

2022 Annual Report

Sanitary Sewer Overflow and Water in Basement Events

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CITY OF DUBLIN DIVISION OF ENGINEERING

2022 ANNUAL SSO AND WIB REPORT

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I. Introduction/Purpose of Report

The City of Dublin (City) and the State of Ohio Environmental Protection Agency (OEPA) entered into a Director's Final Findings and Orders (Orders) in February of 2009, for the resolution of Sanitary Sewer Overflow (SSO) and Water-in-Basements (WIBs) related concerns for the City's sanitary sewer collection system. In general, the Orders require the City to develop and implement a Capacity, Management, Operations and Maintenance (CMOM) program. This program will address adequate capacity to convey base flows and peak flows for all parts of the sewer system, take all feasible steps to stop and mitigate SSOs and WIBs, minimize excessive Infiltration & Inflow (I/I) and to provide notification to all parties with a reasonable potential for exposure to pollutants associated with any overflow event.

- ☐ Per the Orders, the City shall prepare an annual report of all SSO events and WIB occurrences from its own sanitary sewer collection system on **February 15, 2022**. This is the **Fourteenth** annual report to be submitted to the OEPA **as required by the Orders, Section V, Part 9, Pages 9 and 10 of 13**. This report provides the required information collected by the City of Dublin in 2022.

II. Monitoring and Reporting of Sanitary Sewer Overflows (SSOs)

In February of 2010, the City formalized its internal reporting process of Sanitary Sewer Overflows (SSOs) from the sanitary sewer collection system according to the Orders issued by the OEPA. This process is outlined in the Overflow and Emergency Response and Notification Plan (OERNP) submitted to OEPA in August, 2009. All known overflow events are reported to the OEPA with a 5-day follow up report sent by mail or e-mail. A revised OERNP was submitted to OEPA on January 4, 2013 for the City of Dublin.

The City of Dublin continues to flow monitor its sanitary sewer system with multiple flow meters as designated per the Orders from the OEPA to gather information on the flow characteristics. There are currently thirteen (13) flow meters established throughout the largest trunk sewers, which deliver wastewater to City of Columbus. The City added zero (0) flow meter locations in 2022. These flow meters may be moved, as needed, to show flow characteristics throughout the public sanitary sewer system.

III. Elimination of Sanitary Sewer Overflows in 2022

SSOs Removed

Zero (0) SSO events were removed from the list in **Appendix E**, with Dublin Event Reference numbers as follows: N/A

Appendix B & C contains the list of locations of SSO events for 2022 and all the relevant details as required by the Orders.

See **Exhibit 1** for the general location of the SSO and WIB events for 2022.

IV. Activities Performed to Reduce the Occurrence of SSOs and WIBs

The City of Dublin continues its sewer shed based maintenance program aimed at cleaning all sewers on a systematic basis to reduce the number of occurrences of SSOs and WIBs. The past sewer shed based program in 2005 was completed in 2010. A new sewer shed based maintenance program of cleaning, televising and manhole inspections will take its place as noted in the Sewer System Evaluation Study (SSES) previously given to the OEPA.

The City has identified from the previous maintenance program that I/I and structural defects are mostly related to the amount of existing clay pipe and concrete sanitary sewer pipe material. A higher priority is set on Deer Run, North and South Fork Indian Sewer Sheds, which contain the vast majority of the clay and concrete sanitary sewer pipe material for structural repairs and I/I elimination. The SSES proposed phased schedule represents the priority given to these sewer sheds.

The SSES lists the on-going flow monitoring program of the sanitary sewer collection system. The City leases all the flow meters and associated equipment to monitor the flow characteristics of its sanitary sewer collection system. The City has placed meters strategically to monitor the sanitary sewer collection system and the focus is currently on Deer Run, North Fork Indian Run, South Fork Indian Run, and Cosgray sewer sheds.

V. Summary of Sanitary Sewer Overflows (SSOs) Observed in 2022

- The City will report SSOs from its sanitary sewer collection system through its OERNP and this annual report in accordance with the **Orders, Section V, Item 8 and 9 on pages 8, 9 & 10 of 13**. A summary list of the dry and wet weather overflow events is located in **Appendices B and C** respectively.

- **Wet Weather Overflow Events**

The City observed two (2) known SSO events during wet weather throughout the sanitary sewer collection system in 2022.

1. Location, frequency and cause

The City identified two (2) known sanitary sewer overflow event(s) from the sanitary sewer collection system in wet weather from two (2) different locations. Below are the two (2) new locations within the sanitary sewer system:

March 8, 2022 Event – Muirfield Village Golf Club, Hole 6

One (1) event occurred at one (1) known SSO location referred to in Appendix E of this report under the Summary of SSOs and WIBs. This location is referred to as Dublin Reference #32 in Appendix E and was in the Deer Run sewer shed. This was reported by Muirfield Village Golf Club as being a manhole on Hole 6, with close proximity to Deer Run. The City does not have sanitary facilities in that area, so this was assumed to be a private system overflow. The cause of this overflow was excessive wet weather and I/I.

August 20, 2022 Event – Wyandotte Woods Pump Station, 7880 Riverside Drive

One (1) event occurred at one (1) known SSO location referred to in Appendix E of this report under the Summary of SSOs and WIBs. This location is referred to as Dublin Reference #11 in Appendix E and was in

the Riverside sewer shed. The cause of this overflow was a power outage in combination with mechanical failure in pump #2 of this pump station.

2. Changes in Operations and Maintenance procedures

For the March 8 event, since this was a private system, no changes are proposed in operation or maintenance.

For the August 20, 2022 event, pump #2 was sent to be diagnosed and refurbished, which will make it fully operational in a similar event in the future.

See **Exhibit 1** for locations of the two (2) Wet Weather SSOs.

- **Dry Weather Overflow Events**

The City observed a total of zero (0) known SSO events during dry weather at zero (0) locations throughout the sanitary sewer collection system in 2022.

1. Location, frequency and cause

There were no dry weather overflows in 2022.

2. Changes in Operations and Maintenance procedures

There are no proposed changes to operation and maintenance procedures.

In all future events, regardless of the circumstances, City sewer crews shall be mobilized to resolve the situation as outlined in the City's OERNP.

Receiving (named) waterways downstream from the 2022 SSO events include the following:

- **Deer Run**

The City of Dublin sewer service area is broken down into 9 sewer sheds as shown in **Exhibit 1**. The sewer sheds represent the areas served by major trunk sewers and are referred to as follows:

- Cosgray
- Cramer North
- Cramer South
- Deer Run
- Hayden Run
- Llewellyn Farms South
- North Fork Indian Run
- Riverside
- South Fork Indian Run

Table 1 summarizes the total Sanitary Sewer Overflows (SSOs) by sewer shed, including wet weather and dry weather events for 2022.

Table 1

Sewer Sheds	Total SSOs	Dry Weather	Wet Weather
Cosgray	0	0	0
Cramer North	0	0	0
Cramer Creek	0	0	0
Deer Run	1	0	1
Dry Creek	0	0	0
Llewellyn Farms South	0	0	0
North Fork Indian Run	0	0	0
Riverside	1	0	1
South Fork Indian Run	0	0	0
Totals	2	0	2

Appendix E lists all SSOs and WIBs, Reference #'s attached, for the City of Dublin, since the inception of our Directors Final Findings and Orders on February 11, 2009.

VI. Summary of Water-In-Basement (WIB) Occurrences Reported in 2022

- As per the **Orders, Page 9 of 13, Item 9**. Included below is a narrative analysis of patterns of the WIBs by location, frequency and cause, as well as any resultant changes in operations and maintenance procedures.

A summary of WIB's by **Sewer Sheds** is as follows:

Sewer Sheds	Total WIBs	Dry Weather	Wet Weather
Cosgray	1	0	1
Cramer North	0	0	0
Cramer Creek	0	0	0
Deer Run	10	0	10
Dry Creek	0	0	0
Llewellyn Farms South	0	0	0
North Fork Indian Run	3	0	3
Riverside	0	0	0
South Fork Indian Run	0	0	0
Totals	14	0	14

1. Location, frequency and cause

Fourteen (14) known events occurred at the eight (8) known Water-In-Basement locations referred to in Appendix E of this report under the Summary of SSOs and WIBs. These locations are referenced as Dublin numbers 31, 28, 27, 22, 33, and 34 in Appendix A, with numbers 31 and 28 being duplicated.

February 17, 2022 Event – 8757, 8763, and 8772 Glassford Ct

Three (3) events occurred at the three (3) known Water-In-Basement locations specified in Reference 28 in Appendix E of this report. The WIB was caused by excessive wet weather and I/I.

February 17, 2022 Event – 7753 Crawley Drive

One (1) events occurred at the one (1) known Water-In-Basement locations specified in Reference 31 in Appendix E of this report. The WIB was caused excessive wet weather and I/I.

March 7, 2022 Event – 8752, 8757, 8763, and 8772 Glassford Ct

One (1) event occurred at the four (4) known Water-In-Basement locations specified in Reference 28 in Appendix E of this report. The WIBs were caused by extreme weather.

September 5, 2022 Event – 7753 Crawley Drive

One (1) event occurred at the one (1) known Water-In-Basement locations specified in Reference 31 in Appendix E of this report. The WIB was caused by extreme weather.

September 5, 2022 Event – 7976 Holyrood Court

One (1) event occurred at the one (1) known Water-In-Basement locations specified in Reference 27 in Appendix E of this report. The WIB was caused by extreme weather.

September 5, 2022 Event – 9261 Lerwick Drive

One (1) event occurred at the one (1) known Water-In-Basement locations specified in Reference 22 in Appendix E of this report. The WIB was caused by extreme weather.

September 5, 2022 Event – 5529 and 5547 Preswick Drive

Two (2) event occurred at the two (2) known Water-In-Basement locations specified in Reference 33 in Appendix E of this report. The WIBs were caused by extreme weather.

November 11, 2022 Event – 390-404 Edinburgh Road (one apartment building)

One (1) event occurred at the one (1) known Water-In-Basement locations specified in Reference 34 in Appendix E of this report. The WIB was caused by shop rags clogging the service lateral in combination with wet weather.

Four (4) WIB events were added to the Dublin event reference numbers (numbers 31-34) in Appendix E.

2. Changes in Operations and Maintenance procedures for WIBs

The City of Dublin installed eleven new backwater valves at homes that experienced backups in 2022 and provided maintenance on three additional backwater valves, which included replacing alarms, cleaning, and more. The Deer Run sewer shed contributed the majority of WIBs in 2022. The City is constructing a new sanitary force main which will serve the Deer Run sewer shed and has asked for proposals to begin designing a relief sewer which will also serve the Deer Run sewer shed.

VII. Elimination of Water-in-Basement Occurrences in 2022

WIBs Removed

Four (4) WIB events were removed from the list in **Appendix E**, with Dublin Event Reference numbers as follows: 8, 24, 25, and 26.

Appendix D contains the list of locations of WIB events for 2022 and all the relevant details as required by the Orders.

See **Exhibit 1** for the general location of the SSO and WIB events for 2022.



VIII. Report Public Notification

As required by the Orders, the City will make the public aware of this annual report by making the report available on the City of Dublin web site. Interested parties may download and print this report from the City of Dublin website, available under the Engineering, Sanitary Sewer area of the site. This report will also be available at the City of Dublin, Division of Engineering, 6555 Shier Rings Road, Dublin, OH 43016 or by calling Mason Hughes at (614) 410-4734.

Appendix A

Flow Meter Locations

City of Dublin
Flow Meter Locations - 2022

FLOW METERS					Available
Flo-Dar (Dublin Permanent)	13 total		13 installed		0

Status	Meter #	Manhole Facility ID	Pipe Size (in)	Meter Type	SAS System
IN	1	228	21	Flo-Dar	Cramer North
IN	2	433	21	Flo-Dar	Cramer North
IN	3	328	18	Flo-Dar	Cramer South
IN	4	350	21	Flo-Dar	Cramer South
IN	5	1252	21	Flo-Dar	Cosgray
IN	6	1318	18	Flo-Dar	Cosgray
IN	7	1856	30	Flo-Dar	Riverside
IN	8	2213	15	Flo-Dar	North Fork Indian Run
IN	9	6271	12	Flo-Dar	Hayden Run
IN	10	3089	18	Flo-Dar	Riverside
IN	11	3184	42	Flo-Dar	Riverside
IN	12	3674	8	Flo-Dar	Riverside
IN	13	4073	21	Flo-Dar	Cramer North

Appendix B

Annual Summary of Wet Weather Overflows

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City of Dublin

Appendix C

Annual Summary of Dry Weather Overflows

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City of Dublin

Appendix D

Annual Summary of Water-In-Basement Occurrences

City of Dublin
Annual Summary of Water-In-Basement Occurrences - 2022

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Location	Sewer Component	Estimated Date and Time (if known)					Cause	Reduction/Elimination/Prevention	OEPA Reference # / Dublin CityWorks Work Order #	Receiving Waters - if any	Sewer Shed
7747 Crawley Drive	Sewer Lateral	2/17/22	20:50	to	2/17/22	21:20	Wet weather I/I	1. Backflow preventer already installed at this location. It was cleaned to make it more operational. 2. City staff performed CCTV of sanitary main - Inspection	N/A	Basement	North Fork Indian Run
8757, 8763, and 8772 Glassford Ct S	Sewer Laterals	2/17/22	20:30	to	2/17/22	21:00	Wet weather I/I	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident.	N/A	Basement	Deer Run
8752, 8757, 8763, and 8772 Glassford Ct S	Sewer Laterals	3/7/22	9:00	to	3/7/22	10:00	Wet weather I/I	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident. 3. City funded install of backflow preventers at all of these locations.	N/A	Basement	Deer Run
7753 Crawley Drive	Cleanout	9/5/22	7:00	to	9/5/22	8:00	Wet weather I/I	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident. 3. There is already a backwater valve installed at this location with appeared to function during this event. However, the cleanout inside the basement was not watertight, which allowed water to backup into the basement. The cleanout was made watertight.	N/A	Basement	North Fork Indian Run
7976 Holyrood Ct	Sewer lateral	9/5/22	7:00	to	9/5/22	8:00	Wet weather I/I	1. City funded install of backwater valve at this location	N/A	Basement	North Fork Indian Run
9261 Lerwick Drive	Sewer lateral	9/5/22	7:00	to	9/5/22	8:00	Wet weather I/I	1. City has already installed a backwater valve at this location, but cleaning and maintenance of the valve seemed insufficient. City educated resident and paid for cleaning. 2. A new force main was constructed this year to serve this sewer shed.	N/A	Basement	Deer Run
5529 and 5547 Preswick Dr	Sewer lateral	9/5/22	7:00	to	9/5/22	8:00	Wet weather I/I	1. City funded installs of backwater valves at these locations. 2. A new force main was constructed this year to serve this sewer shed.	N/A	Basement	Deer Run
390, 392, 394, 396, 398, 400, 402, 404 Edinburgh Road	Sewer lateral	11/11/22	15:00	to	11/11/22	15:30	Shop rags clogged sewer lateral	1. City educated residents on unflushable items to prevent another backup at this location	N/A	Basement	Cosgray

Appendix E

Summary of SSOs and WIBs

All Years

City of Dublin

Summary of SSOs and WIBs for All Years

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Dublin Event Reference #	Location	OEPA Reference # / Dublin CityWorks Work Order #	Estimated Date and Time (if known)					Receiving Waters - if any	Sewer Component	Cause	Reduction/Elimination/Prevention	Estimated Volume (MG)	Sewer Shed	Monitor Removal Date
2007 Events														
1	Manhole #3281, East of Dublin Rd. just north of Deer Run Creek and Dublin Rd.	1/	3/27/07	10:00	to	3/27/07	14:18	Deer Run Creek trib. to Scioto River	Manhole	Excess I/I/ Wet weather	Sewer lining program in progress to eliminate I/I	MH#3281 - 0.071	Deer Run	Removed
2008 Events														
1	Manhole #3281 & 3726	0806-21-2474/	6/4/08	7:20	to	6/4/08	16:00	Deer Run Creek trib. to Scioto River	Manhole	Excess I/I/ Wet weather	Sewer lining program in progress to eliminate I/I	MH# 3281 - 0.026, MH# 3726-0.026	Deer Run	Removed
1	Manhole #3281 & 3726	1/	6/26/08	13:00	to	6/26/08	19:00	Deer Run Creek trib. to Scioto River	Manhole	Excess I/I/ Wet weather	Sewer lining program in progress to eliminate I/I	MH# 3281 - 0.036, MH# 3726-0.036	Deer Run	Removed
2009 Events														
2	6170, 6174, 6182 Kendall Ridge Loop, 6165, 6175, 6186 Tuswell Dr., Fac. ID 880	0904-25-1135 / 15262	4/15/09	22:45	to	4/16/09	2:00	N/A - Basement	Pipe	Debris in line	Sewer lines were jet cleaned and CCTV inspected.	N/A	Cosgray	Removed
3	N.W. corner of Campden Lakes Blvd./ Chippenham Dr., Fac. ID 2097	0905-25-1357 / 20174	5/5/09	22:30	to	5/5/09	23:30	Summit View Creek trib. to Scioto River	Manhole	Grease	Jet clean the pipe segment, Fac. ID 2042	0.012	Riverside	Removed
2010 Events														
4	Basements - 4666 Chatham Ct., 4568, 4595, 4604, 4611, 4627, 4643, 4658, 4690, 4766 Donegal Cliffs Drive, 4797 Inisheer Ct., 4727, 4735, 4751, 4759, 4767 Vista Ridge Drive, Manhole #2882	1003-25-0730 / 27188	3/26/10	8:00	to	3/26/10	10:00	Scioto River	Manhole	2010 Sanitary Sewer Lining Project ~ Bypass pump operator failed to maintain the wastewater level downstream at MH #2782	Plug was at downstream manhole to alleviate the overflow. Lining operations ceased.	0.0005	Deer Run	Removed
5	5935 Springburn Drive	1014-25-1067 / No #	4/26/10	9:59	to	4/26/10	11:00	N/A - Basement	Sanitary Sewer/Facility ID: 4071	Debris in service line/grease	Sewer lines were jet cleaned and CCTV inspected.	N/A	Deer Run	Removed
6	Manhole #1828 & 1829 / 485 Metro Place South	1008-25-2455 / 33180	8/27/10	13:05	to	8/27/10	14:45	N/A -Ground	Manhole	Roots/Debris in sewer line	Root/debris were cut and removed. Sanitary sewer segment, was cleaned and jetted.	0.00005	Cosgray	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2011 Events														
1	Manhole #3281 & WIB at 8731 Glenamoy Circle	1112-25-3836/49893	12/5/11	19:48	to	12/5/11	23:30	Deer Run Creek trib. to Scioto River	Sanitary Sewer/Facility ID: 3281	Excess I/I/ Wet weather	1. City of Dublin is currently working with a contractor to line the segments directly upstream of Dublin Sanitary Sewer Manhole, Dublin Facility ID:3281	MH# - 0.002, 8731 Glenamoy Circle - 100 gallons	Deer Run	Removed
7	7753 Crawley Drive	1112-25-3836/49893	12/5/11	21:59	to	12/5/11	23:30	N/A - Basement	Pipe	Excess I/I/ Wet weather	1. CCTV the sanitary sewer segments & service lateral connections up & down stream of the affected address for deficiencies. 2. Visually inspect the sanitary sewer manholes for sources of infiltration & inflow.	100 Gallons	North Fork Indian Run	Removed
8	5520,5521, & 5528 Dumfries Court East	1112-25-3838/49893	12/5/11	17:43	to	12/6/11	0:00	N/A - Basement	Pipe	Excess I/I/ Wet weather	1. CCTV the mainline sewers to check sanitary service laterals for excessive visible infiltration, defects, CIPP lining failures and other problems. 2. Visually inspect sanitary sewer manholes for infiltration and inflow and other defects.	5520 & 5521 Dumfries Court East - 10 gallons; 5528 Dumfries Court - 2,970 Gallons	Deer Run	Removed
9	5750 Blazer Parkway, Manhole # 6046	1102-25-0421/38339	2/23/11	8:39	to	2/23/11	10:20	N/A -Ground	Manhole	Debris in Line	1. Debris in the 6" sanitary service lateral was removed by jet cleaning the 572 feet pipe from the 21" mainline sanitary sewer to Dublin Manhole Facility ID: #6046, Point of the SSO	0.0001	Cramer Creek	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2011 Events Cont.														
1	Manhole #3281 & #3726, Wet Well #3902	1103-21-0623/39566	3/5/11	10:56	to	3/5/11	13:15	Deer Run Creek	Manhole & Wet Well	Excess I/I/ Wet weather	1. City of Dublin has CIPP lines approx. 64680 linear feet upstream of this overflow location from 2007 to 2009. 2.Currently flow monitoring upstream and downstream of this location to determine potential solutions for this area. 3.Planned to CIPP line approx. \$500,000 worth of sanitary sewer upstream of this overflow location in 2012.	MH#3281 - 0.0007, MH#3726 - 0.0007, Wet Well #3902 - 0.0003	Deer Run	Removed
1	MH# 3281 - 0.0012, MH# 3726-0.0012, Wet well #3902 - 0.0007	1104-21-1023/40474	4/4/11	17:25	to	4/4/11	21:25	Deer Run Creek trib. to Scioto River	Manhole & Wet Well	Excess I/I/ Wet weather	1. City of Dublin has CIPP lines approx. 64,680 linear feet upstream of this overflow location from 2007 to 2009. 2. Currently flow monitoring upstream and downstream of this location to determine potential solutions for this area. 3.Planned to CIPP line approx. \$500,000 worth of sanitary sewer upstream of this overflow location in 2012.	MH# 3281 - 0.0012, MH# 3726-0.0012, Wet well #3902 - 0.0007	Deer Run	Removed
10	6095 Springburn Drive/ Manhole #2397	1105-21-1508	5/3/11	12:06	to	5/3/11	14:21	Deer Run	Manhole	Manhole & Wet Well	1. Recently set a flow monitor downstream of this location to determine the problem with this part of the system. 2. During the next rain event, City staff will monitor the manhole to see if the sanitary sewer overflow persists at this location.	Unknown	Deer Run	Removed
11	7880 Riverside Drive/Manhole #4421 (Wyandotte Woods Wet Well)	1105-25-1550	5/6/11	10:27	to	5/6/11	11:04	Scioto River	Wet Well	Wet Well	1.Temporary pump set up to bypass existing pumps until such time that we can re-establish the electrical equipment and power to the pumps in the wet well.	MH# 4421 - 0.00074	Dry Creek - Riverside	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2011 Events Cont.														
12	8731 Glenamoy Circle	1112-25-3838	12/5/11	19:48	to	12/5/11	23:30	N/A - Basement	Pipe	Excess I/I/ Wet weather	1. City of Dublin is currently working with a contractor to line the segments directly upstream of Dublin Sanitary Sewer Manhole, Dublin Facility ID:3281	8731 Glenamoy Circle - 100 Gallons	Deer Run	Removed
2012 Events														
13	9442 Din Eidyn Drive	1301-21-237	7/16/12	10:50	to	7/16/12	10:50	N/A	8-inch sanitary sewer/Facility ID: 4169	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 4 gallons	Deer Run	Removed
13	8934 Monifieth Court	1301-21-237	6/28/12	8:00	to	6/28/12	8:00	N/A	8-inch sanitary sewer/Facility ID: 4349	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed
13	5776 Duddingston Drive	1301-21-237	7/12/12	3:05	to	7/12/12	3:05	N/A	8-inch sanitary, Dublin Facility ID: 4176	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2012 Events Cont.														
13	5703 Rothesay Drive	1301-21-237	12/20/12	9:15	to	12/20/12	9:15	N/A	8-inch sanitary, Dublin Facility ID: 4209	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed
13	5725 Rothesay Drive	1301-21-237	12/20/12	9:15	to	12/20/12	9:15	N/A	8-inch sanitary, Dublin Facility ID: 4209	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed
13	5707 Zetland Court	1301-21-237	7/11/12	16:30	to	7/11/12	16:35	N/A	8-inch sanitary, Dublin Facility ID: 4196	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed
13	9377 Capewrath Drive	1301-21-237	7/13/12	7:15	to	7/13/12	7:15	N/A	8-inch sanitary, Dublin Facility ID: 4167	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 4 gallons	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2012 Events Cont.														
13	9470 Avemore Court	1301-21-237	7/16/12	12:00	to	7/16/12	12:00	N/A	8-inch sanitary, Dublin Facility ID: 4197	Contractor Vactor/Jet Truck water pressure	1. City of Dublin taken to notice of the WIB location on a map for sewer crews to be notified in the future when this segment is cleaned. 2. City of Dublin has made notes of location to reduce the vactor truck pressure at the next cleaning of these line segments.	Estimated Volume 2 gallons	Deer Run	Removed
14	6070, 6074, 6084,6088, 6092, 6098, 6100 Glenbar Place	1212-25-2953	12/7/12	18:00	to	12/7/12	21:00	N/A	8-inch santary, Dublin Facility ID: 2988, 2990 & 2991	Grease	1. City of Dublin Sewer Maintenance Staff cleaned 8-inch sanitary sewer , Pipe Facility ID: #2988, with jetter truck on December 7, 2012 which removed the blockage. 2. City of Dublin will revisit the affected pipe segments every 6 months to clean and televise for additional grease presence for a 3 year period. 3. City of Dublin will do visual inspections of manholes. City will perform these inspections once a month for 6 months and then every 6 months until the 3 year mark.	No Volume's Obtained	North Fork Indian Run	Removed
15	Manhole #2407 & #2412	1202-21-0380	2/16/12	8:15	to	2/16/12	9:19	Deer Run Creek	Manhole	Cured in Place Pipe Liner Failure	1. Contractor immediately placed a bypass pump into Manhole #2407 to eliminate SSO. 2.contractor shall ensure that a secondary bypass pump will be readily available onsite if this event reoccurs.	Manhole #2407 - 0.00064 MG, Manhole #2412 - 50 gallons	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2013 Events														
16	6877, 6878, 6881, 6882, 6885, 6886, 6889, 6890 Forest Haven Loop	N/A	5/28/13	11:23	to	5/28/13	1:32	N/A	10-inch sanitary, Dublin Facility ID: 5862	Debris in line	1. Debris in the 10-inch sanitary sewer line was removed by jet cleaning the 101 feet of pipe from sanitary sewer manhole, Dublin Manhole Facility ID: #5665 to #5664, point of the blockage. 2. Schedule to eliminate or reduce the water in basement from reoccurring is to field check the manholes along the service line quarterly over the next 3 years.	5 to 10 gallons per residence	Cramer North	Removed
17	5929 Macewen Court	N/A	12/21/13	14:30	to	12/21/13	22:30	N/A	12-inch sanitary sewer, Facility ID: #4093	Excess I/I/ Wet weather	1. City of Dublin Sewer Maintenance Staff cleaned 12-inch sanitary sewer, Pipe Facility ID: #4093, with jetter truck on December 23, 2013 to check for debris in the line.	No Volume's Obtained	Deer Run	Removed
17	5929 Macewen Court	N/A	12/22/13	1:30	to	12/22/13	6:30	N/A	12-inch sanitary sewer, Facility ID: #4093	Excess I/I/ Wet weather	1. City of Dublin Sewer Maintenance Staff cleaned 12-inch sanitary sewer, Pipe Facility ID: #4093, with jetter truck on December 23, 2013 to check for debris in the line.	No Volume's Obtained	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2014 Events														
19	6740 Post Road	N/A	11/8/14	4:45	to	11/8/14	7:30	N/A	8-inch sanitary sewer, Facility ID: #1062, Manhole Facility ID: #1940	Grease	1. City of Dublin Sewer Maintenance Staff cleaned 8-inch sanitary sewer, Pipe Facility ID: #1062 and 1063, with jetter truck on November 8, 2014 which removed the blockage.	No Volume's Obtained	South Fork Indian Run	Removed
2015 Events														
17	5929 Macewen Court	N/A	6/20/15	13:45	to	6/20/15	18:00	N/A	12-inch sanitary sewer, Facility ID: #4093	Excess I/I/ Wet weather	1. City of Dublin Sewer Maintenance Staff temporarily using 4-inch bypass pumps to alleviate the excess I/I at this location during heavy rainfall events. 1. City of Dublin Engineering Staff plans to oversize downstream sewer to assist in removing the excessive I/I.	Approx. 5-10 gallons.	Deer Run	Removed
21	Dumfries Court East & Loch More Court East	N/A	6/20/15	12:00	to	6/20/15	18:00	N/A	8-inch sanitary sewer, Facility ID: #4244 & #4245 and #4247	Excess I/I/ Wet weather	1. City of Dublin Sewer Maintenance Staff temporarily using 4-inch bypass pumps to alleviate the excess I/I at this location during heavy rainfall events. 1. City of Dublin Engineering Staff plans to continue manhole lining upstream of these areas. 2.City of Dublin Engineering Staff plans to flow monitor this area to get a better understanding of the excessive I/I sources.	No Volume's Obtained	Deer Run	Removed
22	9249 & 9261 Lerwick Drive	N/A	6/20/15	13:45	to	6/20/15	18:00	N/A	8-inch sanitary sewer, Facility ID: #4134 & #4143	Excess I/I/ Wet weather	1. City of Dublin Engineering Staff plans to continue manhole lining program in this area to alleviate the excessive I/I. 2. City of Dublin Engineering Staff plans to flow monitor this area to get a better understanding of the excessive I/I sources.	Approx. 300 gallons each residence	Deer Run	Removed
1	8719 Glenamoy Circle & Muirfield Village Golf Course	N/A	6/20/15	12:00	to	6/20/15	18:00	N/A	8-inch and 15-inch sanitary sewer, Facility ID: #4134 & #4143	Excess I/I/ Wet weather	1. City of Dublin Engineering Staff to further evaluate and flow monitor the Deer Run Sewer Shed for proposed improvements to eliminate SSO's. 2. City of Dublin is targeting areas upstream of this SSO location for future manhole rehabilitation in 2015.	MH ID: 3726 - 36,000 gallons, MH ID: 3281 - 7,200 gallons	Deer Run	Removed

Summary of SSOs and WIBs for All Years

2016 Events														
1	8719 Glenamoy Circle & Muirfield Village Golf Course	N/A	6/23/16	4:00	to	6/23/16	16:00	N/A	8-inch and 15-inch sanitary sewer, Facility ID: #4134 & #4143	Excess I/I/ Wet weather	1. City of Dublin Engineering Staff to further evaluate and flow monitor the Deer Run Sewer Shed for proposed improvements to eliminate SSO's. 2. City of Dublin is targeting areas upstream of this SSO location for Capital and Maintenance Improvements in 2017-2021.	No Volume's Obtained	Deer Run	Removed
17	5929 Macewen Court	N/A	6/23/16	4:00	to	6/23/16	16:00	N/A	12-inch sanitary sewer, Facility ID: #4093	Excess I/I/ Wet weather	1. City of Dublin Sewer Maintenance Staff temporarily using 4-inch bypass pumps to alleviate the excess I/I at this location during heavy rainfall events. 1. City of Dublin Engineering Staff is currently constructing a sewer improvement downstream of this WIB.	Approx. 5-10 gallons.	Deer Run	Removed
2017 Events														
6	Manhole #1829 / 485 Metro Place South	N/A	12/28/17	8:00	to	12/28/17	14:00	N/A -Ground	Manhole	Debris in sewer line	Debris were cut and removed. Sanitary sewer segment, was televised, cleaned, and jetted.	Approx. 100 gallons	Cosgray	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2018 Events														
8	5521 Dumfries Court East	1112-25-3838/49893	6/21/18	18:00	to	6/21/18	22:00	N/A - Basement	Pipe	Excess I/I/ Wet weather	1. Deer Run Sewer upsizing Capital Improvement Project planned for 2019. 2. Contine to visually inspect sanitary sewer manholes for infiltration and inflow and other defects, and provide bypass pumping during rain events. 3. Downstream capacity increase project planned for 2019.	5521 Dumfries Court East - No estimate given	Deer Run	Removed
23	225 Monsarrat Drive	N/A	10/12/18	17:00	to	10/12/18	22:00	N/A - Basement	Pipe ID# 1773	Grease in line	1. Weekly inspection of line. 2. Repair/replace 8" sanitary main line or spot repair location of problem in 2019.	Approx. 250 gallons	Cosgray	Removed (2021)
1	8719 Glenamoy Circle & Muirfield Village Golf Course	N/A	2/24/18	23:00	to	2/25/18	5:00	Deer Run Creek	Manholes, Facility ID: #3281 & #3726	Excess I/I/ Wet weather	The City of Dublin has several Capital Improvement Programs planned to address the issues in this area. A new pump station is planned, along with a new 12" force main along Dublin Rd. Also, there is a proposed upsizing and/or parallel sewer main at Muirfield Court into the Muirfield Village Golf Course. Both of these projects were created to address SSO's in the areas of the most recent overflows noted on this form.	Approx. 2000 gallons	Deer Run	Removed
1	8719 Glenamoy Circle & Muirfield Village Golf Course	N/A	4/3/18	11:00	to	4/3/18	17:00	Deer Run Creek	Manholes, Facility ID: #3281 & #3726	Excess I/I/ Wet weather	The City of Dublin has several Capital Improvement Programs planned to address the issues in this area. A new pump station is planned, along with a new 12" force main along Dublin Rd. Also, there is a proposed upsizing and/or parallel sewer main at Muirfield Court into the Muirfield Village Golf Course. Both of these projects were created to address SSO's in the areas of the most recent overflows noted on this form.	Approx. 36000 gallons	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2019 Events														
8	5521 Dumfries Court East	1112-25-3838/49893	3/30/19	18:00	to	3/30/19	22:00	5521 Dumfries Ct E (Basement) & Deer Run Creek	Pipe #4245	Excess I/I/ Wet weather	1. Deer Run Sewer upsizing Capital Improvement Project planned for 2020. 2. Deer Run Force Main and Lift Station project installed in 2019. 3. Continue to visually inspect sanitary sewer manholes for infiltration and inflow and other defects, and provide bypass pumping during rain events. 4. Downstream capacity increase project planned for 2020.	5521 Dumfries Court East - No estimate given	Deer Run	Removed
24	9080 Moors Pl N.	N/A	2/7/19	20:00	to	2/7/19	21:30	N/A - Basement	Pipe ID# 2980	Grease/ debris in line	Dublin staff jetted and removed treeroots and other debris from downstream mahole and sanitary pipe. The line was televisied and cleaned twice, and treated with RootX	N/A	North Fork Indian Run	Removed
25	400 Metro Place North (Private parking garage)	N/A	3/10/19	16:30	to	3/11/19	9:00	Parking garage floor	N/A	Paperproducts, other debris in floor drain pipe	1.Property owner had a plumbing contractor come and jet the private lines. 2. Dublin City staff investigated upstream and downstream structures (Facility ID #2034, 2035, 2051) as well as the surrounding area, to look for any other blockages or possible causes.	Approx. 1000-2000 gallons	South Fork Indian Run	Removed
26	Corbin Mills Dr. (multiple condos)	N/A	9/5/19	20:00	to	9/5/19	21:45	Condo floors	Manholes, Facility ID: #3281 & #3726	Excess I/I/ Wet weather	The City of Dublin has several Capital Improvement Programs planned to address the issues in this area. A new pump station is planned, along with a new 12" force main along Dublin Rd. Also, there is a proposed upsizing and/or parallel sewer main at Muirfield Court into the Muirfield Village Golf Course. Both of these projects were created to address SSO's in the areas of the most recent overflows noted on this form.	Approx. 36000 gallons	Deer Run	Removed

City of Dublin

Summary of SSOs and WIBs for All Years

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2020 Events														
1	Manholes 3721 & 3726 Muirfield Village Golf Course	39566, 19015	3/20/20	4:00	to	3/20/20	10:30	Deer Run Creek trib. to Scioto River	Manholes, Facility ID: #3721 & #3726	Excess I/I/ Wet weather	1. Sanitary sewer lining program completed in 2020. 2. Sanitary manhole lining completed in 2020. 3. Deer Run Force Main and Lift Station project (design phase)	MH#3726-.0195MG MH#3721-.0195MG	Deer Run	3/20/23
1	Manholes 3721 & 3726 Muirfield Village Golf Course/8624 Dunblane Ct	39566, 19015	5/18/20	11:00	to	5/18/20	13:00	Deer Run Creek trib. to Scioto River	Manholes, Facility ID: #3721 & #3726	Excess I/I/ Wet weather	The City of Dublin has several Capital Improvement Programs planned to address the issues in this area. A new pump station is planned, along with a new 12" force main along Dublin Rd. Also, there is a proposed upsizing and/or parallel sewer main at Muirfield Court into the Muirfield Village Golf Course. Both of these projects were created to address SSO's in the areas of the most recent overflows noted on this form.	MH#3726-N/A MH#3721-N/A	Deer Run	5/18/23
7	7753 Crawley Drive	53122	5/19/20	7:00	to	5/19/20	13:00	N/A - Basement	Pipe	Excess I/I/ Wet weather	1. CCTV the sanitary sewer segments & service lateral connections up & down stream of the affected address for deficiencies. 2. The City is having this property surveyed to confirm elevations. This will assist the City in putting together a plan to address the WIB events at this location.	N/A	North Fork Indian Run	5/19/23
27	7976 Holyrood Ct	156098	5/19/20	7:00	to	5/19/20	11:00	N/A - Basement	Sanitary lateral	Excess I/I/ Wet weather	The City of Dublin will monitor and assess ouyr sanitary and storm sewer infrastrucutre near this location, specifically targeting sources of I/I. The sanitary main was inspected in 2019, and the storm sewer at this location was cleaned in 2020.	Approx. 40-50 gallons	North Fork Indian Run	9/5/2025

City of Dublin

Summary of SSOs and WIBs for All Years

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2020 Events (cont.)														
28	Basements - 8757, 8763, 8772 Glassford Ct S	N/A	5/19/20	7:00	to	5/19/20	11:00	N/A - Basement	Sanitary lateral	Excess I/I/ Wet weather	The City of Dublin will continue to monitor these locations for sources of I/I. Dublin has several Deer Run Sewer Shed improvement projects within the 2021-2025 CIP plan. These plans include the installation a new pump station, as well as a new 16-inch sanitary force main, both currently in the design phase. Many of these proposed Deer Run improvements, as well as other future projects, were driven from the 2012 Deer Run Sewer Modeling report (and 2019 update), and aim to provide relief to the sanitary system, including previous SSO and WIB locations. The City has a rain gauge placed at Grizzell Middle School, just south of Reference #28, which should allow for better monitoring of this location in the future.	8757 - Approxiamtely 1" of sewage in basement, no estimate given 8763 and 8772 - Approximately 0.5" sewage, approximately 50 gallons each	Deer Run	3/7/2025
2021 Events														
29	5356 Erin Isles Ct	182240	4/4/21	16:45	to	4/4/21	17:15	Basement	Sewer lateral in basement	Debris in line	1. Root-X applied to sanitary main line. 2. City staff performed CCTV of sanitary main. 3. Vacall truck cleaning. 4. Routine inspection of sewer line.	Approximately 5 gallons of water, per resident	South Fork Indian Run	4/4/24
11	7880 Riverside Drive (Wyandotte Woods Wet Well)	N/A	5/3/21	23:00	to	5/4/21	0:00	Ground nearby	Pump station	Equipment (power) failure	1. Winelco (contracted inspector) to re-inspect operations of pump station monthly. 2. The cause of the SSO was found to be failed floats. All 4 floats have been replaced. Phone line for alerts had also previously been cut. AT&T has now upgraded their system serving this pump station.	N/A - no solids released	Riverside	5/3/24
30	5750 Paul Blazer Pkwy - WTFD #95	N/A	7/10/21	9:12	to	7/10/21	10:35	Ground nearby	Manhole, Facility ID# 6046	Grease, debris in line	1. City cleaned out nearby sanitary lines	N/A - no solids released	Cramer North	7/10/24
2022 Events														
31	7753 Crawley Drive	N/A	2/17/22	20:50	to	2/17/22	21:20	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. Backflow preventer already installed at this location. It was cleaned to make it more operational. 2. City staff performed CCTV of sanitary main - Inspection	800 gallons	North Fork Indian Run	9/5/2025

City of Dublin

Summary of SSOs and WIBs for All Years

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2022 Events (cont.)														
28	8757, 8763, and 8772 Glassford Ct S	N/A	2/17/22	20:30	to	2/17/22	21:00	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident.	1800 gallons	Deer Run	3/7/2025
28	8752, 8757, 8763, and 8772 Glassford Ct S	N/A	3/7/22	9:00	to	3/7/22	10:00	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident. 3. City funded install of backflow preventers at all of these locations.	2800 gallons	Deer Run	3/7/2025
32	Muirfield Village Golf Club, Hole 6	N/A	3/8/22	17:00	to	3/8/22	18:00	Deer Run	Private Manhole	Excess I/I / Wet weather	This is a privately-maintained system. The owner of the private facility is aware. The City continues to implement a robust CIPP sewer lining program to prevent I/I in the public system.	3000 gallons	Deer Run	3/8/2025
11	Wyandotte Woods Pump Station, 7880 Riverside Drive	N/A	8/20/22	13:30	to	8/20/22	16:40	Ground nearby	Pump station	Power outage and mechanical failure.	1. Pump #2 sent to be diagnosed and repaired. 2. Alarm dialer to be switched from land line to cellular.	600 gallons	Riverside	8/20/2025
31	7753 Crawley Drive	N/A	9/5/22	7:00	to	9/5/22	8:00	Basement	Cleanout in basement	Excess I/I / Wet weather	1. City staff performed CCTV of sewer mains upstream and downstream of backups. 2. City staff inspected manholes upstream and downstream of incident. 3. There is already a backwater valve installed at this location with appeared to function during this event. However, the cleanout inside the basement was not watertight, which allowed water to backup into the basement. The cleanout was made watertight.	3 gallons	North Fork Indian Run	9/5/2025
27	7976 Holyrood Ct	N/A	9/5/22	7:00	to	9/5/22	8:00	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. City funded install of backwater valve at this location	50 gallons	North Fork Indian Run	9/5/2025
22	9261 Lerwick Drive	N/A	9/5/22	7:00	to	9/5/22	8:00	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. City has already installed a backwater valve at this location, but cleaning and maintenance of the valve seemed insufficient. City educated resident and paid for cleaning. 2. A new force main was constructed this year to serve this sewer shed.	50 gallons	Deer Run	9/5/2025
33	5529 and 5547 Preswick Dr	N/A	9/5/22	7:00	to	9/5/22	8:00	Basement	Sewer lateral in basement	Excess I/I / Wet weather	1. City funded installs of backwater valves at these locations. 2. A new force main was constructed this year to serve this sewer shed.	700 gallons	Deer Run	9/5/2025
34	390, 392, 394, 396, 398, 400, 402, 404 Edinburgh Road	N/A	11/11/22	15:00	to	11/11/22	15:30	Basement	Sewer lateral in basement	Shop rags clogged sewer lateral	1. City educated residents on unflushable items to prevent another backup at this location	Unknown - Occurred on City holiday	Cosgray	11/11/2025

Appendix F

Rainfall Data

2022 Yearly Rainfall Data
for
Dublin Rain Gauges:
Wyandot Elementary School & Griffith Thomas Elementary School

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days in month	No. of Rainfall Days in month	Monthly Total Rainfall (inches)	Ave. Daily Rainfall	Monthly Maximum	Monthly Minimum
January	1.48	0.05	0.00	0.00	0.00	0.00	0.00	0.08	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.14	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.01	0.00	31	11	2.63	0.08	1.48	0.00
February	0.00	0.95	0.03	0.00	0.17	0.16	0.26	0.00	0.03	0.00	0.03	0.00	0.00	0.01	0.00	0.00	1.82	0.00	0.00	0.00	0.00	1.79	0.00	0.75	0.32	0.00	0.00				28	14	6.36	0.23	1.82	0.00	
March	0.00	0.00	0.00	0.00	0.00	0.05	2.04	0.00	0.01	0.00	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.10	0.28	0.04	0.00	0.05	0.13	0.00	0.10	0.00	0.00	0.00	0.00	0.07	31	16	2.97	0.10	2.04	0.00	
April	0.03	0.00	0.00	0.14	0.16	0.19	0.00	0.01	0.07	0.00	0.20	0.12	0.49	0.17	0.00	0.15	0.00	0.64	0.02	0.00	0.20	0.00	0.00	0.00	0.01	0.00	0.06	0.00	0.00	0.02		30	18	2.72	0.09	0.64	0.00
May	0.04	0.00	0.68	0.00	0.65	1.19	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.18	0.00	0.19	0.00	1.07	0.34	0.04	0.00	0.00	0.00	0.80	0.11	0.00	0.00	0.00	0.00	31	14	5.90	0.19	1.19	0.00
June	0.43	0.02	0.01	0.00	0.00	0.78	0.28	0.46	0.01	0.00	0.09	0.59	0.39	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		30	12	3.07	0.10	0.78	0.00	
July	0.00	0.00	0.00	0.00	1.68	3.08	0.00	0.05	0.00	0.00	0.00	0.00	0.51	0.01	0.01	1.10	2.37	0.01	0.00	0.35	0.01	0.00	0.10	0.00	0.01	0.00	0.17	0.06	0.15	0.00	0.00	31	18	9.69	0.31	3.08	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.23	0.00	0.64	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	1.03	0.52	0.01	0.00	0.00	0.00	0.23	0.00	0.00	0.01	0.00	0.00	31	11	3.34	0.11	1.03	0.00
September	0.00	0.00	0.00	0.94	2.56	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.61	0.00	0.00	0.00	0.15	0.03	0.16	0.00	0.00	0.00		30	11	4.62	0.15	2.56	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.16	0.04	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.00	0.23	0.07	31	11	1.41	0.05	0.70	0.00
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.04	0.04	0.04	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.03	0.00	0.55	0.02	0.00	0.05		30	13	2.12	0.07	0.94	0.00
December	0.00	0.00	0.03	0.00	0.00	0.04	0.04	0.00	0.09	0.02	0.03	0.00	0.00	0.09	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.02	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	31	13	1.00	0.03	0.43	0.00

Note: Data set is an average of the Griffith Thomas and Wyandot Rain Gauges

Total Yearly Rainfall= 45.85

=SSO/ Wet Weather Events = WIB =Monthly Maximum =No data or does not exist

2022 Yearly Rainfall Data
for
Griffith Thomas Elementary Rain Gauge
Gauge Location: 4671 Tuttle Rd, Dublin, OH 43017

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days in month	No. of Rainfall Days in month	Monthly Total Rainfall (inches)	Ave. Daily Rainfall	Monthly Maximum	Monthly Minumum
January	1.34	0.05	0.00	0.00	0.00	0.00	0.01	0.10	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	31	8	2.36	0.08	1.34	0.00	
February	0.00	0.94	0.05	0.00	0.15	0.16	0.27	0.00	0.02	0.00	0.04	0.00	0.00	0.01	0.00	0.00	1.83	0.01	0.00	0.00	0.00	1.72	0.00	0.78	0.35	0.00	0.00	0.00				28	13	6.33	0.23	1.83	0.00
March	0.00	0.00	0.00	0.00	0.00	0.10	1.93	0.00	0.01	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.08	0.24	0.04	0.00	0.05	0.17	0.01	0.13	0.00	0.00	0.00	0.00	0.06	31	13	2.85	0.09	1.93	0.00	
April	0.04	0.00	0.00	0.14	0.17	0.18	0.01	0.03	0.09	0.00	0.23	0.08	0.52	0.11	0.00	0.19	0.00	0.68	0.01	0.00	0.21	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02		30	17	2.74	0.09	0.68	0.00
May	0.07	0.00	0.64	0.01	0.70	1.23	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.19	0.00	0.20	0.00	1.02	0.24	0.04	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	31	13	5.19	0.17	1.23	0.00
June	0.43	0.02	0.01	0.00	0.00	0.78	0.28	0.46	0.01	0.00	0.09	0.59	0.39	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		30	11	3.07	0.10	0.78	0.00	
July	0.00	0.00	0.00	0.00	0.90	4.10	0.00	0.06	0.00	0.00	0.00	0.00	0.45	0.01	0.00	1.02	2.33	0.01	0.00	0.29	0.01	0.00	0.13	0.00	0.01	0.00	0.15	0.08	0.12	0.00	0.00	31	15	9.67	0.31	4.10	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.24	0.00	0.23	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	1.03	0.51	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	31	9	2.84	0.09	1.03	0.00	
September	0.00	0.00	0.00	0.96	2.56	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.61	0.00	0.00	0.00	0.16	0.05	0.16	0.00	0.00	0.00		30	8	4.66	0.16	2.56	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.32	0.08	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.03	0.01	0.00	0.00	0.16	0.08	31	10	0.96	0.03	0.32	0.00
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.04	0.08	0.08	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.02	0.00	0.48	0.04	0.01	0.04		30	11	2.18	0.07	0.68	0.00
December	0.00	0.00	0.04	0.00	0.00	0.04	0.04	0.00	0.04	0.04	0.04	0.00	0.01	0.08	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	31	11	0.72	0.02	0.32	0.00

Note: Data substituted from "EMA DexterFalls" and "Columbus RG1" Rain Gauges for times in which the rain gauge was down for maintenance

Total Yearly Rainfall= 43.57

=SSO/ Wet Weather Events

= WIB

=Monthly Maximum

=No data or does not exist

2022 Yearly Rainfall Data
for
Wyandot Elementary Rain Gauge
Gauge Location: 5620 Dublinshire Dr, Dublin, OH 43017

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	No. of Days in month	No. of Rainfall Days in month	Monthly Total Rainfall (inches)	Ave. Daily Rainfall	Monthly Maximum	Monthly Minimum
January	1.63	0.05	0.01	0.00	0.00	0.00	0.00	0.07	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.12	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.02	0.01	31	10	2.90	0.09	1.63	0.00
February	0.00	0.97	0.02	0.00	0.20	0.16	0.25	0.00	0.05	0.00	0.03	0.00	0.00	0.01	0.00	0.00	1.82	0.00	0.00	0.00	0.00	1.86	0.00	0.73	0.29	0.00	0.01	0.00				28	13	6.40	0.23	1.86	0.00
March	0.00	0.00	0.00	0.00	0.00	0.01	2.15	0.00	0.02	0.00	0.02	0.02	0.03	0.00	0.00	0.00	0.00	0.12	0.33	0.04	0.00	0.06	0.10	0.00	0.08	0.00	0.00	0.00	0.01	0.01	0.09	31	15	3.09	0.10	2.15	0.00
April	0.02	0.00	0.00	0.14	0.16	0.20	0.00	0.00	0.06	0.00	0.17	0.16	0.47	0.24	0.00	0.12	0.00	0.61	0.03	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.02		30	15	2.71	0.09	0.61	0.00
May	0.02	0.00	0.72	0.00	0.60	1.15	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.18	0.00	0.19	0.00	1.13	0.44	0.05	0.00	0.00	0.00	1.31	0.23	0.00	0.00	0.00	0.00	31	13	6.62	0.21	1.31	0.00
June	0.43	0.02	0.01	0.00	0.00	0.78	0.28	0.46	0.01	0.00	0.09	0.59	0.39	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		30	12	3.08	0.10	0.78	0.00
July	0.00	0.01	0.00	0.00	2.46	2.06	0.00	0.04	0.00	0.00	0.00	0.00	0.58	0.01	0.02	1.19	2.42	0.00	0.00	0.42	0.00	0.00	0.07	0.00	0.00	0.01	0.20	0.04	0.18	0.00	0.00	31	15	9.71	0.31	2.46	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.23	0.00	1.05	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	1.03	0.53	0.00	0.01	0.00	0.00	0.38	0.00	0.00	0.02	0.00	0.00	31	9	3.85	0.12	1.05	0.00
September	0.00	0.00	0.00	0.93	2.56	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.61	0.00	0.00	0.00	0.15	0.02	0.16	0.00	0.00	0.01		30	11	4.58	0.15	2.56	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.08	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.30	0.06	31	6	1.86	0.06	1.25	0.00
November	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.04	0.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.62	0.00	0.00	0.07		30	9	2.06	0.07	1.20	0.00
December	0.00	0.00	0.03	0.00	0.00	0.05	0.04	0.00	0.15	0.01	0.02	0.00	0.00	0.11	0.55	0.00	0.01	0.00	0.00	0.00	0.00	0.26	0.02	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	31	12	1.28	0.04	0.55	0.00

Note: Data substituted from "Columbus RG1" Rain Gauge for times in which the rain gauge was down for maintenance

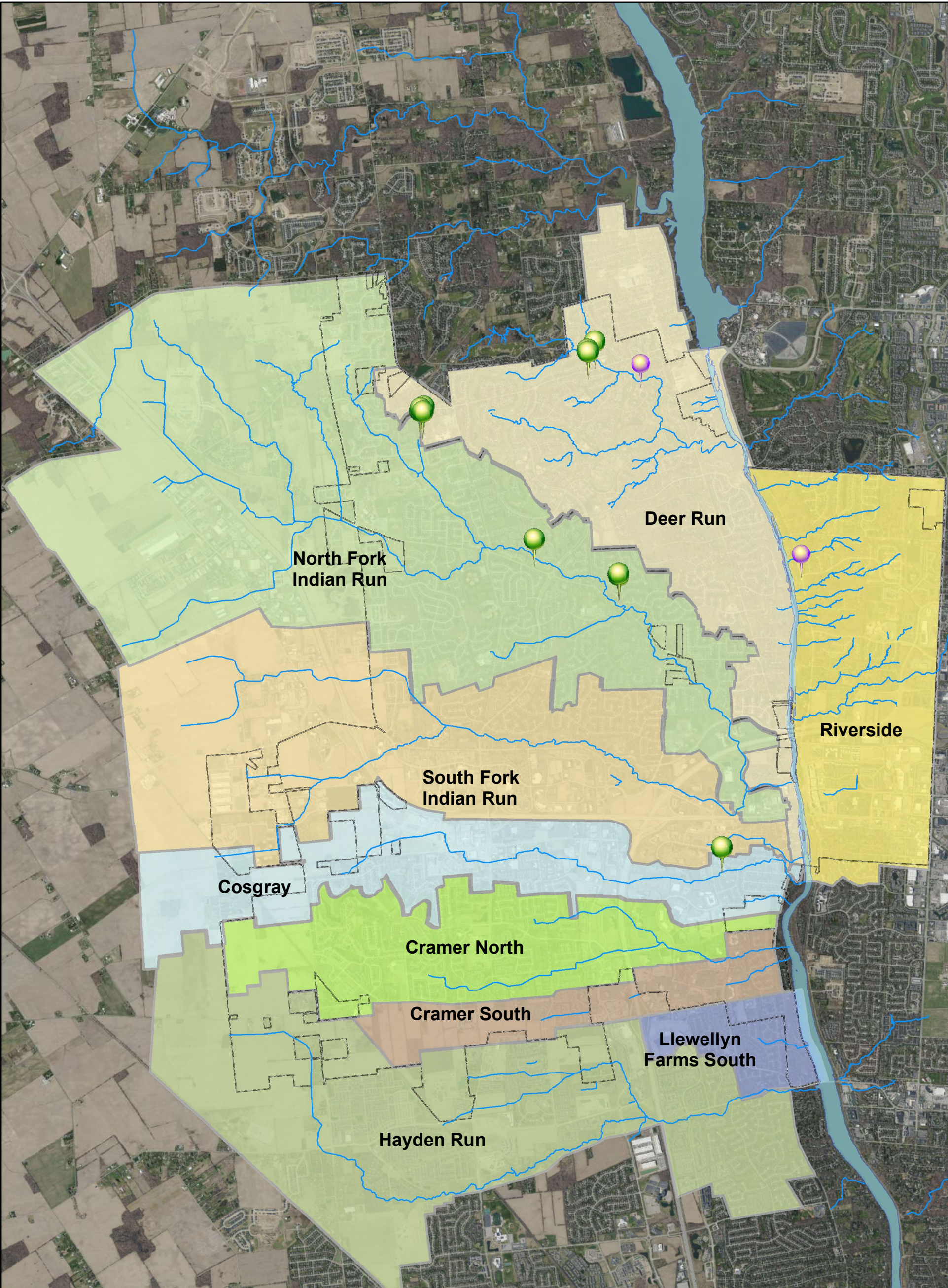
Total Yearly Rainfall= 48.14

=SSO/ Wet Weather Events

= WIB

=Monthly Maximum

=No data or does not exist



1 inch = 4,042 feet

Exhibit 1

City of Dublin

2022 Sanitary Sewer Overflows and Water in Basement Events

Legend

All Years Summary Data

Event Type

- Sanitary Sewer Overflow
- Water in Basement

- Streams
- River
- City of Dublin
- Cosgray
- Cramer North
- Cramer South
- Deer Run
- Hayden Run
- Llewellyn Farms South
- North Fork Indian Run
- Riverside
- South Fork Indian Run