk Sewer
- Riverside Sanitary Trunk Sewer

FIGURES 2 through 6 show the individual tributary areas and the sanitary sewer systems for each area. The Riverside Sanitary Trunk Sewer serves those areas of Dublin on the east side of the Scioto River and drains into the City of Columbus sanitary sewer system through the Upper Scioto East Interceptor Sewer. The remaining six tributary areas located on the west side of the Scioto River drain to the Upper Scioto West Interceptor Sewer. The Upper Scioto West Interceptor Sewer is the latest major improvement to the sanitary sewer system. Costing \$21.7 million (\$18.7 million funded by the City of Dublin and \$3 million by the City of Columbus) the project was undertaken to relieve many system deficiencies and provide the sanitary sewer system adequate capacity necessary to meet the wastewater demands associated with future growth. The debt incurred by Dublin to finance this project will be repaid in 2018.

In the 1997 Community Plan, it is stated there were 168 miles of sewers and 3,150 manholes. As a whole, the sanitary sewer collection system consists of over 212 miles (a 25% increase) of sanitary sewers and 5,130 sanitary sewer manholes (a 60% increase). One sanitary sewer pump station along with approximately 3,500 feet of sanitary sewer force main compliment the system to provide service to areas in the Riverside Sanitary Sewer Tributary Areas where gravity service is not feasible. This pump station is located along the east side of Riverside Drive between Summit View Road and Wyandotte Woods Boulevard. The City of Dublin currently generates an average of approximately 6.0 MGD of wastewater that drains to the City of Columbus sanitary sewer system for ultimate treatment and disposal.

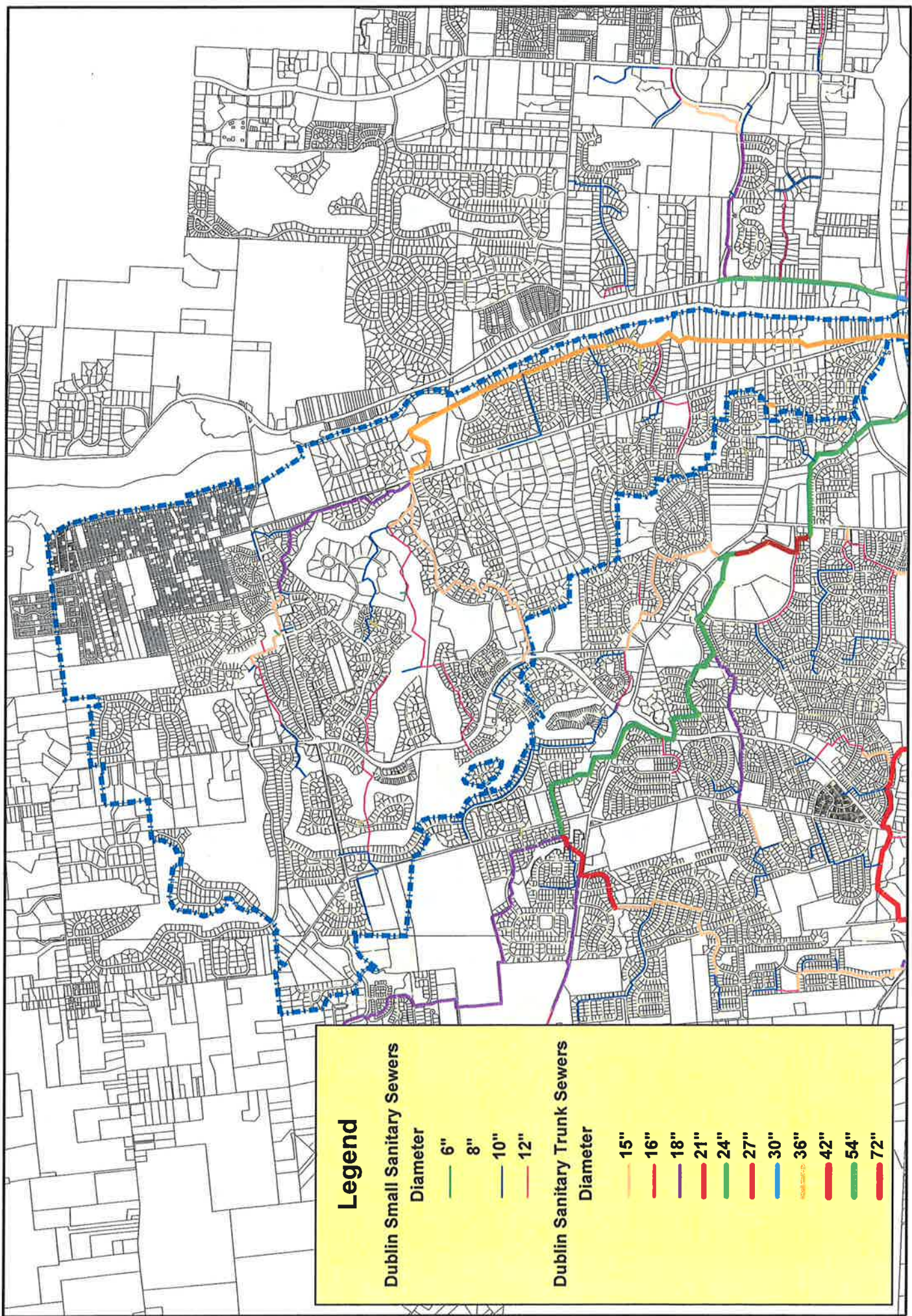
Sanitary Sewer Tributary Areas



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FIGURE 1



Legend	
Dublin Small Sanitary Sewers	
Diameter	
6"	Blue line
8"	Orange line
10"	Purple line
12"	Green line
Dublin Sanitary Trunk Sewers	
Diameter	
15"	Red line
16"	Orange line
18"	Purple line
21"	Red line
24"	Green line
27"	Red line
30"	Blue line
36"	Orange line
42"	Red line
54"	Green line
72"	Red line

FIGURE 2

Deer Run Sanitary Sewer System



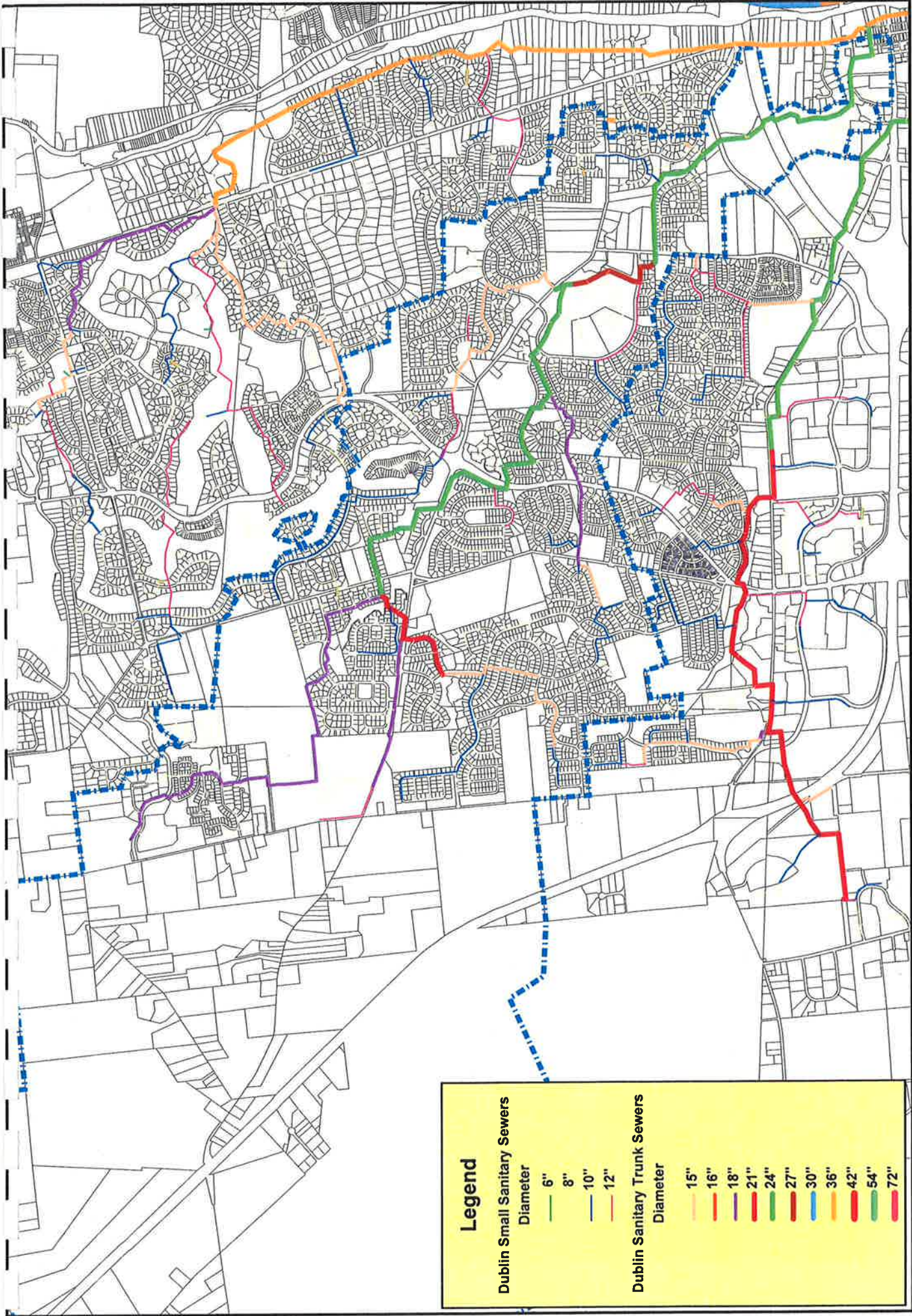
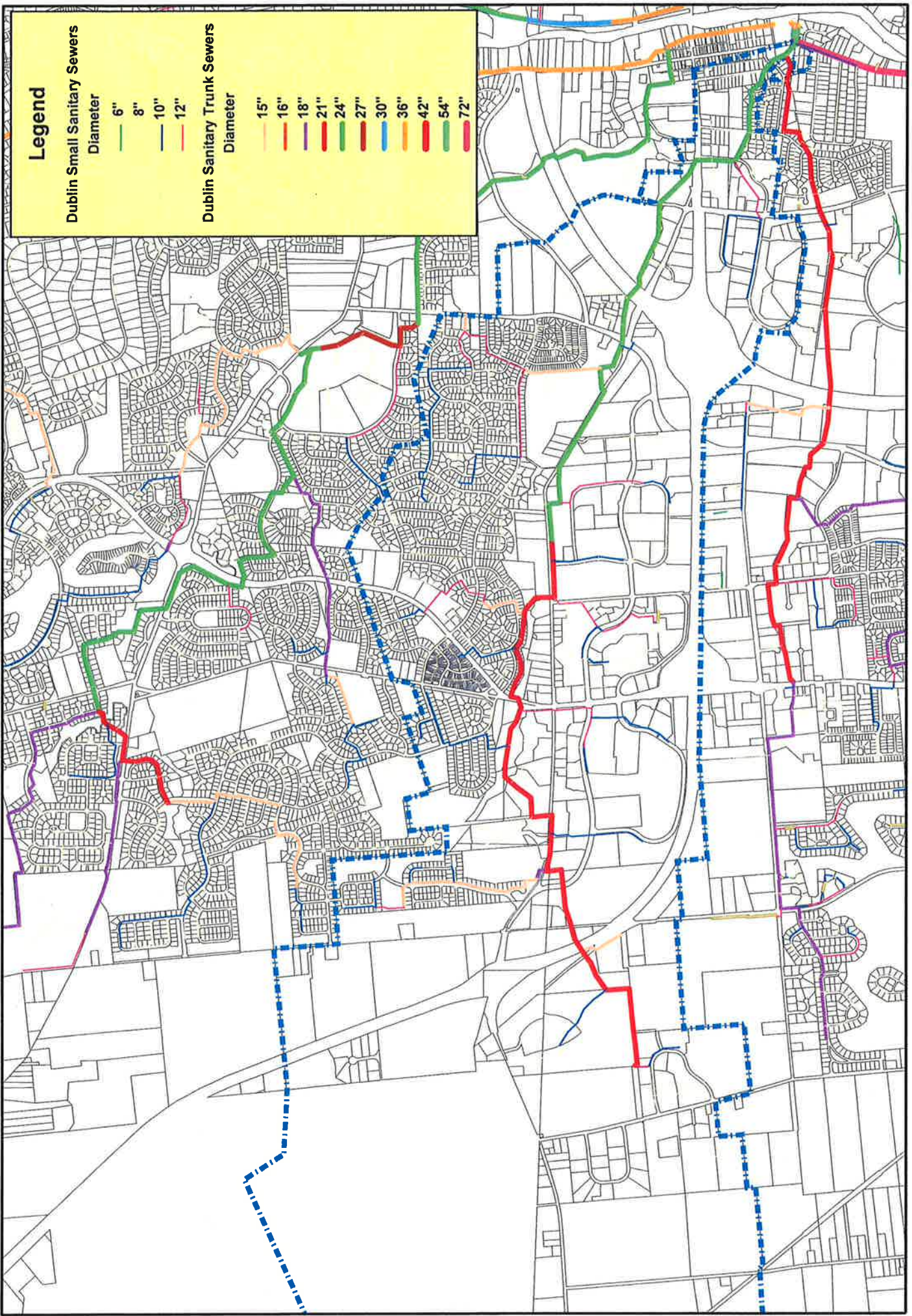


FIGURE 3

North Fork Indian Run Sanitary Sewer System

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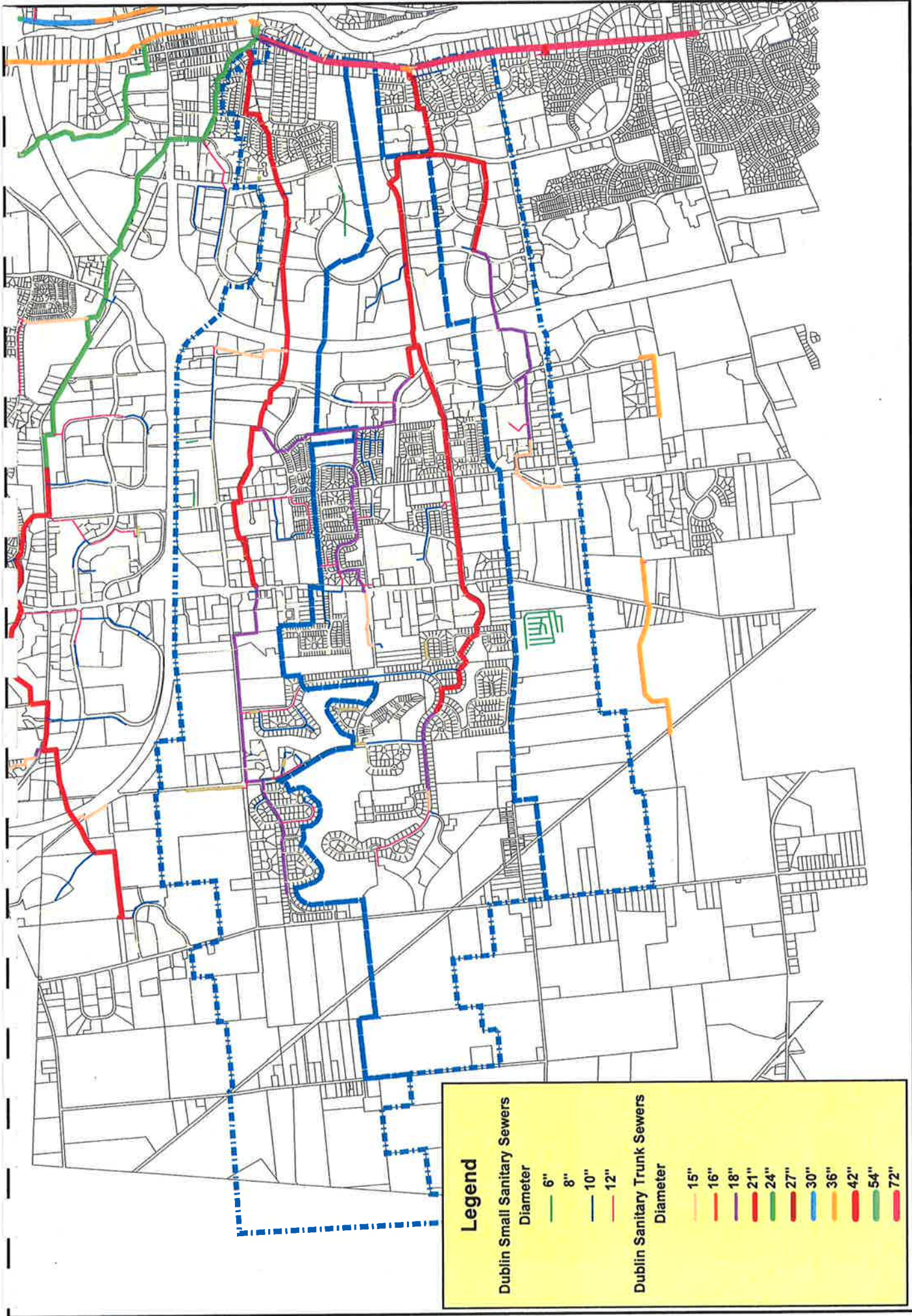
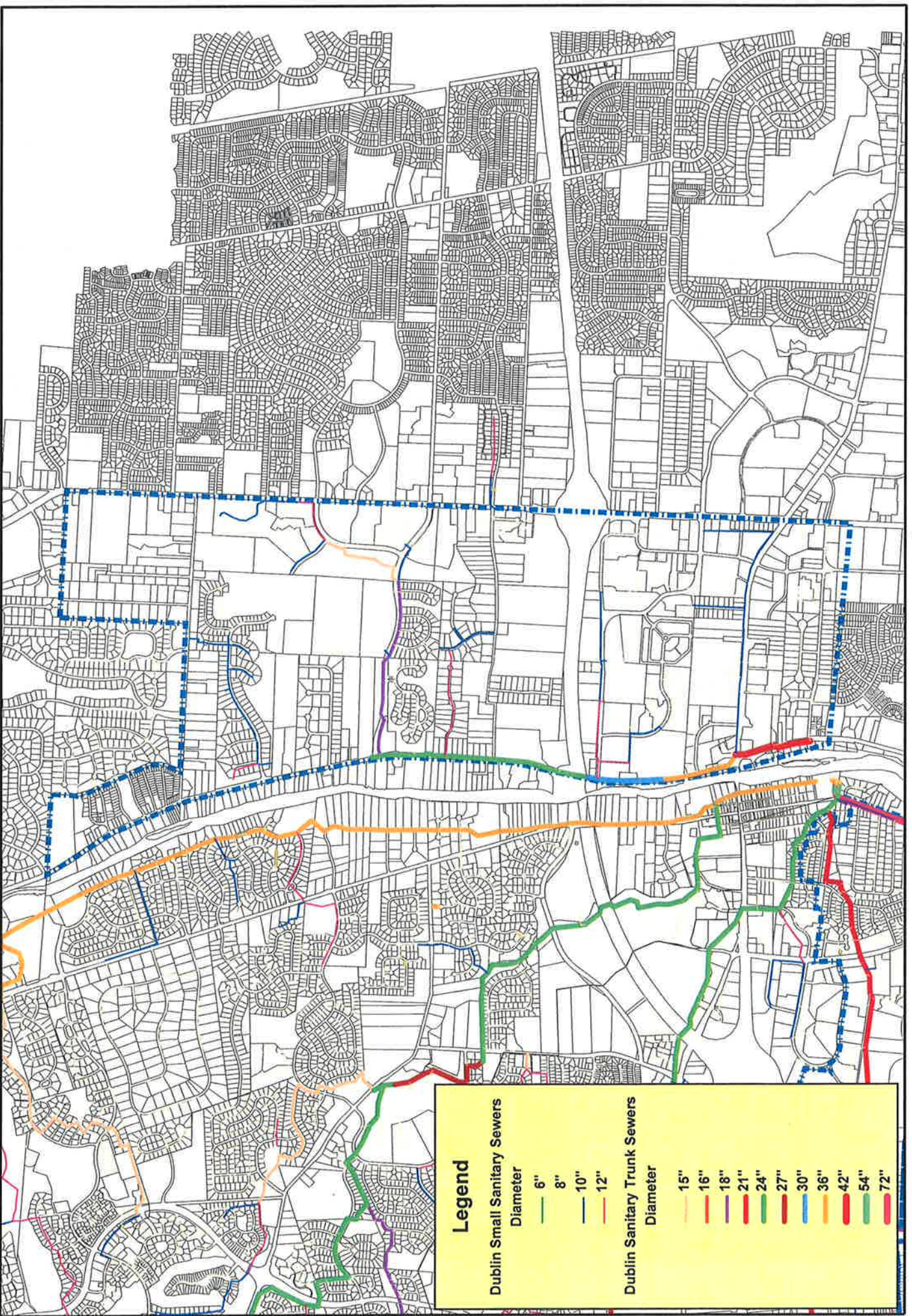


FIGURE 5

**Cosgray, Cramer North and Cramer South
Sanitary Sewer Systems**

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Legend	
Dublin Small Sanitary Sewers	
Diameter	6"
	8"
	10"
	12"
Dublin Sanitary Trunk Sewers	
Diameter	15"
	16"
	18"
	21"
	24"
	27"
	30"
	36"
	42"
	54"
	72"



FIGURE 6

Riverside Sanitary Sewer System

Water Supply and Distribution

The City of Columbus water supply is supported by both surface water and ground water sources and is the primary source of drinking water for the City of Dublin. The City of Columbus currently maintains three upground reservoirs and ground water sources to maintain a minimum safe yield of 130 MGD. The minimum safe yield is the amount of water that can be supplied during an extended period of drought. Existing system water supply storage consists of Griggs Reservoir, O'Shaughnessy Reservoir, and Hoover Reservoir. Together these reservoirs have a total storage capacity of 36 billion gallons and provide a minimum safe yield of 111 MG. Water supply is supplemented with ground water sources and account for 19 MGD. The present average daily demand for the water utility is approximately 148 MGD, exceeding the minimum safe yield. Projections have shown that future system demand is expected to reach 185 MGD by 2025. The City of Columbus is currently in the process of implementing water system improvements to increase the systems water supply and safe yield. Columbus is planning to expand the ground water well field to increase supply by 15 MGD. In addition, the utility is expanding existing surface water supplies by constructing three additional reservoirs capable of supplying the system with an additional 45 MGD. The new reservoirs will be located on 2,500 acres in Delaware County and provide Columbus with an additional 18.3 billion gallons storage capacity. The continued efforts to maintain adequate sources of drinking water will enable the City of Dublin to support additional community growth.

The water distribution system supplying the City of Dublin provides an average of approximately 5.9 million gallons of domestic water on a daily basis. The distribution system consists of over 182 miles of water distribution pipe ranging in size from 2 inches to 24 inches. The system contains 2,900 public fire hydrants and 115 water valves. For comparison sake, the 1997 Community Plan indicated that 144 miles of waterlines existed as well as 1,800 fire hydrants. This constitutes a 25% increase in water lines and a 60% in the number of fire hydrants.

Water storage is provided by five storage tanks totaling 7.5 million gallons. The storage towers are listed as follows.

- Summit View Storage Tower (2 MG)
- Rings Road Storage Tower (2 MG)
- Avery Road Storage Tower (2 MG)
- Post Road Storage Tower (1 MG)
- Tartan West Storage Tower (0.5 MG)

System water storage is maintained by four booster stations. The storage towers control system hydraulics across four pressure districts. The pressure districts are as follows.

- Henderson Pressure District
- Smoky Row Pressure District
- Post Pressure District
- Tartan Pressure District

These pressure districts are represented on FIGURE 7. The water distribution system, including the location of elevated water storage and booster stations, is represented in FIGURE 8. Continuing the proper expansion of the water distribution system will allow the City of Dublin to provide future growth with access to necessary potable water.