

3.0 EXISTING CONDITIONS

Executive Summary: An accurate understanding of existing conditions is a necessary starting point for the development of a Wet Weather Plan. This report section summarizes and documents existing conditions within the Allegheny County Sanitary Authority (ALCOSAN) interceptor system. It also documents the current understanding of the tributary sewer collection systems of the municipalities that comprise the ALCOSAN service area.

ALCOSAN has a service area of 309 square miles and provides regional wastewater conveyance and treatment for the City of Pittsburgh and all or a portion of 82 other municipalities. Roughly 17 percent of the area is served by combined sewer systems (where wastewater and storm water runoff are conveyed through a single sewer pipe system), 52 percent of the ALCOSAN service area is served by separate sanitary sewer systems (where wastewater and storm water are conveyed through two distinct and parallel piping systems), and 31 percent is non-contributing areas that are either undeveloped or served by individual on-lot systems. According to the 2010 census, there are approximately 836,600 people who live within the ALCOSAN service area, including approximately 13,000 who live within non-contributing areas.

ALCOSAN owns, operates, and maintains over 88.5 miles of interceptor sewers, lateral sewers, force main sewers, and other sewer pipe categories that convey wastewater from the customer municipalities to the 250 million gallon per day (MGD) Woods Run wastewater treatment plant (WWTP) that is located on the North Side of the City of Pittsburgh. There are over 300 regulator structures along the ALCOSAN interceptor system that are owned and/or operated by ALCOSAN. These regulator structures direct all the dry weather flow to the ALCOSAN system and control the quantity of flow diverted to the ALCOSAN treatment plant during wet weather. The ALCOSAN system also includes five pumping stations and two ejector stations. There are over 4,000 miles of wastewater collection sewers that are owned, operated, and maintained by the customer municipalities, or their designated municipal authorities. There are over 140 municipal regulator structures located along municipal trunk sewers. A simplified map of the ALCOSAN interceptor system and the treatment plant are shown on Figure 3-1.

Section 3.1 provides summary descriptions of existing conditions within the ALCOSAN WWTP and along the ALCOSAN interceptor system. Sections 3.2 through 3.8 provide summary descriptions for each of the seven designated planning basin areas that encompass the ALCOSAN service area. Maps for each planning basin area are provided which show the existing configurations of the ALCOSAN interceptor sewers and selected municipal trunk sewers and the locations of the ALCOSAN and municipal regulator structures. Summary tables for each planning basin list the municipalities that contribute wastewater flow to the ALCOSAN system and the corresponding sewershed areas and service populations. The maps and tables also indicate and quantify areas which currently do not have public sewers. Summary tables also provide the total lengths of existing ALCOSAN and municipal sewer pipes. Other summary tables list and document each of the ALCOSAN and municipal regulator structures, their locations, and the owner/operator.

An Existing Conditions Report was prepared for each planning basin area and provides more detailed information on existing conditions within the ALCOSAN and municipal sewer systems. These reports are listed in the Bibliography.

3.1 ALCOSAN Service Area Overview

The Allegheny County Sanitary Authority (ALCOSAN) provides regional wastewater conveyance and treatment for the City of Pittsburgh and all or a portion of 82 other municipalities. The total population living within the ALCOSAN service area is approximately 836,600 according to the 2010 block level census data for Allegheny County. The completed census data analysis indicates that 347,700 people live in areas served by combined sewer systems, 476,000 people live in areas served by separate sanitary sewer systems and 13,000 people live in non-contributing areas that are either undeveloped or served by individual on-lot systems. ALCOSAN was chartered in 1946 to implement a plan for meeting a state mandate for controlling pollution. Service agreements were developed and implemented, and design of the sewer systems followed. In 1956, construction of the ALCOSAN interceptor system and wastewater treatment plant began, and the system was completed and on-line by 1959.

Collection System Overview: ALCOSAN owns and/or operates approximately 88.5 miles of shallow-cut and deep tunnel interceptor pipe, connector pipes, force mains, siphons, and other categories of sewer pipe which convey sewage from the combined and separate sewer collection systems that are owned by the 83 municipalities. The various pipe categories that comprise the ALCOSAN interceptor system, and their associated lengths, are shown in Table 3-1.

Approximately 31.3 miles are deep tunnel interceptors which extend along and cross under the main rivers and two segments of Chartiers Creek, up to 100 feet below the ground surface, with concrete pipe grouted into rock bore tunnels. Originally, all the interceptor sewers along both the main rivers and tributary streams were designed as traditional open trench construction sewers. However, the interceptor sewer design along the main rivers, navigable waterways under the jurisdictional authority of the United States Army Corps of Engineers (USACE), was subsequently changed to a deep tunnel configuration. This decision was made because construction permits for traditional trench sewers along navigable rivers would only be issued with the stipulation that the interceptors



Figure 3-2: Construction of an ALCOSAN deep tunnel interceptor sewer

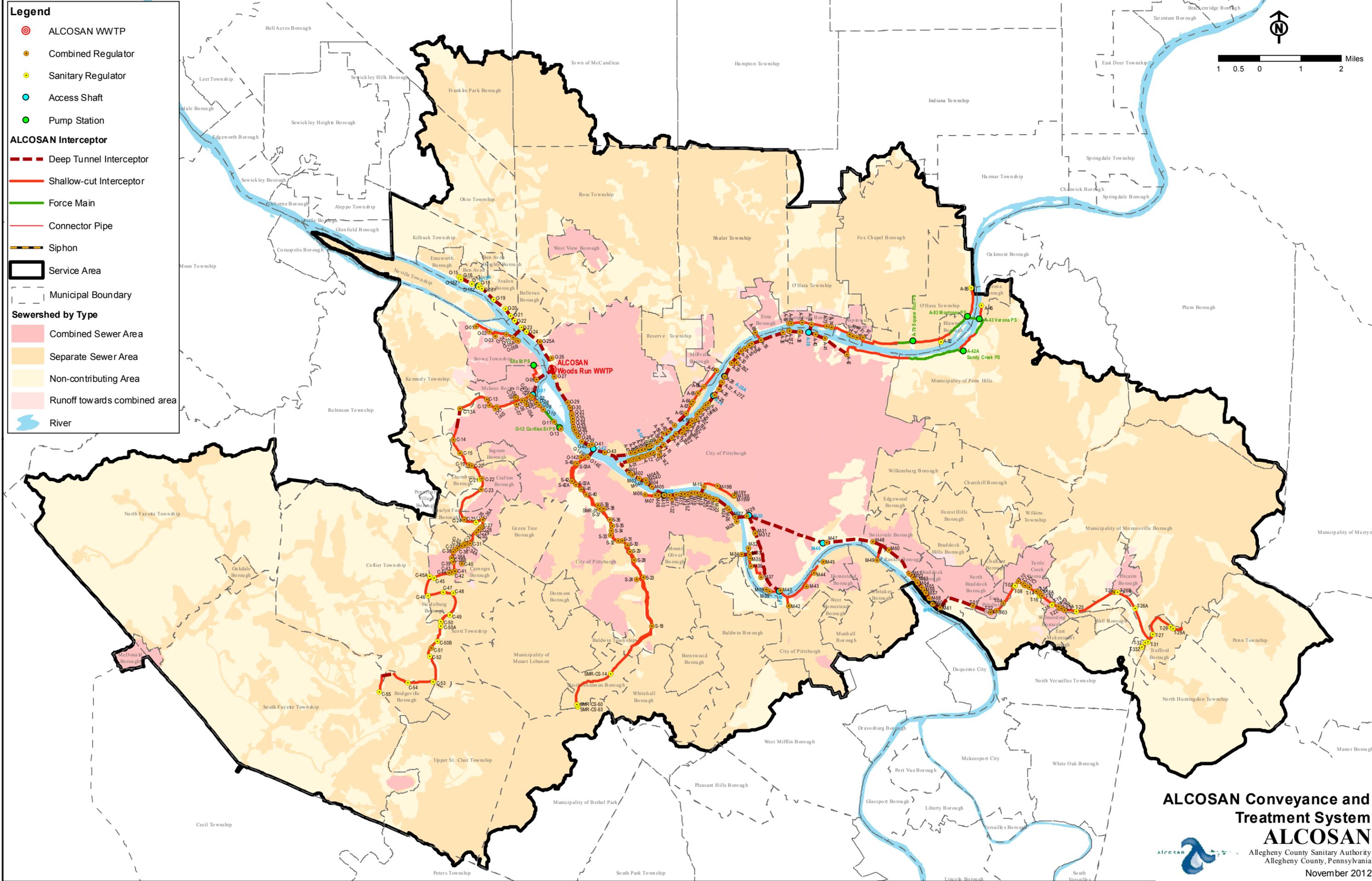


Figure 3-3: Construction of an ALCOSAN shallow-cut interceptor sewer

would be subject to lowering or removal upon order from the USACE.

Approximately 48.6 miles are shallow-cut interceptors built with traditional open trench construction methods. There are 4.5 miles of lateral sewers and connector pipes linking the regulator structures with the interceptor system. There are 3.8 miles of force mains from six pump stations and two ejector stations that ALCOSAN owns and operates. Along the Chartiers Creek interceptor, there are two tunnel segments and 10 inverted siphons. There are seven cross connections between the Saw Mill Run parallel interceptors.

Figure 3-1: ALCOSAN Conveyance and Treatment System



Legend

- ⊙ ALCOSAN WWTP
- Combined Regulator
- Sanitary Regulator
- Access Shaft
- Pump Station

ALCOSAN Interceptor

- Deep Tunnel Interceptor
- Shallow-cut Interceptor
- Force Main
- Connector Pipe
- Siphon
- ▭ Service Area
- - - Municipal Boundary

Sewershed by Type

- Combined Sewer Area
- Separate Sewer Area
- Non-contributing Area
- Runoff towards combined area
- River

ALCOSAN Conveyance and Treatment System
ALCOSAN
 Allegheny County Sanitary Authority
 Allegheny County, Pennsylvania
 November 2012

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Table 3-1: Summary of ALCOSAN Interceptor System Pipe Categories

ALCOSAN Pipe Category	Total Length (feet)	Total Length (miles)
Shallow Cut Interceptor Pipes ⁽¹⁾	256,414	48.6
Deep Tunnel Interceptor Pipes ⁽²⁾	165,318	31.3
Connector Pipes, Lateral Sewers, Cross Connections ⁽³⁾	23,473	4.48
Force Mains (from pump and ejector stations)	20,064	3.80
Inverted Siphons	1,993	0.38
ALCOSAN System Total	467,262	88.5

Note⁽¹⁾: Includes the Pine Creek (A-68) and Streets Run (M-42) river crossings and part of the Whittaker Run (M-49) river crossing

Note⁽²⁾: Includes various crossings under the main rivers

Note⁽³⁾: Cross connections between the Saw Mill Run parallel interceptors

There are 310 regulator structures that direct and control flow to the ALCOSAN interceptors including 258 combined sewer system regulators and 52 sanitary sewer system regulators along the ALCOSAN interceptor system that are operated and maintained by ALCOSAN. Some



Figure 3-4: Interior view of an ALCOSAN regulator structure diverting flow for treatment

regulators share a common overflow outfall pipe and the ALCOSAN system contains 251 combined sewer overflow (CSO) discharge outfalls and 51 sanitary sewer overflow (SSO) discharge outfalls. A simplified map of the ALCOSAN interceptor system and the location of the treatment plant is shown in Figure 3-1. More detailed descriptions of the ALCOSAN system are provided in the September 1995 *System Inventory and Characterization Report* and in the 2009 planning basin *Existing Conditions Reports*.

There are over 4,000 miles of municipal collection system sewers that are tributary to the ALCOSAN system. Approximately 1,300 miles (32%) are combined sewers (wastewater and storm water are conveyed

through a common sewer system) and 2,800 miles (68%) are separate sanitary sewers (wastewater and storm water are each conveyed through their own distinct sewer systems). These collection systems are owned and operated by the 83 service area municipalities that comprise the ALCOSAN service area. The municipalities own and operate 133 CSO and 55 SSO regulator structures which control wastewater flow conveyed by their collection systems.

Hydraulic Operation Overview: The shallow-cut interceptor system was designed to operate under low flow conditions during dry weather, and to flow full pipe or under surcharge conditions during significant storm events. The deep tunnel interceptor system was designed to operate under the principal of “controlled submergence,” flooded to predetermined levels at the main pump station wet well during both dry and wet weather conditions. The operating level of the wet well, considerably above the crowns of the deep tunnel sewer pipes, was designed to meet three goals:

- Provide a sufficient hydraulic grade-line slope and flow velocity during dry weather conditions to keep solid materials suspended in the waste stream
- Limit and control the quantity of storm water flow that would be conveyed to and pumped at the treatment plant
- Limit and control electrical power consumption at the main pump station

This surcharged design configuration made it possible to reduce pumping requirements and produce a satisfactory hydraulic gradient to successfully convey dry weather flow and solids and permit wet weather control of municipal trunk sewer flows entering the tunnel interceptor sewer system.

Service Area and Population Overview: ALCOSAN’s total tributary sewershed drainage area is approximately 309 square miles, or 40 percent of Allegheny County. Of the entire service area, approximately 294 square miles is in Allegheny County and approximately 15 square miles are in Washington and Westmoreland Counties. Approximately 31%, or 96 square miles, is considered “non-contributing,” which is defined as either undeveloped and unsewered land, or lots with on-site sewage treatment that do not contribute to ALCOSAN. The latter comprises a small fraction of non-contributing area. Of the sewered portion of the ALCOSAN service area, 161 square miles, or 52% of the sewershed areas are served by separate sanitary and storm water sewers; the remaining 53 square miles, or 17% of the sewershed areas are served by combined sewers. The total population served by the ALCOSAN system is approximately



Figure 3-5: Aerial view of the ALCOSAN wastewater treatment plant at Woods Run

823,600 based upon the 2010 block level census data for Allegheny County. Approximately 42 percent of the sewer customers are served by separate sewer systems and 57 percent of the sewer customers are served by combined sewer systems. There are approximately 13,000 additional people who reside within the non-contributing areas.

Treatment Plant Overview: Wastewater treatment is provided by ALCOSAN at the Woods Run WWTP located on a 56-acre parcel along the north shore of the Ohio River in the City of Pittsburgh. The plant is

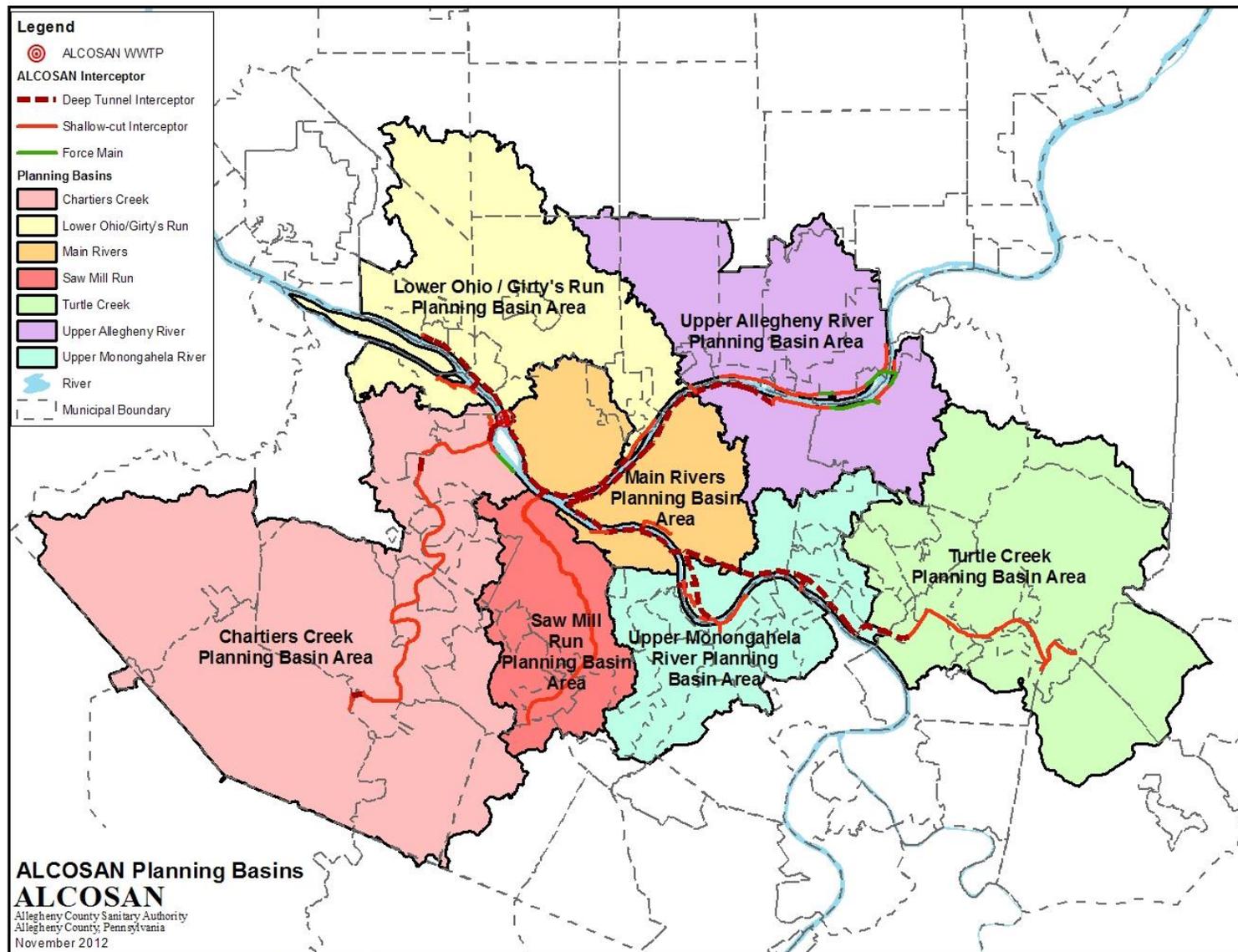
authorized to operate and discharge to the Ohio River under National Pollutant Discharge Elimination System (NPDES) permit number PA0025984. Wastewater is conveyed to the WWTP via three deep tunnel interceptors that discharge into the main pumping station where it is lifted to flow via gravity through the treatment process units. Completion of CIP Phase I construction projects in 2004 and subsequently completed interim capital improvements in 2009 resulted in the expansion of the full treatment capacity to 250 MGD, effective during the spring of 2009. Table 3-2 provides a summary of the existing treatment processes at the Woods Run plant. For more detailed information on the treatment facilities please refer to the ALCOSAN Pennsylvania Act 537 Comprehensive Sewage Facilities Plan. The current solids handling processes include co-settling of primary and waste activated sludge in the primary settling tanks. Co-settled sludge is then pumped to the dewatering feed tanks. The sludge is dewatered using high solids centrifuges and the dewatered sludge cake is split between incineration and lime stabilization. The lime stabilized sludge is either land applied or land filled. ALCOSAN operates an odor control system to prevent odors from being detectable off-site from the plant.

Table 3-2: Summary of Existing Woods Run WWTP Treatment Processes

Treatment Process	Description (Number of Units)
Main Pumping Station	Wet Well / Dry Well Main Sewage Pumps (6)
Preliminary Treatment	Mechanical Bar Screens (6) Aerated Grit Collecting Tanks (6)
Primary Treatment	Rectangular Sedimentation Tanks (9)
Secondary Treatment	Contact Stabilization Activated Sludge Process 4-Pass Aeration Basins (8) Final Settling Tanks (16)
Disinfection	Chlorine Contact Tanks (2) Chlorination / Dechlorination Effluent Post Aeration

Planning Basin Area Overview: The ALCOSAN service area was divided into seven planning basin areas to facilitate regional wet weather planning in a manageable manner. The basin delineations were configured by the ALCOSAN interceptors and their respective tributary sewershed areas. Tables 3-3 and 3-4A and 3-4B provide summary information for each of the planning basin areas. See Figure 3-6 for a map of the designated seven planning basins. Summary information for each of the planning basin areas is provided in Sections 3.2 through 3.8.

Figure 3-6: ALCOSAN Planning Basin Configuration



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Table 3-3: Planning Basin Overview Information

Planning Basin	Total Basin Area (square miles)	Areas Served by Combined Sewers		Areas Served by Separate Sewers		Non-Contributing Areas		Number of Municipalities in Planning Basin ⁽¹⁾
		Area (sq.-mi)	Percent of Planning Basin Area	Area (sq.-mi)	Percent of Planning Basin Area	Area (sq.-mi)	Percent of Planning Basin Area	
Chartiers Creek	93.7	7.4	8%	40.5	43%	45.8	49%	24
Lower Ohio/Girty's Run	42.1	2.7	6%	24.7	59%	14.6	35%	20
Main Rivers	23.4	20.5	88%	2.2	9%	0.6	3%	3
Saw Mill Run	19.7	5.2	26%	13.2	67%	1.4	7%	12
Turtle Creek ⁽²⁾	57.2	3.0	5%	33.0	58%	21.2	37%	20
Upper Allegheny River	42.6	7.4	17%	27.6	65%	7.6	18%	16
Upper Monongahela River	30.3	5.5	18%	20.1	66%	4.7	16%	22
Total Service Area	309	52.7	17%	161	52%	96	31%	83

Note⁽¹⁾:ALCOSAN serves all or portions of 83 municipalities. Some municipalities are in more than one planning basin.

Note⁽²⁾:The Thompson Run Interceptor is municipally owned and operated and maintained by ALCOSAN under a Service Agreement

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-4A: Additional Planning Basin Overview Information

Planning Basin	Total Population	Service Population in Combined Sewersheds	Percent of Total Population	Service Population in Separate Sewersheds	Percent of Total Population	Service Population in Non-Contributing Areas	Percent of Total Population
Chartiers Creek	154,566	38,341	25%	111,243	72%	4,982	3%
Lower Ohio/ Girty's Run	92,061	18,546	20%	71,554	78%	1,961	2%
Main Rivers	164,070	158,584	97%	5,440	3%	46	0%
Saw Mill Run	106,722	38,802	36%	67,657	63%	262	0%
Turtle Creek ⁽¹⁾	89,370	15,165	17%	70,763	79%	3,442	4%
Upper Allegheny River	112,957	46,447	41%	64,851	57%	1,659	1%
Upper Monongahela River	116,809	31,789	27%	84,422	72%	599	1%
Total Service Area	836,556	347,674	42%	475,930	57%	12,951	2%

Note⁽¹⁾: The Thompson Run Interceptor is municipally owned and operated and maintained by ALCOSAN under a service agreement

Table 3-4B: Additional Planning Basin Overview Information

Planning Basin	Miles of ALCOSAN Interceptor⁽²⁾	Miles of Municipal Combined Sewers	Miles of Municipal Separate Sewers	Number of ALCOSAN CSO Regulators⁽³⁾	Number of Municipal CSO Regulators⁽³⁾	Number of ALCOSAN SSO Regulators⁽³⁾	Number of Municipal SSO Regulators⁽³⁾
Chartiers Creek	16.8	170	744	43	31	17	18
Lower Ohio/ Girty's Run	7.2	69	407	14	11	13	12
Main Rivers	17.9	507	32	105	4	0	2
Saw Mill Run	15.0	145	301	26	46	3	3
Turtle Creek ⁽¹⁾	7.7	71	462	21	4	16	3
Upper Allegheny River	13.5	187	424	20	17	3	8
Upper Monongahela River	10.4	147	396	29	20	0	9
Total Service Area	88.5	1,296	2,767	258	133	52	55

Note⁽¹⁾: The Thompson Run Interceptor is municipally owned and operated and maintained by ALCOSAN under a service agreement

Note⁽²⁾: Miles of interceptor includes total lengths of all pipes and components (i.e. deep tunnel, shallow-cut, connections, inverted siphons, etc.) in the system

Note⁽³⁾: Some regulators share a common outfall so the number of regulator structures will not be the same as the number reported in WWP Section 4

Municipal Collection System Overview: There are over 4,000 miles of collection sewers located within the ALCOSAN service area. Combined sewer systems convey a combination of wastewater, industrial discharges, and storm water runoff through a single network of sewer pipes. Separate sewer systems convey wastewater flow and industrial discharges. Areas served by separate sanitary sewers typically have independent storm sewer systems to convey storm water runoff. ALCOSAN owns, operates and maintains the regional interceptor system (with the exception of the Thompson Run interceptor which is owned by the municipalities tributary to the interceptor) and wastewater treatment facility, but does not own or operate the sewer collection systems that convey the wastewater flow from the customer municipalities to the ALCOSAN system.

Most of the municipalities within the ALCOSAN service area own, operate, and maintain their respective combined or sanitary sewer collection systems. However, 22 of the 83 customer municipalities have sewer or water and sewer authorities. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP. There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

Sewers in municipal collection systems range in age from over 100 years to being recently installed. There are 133 municipal CSO regulator structures and 55 municipal SSO regulator structures within the ALCOSAN service area. These regulators are located along municipal collection sewers and during wet weather conditions are intended to discharge wastewater flow in excess of the conveyance capacities of downstream municipal trunk sewers in order to prevent excessive surcharging in manholes or sewer backups into basements. More detailed descriptions of the sewer systems of the 83 municipalities partially or wholly in the ALCOSAN service area are in the Existing Conditions Reports for each of the seven planning basin areas.

Record drawings were reviewed and field investigations were conducted by each of the customer municipalities to verify that information on existing sewer systems was correct and to provide any needed information that was found to be missing. The field investigations documented the location of each of the municipal regulator structures that direct wastewater flow to the ALCOSAN wastewater treatment plant and can allow a portion of the flow during wet weather conditions to discharge into receiving waterways. The information was loaded into a Geographic Information System (GIS) database from which computerized sewer maps and sewer system statistics were generated. Data from the 2010 Census was applied to the GIS to analyze the current sewershed areas and service populations that receive sewer service from ALCOSAN.

Overview of Existing Direct Stream Inflow Connections: In the mid-1990s, ALCOSAN identified suspected locations where surface watercourses discharged into municipal combined sewer systems. Based on field investigations in 2005, ALCOSAN and PaDEP determined that the streams at 11 of these locations exhibited perennial base flow; they were conveyed directly into the regional conveyance system; and, based on logistic complexity, there was a reasonable potential that they could be removed or re-routed. The combined drainage area of the 11 streams is approximately 2,400 acres. These streams are listed in Appendix J of the 2008 ALCOSAN Consent Decree and are listed on Table 3-5. The locations of the direct stream inflow points are shown on Figure 3-7. Three of the streams were selected as Supplemental Environmental Projects for the ALCOSAN Consent Decree. ALCOSAN completed an additional direct stream removal project, not on the CD Appendix J list, in the Jacks Run watershed (O-25).

The drainage of natural streams into the municipal combined sewer systems is rooted in the context of Pittsburgh's topography and early development. Combined sewers were constructed to meet the needs of new and expanding communities. They discharged wastewater to nearby creeks and streams. To protect public health, many of these streams were culverted and filled.



Figure 3-8: A creek along Spring Garden Avenue is culverted and becomes the Spring Garden combined trunk sewer serving Reserve Township and the City of Pittsburgh.

In some areas upstream, undeveloped drainage areas continued to flow into the culverted combined sewers (Figure 3-8). In other areas, sewer lines were installed in the streambed to take advantage of level grades and floodplains for roads, railroads, residential, commercial, and/or industrial development. The history and practice of culverting streams in the Pittsburgh area has been ongoing for over 150 years. Figure 3-9, shows a historical map of the City of Pittsburgh from that superimposes surface streams that existed in 1876 with the ALCOSAN interceptor system and major municipal trunk sewers.

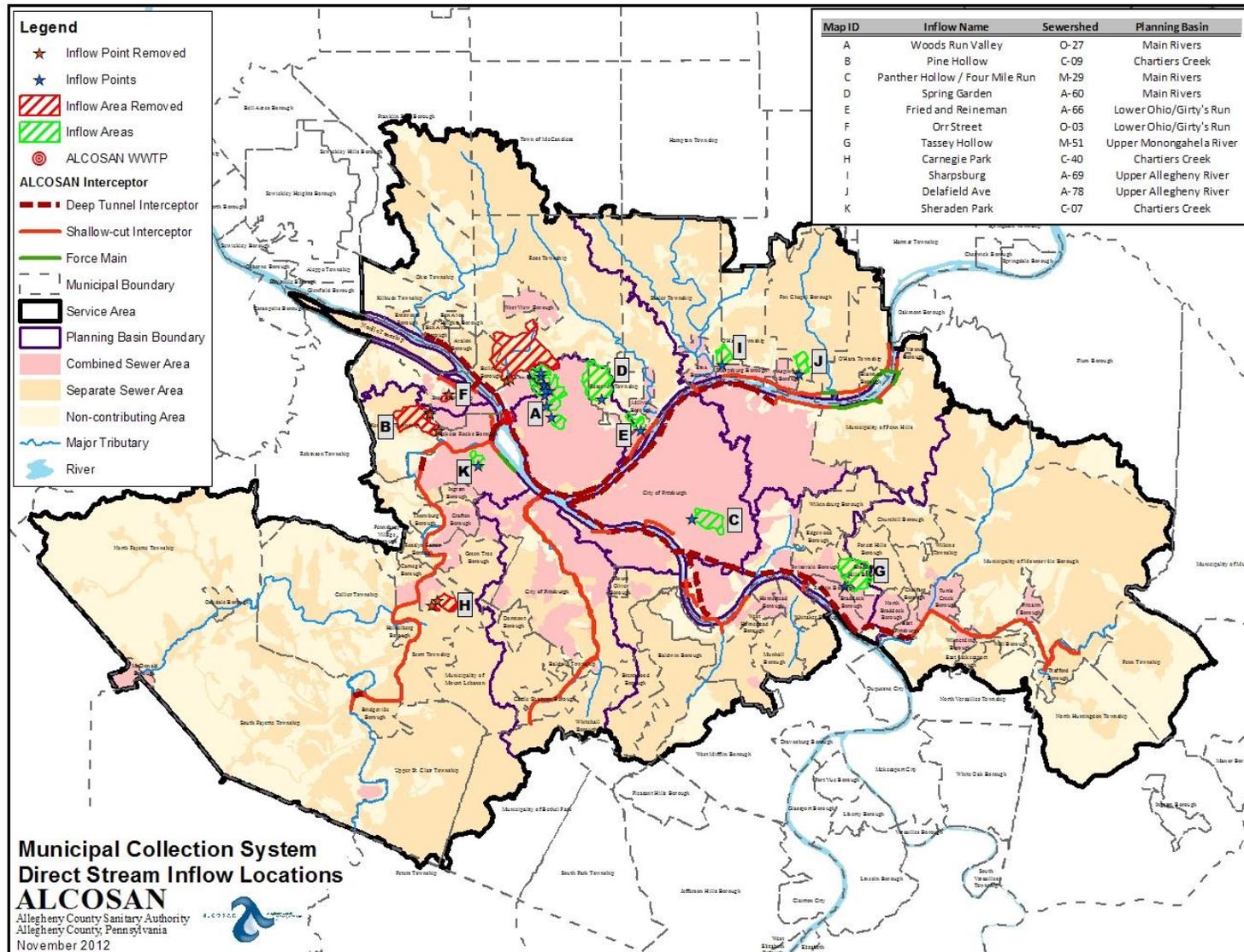
ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-5: Municipal Collection System Direct Stream Inflows

Direct Stream Inflow Map Location ID		Municipality	Planning Basin Area	Sewershed Name	Approx. Drainage Area (acres)	Field Measured Base Flow (gpd)	Supplemental Environmental Projects	Implementation Status
A	Woods Run Valley	City of Pittsburgh	MR	O-27-00	500	NA	No	No active project
B	Pine Hollow	Kennedy Twp., McKees Rocks Boro., Stowe Twp.	CC	C-09-00	360	469,000	Yes	Scheduled for completion in 2012
C	Panther Hollow / Four Mile Run	City of Pittsburgh	MR	M-29-00	220	35,000	No	ALCOSAN pursuing funding with PWSA and Pittsburgh Parks Conservancy
D	Spring Garden	Reserve Twp., City of Pittsburgh	MR	A-60-00	520	240,000	No	No active project
E	Fried & Reineman	Millvale Boro., Reserve Twp., City of Pittsburgh	LO/GR	A-66-00	70	260,000	No	Engineering feasibility study completed. Implementation to be coordinated with State Route 28 widening project
F	Orr Street	Stowe Twp.	LO/GR	O-03-00	30	129,000	Yes	Completed
G	Tassey Hollow	Rankin Boro.	UM	M-51-00	360	24,000	No	Preliminary feasibility assessments
H	Carnegie Park	Carnegie Borough	CC	C-40-00 C-41-00	100	NA	Yes	Completed in 2012
I	Ravine Street - Sharpsburg	O'Hara Twp., Sharpsburg Borough	UA	A-69-00	50	150,000	No	Engineering feasibility study completed. Implementation to be coordinated with State Route 28 widening project.
J	Delafield Avenue	Fox Chapel Boro., Aspinwall Boro.	UA	A-78-00	100	18,000	No	Army Corps of Engineer Civil Works project. Completion pending funding.
K	Sheraden Park	City of Pittsburgh	CC	C-07-0	60	65,000	No	Army Corps of Engineers Civil Works project. City of Pittsburgh sewers have been re-routed from the culverted stream. Stream daylighting and restoration project is in progress

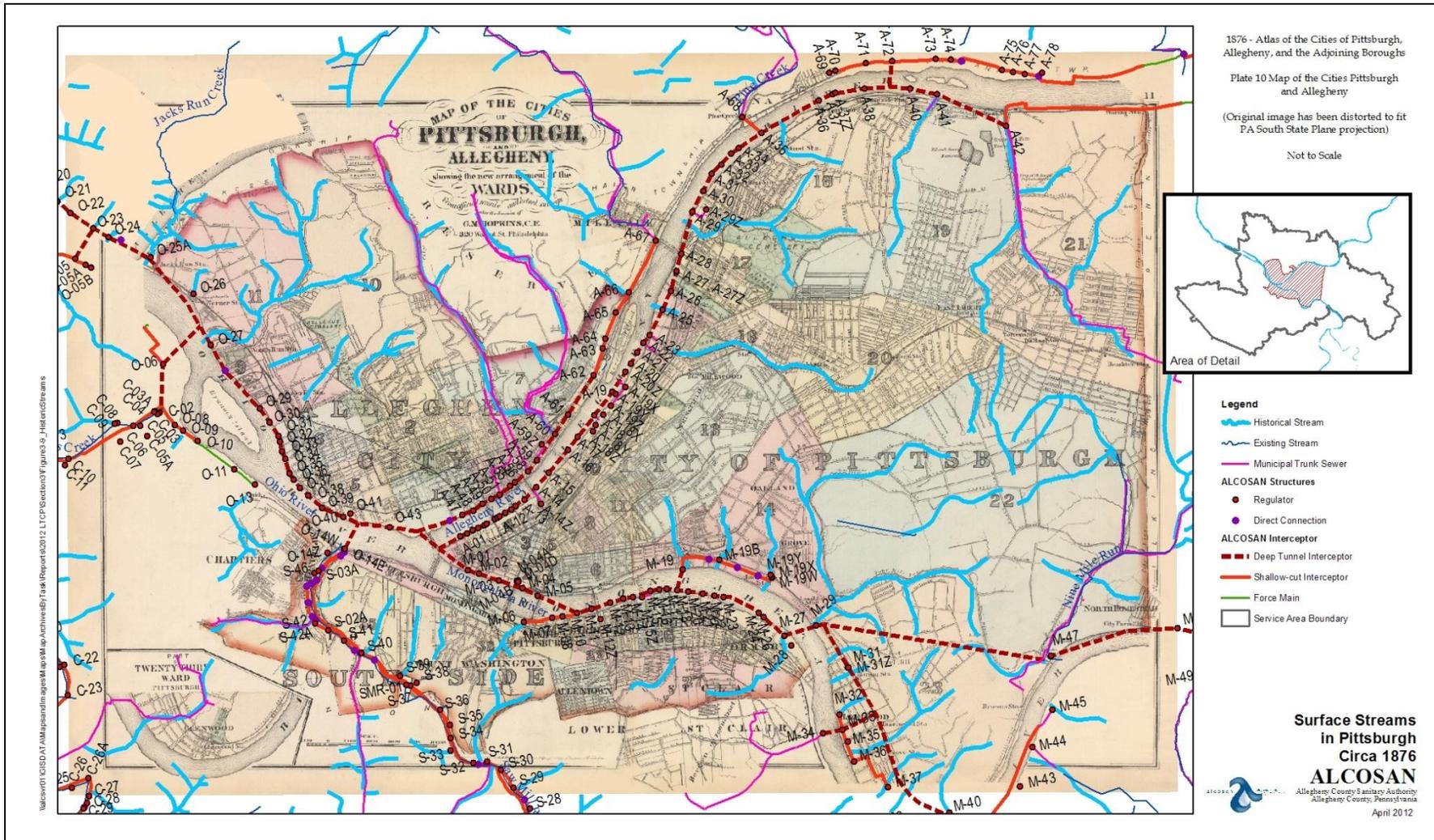
Note: An additional direct stream removal project was completed by ALCOSAN in the Jacks Run watershed (O-25 sewershed).

Figure 3-7: Municipal Collection System Direct Stream Inflow Locations



ALCOSAN Clean Water Plan Section 3 - Existing Conditions

Figure 3-9: Surface Streams in Pittsburgh, Circa 1876



3.2 Chartiers Creek Basin Characterization

The Chartiers Creek Planning Basin is one of the seven designated planning basin areas that comprise the ALCOSAN service area. This section provides an overview and summary of the Chartiers Creek basin including details of the ALCOSAN interceptor system and the tributary municipal collection systems within the planning basin area. More in-depth and detailed descriptions of the basin can be found in the August 2010 Chartiers Creek *Existing Information and Conditions Report* (EICR). For this WWP, planning basin populations and model simulation results were refined and updated since the EICR was submitted.

The Chartiers Creek Planning Basin stretches across an area of approximately 60,000 acres or 93.7 square miles. As shown in Table 3-6, approximately 8% of the planning basin area is served by combined sewer systems, 43% is served by separate sanitary sewer systems, and 49% is non-contributing areas that are either undeveloped or served by individual on-lot septic systems. The sewer system categories are further explained in WWP Section 3.1. According to the 2010 census, approximately 154,600 people are living within the Chartiers Creek Planning Basin and 97% are provided sewage treatment service by ALCOSAN. Figure 3-10 is a map of the Chartiers Creek Planning Basin which shows the interceptor sewers, the tributary sewershed areas, and diversion structures that regulate sewer flow.

Table 3-6: Combined, Separate and Non-Contributing Areas within the Chartiers Creek Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Population	Percent of Planning Basin Population
Combined Sewer System	7.4	8%	38,341	25%
Separate Sewer System	40.5	43%	111,243	72%
Non-Contributing Areas	45.8	49%	4,982	3%
Planning Basin Total	93.7	100%	154,566	100%

There are 24 municipalities that are located completely or partially within the Chartiers Creek basin. Cecil Township is not an official ALCOSAN municipality though it contributes a small quantity of wastewater flow. ALCOSAN honors the agreement that South Fayette Township has to accept flow from Cecil Township. The tributary municipalities are shown in Figure 3-10 and listed in Table 3-7 along with their tributary areas and populations. Some communities such as Robinson Township, North Fayette Township and Peters Township have areas within their municipal boundaries where wastewater flow is not directed to the ALCOSAN system but is conveyed to other wastewater treatment plants (WWTPs). Wastewater flows generated within the Chartiers Creek basin are conveyed to the ALCOSAN WWTP via a deep tunnel interceptor that begins at the Chartiers/Ohio Junction drop-shaft structure and extends under the Ohio River. Flows generated in the Chartiers basin are not conveyed to other adjacent neighboring basin areas and the basin does not receive flow from other neighboring planning basin areas.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-7: Tributary Municipalities in the Chartiers Creek Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
Municipality of Bethel Park	1,882	3.1%	8,680	5.6%
Borough of Bridgeville	651	1.1%	5,148	3.3%
Borough of Carnegie	933	1.6%	7,872	5.1%
Borough of Castle Shannon	5	0%	60	0.04%
Cecil Township*	20	0%	26	0.02%
Collier Township	3,219	5.4%	6,255	4%
Borough of Crafton	590	1.0%	5,939	3.8%
Borough of Green Tree	1,005	1.7%	3,081	2.0%
Borough of Heidelberg	169	0.3%	1,244	0.8%
Borough of Ingram	278	0.5%	3,330	2.2%
Kennedy Township	1,233	1.0%	5,066	3.3%
Borough of McDonald	322	0.5%	2,154	1.4%
Borough of McKees Rocks	627	1.0%	6,092	3.9%
Municipality of Mt. Lebanon	2,375	4.0%	19,792	12.8%
North Fayette Township	1,641	2.7%	4,359	2.8%
Borough of Oakdale	277	0.5%	1,437	0.9%
Peters Township	48	0.1%	234	0.2%
City of Pittsburgh	2,466	4.1%	15,197	9.8%
Robinson Township	258	0.4%	732	0.5%
Borough of Rosslyn Farms	200	0.3%	419	0.3%
Scott Township	2,273	3.8%	16,161	10.5%
South Fayette Township	4,595	7.7%	13,080	8.5%
Stowe Township	344	0.6%	3,529	2.3%
Borough of Thornburg	153	0.3%	438	0.3%
Upper St. Clair Township	5,098	8.5%	19,259	12.5%
Planning Basin Total (Contributing Areas)	30,662	51%	149,584	96.8%
Planning Basin Out Areas	29,329	49%	4,982	3.2%

* Cecil Township is not an official ALCOSAN municipality. ALCOSAN honors the agreement that South Fayette has with Cecil Township.

Figure 3-10: Chartiers Creek Planning Basin

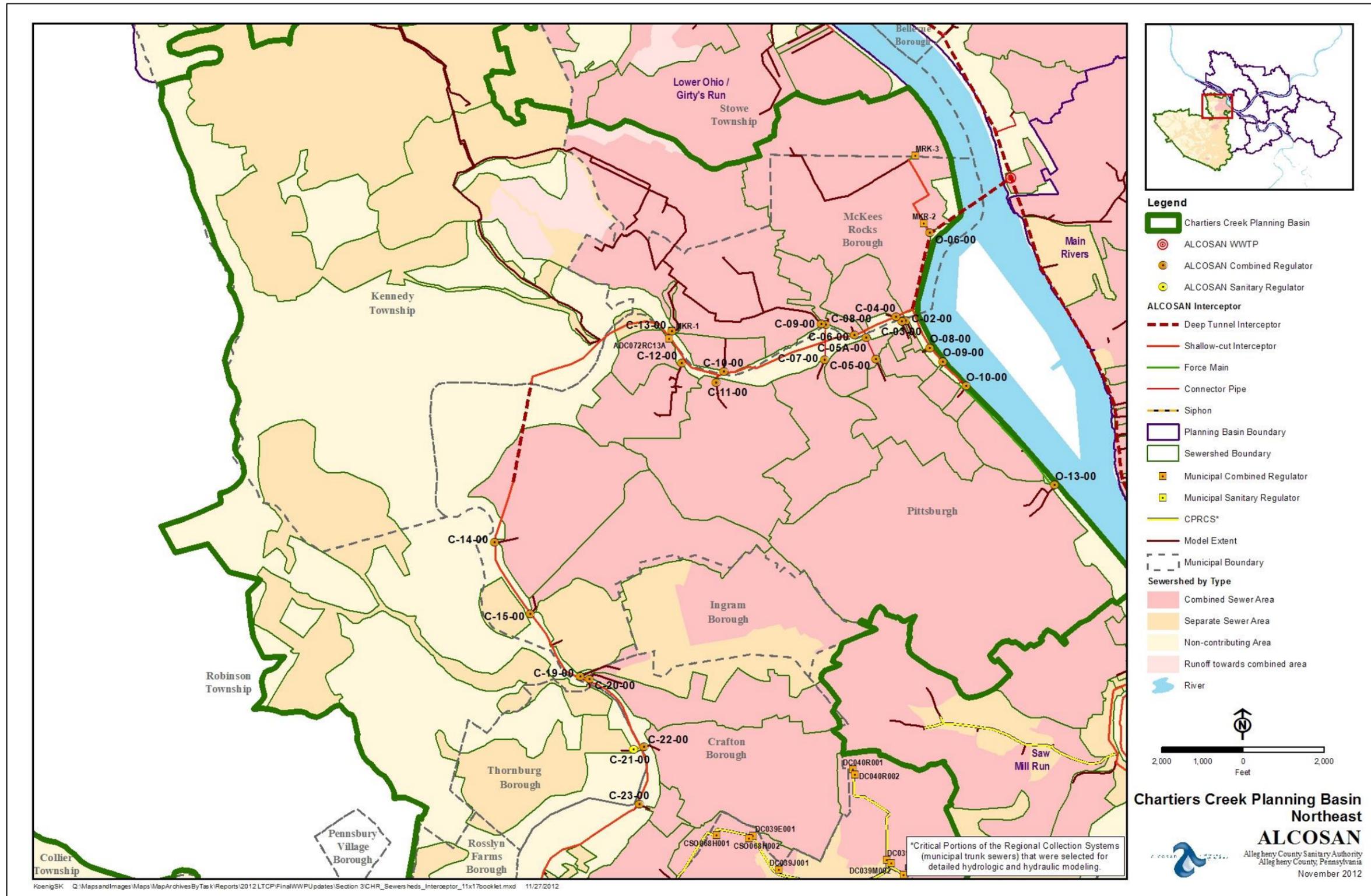


Figure 3-10: Chartiers Creek Planning Basin

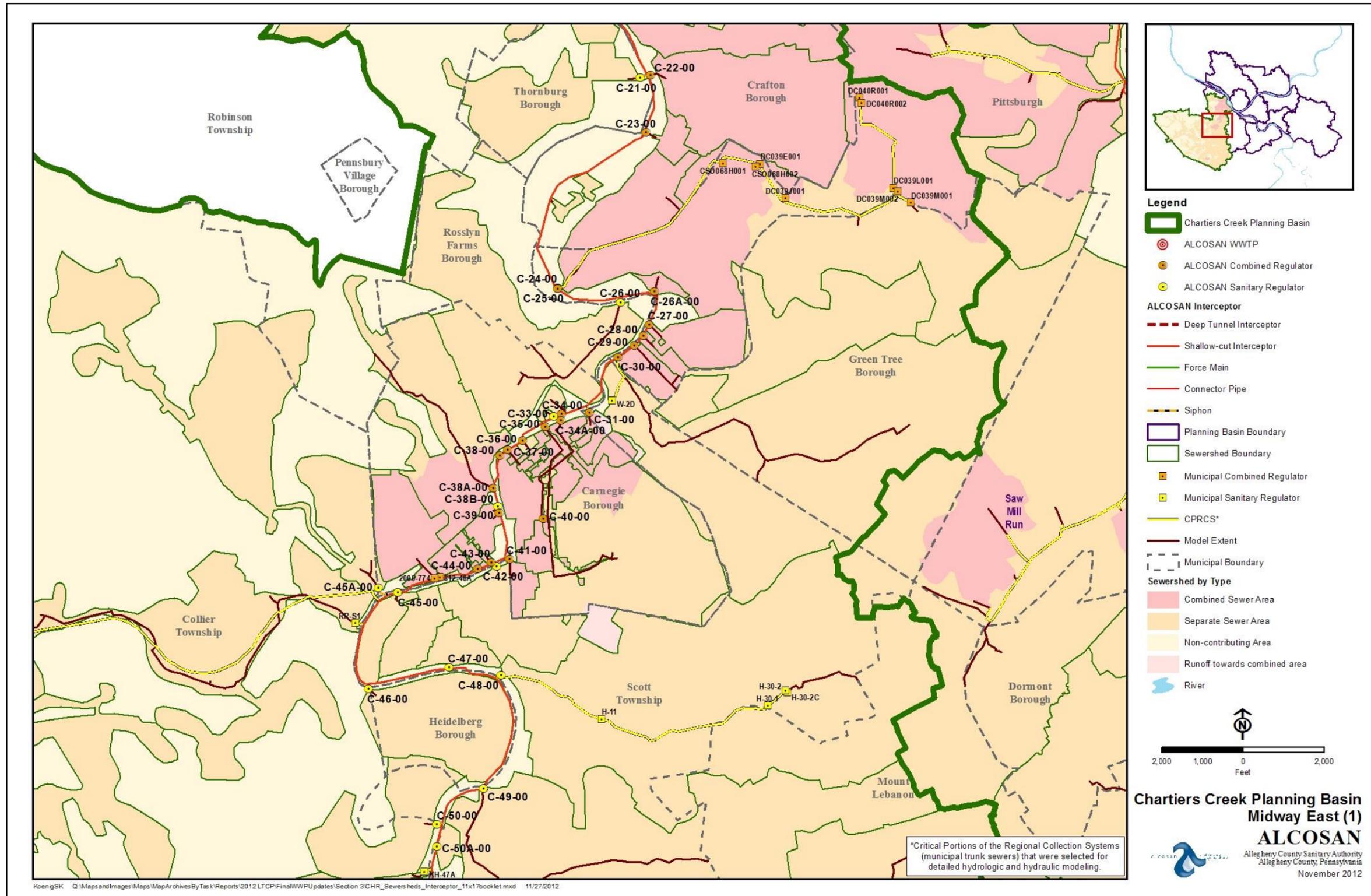


Figure 3-10: Chartiers Creek Planning Basin

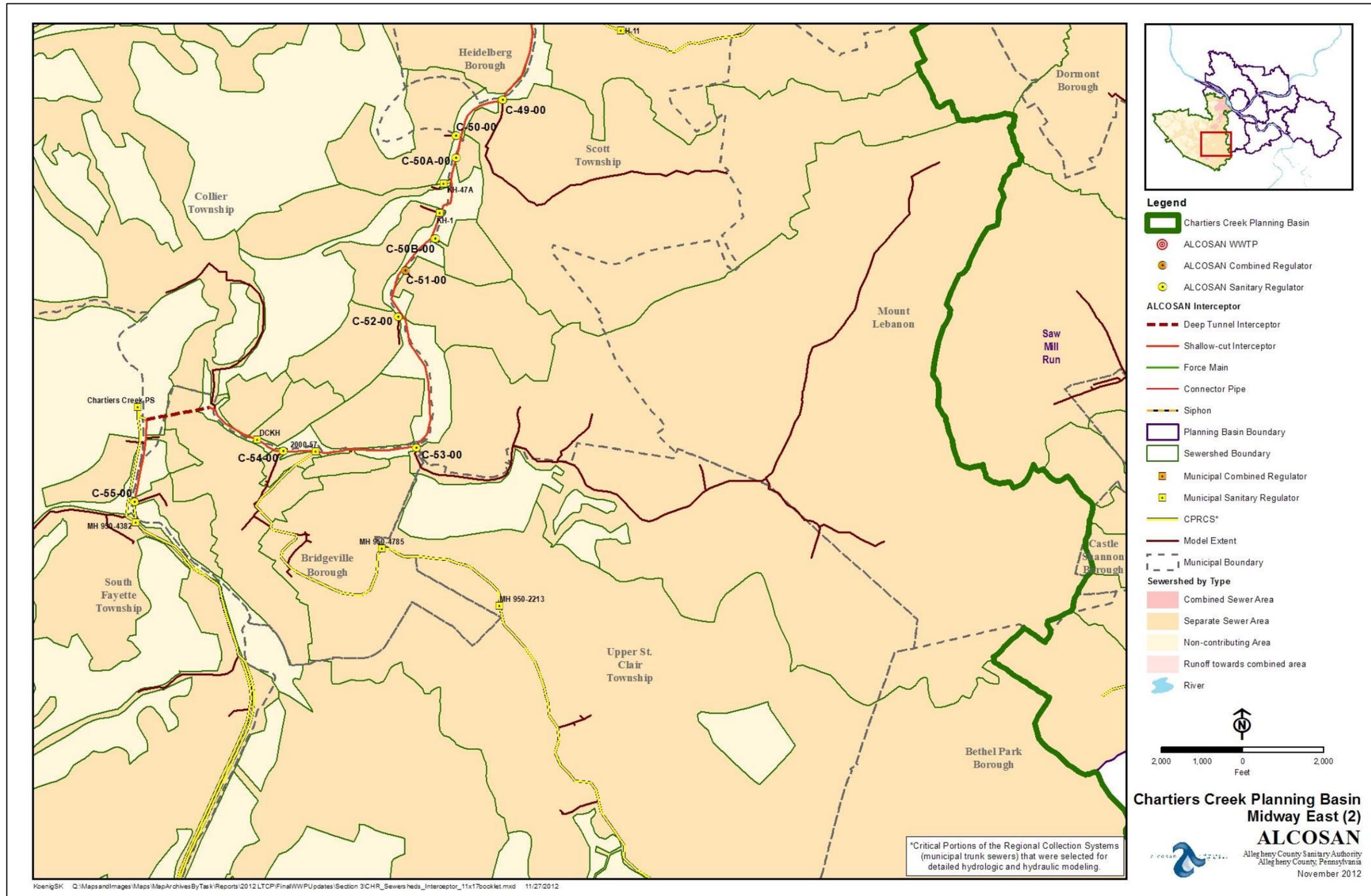


Figure 3-10: Chartiers Creek Planning Basin

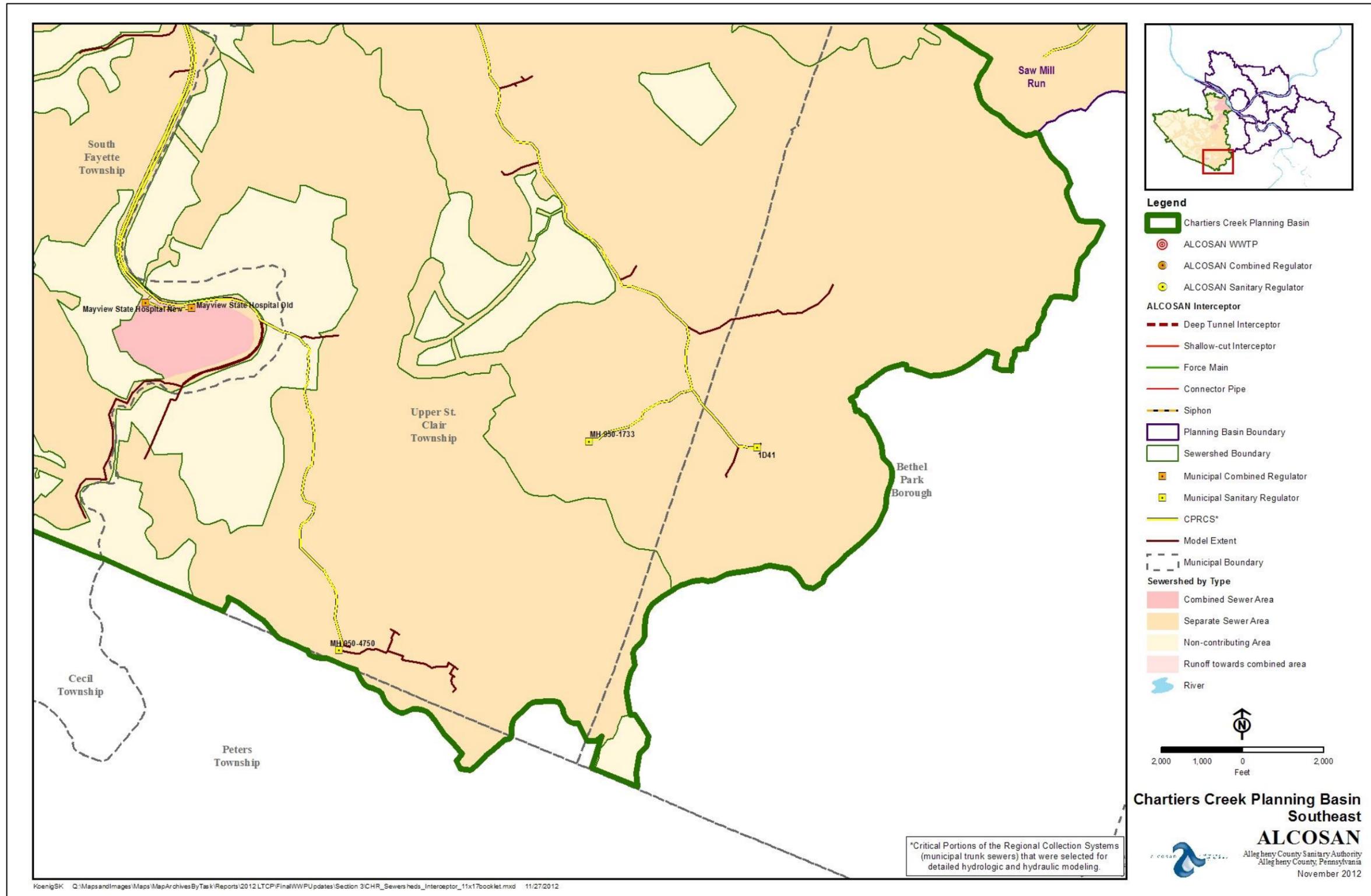


Figure 3-10: Chartiers Creek Planning Basin

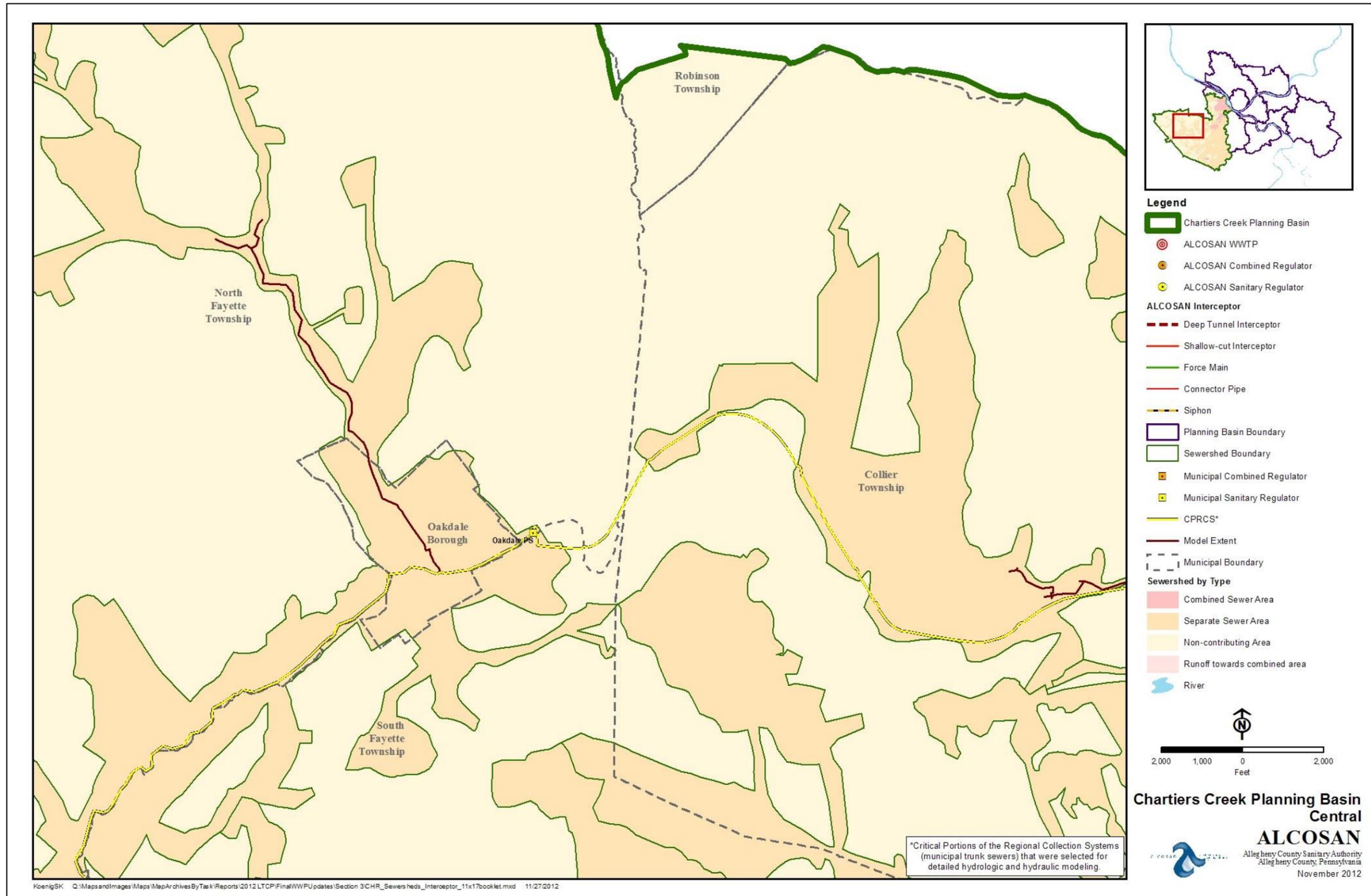
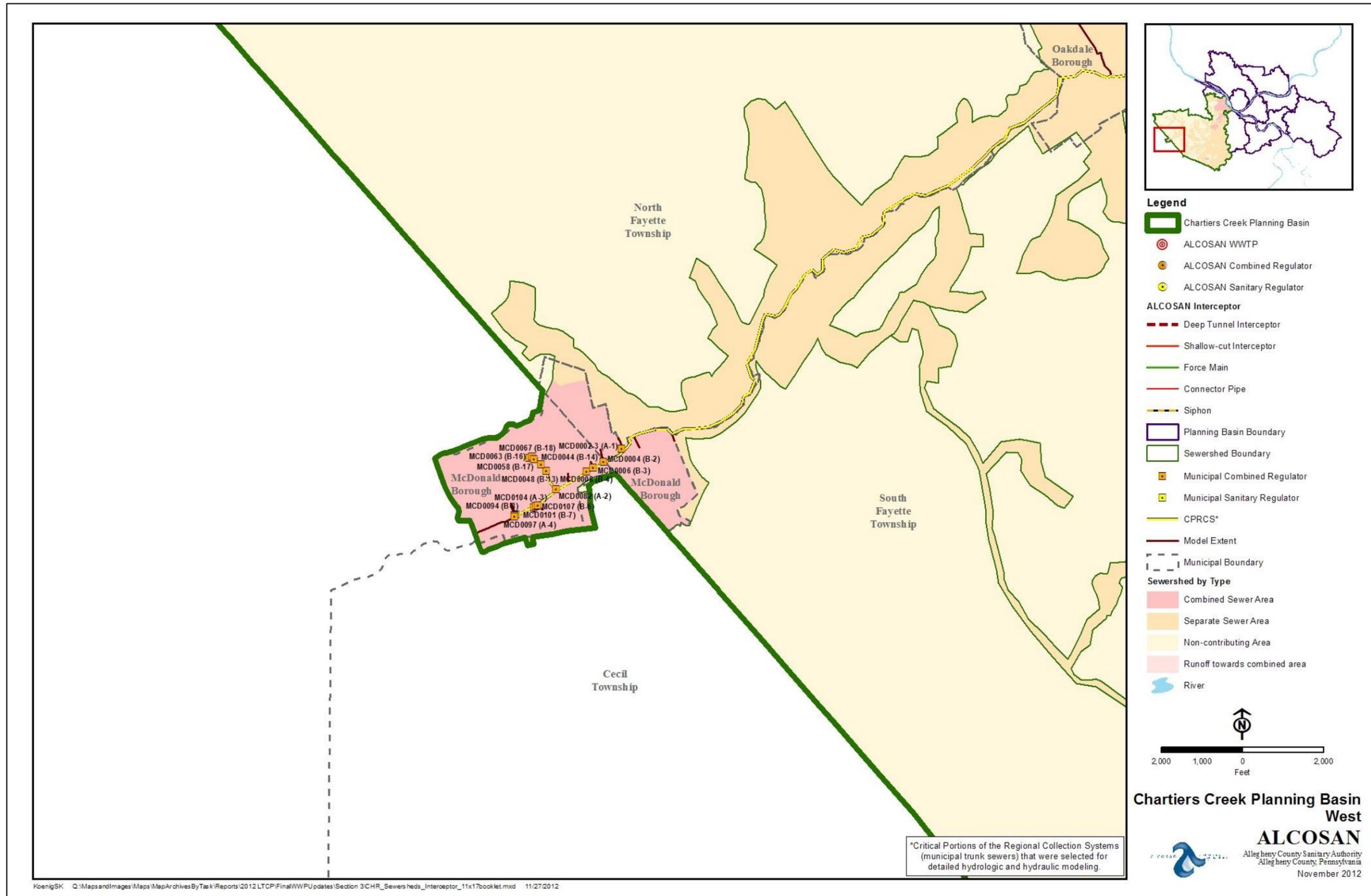


Figure 3-10: Chartiers Creek Planning Basin



3.2.1 Interceptor System Overview

The Chartiers Creek Planning Basin is served by approximately 17 miles of ALCOSAN interceptor pipe that receives flow from all or portions of 24 municipalities at 88 points of connection between municipal trunk sewers and the ALCOSAN interceptors. The interceptor system is comprised of reaches that are categorized as deep tunnel, shallow-cut, inverted siphons, and force mains. The interceptor system also includes two pump stations and one ejector station conveying municipal flow to the interceptor. Force mains convey flow from pump stations to gravity sewers. Inverted siphons were constructed to allow interceptors to pass under Chartiers Creek. Interceptor pipes range in size between 24 and 54 inches in diameter, and are made primarily of reinforced concrete, with a small fraction composed of cast iron and ductile iron. There are no parallel relief sewer lines and there have been no major expansions to the interceptor since its initial construction.

The configuration of the ALCOSAN interceptor system is depicted in Figure 3-10. Overview information on the interceptor system is provided in Table 3-8. More detailed and in-depth descriptions of the interceptor system can be found in Section 3.0 of the EICR report.

Table 3-8: Chartiers Creek Planning Basin Interceptor Pipe Components

ALCOSAN Conveyance System Component	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Deep Tunnel Interceptor Pipe	54	8,400	1.6	9.4%
Shallow-Cut Interceptor Pipe	24 to 45	70,500	13.4	79%
Inverted Siphon Pipe	36 to 42	6,400	1.2	7.2%
Force Main and Connector Pipe	varies	3,600	0.7	4.0%
Total Basin Length		88,900	16.8	100%

A 54-inch diameter deep tunnel interceptor commences at the ALCOSAN WWTP and extends upstream under the Ohio River to the Chartiers - Ohio Junction (structure O-07-00). At the junction structure, a drop-shaft connects the deep tunnel to a pair of shallow-cut interceptors, one extending along Chartiers Creek and one extending along the south shore of the Ohio River. There are two sections of the interceptor system along Chartiers Creek which were installed using tunnel construction methods versus open cut methods. These segments were constructed as tunnels due to the significant depths relative to grade and function hydraulically as an extension of the shallow-cut gravity interceptor. Both of the tunnel sections are 54 inches in diameter and constructed of reinforced concrete pipe.

There are ten single barrel inverted siphon stream crossings along the Chartiers Creek shallow-cut interceptor system. They are listed in Table 3-9.

Table 3-9: Inverted Siphons along the Chartiers Creek Interceptor

Stream Crossing Segment	Total Siphon Length (Feet)	Diameter (Inches)
C-13-10 to C-13-12	304	36
C-13A-00 to C-13-20	149	36
C-30-08 to C-30-06	332	42
C-36-02 to C-35-04	181	42
C-38-08 to C-38-06	209	42
C-44-12 to C-44-10	220	42
C-47-06 to C-47-04	191	42
C-49-02 to C-48A-18	224	42
C-50A-10 to C-50A-08	240	42
C-54-14 to C-54-12	140	24

Pump and Ejector Stations: Within the Chartiers Creek interceptor system, ALCOSAN owns one pump station and operates/maintains another. The Corliss Street Pump Station, located along the Ohio River, receives flows from the Corks Run sewershed and conveys it through a 16-inch diameter force main to a distance of approximately 3,389 feet to the shallow-cut interceptor. The pump station includes two 2,500 gallons per minute (gpm) pumps with a combined installed capacity of 3,400 gpm.

The Ella Street pump station and its storm water pumps were previously owned by McKees Rocks Borough. However, ALCOSAN recently completed renovations for the pump station, and ALCOSAN owns, operates and maintains both the wastewater pumps and the storm water pumps. The pumps receive flow from the McKees Rocks municipal sewers and convey it through a 15-inch diameter force main to a distance of approximately 195 feet to a gravity sewer that discharges at the Shingiss Street regulator and drop-shaft (structure O-06) where it is conveyed to the deep tunnel.

Connections, Regulators and Hydraulic Relief Structures, and Appurtenances: There are 84 confirmed points of connection along Chartiers Creek and the Ohio River where municipal sewers discharge wastewater flow into the ALCOSAN interceptor system. Many of these connections are made via a regulator/diversion structure, while others are direct connections at interceptor manholes. A few municipal sewers are tapped directly into the interceptor pipe without a manhole connection.

The Chartiers Creek Planning Basin contains 60 ALCOSAN regulator structures which are shown on Figure 3-10. Of these, 43 are combined sewer overflow (CSO) regulators and 17 are sanitary sewer overflow (SSO) regulators. These ALCOSAN regulator structures can be categorized into three different flow control strategies: double orifice structures, single orifice

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

regulator structures, and simple dam regulator structures. Detailed descriptions and representative drawings of these regulator structure categories are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*. Some of the outfall pipes require flap gates to prevent creek or river water from intruding into the interceptor system during high stream flow periods. Table 3-10 lists all the ALCOSAN regulators within the Chartiers Creek Planning Basin. The table includes two interceptor relief overflows (IRO) structures, C-03A and C-13A, located along the interceptor itself that relieve excessive surcharge conditions from the interceptor. All regulator structures have a unique overflow outfall point associated with them except regulators C-24 and C-25 which share a common outfall point. All outfall points associated with ALCOSAN owned CSO regulators, including the two IRO structures, are listed in the ALCOSAN NPDES permit PA0025984.

Table 3-10: ALCOSAN CSO and SSO Regulator Structures in the Chartiers Creek Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
C-02	Regulator is now abandoned and sealed			
C-03	Combined	Single Orifice	Yes	Sloan Way (COP)
C-03A IRO (C-04-02)	Combined	Simple DAM	Yes	Approximately 450 ft. above West Carson Street (Borough of McKees Rocks)
C-04	Combined	Double Orifice	No	McKees Rock Redevelopment (Borough of McKees Rocks)
C-05	Combined	Simple DAM	Submerged	Stafford Street at Elliot Warehouse (COP)
C-05A	Combined	Double Orifice	No	Stafford Street (COP)
C-06	Combined	Double Orifice	Yes	Linen Street (Borough of McKees Rocks)
C-07	Combined	Double Orifice	No	Ohio Conn. Ry. Culvert (COP)
C-08	Combined	Double Orifice	Yes	Left bank rear of Singer Ice Co. (Borough of McKees Rocks)
C-09	Combined	Simple DAM	Yes	Federal Enameling & Stamping (Borough of McKees Rocks)
C-10	Combined	Double Orifice	Yes	Fort Pitt Malleable Co. (Borough of McKees Rocks)
C-11	Combined	Single Orifice	No	10 ft. Arch Culvert (COP)
C-12	Combined	Double Orifice	Yes	Railroad Yard (COP)
C-13	Combined	Double Orifice	Yes	L.B. under PC&Y RR bridge (Borough of McKees Rocks)
C-13A IRO	Combined	Single Orifice	Yes	Scully Yard, Summerdale Street extended (COP/ Borough of McKees Rocks)
C-14	Regulator is now abandoned and sealed			
C-15	Combined	Double Orifice	Yes	Broadhead Fording Road (COP)
C-19	Combined	Double Orifice	Yes	State Hwy. Bridge (COP)

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-10: ALCOSAN CSO and SSO Regulator Structures in the Chartiers Creek Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
C-20	Combined	Double Orifice	No	Roswell Drive (Borough of Crafton)
C-22	Combined	Double Orifice	No	Crafton Borough Sewer (Borough of Crafton)
C-23	Combined	Double Orifice	No	RB 1550 ft. U/S Crafton Sewer (Borough of Crafton)
C-24	Combined	Double Orifice	No	PCC & St. L. RR Bridge (COP)
C-25	Combined	Double Orifice	No	PCC & St. L. RR Bridge (COP)
C-26A	Combined	Double Orifice	No	Idlewild Road (COP)
C-27	Combined	Double Orifice	Yes	Pringle Way (COP)
C-28	Combined	Double Orifice	Yes	Moffat Way (COP)
C-29	Combined	Double Orifice	Yes	Woodkirk Street (COP)
C-30	Combined	Double Orifice	No	Whiskey Run, R.B. approx. 120 ft. U/S of PC&Y RR bridge (COP)
C-31	Combined	Double Orifice	Yes	PA Parkway Bridge (Township of Scott)
C-34	Combined	Double Orifice	Yes	Elm Street (Borough of Carnegie)
C-34A	Combined	Double Orifice	Yes	(Borough of Carnegie)
C-35	Combined	Double Orifice	Yes	Chestnut Street Bridge (Borough of Carnegie)
C-36	Combined	Double Orifice	Yes	Walnut Street (Borough of Carnegie)
C-37	Combined	Double Orifice	Yes	Broadway Street (Borough of Carnegie)
C-38	Combined	Double Orifice	Yes	Pine Street (Borough of Carnegie)
C-38A	Combined	Double Orifice	Yes	Campbell's Run (Borough of Carnegie)
C-38B	Combined	Double Orifice	Yes	Left Bank, at foot of Barrett Way (Borough of Carnegie)
C-39	Combined	Double Orifice	Yes	Third Avenue (Borough of Carnegie)
C-40	Regulator is now abandoned and sealed			
C-41	Combined	Double Orifice	No	PCC & St. L. Ry. Bridge (Borough of Carnegie)
C-43	Combined	Double Orifice	Yes	Carothers Street Bridge (Boro of Carnegie)
C-44	Combined	Double Orifice	Yes	Fourth Street (Borough of Carnegie)
C-51	Combined	Double Orifice	Yes	Right bank, at Sipes Paint Company (Township of Scott)
O-06	Combined	Double Orifice	Submerged	Shingiss Street (Borough of McKees Rocks)
O-08	Combined	Double Orifice	Yes	Tabor Street, Outlet U-2 (COP)

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-10: ALCOSAN CSO and SSO Regulator Structures in the Chartiers Creek Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
O-09	Regulator is now abandoned and sealed			
O-10	Regulator is now abandoned and sealed			
O-11	Regulator is now abandoned and sealed			
O-13	Combined	Single Orifice	No	Cork's Run (COP)
C-21	Sanitary	Double Orifice	Yes	L.B., end of Thornburg Sewer opposite Crafton Borough Sewer (Boro of Thornburg)
C-26	Sanitary	Double Orifice	Yes	L.B rear of Columbia Steel & Shafting Co, Foot of Arch St. ext. (Boro of Rosslyn Farms)
C-33	Sanitary	Double Orifice	Yes	Vine Street (Borough of Carnegie)
C-42	Sanitary	Double Orifice	Yes	Right Bank, foot of Center Way (Township of Scott)
C-45	Sanitary	Double Orifice	Yes	RB, approximately 30 ft. U/S of West Main St. highway bridge (Township of Scott)
C-45A	Sanitary	Double Orifice	Yes	L.B., landward side of RR Culvert, approx. 550 ft. U/S of highway bridge (Boro of Carnegie)
C-46	Sanitary	Double Orifice	Yes	Left Bank, end of Grant Avenue near RR Bridge (Borough of Heidelberg)
C-47	Sanitary	Double Orifice	Yes	R.B., across creek from American Steel Band Company (Township of Scott)
C-48	Sanitary	Double Orifice	No	R.B., approx. 30 ft. D/S of East Railroad St. Highway Bridge (Township of Scott)
C-49	Sanitary	Double Orifice	No	R.B., approx. 20 ft. D/S of Collier St. Highway Bridge (Township of Scott)
C-50	Sanitary	Single Orifice	Yes	L.B., approx. 750 ft. D/S of Woodville Rd. Highway Bridge (Collier Township)
C-50A	Sanitary	Double Orifice	Yes	R.B., approx. 250 ft. D/S of Woodville Rd. Highway Bridge (Township of Scott)
C-50B	Sanitary	Double Orifice	Yes	R.B., approx. 1400 ft. upstream of P.C.Y. RR Bridge (Township of Scott)
C-52	Sanitary	Double Orifice	Yes	L.B., approx. 100 ft. downstream of P.C.C. & St.L. RR Bridge (Collier Township)
C-53	Sanitary	Double Orifice	No	L.B., approx. 100 ft. D/S of mouth of Painters Run (Township of Scott)
C-54	Sanitary	Double Orifice	Yes	Right bank, mouth of McLaughlin Run (Borough of Bridgeville)
C-55	Sanitary	Double Orifice	Yes	R.B., approx. 120 ft. D/S of Pgh. W. Va. RR Bridge (Borough of Bridgeville)

3.2.2 Municipal Collection System Overviews

There are 24 municipalities located completely or partially within the Chartiers Creek Planning Basin. This section provides summary information relative to the individual municipal collection systems. Section 5.0 of the Chartiers Creek EICR provides a more in-depth and detailed level of information on each of the municipal collection systems.

Table 3-11 lists the municipalities and the corresponding total length of public collection sewers within the planning basin. Many of the municipalities within the Chartiers Creek basin own, operate, and maintain their respective sanitary or combined sewer collection systems. However, seven of the municipalities have sewer or water and sewer authorities. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP. There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. Because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

The information for this WWP was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the EICR was submitted, so WWP and EICR sewer lengths may differ. As was described in WWP Section 3.1, there are two types of sewer systems and two categories of sewershed areas that comprise the sewered portions of the Chartiers Creek planning basin, combined sewers and separate sewers.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-11: Lengths of Sewers within each Municipality in the Chartiers Creek Basin

Municipality / Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Chartiers Creek Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Chartiers Creek Planning Basin
Bethel Park Municipality/ Bethel Park Municipal Authority	0.0	0%	50.7	6.9%
Bridgeville Borough	0.0	0%	23.0	3.1%
Carnegie Borough	17.5	10%	17.3	2.3%
Castle Shannon Borough	0.0	0%	0.2	0.0%
Cecil Township ⁽²⁾	0.0	0%	0.3	0.0%
Collier Township/ Collier Township Municipal Authority ⁽³⁾	0.00	0%	76.9	10.4%
Crafton Borough	20.6	12%	2.4	0.3%
Green Tree Borough	0.0	0%	24.7	3.3%
Heidelberg Borough	0.0	0%	5.7	0.8%
Ingram Borough	6.7	4%	3.9	0.5%
Kennedy Township	0.0	0%	35.0	4.7%
McDonald Borough / McDonald Borough Sewer Authority	13.4	8%	0.0	0.0%
McKees Rocks Borough	24.5	14%	0.0	0.0%
Mount Lebanon	0.0	0%	92.1	12.4%
North Fayette Township	0.0	0%	36.9	4.9%
Oakdale Borough/ Oakdale Borough Authority	0.0	0%	8.7	1.2%
Peters Township/ Peters Township Municipal Authority	0.0	0%	1.1	0.1%
City of Pittsburgh/ Pittsburgh Water and Sewer Authority	71.8	42%	2.3	0.3%
Robinson Township/ Municipal Authority of the Township of Robinson	0.0	0%	8.7	1.2%
Roslyn Farms Borough	0.0	0%	4.5	0.6%
Scott Township	0.0	0%	64.5	8.3%

Table 3-11: Lengths of Sewers within each Municipality in the Chartiers Creek Basin

Municipality / Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Chartiers Creek Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Chartiers Creek Planning Basin
South Fayette Township	2.5	1%	127.4	17.2%
Stowe Township	12.7	7%	0.0	0.0%
Thornburg Borough	0.0	0%	4.5	0.6%
Upper St. Clair Township	0.0	0%	152.9	20.6%
Planning Basin Total	169.8	100%	743.8	100%

⁽¹⁾Note: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

⁽²⁾ Note: Cecil Township is not an official ALCOSAN municipality. ALCOSAN honors the agreement that South Fayette has to accept wastewater flow from Cecil Township.

⁽³⁾ Note: Collier Township owns and operates the sewer system tributary to POC C-50. The Collier Township Municipal Authority owns and operates the remaining sewer systems tributary to its other POCs with ALCOSAN.

Municipal CSO and SSO Regulators: The Chartiers Creek basin contains 51 municipal or authority owned overflow regulators. Of these, 33 are CSO regulator structures and 18 are SSO regulator structures. With the exception of five regulators located in the City of Pittsburgh as well as one regulator in McKees Rocks, all municipal CSO and SSO regulators have a unique outfall point associated with them. These five City of Pittsburgh/Pittsburgh Water and Sewer Authority regulators (039L001, 039M001, 039M002, 040R001, and 040R002) all divert flow to pipes which convey flow to a single outfall 039K001 also in the City of Pittsburgh, while the McKees Rocks regulator MKR-1 shares a common outfall point with ALCOSAN CSO regulator C-13-00. This results in 45 unique municipal overflow outfall points. Table 3-12 lists all the municipal CSO regulator structures and Table 3-13 lists all the municipal SSO regulators within the Chartiers Creek Basin.

The municipal SSO structure list includes two emergency pump station overflows, each located just upstream of the Chartiers Creek and Oakdale Pump stations that are owned and operated by the Municipal Authority of the Township of South Fayette. These overflow structures discharge only in an emergency when there is a mechanical failure at the pump station or if the influent flow during a large storm were to exceed the hydraulic capacity of the pump station. In addition to the overflows from municipal system CSO/SSO regulator structures listed in Tables 3-12 and 3-13, there can be additional overflows from the other municipal pumping station emergency overflow structures and/or basement back-ups and surcharged or “popping” manhole covers.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-12: Municipal CSO Regulator Structures within the Chartiers Creek Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner(s) ⁽¹⁾
C-44-07	812-48A	At manhole C-44-07, South of Sixth Street	Chartiers Creek	Borough of Carnegie
C-44-08	2000-774	At manhole C-44-08, Southwest of Sixth Street	Chartiers Creek	Borough of Carnegie
C-45B-04	MCD0002-3 (A-1) ⁽²⁾	Approximately 110 feet southeast of the corner of Meadow Street and Dempe Street	Robinson Run	Borough of McDonald/ McDonald Borough Municipal Authority (McDonald/MBMA)
C-45B-04	MCD0082 (A-2) ⁽²⁾	Intersection of Arabella Street and O'Hara Street, located next to creek by small bridge	Robinson Run	McDonald / MBMA
C-45B-04	MCD0104 (A-3) ⁽²⁾	Approximately 100 feet southeast of the intersection of O'Hara Street and McDonald Street	Robinson Run	McDonald / MBMA
C-45B-04	MCD0097 (A-4) ⁽²⁾	At the end of Third Street Next to Robinson Run	Robinson Run	McDonald / MBMA
C-45B-04	MCD0004 (B-2) ⁽²⁾	Corner of E O'Hara and Miller Street, along creek, next to baseball field	Robinson Run	McDonald / MBMA
C-45B-04	MCD0006 (B-3) ⁽²⁾	On O'Hara St., 245 feet southwest of the intersection of Miller Street and O'Hara St	Robinson Run	McDonald / MBMA
C-45B-04	MCD0008 (B-4) ⁽²⁾	At the intersection of Chestnut and O'Hara Street	Robinson Run	McDonald / MBMA
C-45B-04	MCD0107 (B-6) ⁽²⁾	Approximately 175 feet southeast of the intersection of O'Hara Street and McDonald Street	Robinson Run	McDonald / MBMA
C-45B-04	MCD0101 (B-7) ⁽²⁾	Approximately 170 feet south of the intersection of O'Hara St and McDonald St. Next to the bridge	Robinson Run	McDonald / MBMA
C-45B-04	MCD0094 (B-8) ⁽²⁾	At the end of Third Street next to Robinson Run. Discharges into Robinson Run watershed	Robinson Run	McDonald / MBMA

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-12: Municipal CSO Regulator Structures within the Chartiers Creek Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner(s) ⁽¹⁾
C-45B-04	MCD0095 (B-9) ⁽²⁾	At the end of Third Street next to Robinson Run. To the west side of Third Street	Robinson Run	McDonald / MBMA
C-45B-04	MCD0048 (B-13) ⁽²⁾	Along a creek, 100 feet North of the intersection of East Lincoln Avenue and Arabella Street	Robinson Run	McDonald / MBMA
C-45B-04	MCD0044 (B-14) ⁽²⁾	Along a creek, 300 feet northwest of the intersection of East Lincoln Ave. and Arabella St	Robinson Run	McDonald / MBMA
C-45B-04	MCD0063 (B-16) ⁽²⁾	50 feet west of the intersection between McDonald Street and Washington Avenue	Robinson Run	McDonald / MBMA
C-45B-04	MCD0058 (B-17) ⁽²⁾	50 feet south of the intersection of McDonald Street and Washington Avenue	Robinson Run	McDonald / MBMA
C-45B-04	MCD0067 (B-18) ⁽²⁾	Intersection of McDonald Street and Washington Avenue	Robinson Run	McDonald / MBMA
C-13	MKR-1	The intersection of Singer Avenue and Creek Road. Discharges into Chartiers Creek	Chartiers Creek	Borough of McKees Rocks
O-06	MKR-2	Robb Street Pump Station: About 490 ft. southeast of the intersection of Robb Street and Shingiss St.	Ohio River	Borough of McKees Rocks
O-06	MKR-3	Ella Street Pump Station: About 980 ft. northeast of the intersection of Ella Street and Ruth Street	Ohio River	Borough of McKees Rocks
C-25	CSO 039E001	Oakwood Road	Unnamed Tributary to Chartiers Creek	City of Pittsburgh/ Pittsburgh Water and Sewer Authority (Pittsburgh/PWSA)
C-25	CSO 039J001	Steen Street	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	DC 039L001	Keever Avenue and Brett Street	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-12: Municipal CSO Regulator Structures within the Chartiers Creek Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner(s) ⁽¹⁾
C-25	DC 039M001	Structure: Poplar Street & Kearns Avenue	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	DC 039M002	Structure: Poplar Street & Noblestown Road	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	DC 040R001	Structure: Keever Avenue & Brett Street	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	DC 040R002	Structure: Hyde Street & Brett Street	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	CSO 068H001	Balver Avenue	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-25	CSO 068H002	Oakwood Road	Unnamed Tributary to Chartiers Creek	Pittsburgh/PWSA
C-13-02	ADC 072RC13A ⁽³⁾	Township Road	Chartiers Creek	Pittsburgh/PWSA

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: The McDonald Sewage Authority Source Flow Reduction Study (Dec 2017) reports that full separation of its combined sewer system was recently completed and all active CSO structures have been disconnected from the sanitary system, and are now considered dedicated stormwater outfall structures. ALCOSAN will confirm.

Note⁽³⁾: Pittsburgh Water and Sewer Authority reports regulator ADC 072RC13A is owned by ALCOSAN, but it is not listed under the ALCOSAN CSO permit in the Consent Decree.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-13: Municipal SSO Regulator Structures within the Chartiers Creek Basin

POC	Municipal Regulator ID	Location	Receiving Stream	Owner ⁽¹⁾
C-53-10	1D41	Intersection of Drake Road and South Park Road	McLaughlin Run	Municipality of Bethel Park / Bethel Park Municipal Authority (Bethel Park/BPMA)
C-53-10	2000-57	End of Commercial Boulevard. Connects to ALCOSAN manhole C-53-10. (Believed to not be active.)	Chartiers Creek	Borough of Bridgeville
C-54-06	DCKH	About 300 ft. northeast of the intersection of Washington Pike and East Street Clair Street	Chartiers Creek	Township of Collier / Collier Township Municipal Authority (Collier/CTMA) ⁽²⁾
C-50A-12	KH-1	About 600 ft. South East of intersection with Oakdale/Thoms Run Road and Washington Pike	Chartiers Creek	Collier/CTMA ⁽²⁾
C-50A-06	KH-47A	At rear of Allegheny Co. Park & Ride on Washington Pike at Thoms Run Road	Chartiers Creek	Collier/CTMA ⁽²⁾
C-45B-08	RR-SI	About 650 ft. southeast of intersection with Noblestown Road and Station Street	Chartiers Creek	Collier/CTMA ⁽²⁾
C-30	W-2D ⁽³⁾	Intersection of Bent Alley and Bell Avenue	Chartiers Creek	Township of Scott
C-48	H-11 ⁽⁴⁾	1500 feet northwest from the intersection of Hope Hollow Road and Green Tree Road	Georges Run	Township of Scott
C-48	H-30-1	Intersection of Roessler Road and Cochran Road. Located in Max & Erma's Parking lot	Georges Run	Township of Scott
C-48	H-30-2	Sidewalk in front of Manor Oak Building 540 feet NE of intersection of Cochran Rd. & Roessler Rd.	Georges Run	Township of Scott
C-48	H-30-2C	Corner of Manor Oak Building No 1. Nearest to the Roessler Road	Georges Run	Township of Scott

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-13: Municipal SSO Regulator Structures within the Chartiers Creek Basin

POC	Municipal Regulator ID	Location	Receiving Stream	Owner ⁽¹⁾
C-54-16	Chartiers Creek Pump Station	3000 feet North of the intersection of Millers Run Rd and I79 HWY. Located near billboard in abandoned site. Emergency Pump Station Overflow	Chartiers Creek	Township of South Fayette / Municipal Authority of South Fayette (South Fayette/MASF)
C-45B-04	Oakdale Pump Station	In North Fayette, near border with Oakdale Emergency Pump Station Overflow	Robinson Run	(South Fayette/MASF)
C-53-10	MH 950-4785	McLaughlin Run Road across from racquetball courts, behind baseball outfield by utility pole with flow monitoring box beside manhole	McLaughlin Run	Township of Upper St. Clair & Borough of Bridgeville
C-53-10	MH 950-1733	Behind 2340 Harrow Road; On McLaughlin Run critical sewer	Unnamed Tributary to McLaughlin Run	Township of Upper St. Clair
C-53-10	MH 950-2213	McLaughlin Run Road, opposite of electrical station, over guard rail, beside meter box; On McLaughlin Run critical sewer	McLaughlin Run	Township of Upper St. Clair
C-55-02	MH 950-4382	Under the Pittsburgh & West Virginia Railroad track bridge across Chartiers Creek; On Brush Run critical sewer in South Fayette near border with Bridgeville	Chartiers Creek	Township of Upper St. Clair
C-55-02	MH 950-4750	200 feet from the intersection of Pinetree Drive & Circle Drive, located at Brush Run Pump Station.	Unnamed Tributary to Brush Run	Township of Upper St. Clair

Note ⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note ⁽²⁾: Collier Township owns and operates the sewer system tributary to POC C-50. The Collier Township Municipal Authority owns and operates the remaining sewer systems tributary to its other points of connection with ALCOSAN.

Note ⁽³⁾: The Scott Township Feasibility Study Report (July 2013) indicates CCTV has shown this is not a constructed overflow. ALCOSAN will confirm.

Note ⁽⁴⁾: The Scott Township Source Reduction Study (Dec 2017) indicates this overflow pipe was eliminated as part of the Phase 1 COA Demonstration Project. ALCOSAN will confirm.

Municipal Pump Stations: There are 19 municipal pump stations located within the CC basin that are briefly summarized below. Pump stations owned and operated by private entities are not included.

Collier Township / Collier Township Municipal Authority *

- Lift Station Number 1 - serves the Nevillewood Plan
- Lift Station Number 2 - serves the Nevillewood Plan
- Upper Scotts Run pump station - serves the Centennial Point Plan

Kennedy Township

- Porter Hollow pump station - primary pump station
- Clever Road pump station - primary pump station
- Ewing Road pump station - secondary pump station
- Forest Grove Road pump station - secondary pump station
- Diebold Road pump station - secondary pump station
- Oak Point pump station - secondary pump station

McKees Rocks Borough

- Robb Street Pump station

Robinson Township / Municipal Authority of the Township of Robinson

- Robinson lift station - serves the Cloverleaf Estates Plan
- Country Club Estates pump station - serves the Country Club Estates plan
- Chartiers Creek Pump Station - located along Steubenville Pike

South Fayette Township / Municipal Authority of South Fayette

- Chartiers Creek pump station
- Oakdale pump station
- South Fayette Park pump station

Upper St. Clair Township

- Brush Run pump station
- Deerfield Manor pump station

* Note: Collier Township owns and operates the sewer system tributary to POC C-50. The CTMA owns and operates the remaining sewer systems, including the pump stations, tributary to its other POCs with ALCOSAN.

3.3 Lower Ohio-Girty's Run Basin Characterization

The Lower Ohio River - Girty's Run (LOGR) Planning Basin is located in the northwestern portion of the ALCOSAN Service Area. This section provides an overview and summary of the LOGR basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collection systems within the planning basin area. More in-depth and detailed description of the basin can be found in the August 2010 Lower Ohio - Girty's Run *Existing Conditions and Information Report* (ECIR). For this WWP, planning basin populations and model simulation results were refined and updated since the ECIR was submitted.

The LOGR Planning Basin stretches across an area of approximately 26,950 acres or 42.1 square miles. As shown in Table 3-14, approximately 6% of the planning basin area is served by combined sewer systems, 59% is served by separate sanitary sewer systems, and 35% is non-contributing areas that are either undeveloped or served by individual on-lot septic systems. The sewer system categories are further explained in Section 3.1. According to the 2010 census, approximately 92,000 people are living in the LOGR Planning Basin and 98% are provided sewage treatment service by ALCOSAN. Figure 3-11 is a map of the LOGR Planning Basin which shows the interceptor sewers, the tributary sewershed areas, and diversion structures that regulate sewer flow.

Table 3-14: Combined, Separate and Non-Contributing Areas within the LOGR Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Population	Percent of Planning Basin Population
Combined Sewer System	2.7	6%	18,546	20%
Separate Sewer System	24.7	59%	71,554	78%
Non-Contributing Areas	14.6	35%	1,961	2%
Planning Basin Total	42.1	100%	92,061	100%

There are 20 municipalities that are located completely or partially within the LOGR Planning Basin. The tributary municipalities are shown in Figure 3-11 and listed in Table 3-15 along with their tributary areas and populations. There are 47 acres of undeveloped areas of Robinson Township that contribute storm water runoff toward Kennedy Township sewers. There are 3.1 acres of undeveloped area of Etna Borough that contribute storm water runoff to Shaler Township sewers. No wastewater flow is conveyed to the ALCOSAN system from either of these undeveloped and non-contributing areas.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-15: Tributary Municipalities in the Lower Ohio-Girty's Run Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
Avalon Borough	338	1.3%	4,705	5.1%
Bellevue Borough	602	2.2%	8,394	9.1%
Ben Avon Borough	190	0.7%	1,766	1.9%
Ben Avon Heights Borough	78	0.3%	361	0.4%
Emsworth Borough	276	1.0%	2,407	2.6%
Etna Borough*	0	0.0%	0	0.0%
Franklin Park Borough	2,008	7.5%	3,293	3.6%
Kennedy Township	415	1.5%	2,172	2.4%
Kilbuck Township	141	0.5%	409	0.4%
McCandless Township	2,203	8.2%	8,920	9.7%
Millvale Borough	275	1.0%	3,756	4.1%
Neville Township	741	2.8%	1,068	1.2%
Ohio Township	1,242	4.6%	2,978	3.2%
City of Pittsburgh	519	1.9%	5,893	6.4%
Reserve Township	185	0.7%	681	0.7%
Robinson Township*	0	0.0%	0	0.0%
Ross Township	5,853	21.7%	26,333	28.6%
Shaler Township	1,428	5.3%	7,423	8.1%
Stowe Township	483	1.8%	2,796	3.0%
West View Borough	598	2.2%	6,744	7.3%
Planning Basin Total (Contributing Area)	17,575	65%	90,100	97.9%
Planning Basin Out Areas	9,375	35%	1,961	2.1%

*Note: These non-contributing areas currently are either undeveloped or served by individual on-lot septic systems, but may be developed in the future.

Figure 3-11 – Lower Ohio River – Girty’s Run Planning Basin

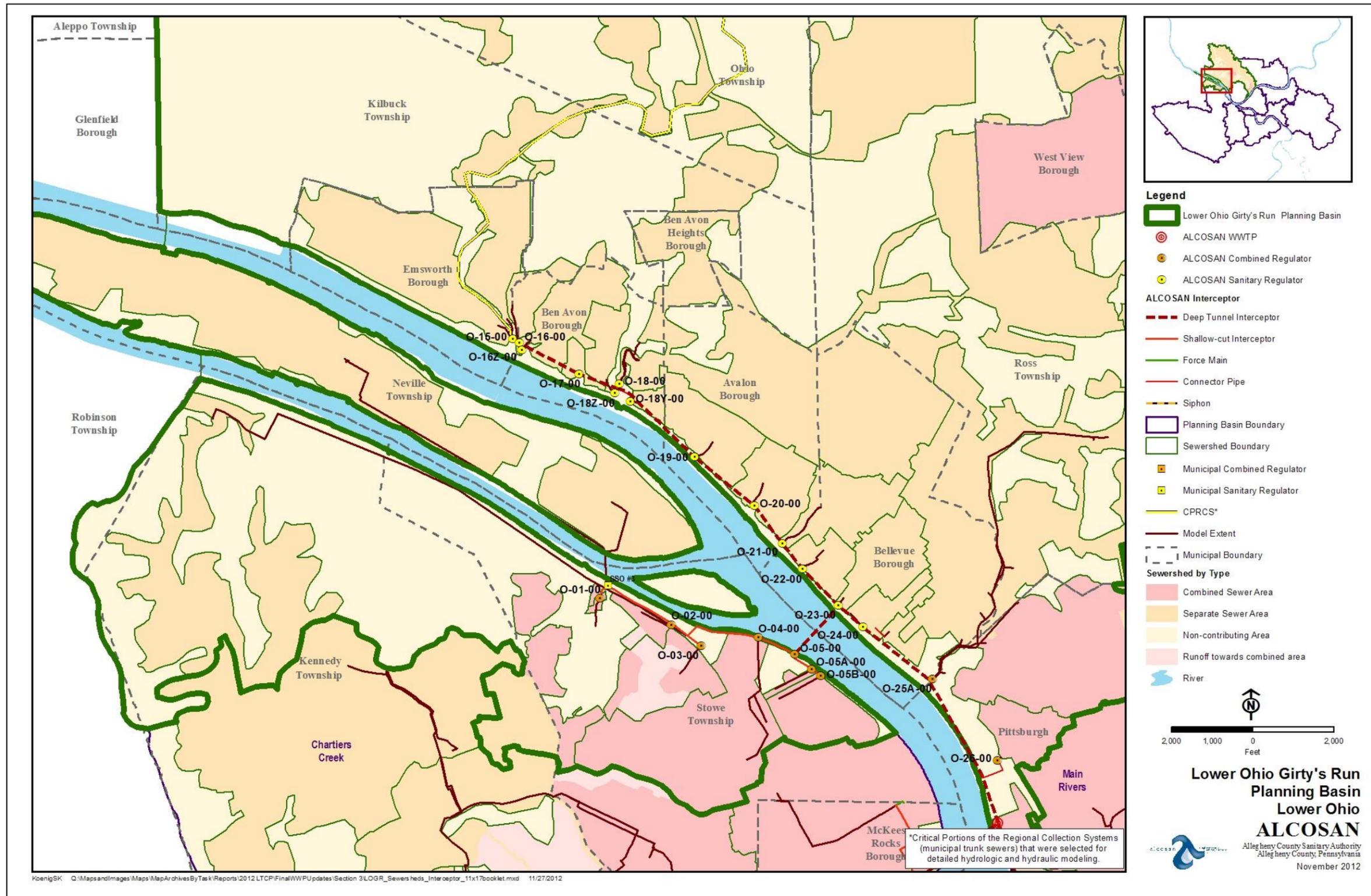
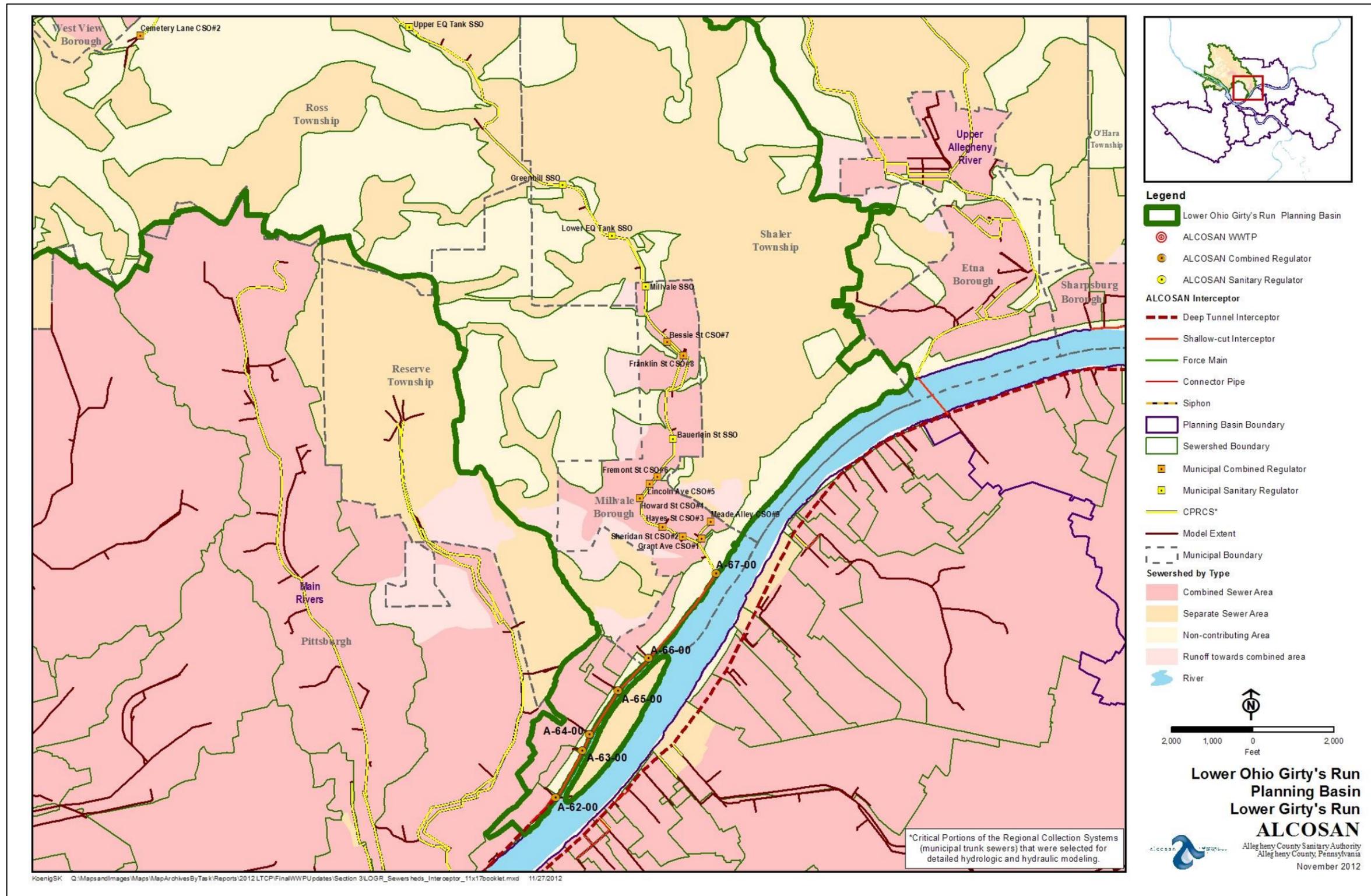
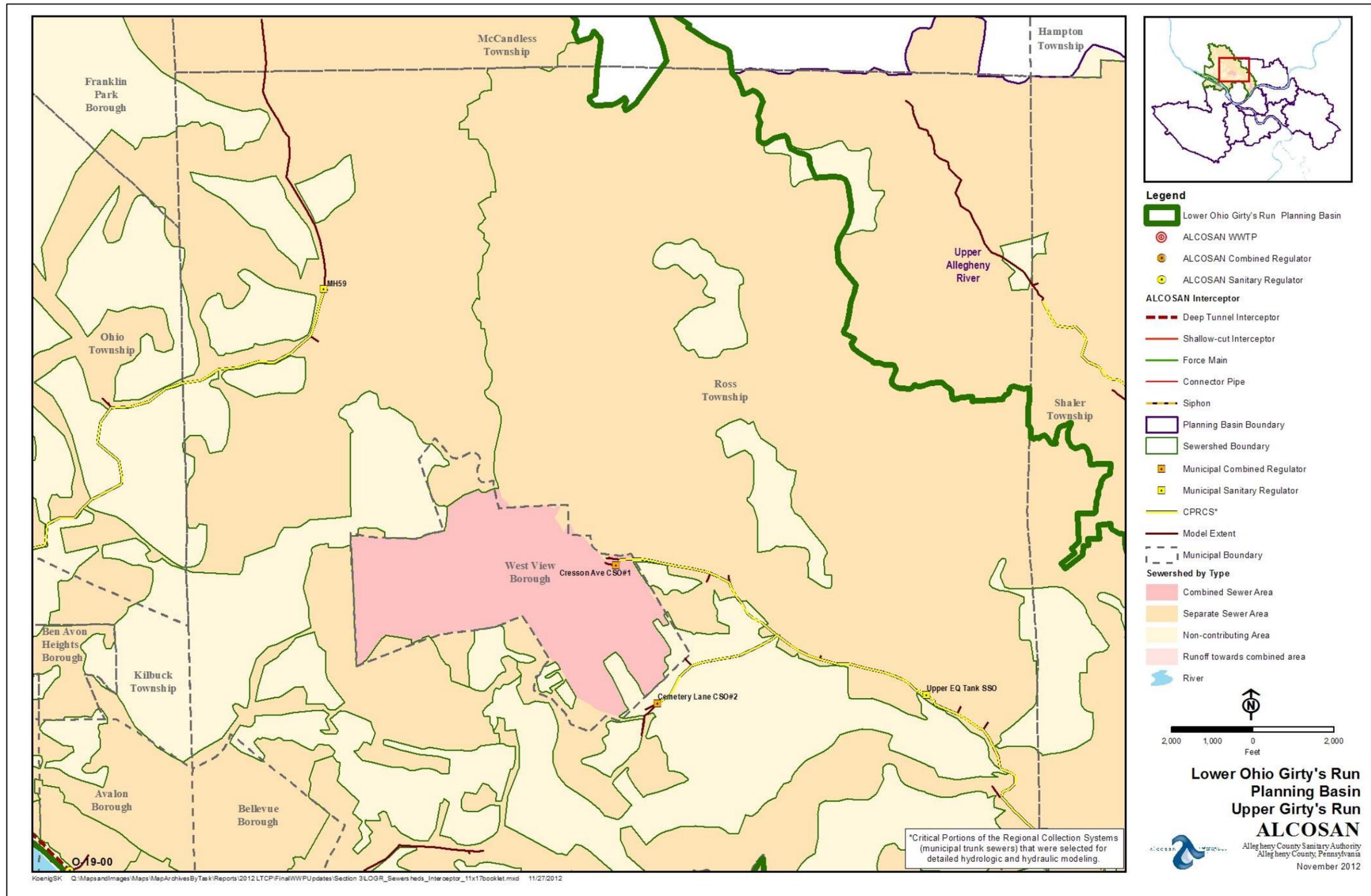


Figure 3-11 – Lower Ohio River – Girty’s Run Planning Basin



KoenigSK Q:\Maps\Images\Maps\MapArchives\ByTask\Reports\2012\LTCP\Final\WWFUpd\ates\Section 3\LOGR_Sewersheds_Interceptor_11x17booklet.mxd 11/27/2012

Figure 3-11 – Lower Ohio River – Girty’s Run Planning Basin



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3.3.1 Interceptor System Overview

The LOGR Planning Basin is served by approximately 7 miles of ALCOSAN sewer pipe that receives flow from all or portions of 19 municipalities at 30 points of connection. ALCOSAN owns and operates a 36-inch shallow cut interceptor that runs parallel to the north shore of the Allegheny River in the vicinity of Herr’s Island, extending from diversion structures A-62 to A-67. At the McFadden street structure (A-62), the interceptor connects to the ALCOSAN deep tunnel interceptor via a 30-inch diameter drop shaft. The deep tunnel (which lies within the Main Rivers Planning Basin) runs parallel to the Allegheny River and then continues along the Ohio River to the ALCOSAN Wastewater Treatment Plant.

A 30 to 36-inch deep tunnel interceptor runs parallel to the north shore of the Ohio River from diversion structure O-15, near the Emsworth Dam, to the ALCOSAN Wastewater Treatment Plant. A segment of 27-inch shallow cut interceptor conveys flows from diversion structure O-15 to the connection point to the deep tunnel interceptor at O-16. A 15- to 24-inch shallow cut interceptor extends along the south shore and connects diversion structures O-01 through O-05. The cumulative flow from the south shore interceptor crosses the Ohio River via a 14- to 24-inch sewer to connect to the deep tunnel interceptor on the north shore of the Ohio River.

The configuration of the ALCOSAN interceptor system is depicted in Figure 3-11. Overview information on the interceptor system is provided in Table 3-16. There are no inverted siphon pipes, pump stations, or force main pipes within the LOGR basin.

Table 3-16: LOGR Planning Basin Interceptor Pipe Components

ALCOSAN Conveyance System Component	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Shallow-Cut Interceptor	27 to 36	14,000	2.7	37%
Deep Tunnel Interceptor	30 to 36	20,400	3.9	54%
Other Connector Pipes	varies	3,600	0.7	9%
Total Basin Pipe Length		38,000	7.2	100%

Connections, Regulators and Hydraulic Relief Structures and Appurtenances: Flows from the municipal collection systems that comprise the Lower Ohio-Girty’s Run planning basin enter the ALCOSAN interceptor system through 27 regulator structures and two direct connections. Of the regulator structures there are 16 variable orifice tipping-gate regulator structures, two single orifice regulator structures, six double orifice regulator structures and three simple dam regulator structures. All the regulator structures have a unique overflow outfall point associated with them except regulators O-16 and O-16Z, which share a common outfall point. ALCOSAN regulator structure O-15-00 is a composite structure that contains both a tipping gate and a single orifice. Detailed descriptions and representative drawings of these

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

regulator structure categories are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*. Table 3-17 lists all the ALCOSAN regulator structures located within the LOGR Planning Basin.

Table 3-17: ALCOSAN CSO and SSO Regulators within the LOGR Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
A-62	Combined	Tipping Gate	Yes	McFadden Street (City of Pittsburgh)
A-63	Combined	Tipping Gate	Yes	Emma Street (City of Pittsburgh)
A-64	Combined	Tipping Gate	Yes	Rialto Street (City of Pittsburgh)
A-65	Combined	Tipping Gate	Yes	Heckelman Street (City of Pittsburgh)
A-66	Regulator is now abandoned and sealed			
A-67	Combined	Tipping Gate	Yes	Girty's Run (Millvale Borough)
O-01	Combined	Double Orifice	No	Cole Ave and Island Ave (Stowe Twp)
O-02	Combined	Double Orifice	No	Davis Alley (Stowe Twp)
O-03	Combined	Double Orifice	No	Orr Street (Stowe Twp)
O-04	Combined	Double Orifice	Yes	1000 ft. D/S from river crossing (Stowe Twp)
O-05	Combined	Double Orifice	Yes	At river crossing (Stowe Twp)
O-05A	Combined	Single Orifice	No	Downstream from Orchard St (Stowe Twp)
O-05B	Combined	Single Orifice	No	Upstream from Orchard Street (Stowe Twp)
O-25A	Combined	Tipping Gate	Yes	Jacks Run (City of Pittsburgh)
O-26	Combined	Double Orifice	No	Verner Avenue (City of Pittsburgh)
O-15	Sanitary	Tipping Gate ⁽¹⁾	Yes	Lowries Run (Emsworth Borough)
O-16	Sanitary	Tipping Gate	Yes	Western Avenue (Ben Avon Borough)
O-16Z ⁽²⁾	Sanitary	Simple Dam	Yes	Forest Avenue Lateral (Ben Avon Borough)
O-17	Sanitary	Tipping Gate	No	Irwin Avenue (Ben Avon Borough)
O-18	Sanitary	Tipping Gate	No	Spruce Run (Ben Avon Borough)
O-18Y	Sanitary	Simple Dam	No	Cliff Street Lateral (Ben Avon Borough)
O-18Z	Sanitary	Simple Dam	No	Ridge Ave Lateral (Ben Avon Borough)
O-19	Sanitary	Tipping Gate	No	Birmingham Lateral (Avalon Borough)

Table 3-17: ALCOSAN CSO and SSO Regulators within the LOGR Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
O-20	Sanitary	Tipping Gate	No	Elizabeth Avenue (Avalon Borough)
O-21	Sanitary	Tipping Gate	No	Wet Street (Avalon Borough)
O-22	Sanitary	Tipping Gate	No	Meade Avenue (Bellevue Borough)
O-23	Sanitary	Tipping Gate	No	S. Fremont Avenue (Bellevue Borough)
O-24	Sanitary	Tipping Gate	No	Shiloh Avenue (Bellevue Borough)

Note⁽¹⁾: O-15 has a double regulator to control flow, the primary regulator is a tipping gate and the secondary is a simple orifice.

Note⁽²⁾: The O-16 and O-16Z regulators share a common outfall pipe

3.3.2 Municipal Collection System Overviews

There are 20 municipalities located all or partially within the Lower Ohio Girty’s Run Planning Basin. This section provides a brief overview of information relative to individual municipal collection systems. Section 4 of the LOGR ECIR provides a more in depth and detailed level of information on each municipal system.

Table 3-18 lists the total length of public collection sewers within the planning basin for each municipality. Many of the municipalities within the LOGR basin own, operate, and maintain their respective sanitary or combined sewer collection systems. However, there are a total of six Authorities or Joint Operating Committees within the LOGR Planning Basin. Girty’s Run Joint Sewer Authority (GRJSA) was formed by McCandless Township, Ross Township, Shaler Township, Millvale Borough and Reserve Township. The Lowries Run Joint Operating Committee (LRJOC) was formed for maintaining the municipal trunk sewer within the Lowries Run sewershed area. The McCandless Township Sanitary Authority includes the sewers within McCandless Township and Franklin Park. Ohio Township, the City of Pittsburgh, Robinson Township, and the Borough of West View also have sewer authorities.

There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

The information for this WWP was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The information for this WWP was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the ECIR was submitted, so WWP and ECIR sewer lengths may differ. As was described in WWP Section 3.1, there are two types of sewer systems and two corresponding categories of sewershed areas that comprise the sewered portions of the LOGR planning basin, combined sewers and separate sewers.

Table 3-18: Lengths of Sewers within each Municipality in the LOGR Planning Basin

Municipality / Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of LOGR Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of LOGR Planning Basin
Avalon Borough	0.0	0.0%	15.4	3.8%
Bellevue Borough	0.0	0.0%	21.4	5.3%
Ben Avon Borough	0.0	0.0%	7.7	1.9%
Ben Avon Heights Boro	0.0	0.0%	2.3	0.6%
Emsworth Borough	0.0	0.0%	9.3	2.3%
Etna Borough*	0.0	0.0%	0.0	0.0%
Franklin Park Borough/ McCandless Township Sanitary Authority (MTSA)	0.0	0.0%	38.5	9.5%
Kennedy Township	0.0	0.0%	12.6	3.1%
Kilbuck Township	0.0	0.0%	4.0	1.0%
McCandless Township/ (MTSA)	0.0	0.0%	56.6	13.9%
Millvale Borough/ Girty's Run Joint Sewer Authority (GRJSA)	13.6	20%	0.0	0.0%
Neville Township	0.0	0.0%	10.2	2.5%
Ohio Township/ Ohio Township Sanitary Authority	0.0	0.0%	28.7	7.0%
City of Pittsburgh /	19.1	28%	1.8	0.4%

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-18: Lengths of Sewers within each Municipality in the LOGR Planning Basin

Municipality / Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of LOGR Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of LOGR Planning Basin
Pittsburgh Water and Sewer Authority				
Reserve Township	0.0	0.0%	5.1	1.3%
Robinson Township/ Municipal Authority of the Township of Robinson ⁽²⁾	0.0	0.0%	0.0	0.0%
Ross Township/(GRJSA)	0.0	0.0%	150.5	37%
Shaler Township/ (GRJSA)	0.0	0.0%	39.9	9.8%
Stowe Township	13.9	20%	0.0	0.0%
West View Borough/ Municipal Authority of West View (MAWV)	22.3	32%	3.1	0.8%
Planning Basin Total	68.9	100%	407.1	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: The non-contributing areas in these municipalities currently are either undeveloped or served by individual on-lot septic systems, but may be developed in the future.

Municipal CSO and SSO Regulators: The LOGR Planning Basin contains 23 municipal or authority owned overflow regulator structures. Of these, 11 are CSO regulator structures and 12 are SSO regulator structures. The SSO list includes 2 pump station emergency overflows in Neville Township that impact flow to the ALCOSAN system. Table 3-19 lists the municipal owned CSO regulator structures and Table 3-20 lists the municipal SSO regulators that are located within the LOGR Planning Basin. Table 3-20 includes the emergency outfall structures associated with each of the two flow equalization facilities located along the Girty’s Run trunk sewer. In addition to the overflows from municipal system CSO/SSO outfall pipes listed in these tables, there can be additional overflows from the other municipal pumping station emergency overflow structures and/or basement back-ups and surcharged or “popping” manhole covers.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-19: Municipal CSO Regulator Structures within the LOGR Planning Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Water	Owner(s)⁽¹⁾
A-67	Grant Avenue CSO #1	Grant Avenue	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Sheridan Street CSO #2	Sheridan Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Hayes Street CSO #3	Hayes Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Howard Street CSO #4	Howard Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Lincoln Avenue CSO #5	Lincoln Avenue	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Fremont Street CSO #6	Fremont Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Bessie Street CSO #7	Bessie Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Franklin Street CSO #8	Franklin Street	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Meade Alley CSO #9	Meade Alley	Girty's Run	Millvale Borough/ GRJSA ⁽²⁾
A-67	Cresson Avenue CSO #1	Cresson Avenue	Girty's Run	West View Borough/ MAWV
A-67	Cemetery Lane CSO #2	Cemetery Lane	Girty's Run	West View Borough/ MAWV

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as "owners." Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾ Girty's Run Joint Sewer Authority

Note⁽³⁾ Municipal Authority of West View

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-20: Municipal SSO Regulator Structures within the LOGR Planning Basin

POC	Regulator ID - Municipality	Location	Receiving Water	Owner ⁽¹⁾
A-67	Bauerlein Street SSO	Bauerlein Street (MH.07 IRO)	Girty's Run	Millvale Borough/ GRJSA
A-67	Greenhill SSO	Greenhill Road/Babcock Boulevard (MH.37 IRO)	Girty's Run	Shaler Township/ GRJSA
A-67	Hayes SSO	Hayes Street/Farragut Street (MH.I IRO)	Girty's Run	Millvale Borough/ GRJSA
A-67	Upper EQ Tank SSO	5 MG EQ Tank Babcock Boulevard	Girty's Run	Ross Township/ GRJSA
A-67	Lower EQ Tank SSO	3 MG EQ Tank Evergreen Road	Girty's Run	Shaler Township/ GRJSA
A-67	Millvale SSO	Walter Avenue/Bessie Street (MH.25 IRO)	Girty's Run	Millvale Borough/ GRJSA
O-15	MH59	Sewickley Oakmont Road	Lowries Run	Ross Township/ LRJOC
O-15	MH62	Lowries Run Road	Lowries Run	Ross Township/ LRJOC
O-01-08	Emergency PS Overflow (SSO #1)	South Utah Avenue	Ohio River	Neville Township
O-01-08	Emergency PS Overflow (SSO #2)	Grand Avenue	Ohio River	Neville Township
O-01-08	SSO #3	Fleming Park Bridge	Ohio River	Neville Township
O-25	R-27	Jacks Run	Jack's Run	Ross Township

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as "owners." Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Municipal Pump Stations: There are 11 municipal pump stations located within the LOGR basin and summarized briefly below. Pump stations owned and operated by private entities are not included.

Emsworth Borough

- Emsworth pump station 826-135

Kennedy Township

- Ellwood Court pump station
- Vigne Street pump station
- Richard Street pump station
- Herbst Hollow pump station

Neville Township

- Main Pump Station
- Back Channel pump station
- Detroit Gas and Electric Company ejector station

Stowe Township

- Memorial street

Borough of Franklin Park/

McCandless Township Sanitary Authority

- Franklin Park Borough pump station

McCandless Township/

McCandless Township Sanitary Authority

- McCandless Township pump station

3.4 Main Rivers Basin Characterization

The Main Rivers (MR) Planning Basin is one of the seven planning basins that comprise the ALCOSAN service area. This section provides an overview and summary of the Main Rivers basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collections within the planning area. More in-depth and detailed descriptions of the basin can be found in the March 2010 Main Rivers *Existing Information and Conditions Report* (EICR). For this WWP, planning basin populations and model simulation results were refined and updated since the EICR was submitted.

The basin is centrally located in the ALCOSAN service area and serves portions of the City of Pittsburgh, Reserve Township, and Ross Township. The MR Basin encompasses a service area of 14,958 acres or 23.4 square miles. As shown in Table 3-21, approximately 88% of the planning basin area is served by combined sewer systems and 9% is served by separate sanitary sewer systems. Less than 0.03% of the basin is non-contributing areas that are undeveloped or served by individual on-lot septic systems. According to the 2010 census, approximately 164,000 people are living in the Main Rivers Planning Basin and nearly 100% are provided sewage treatment service by ALCOSAN.

In general, the MR basin is primarily urban in nature and most developed areas have sewer services. The collection system in the City of Pittsburgh consists mostly of combined sewers. Ross Township and Reserve Township have separate sanitary and storm sewer systems but discharge into the City of Pittsburgh combined sewer system. Figure 3-12 is a map of the Main Rivers Planning Basin which shows the interceptor sewers, the tributary sewershed areas, and diversion structures that regulate sewer flow.

Table 3-21: Combined, Separate and Non-Contributing Areas within the Main Rivers Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Service Population	Percent of Planning Basin Population
Combined Sewer System	20.5	88%	158,584	97%
Separate Sewer System	2.2	9%	5,440	3%
Non-Contributing Areas	0.6	3%	46	0.03%
Planning Basin Total	23.4	100%	164,070	100%

There are 3 municipalities that are located completely or partially within the MR Planning Basin. The tributary municipalities are shown in Figure 3-12 and listed in Table 3-22 along with their tributary areas and populations. The wastewater flows generated within the Main Rivers basin are conveyed to the ALCOSAN Woods Run WWTP via deep tunnel interceptors that extend along the Allegheny, Monongahela and Ohio Rivers. The portion of the ALCOSAN

interceptor within the MR basin, receives flow directly from the Girty’s Run, Saw Mill Run, Upper Allegheny and Upper Monongahela River Planning Basin areas and conveys the flow to the WWTP.

Table 3-22: Tributary Municipalities in the Main Rivers Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
City of Pittsburgh	13,916	93.0%	161,253	98.3%
Reserve Township	550	3.7%	2,549	1.6%
Ross Township	84	0.6%	222	0.1%
Planning Basin Total (Contributing Area)	14,550	97.3%	164,024	99.97%
Planning Basin Out Areas	408	2.7%	46	0.03%

The sewers within the City of Pittsburgh are operated and maintained by the Pittsburgh Water and Sewer Authority under a lease agreement. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP. Reserve and Ross Townships own, operate and maintain their own municipal collection systems.

3.4.1 Interceptor System Overview

The MR Basin is served by approximately 15 miles of ALCOSAN deep tunnel interceptor, approximately 1.4 miles of shallow-cut interceptors, and an additional 1.4 miles of various connector sewers. Deep tunnel interceptors, ranging in size from 36 to 114 inches in diameter, extend along the north and south shores of the Allegheny River. A deep tunnel interceptor, ranging in size from 78 to 90 inches in diameter, extends along the Monongahela River and a deep tunnel interceptor, ranging in size from 120 to 126 inches in diameter, extends along the north shore of the Ohio River. Shallow-cut interceptors, ranging in size from 18 to 24 inches in diameter convey flow to the 8th Street access shaft (M-09) and the Brady Street River crossing (M-19). Within the MR basin, the deep tunnel interceptors and river crossings are able to pass under the rivers without the use of inverted siphons or pump stations.

The configuration of the ALCOSAN interceptor system is depicted in Figure 3-12. Overview information on the interceptor system is provided in Table 3-23. More detailed and in-depth descriptions of the interceptor system can be found in Section 3.0 of the Main Rivers EICR.

Figure 3-12: Main Rivers Planning Basin

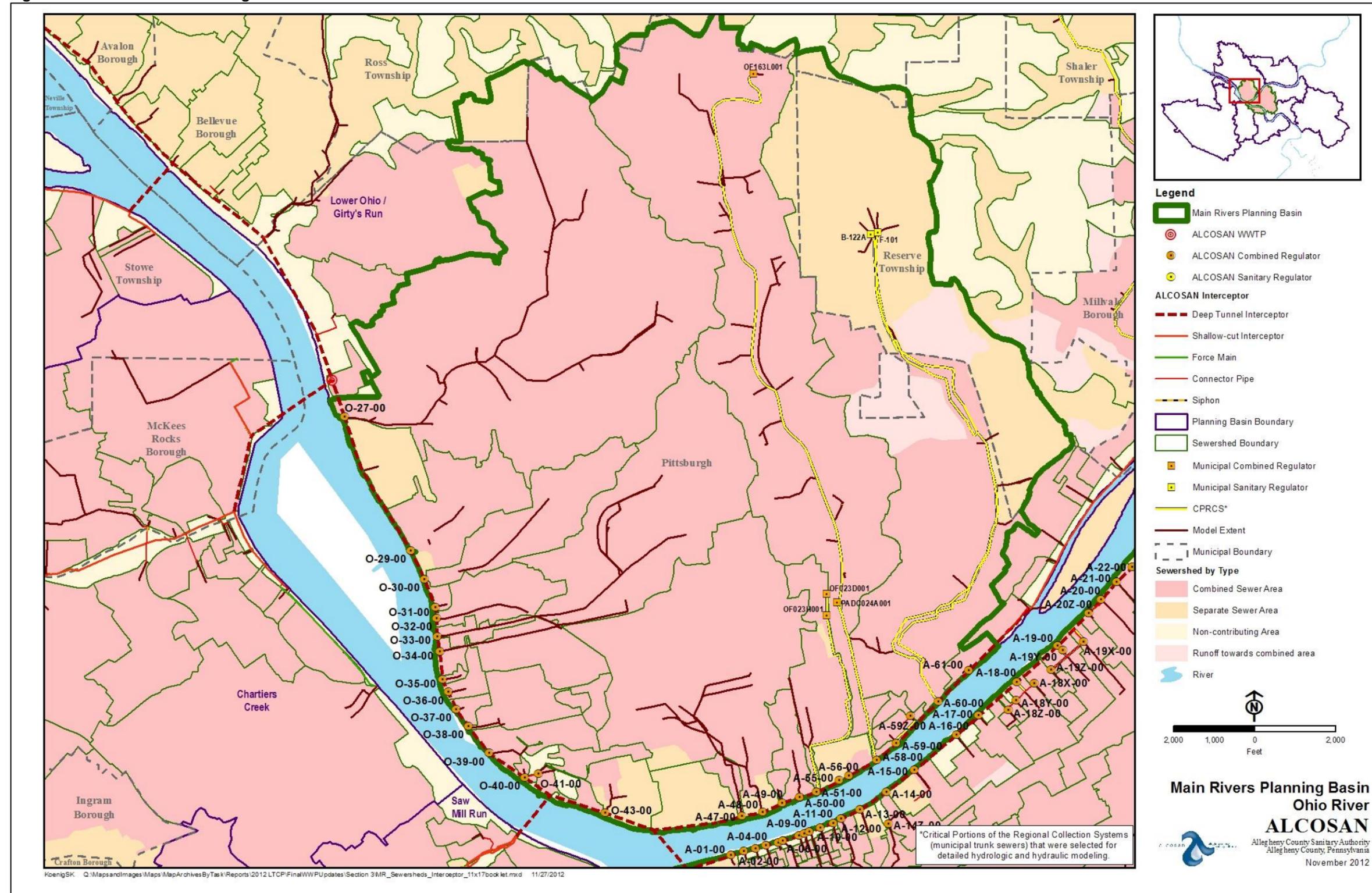


Figure 3-12: Main Rivers Planning Basin

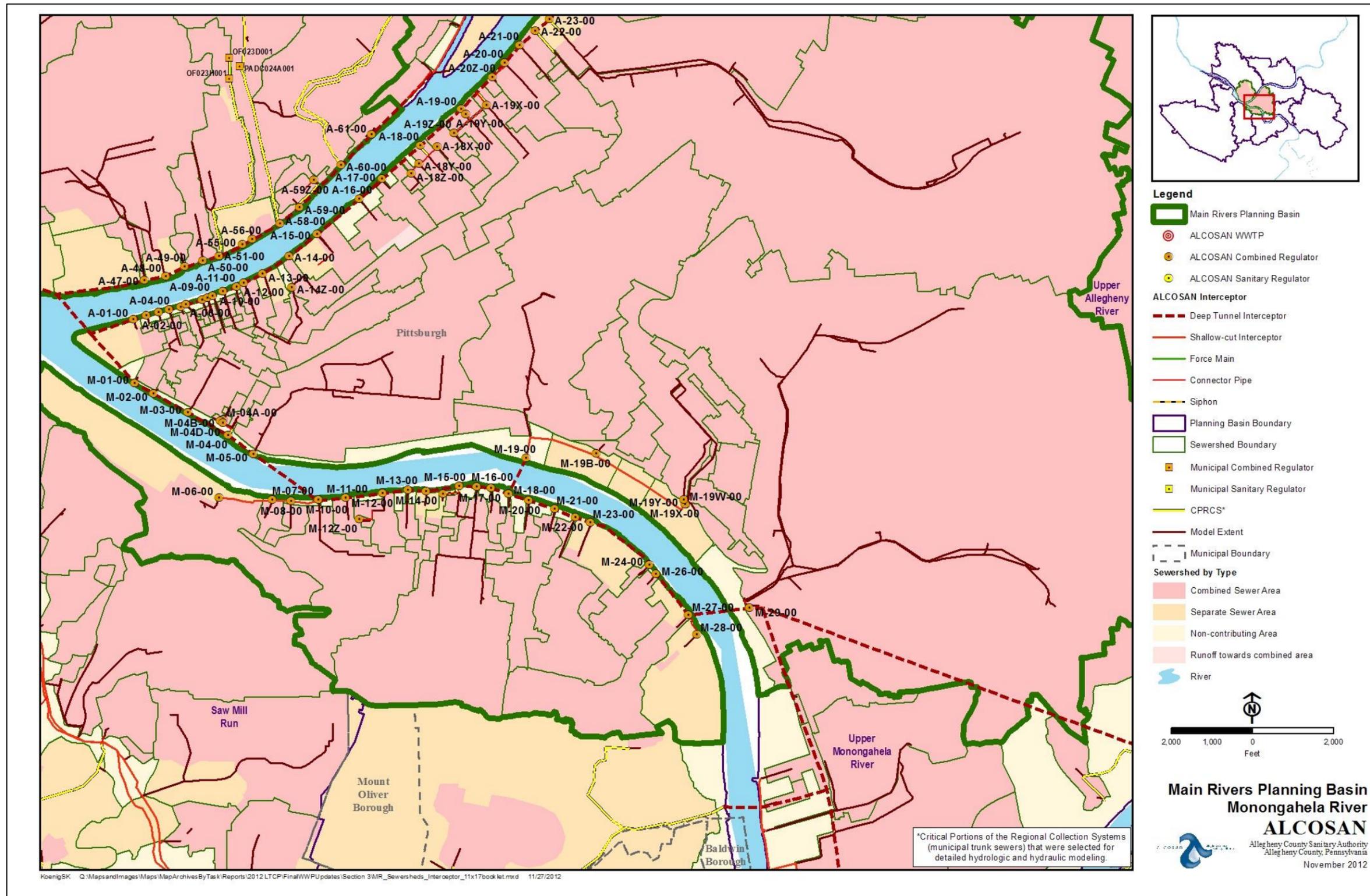
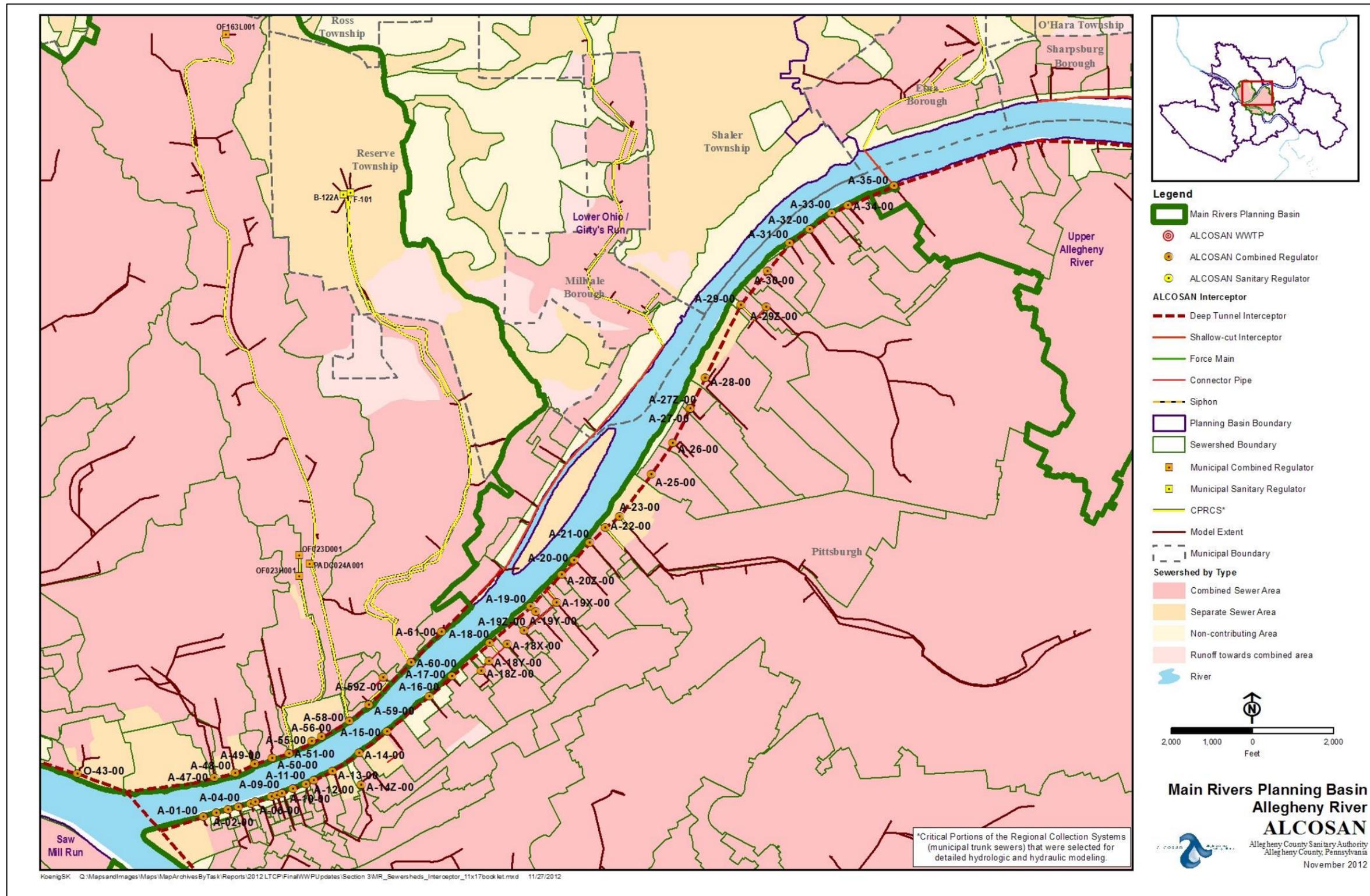


Figure 3-12: Main Rivers Planning Basin



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ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-23: Main Rivers Planning Basin Interceptor Pipe Components

Planning Basin	Range of Pipe Sizes (inches)	Approximate Length		% of Total Length
		(ft.)	(mi.)	
Deep Tunnel Interceptor	36 to 126	79,400	15	84%
Shallow-Cut Interceptor	18 to 24	7,400	1.4	8%
Other Connector Pipes	varies	7,600	1.4	8%
Total System Length		94,400	17.9	100%

Connections, Regulators and Hydraulic Relief Structures, and Appurtenances: There are approximately 108 points of connection (POCs) within the Main Rivers basin where municipal sewers convey flow into the ALCOSAN system. These POCs are all located in the City of Pittsburgh. There are 105 regulator structures in the MR Basin. Figure 3-12 shows the regulator structure locations. These regulator structures can be categorized into three different flow control strategies: variable orifice tipping gates, fixed single orifice structures, and simple diversion dam structures. Detailed descriptions and representative drawings are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*. Some of the outfall pipes require flap gates to prevent river water from intruding into the interceptor system. Table 3-24 lists and summarizes the regulator structures within the MR basin. Most regulator structures have a unique outfall point associated with them. However, regulator structures M-04A, M-04B and M-04D share a common outfall point (M-04Z) and regulator structures M-19W, M-19X and M-19Y share a common outfall point (M-19A).

Table 3-24: ALCOSAN CSO and SSO Regulator Structures within the Main Rivers Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
A-01-00	CSO	Tipping Gate	Yes	Gateway Center
A-02-00	CSO	Tipping Gate	Yes	Gateway Center
A-03-00	CSO	Tipping Gate	Yes	Gateway Center
A-04-00	CSO	Tipping Gate	Yes	Stanwix Street
A-05-00	CSO	Single Orifice	Yes	Cecil Place
A-06-00	CSO	Tipping Gate	Yes	Roberto Clemente Bridge
A-07-00	CSO	Tipping Gate	Yes	Barker Place
A-08-00	CSO	Tipping Gate	Yes	Scott Place
A-09-00	CSO	Tipping Gate	Yes	7 th Street Bridge
A-10-00	CSO	Tipping Gate	Yes	8 th Street
A-11-00	CSO	Tipping Gate	Yes	9 th Street
A-12-00	CSO	Tipping Gate	Yes	Garrison Place

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-24: ALCOSAN CSO and SSO Regulator Structures within the Main Rivers Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
A-13-00	CSO	Tipping Gate	Yes	10 th Street
A-14-00	CSO	Tipping Gate	Yes	12 th Street
A-14Z-00	CSO	Simple Dam	No	11 th Street
A-15-00	CSO	Tipping Gate	Yes	14 th Street
A-16-00	CSO	Tipping Gate	Yes	17 th Street
A-17-00	CSO	Tipping Gate	Yes	20 th Street
A-18-00	CSO	Tipping Gate	Yes	24 th Street
A-18X-00	CSO	Simple Dam	No	25 th Street
A-18Y-00	CSO	Simple Dam	No	23 rd Street
A-18Z-00	CSO	Simple Dam	No	22 nd Street
A-19X-00	CSO	Simple Dam	No	28 th Street
A-19Y-00	CSO	Simple Dam	No	27 th Street
A-19Z-00	CSO	Simple Dam	No	26 th Street
A-20-00	CSO	Tipping Gate	Yes	30 th Street
A-20Z-00	CSO	Simple Dam	No	29 th Street
A-21-00	CSO	Tipping Gate	Yes	31 st Street
A-22-00	CSO	Tipping Gate	No	32 nd Street
A-23-00	CSO	Tipping Gate	No	33 rd Street
A-25-00	CSO	Tipping Gate	Yes	36 th Street
A-26-00	CSO	Tipping Gate	Yes	38 th Street
A-27-00	CSO	Tipping Gate	Yes	40 th Street
A-27Z	CSO	Simple Dam	Undetermined	40 th Street
A-28-00	CSO	Tipping Gate	Yes	43 rd Street
A-29-00	CSO	Tipping Gate	Yes	48 th Street
A-29Z-00	CSO	Simple Dam	No	49 th Street
A-30-00	CSO	Tipping Gate	No	51 st Street
A-31-00	CSO	Tipping Gate	No	52 nd Street
A-32-00	CSO	Tipping Gate	Yes	McCandless Street
A-33-00	CSO	Tipping Gate	Yes	54 th Street
A-34-00	CSO	Tipping Gate	Yes	55 th Street
A-47-00	CSO	Tipping Gate	Yes	Stadium Drive
A-48-00	CSO	Tipping Gate	Yes	General Robinson Street East
A-49-00	CSO	Tipping Gate	Yes	Federal Street
A-50-00	CSO	Tipping Gate	Yes	Sandusky Street and Isabella Street
A-51-00	CSO	Tipping Gate	Yes	Anderson Street
A-55-00	CSO	Tipping Gate	Yes	Grantham Street

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-24: ALCOSAN CSO and SSO Regulator Structures within the Main Rivers Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
A-56-00	CSO	Tipping Gate	Yes	Goodrich Street and River Avenue
A-58-00	CSO	Tipping Gate	Yes	Progress Street and River Avenue
A-59-00	CSO	Tipping Gate	Yes	Warfield Avenue and River Avenue
A-59Z-00	CSO	Simple Dam	Yes	16th Street and River Avenue
A-60-00	CSO	Tipping Gate	Yes	River Avenue near Heinz Field
A-61-00	CSO	Tipping Gate	Yes	River Avenue
M-01-00	CSO	Tipping Gate	Yes	Mon Warf Parking Area
M-02-00	CSO	Tipping Gate	Yes	Mon Warf Parking Area
M-03-00	CSO	Tipping Gate	Yes	Mon Warf Parking Area
M-04-00	CSO	Tipping Gate	Yes	Grant Street
M-04A-00	CSO	Simple Dam	No	Cherry Way
M-04B-00	CSO	Simple Dam	No	Cherry Way
M-04D-00	CSO	Simple Dam	No	Cherry Way
M-05-00	CSO	Tipping Gate	Yes	Try Street
M-06-00	CSO	Tipping Gate	Yes	South First Street
M-07-00	CSO	Tipping Gate	Yes	South Fourth Street
M-08-00	CSO	Tipping Gate	Yes	South Sixth Street
M-10-00	CSO	Tipping Gate	Yes	South Eighth Street
M-11-00	CSO	Tipping Gate	Yes	South Tenth Street
M-12-00	CSO	Tipping Gate	Yes	South 13 th Street
M-12Z-00	CSO	Simple Dam	No	South Eleventh Street
M-13-00	CSO	Tipping Gate	Yes	South 15 th Street
M-14-00	CSO	Tipping Gate	Yes	South 17 th Street
M-15-00	CSO	Tipping Gate	Yes	South 19th Street
M-15Z-00	CSO	Simple Dam	No	South 18 th Street
M-16-00	CSO	Tipping Gate	Yes	South 20 th Street
M-17-00	CSO	Tipping Gate	Yes	South 21 st Street
M-18-00	CSO	Tipping Gate	Yes	South 22 nd Street
M-19-00	CSO	Tipping Gate	Yes	Brady Street
M-19W-00	CSO	Simple Dam	No	Bates Street
M-19X-00	CSO	Simple Dam	No	Bates Street
M-19Y-00	CSO	Simple Dam	No	Bates Street
M-19B-00	CSO	Single Orifice	No	Bates Street
M-20-00	CSO	Tipping Gate	Yes	South 23 rd Street
M-21-00	CSO	Tipping Gate	Yes	South 25 th Street
M-22-00	CSO	Tipping Gate	Yes	South 25 th Street

Table 3-24: ALCOSAN CSO and SSO Regulator Structures within the Main Rivers Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
M-23-00	CSO	Tipping Gate	Yes	South 26 th Street
M-24-00	CSO	Tipping Gate	Yes	Hot Metal Street
M-26-00	CSO	Tipping Gate	Yes	South 30 th Street
M-27-00	CSO	Tipping Gate	Yes	South 33 rd Street
M-28-00	CSO	Simple Dam	Yes	South 24 th Street
M-29-00	CSO	Tipping Gate	No	Greenfield Avenue
O-27-00	CSO	Tipping Gate	Yes	Westhall Street
O-29-00	CSO	Tipping Gate	Yes	Superior Avenue
O-30-00	CSO	Tipping Gate	Yes	Island Avenue
O-31-00	CSO	Tipping Gate	Yes	Preble Avenue
O-32-00	CSO	Tipping Gate	Yes	Branchport Street and Preble Avenue
O-33-00	CSO	Tipping Gate	Yes	Preble Avenue
O-34-00	CSO	Tipping Gate	Yes	Columbus Avenue and Preble Ave.
O-35-00	CSO	Tipping Gate	Yes	North Franklin Street and Preble Ave.
O-36-00	CSO	Tipping Gate	Yes	Liverpool Street and Oxlane Street
O-37-00	CSO	Tipping Gate	Yes	Pennsylvania Ave and Preble Ave
O-38-00	CSO	Tipping Gate	Yes	W. North Avenue and Preble Avenue
O-39-00	CSO	Tipping Gate	Yes	Kroll Drive
O-40-00	CSO	Tipping Gate	Yes	North Point Drive
O-41-00	CSO	Single Orifice	Yes	North Point Drive
O-43-00	CSO	Tipping Gate	Yes	North Shore Drive

3.4.2 Municipal Collection System Overviews

There are three municipalities completely or partially located in the Main Rivers Planning Basin. This section provides a brief overview of the municipal collection systems within the MR Planning Basin. Individual municipal collection systems within the basin are described in greater detail in Section 4 of the MR EICR.

Table 3-25 lists the total length of public collection sewers within the planning basin for each municipality. The sewer system within the City of Pittsburgh is owned and operated by the Pittsburgh Water and Sewer Authority. Reserve and Ross Townships own, operate and maintain their own municipal collection systems. The information for this WWP was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the EICR was submitted, so WWP and EICR sewer lengths may differ. As was described in Section 3.1, there are two types of sewer systems and two corresponding categories of sewershed areas that comprise the Main Rivers Planning Basin, combined sewers and separate sewers.

Table 3-25: Lengths of Sewers within each Municipality in the Main Rivers Basin

Municipality ⁽¹⁾ / Municipal Authority	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Main Rivers Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Main Rivers Planning Basin
City of Pittsburgh/ Pittsburgh Water and Sewer Authority	507.1	100%	15.1	47%
Reserve Township	0.0	0.0%	14.9	47%
Ross Township	0.0	0.0%	1.9	6%
Planning Basin Total	507.1	100%	31.9	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Municipal CSO and SSO Regulators: There are 6 municipal owned regulator structures within the Main Rivers basin. Of these, 4 are municipal CSO structures within the City of Pittsburgh and 2 are municipal SSOs within Reserve Township. The PAD024A001 regulator was constructed by PaDOT as part of the East Street highway project. Three of the CSO regulator structures share a common outfall pipe. The fourth CSO regulator and the two SSO regulators each have their own outfall pipes. Table 3-26, summarizes all municipal CSO and SSO regulator structures within the MR Basin.

Within the basin, basement flooding has been reported at 900 Fifth Avenue and the Carnegie Mellon University Physical Plant Building. There have also been historical reports of basement flooding in Reserve Township, but in 1995, relief lines were installed that alleviated some of the capacity problems in the existing sewer lines. Additionally, backflow protection systems have been installed at some locations. The Township reports that these improvements have eliminated basement flooding in this area.

Municipal System Appurtenances: There are approximately 70 known flow dividers within the PWSA sewer system. The dividers typically divert flows into a relief sewer. In general, the flow dividers redistribute flows, particularly during wet weather conditions, to improve conveyance capacities and reduce the likelihood of overflows. The PWSA Evergreen and Ivory pump station is the only pump station in the Main Rivers basin. There could be overflows from the pump station emergency overflow structure should the facility fail or if influent flow were to exceed the station capacity. There are no municipal siphons, storage facilities, or other appurtenances in the planning area.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-26: Municipal CSO and SSO Regulator Structures within the Main Rivers Basin

ALCOSAN POC	Municipality Regulator ID	Location	Regulator Type	Receiving Stream	Owner(s) ⁽¹⁾
A-51	OF023D001	Habit Street and Howard Street	CSO	Storm Outfall to Allegheny River	City of Pittsburgh/ Pittsburgh Water and Sewer Authority (Pittsburgh/PWSA)
A-51	OF023H001	Howard Street	CSO	Storm Outfall to Allegheny River	Pittsburgh/PWSA
A-58	PADC024A001	Between I-279 and East Street	CSO	Storm Outfall to Allegheny River	Pittsburgh/PWSA
A-59	OF163L001	Evergreen Road	CSO	Unnamed Tributary to Nelson Run	Pittsburgh/PWSA
A-60	B122A	Spring Garden Avenue	SSO	Spring Garden	Reserve Township
A-60	F101	Spring Garden Avenue	SSO	Spring Garden	Reserve Township

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

3.5 Saw Mill Run Basin Characterization

The Saw Mill Run (SMR) Planning Basin is one of the seven designated planning basin areas that comprise the ALCOSAN service area. This section provides an overview and summary of the Saw Mill Run basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collection systems within the planning basin area. The August 2009 Saw Mill Run *Current Information and Conditions Report* (CICR) provides a more in-depth and detailed description of the basin. For this WWP, planning basin populations and model simulation results were refined and updated since the CICR was submitted.

The Saw Mill Run Planning Basin is located in the south central part of the ALCOSAN service area in Allegheny County. The basin stretches across an area of approximately 12,618 acres or 19.7 square miles. As shown in Table 3-27, approximately 26% of the planning basin population is served by combined sewer systems, 67% is served by separate sanitary sewers, and 7 percent is non-contributing areas that are either undeveloped or served by individual on-lot septic systems. The sewer system categories are further explained in WWP Section 3.1. According to the 2010 census, approximately 106,700 people are living within the planning basin area and over 99% are provided sewage treatment service by ALCOSAN.

Table 3-27: Combined, Separate and Non-Contributing Areas in the Saw Mill Run Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Service Population	Percent of Planning Basin Population
Combined Sewer System	5.19	26%	38,802	36.4%
Separate Sewer System	13.2	67%	67,657	63.4%
Non-Contributing Areas	1.4	7%	262	0.2%
Planning Basin Total	19.7	100%	106,722	100%

Figure 3-13 is a map of the Saw Mill Run basin which shows the interceptor sewers, the tributary sewershed areas, and diversion structures that regulate sewer flow. The map also shows two categories of municipal trunk sewers. Critical Portions of the Regional Collection System (CPRCS) include the municipal regulator structures and the municipal trunk sewers that convey the flow from the regulators to the point of connection (POC) to the ALCOSAN system. Model Extents are other portions of municipal trunk sewers that were selected for detailed hydrologic and hydraulic (H&H) modeling.

There are 12 municipalities that are located completely or partially within the Saw Mill Run basin. More than half of the municipalities within the planning basin contribute flows to neighboring basins. There are areas of Crafton Borough that contribute storm water runoff to the Pittsburgh Water and Sewer Authority (PWSA) sewer system, but there are no public

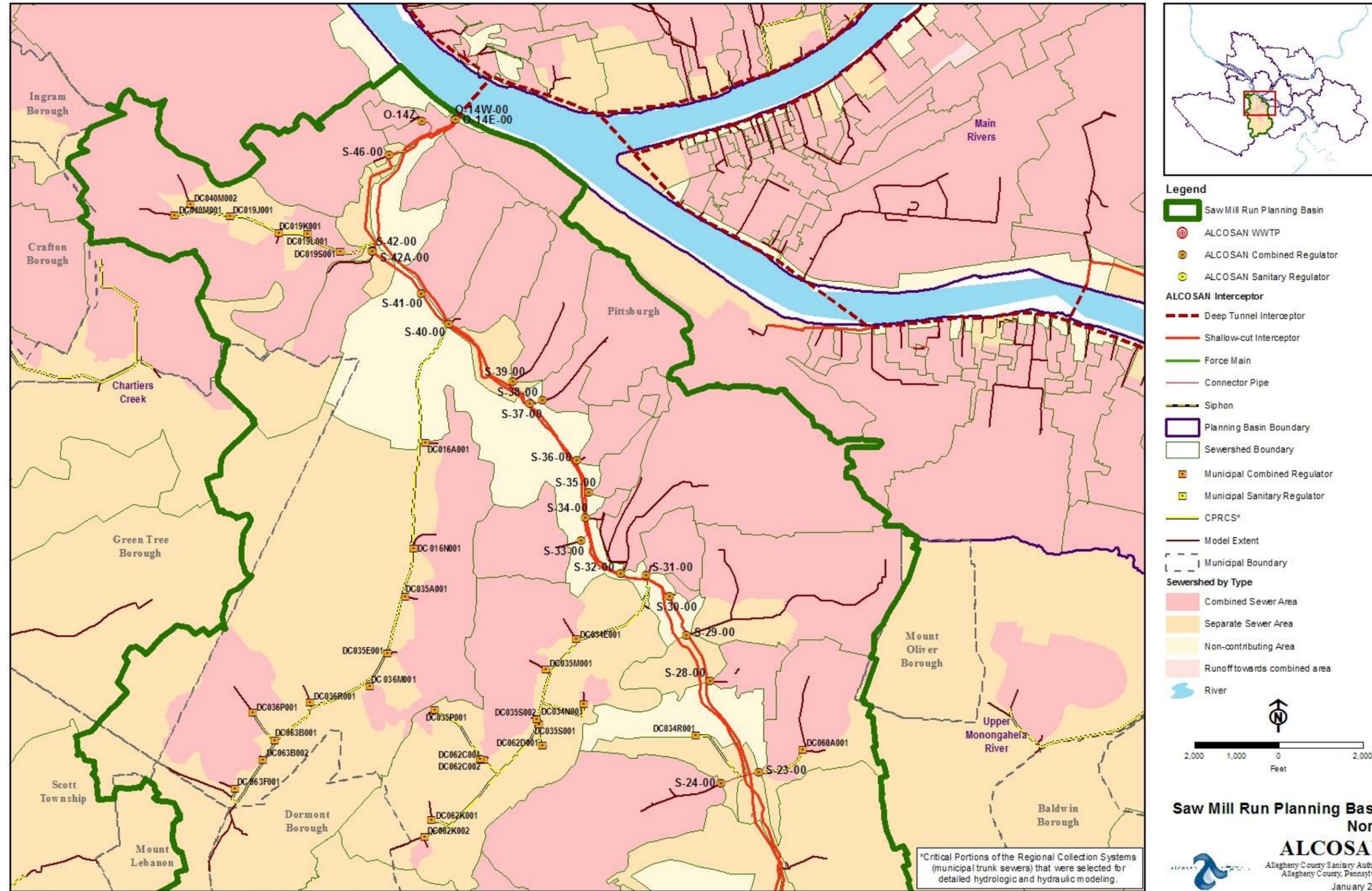
ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

sewers to convey wastewater flow to the ALCOSAN system. Portions of Bethel Park and Baldwin Borough contribute wastewater flow to the ALCOSAN system and other portions convey wastewater to adjacent sewage treatment providers. The tributary municipalities are shown in Figure 3-13 and listed in Table 3-28 along with their contributing acreage and population within the basin.

Table 3-28: Tributary Municipalities in the Saw Mill Run Planning Basin

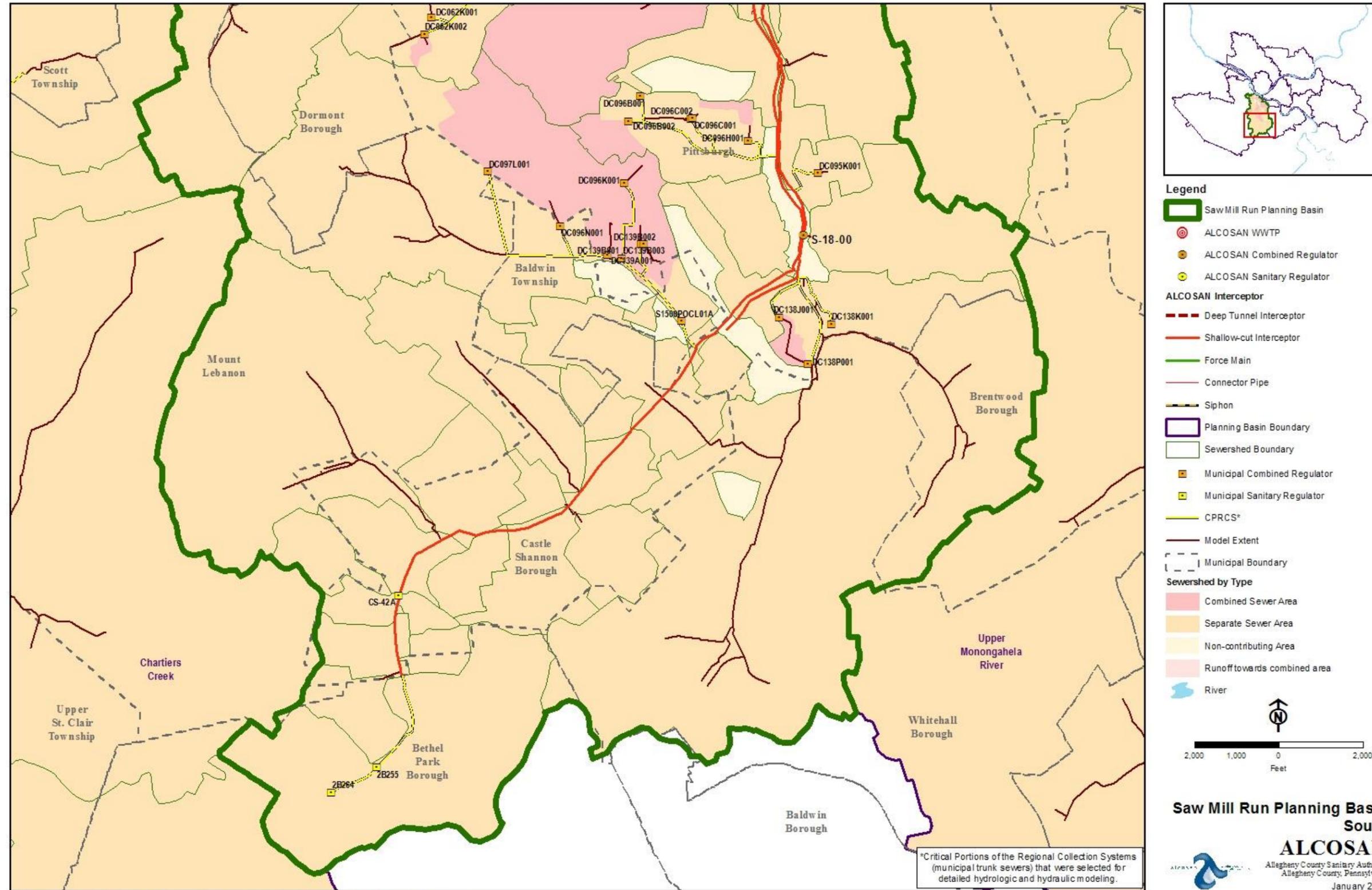
Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
Township of Baldwin	289	2.3%	1,986	1.9%
Municipality of Bethel Park	621	4.9%	2,856	2.7%
Borough of Brentwood	373	3.0%	4,037	3.8%
Borough of Castle Shannon	1,015	8.1%	8,265	7.7%
Borough of Crafton	1	0.0%	8	0.01%
Borough of Dormont	486	3.9%	8,605	8.1%
Borough of Green Tree	313	2.5%	1,271	1.2%
Municipality of Mt. Lebanon	1,516	12.0%	13,368	12.5%
Borough of Mount Oliver	12	0.1%	107	0.1%
City of Pittsburgh	5,977	47.4%	57,807	54.2%
Township of Scott	38	0.3%	855	0.8%
Borough of Whitehall	1,102	8.7%	7,295	6.8%
Planning Basin Total (Contributing Area)	11,743	93%	106,460	99.8%
Planning Basin Out Areas	870	7%	262	0.2%

Figure 3-13: Saw Mill Run Planning Basin



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Figure 3-13: Saw Mill Run Planning Basin



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3.5.1 Interceptor System Overview

The Saw Mill Run Planning Basin is served by approximately 14 miles of shallow-cut interceptor sewers. The SMR interceptor system begins in the Borough of Castle Shannon at Connor Road, flows downstream along Saw Mill Run, and terminates at structure O-14 where the SMR interceptor system discharges into the ALCOSAN deep tunnel system via a 54-inch diameter river crossing. The interceptor pipe ranges in diameter between 15 and 54 inches. The SMR interceptor system includes two sewers: the SMR Interceptor Sewer and the SMR Parallel Relief Interceptor Sewer. The SMR Parallel Relief Interceptor Sewer was installed in the mid-1990s to increase the conveyance capacity of the interceptor system.

The configuration of the ALCOSAN interceptor system is depicted in Figure 3-13. Overview information on the interceptor system is provided in Table 3-29. Within the Borough of Castle Shannon collection system, the Canal Street pump station is located downstream of the CS-ML SSO. It serves eight residences and was installed to relieve chronic basement backups in the Canal Street area. More detailed and in-depth descriptions of the interceptor system can be found in Section 3.0 of the Saw Mill Run *Current Information and Conditions Report*.

In 1992, the United States Army Corps of Engineers (USACE) began and ultimately completed construction of a multi-barrel inverted siphon sewer which routed the older interceptor below Saw Mill Run near Main Street, in the West End section of the City of Pittsburgh. The multi-barrel configuration provides greater operational flexibility for maintenance.

Table 3-29: Saw Mill Run Planning Basin Interceptor Pipe Components

ALCOSAN Conveyance System Component	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Shallow-Cut Interceptor	15 to 54	73,200	13.9	93%
Deep Tunnel River Crossing	54	1,300	0.2	1.6
Inverted Siphon Pipe	27 to 36	450	0.1	0.6%
Other Connector Pipes	varies	4,100	0.8	5.2%
Total Basin Length		79,000	15.0	100%

Connections, Regulators and Hydraulic Relief Structures, and Appurtenances: At the downstream end of the SMR interceptor, the flow passes through an interceptor relief overflow (IRO) structure before dropping under the Ohio River and connecting with the deep tunnel system. The ALCOSAN O-14 IRO regulator is a dual structure, consisting of three variable orifice tipping gates for each of the east side and west side parallel interceptor lines, to control wet weather flow along the shallow cut interceptor. Flows that exceed the capacities of the tipping gates overflow directly to the Ohio River. The regulated flow passes through a vortex drop shaft, travels beneath the Ohio River through a river crossing and connects to the deep-

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

tunnel interceptor on the north shore of the Ohio River where the flow is conveyed to the ALCOSAN WWTP.

The 12 tributary municipal collection sewer systems discharge into the Saw Mill Run Interceptor system through 71 points of connection. These include 44 direct connections, at which municipal sewer pipes discharge to the ALCOSAN interceptor at a manhole, and 27 connections through regulator structures. Each regulator structure has a unique overflow outfall. There are 26 ALCOSAN CSO regulator structures and three ALCOSAN SSO regulators. The ALCOSAN regulator structures can be categorized into 5 flow control strategies: single orifice regulator structures, double orifice structures, tipping gate structures, simple dam structures, and elevated pipe structures. Table 3-30 lists the ALCOSAN regulator structures within the SMR Planning Basin.

There are seven cross-connections between the SMR Interceptor Sewer and the SMR Parallel Relief Interceptor Sewer. These cross-connections are the mechanisms through which excess wet weather flows are relieved from the SMR Interceptor Sewer to the SMR Parallel Relief Interceptor Sewer. In the event that the SMR Parallel Relief Interceptor Sewer cannot convey all of the wet weather flows from the SMR Interceptor Sewer, there are six interceptor relief overflow regulator structures (IROs) along the Saw Mill Run interceptor shown on Figure 3-13. The outfalls from these IRO regulators discharge directly to Saw Mill Run. In December 2008, ALCOSAN sealed three previous IROs at structures S-17, S-16, and S-15.

Table 3-30: ALCOSAN CSO and SSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
O-14W-IRO (3 gates)	CSO	Tipping Gate	Yes	West Carson and Saw Mill Run Blvd.
O-14E (3 gates)	CSO	Tipping Gate	Yes	West Carson and Saw Mill Run Blvd.
O-14Z	CSO	Simple Dam	No	Steuben Street and Saw Mill Run
S-01A-IRO	CSO	Adjustable Sluice Gate	No	Woodruff Street and Saw Mill Run
S-02A-IRO	CSO	Elevated Pipe	Yes	McKnight Street and Saw Mill Run
S-03A-IRO	CSO	Elevated Pipe	Yes	South Main Street and Saw Mill Run
S-18	CSO	Single Orifice	Yes	Maytide Street at Saw Mill Run Blvd.
S-23	CSO	Double Orifice	Yes	Edgebrook Ave (east of Saw Mill Run)
S-24	CSO	Single Orifice	No	Edgebrook Ave (west of Saw Mill Run)
S-28	CSO	Single Orifice	No	Intervale at Saw Mill Run Blvd.
S-29	CSO	Double Orifice	No	Bausman Street and Saw Mill Run Blvd.
S-30	CSO	Single Orifice	No	125 Saw Mill Run Blvd.

Table 3-30: ALCOSAN CSO and SSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
S-31	CSO	Single Orifice	No	Buffington Avenue
S-32 (SMR-20-1)	CSO	Double Orifice	No	Warrington Avenue and Saw Mill Run Blvd
S-33	CSO	Single Orifice	No	Crane Avenue and Saw Mill Run Blvd.
S-34	CSO	Single Orifice	Yes	Weinman Street and Saw Mill Run Blvd.
S-35	CSO	Single Orifice	Yes	Soffel Street and Saw Mill Run Blvd.
S-36	CSO	Double Orifice	Yes	Spahrgrove and Saw Mill Run Blvd.
S-37	CSO	Single Orifice	No	Woodruff Street Extension
S-38	CSO	Simple Dam	No	Woodruff Street and Saw Mill Run
S-39	CSO	Single Orifice	No	921 Saw Mill Run Blvd.
S-40	CSO	Single Orifice	No	Penn DOT Facility at Ft. Pitt Tunnel
S-41	CSO	Double Orifice	Yes	Shaler Street and Wabash Avenue
S-42A (street)	CSO	Simple Dam	No	Green Tree Road and McKnight Street
S-42 (curb)	CSO	Simple Dam	No	Green Tree Road and McKnight Street
S-46	CSO	Single Orifice	No	South Main Street and Sanctus
SMR CS-14-IRO	SSO	Elevated Pipe	N/A	Sleepy Hollow Road/ Willow Avenue and Saw Mill Run
SMR CS-50-IRO	SSO	Elevated Pipe	N/A	Smith Street and Saw Mill Run
SMR CS-53-IRO	SSO	Elevated Pipe	N/A	Conner Road and Saw Mill Run

3.5.2 Municipal Collection System Overviews

There are 12 municipalities contributing to the Saw Mill Run Planning Basin. This section provides a brief overview of the municipal collection systems within the SMR basin. Individual municipal collection systems within the basin are described in greater detail in Section 4 of the SMR CICR. The approximate total length of public collection sewers within the basin for each municipality is provided in Table 3-31. Many of the municipalities within the SMR basin own, operate and maintain their respective sanitary or combined sewer collection systems. However, two of the tributary municipalities, Bethel Park and the City of Pittsburgh, have authorities. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

There is a one municipal pump station within the SMR basin, the Canal Street Pump station in Castle Shannon Borough, which serves eight residences.

The information was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the CICR was submitted, so WWP and CICR sewer lengths may differ. As was described in Section 3.1, there are two types of sewer systems and two corresponding categories of sewershed areas that comprise the sewered portions of the SMR basin: combined sewers and separate sewers.

Table 3-31: Lengths of Sewers within each Municipality in the Saw Mill Run Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Saw Mill Run Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Saw Mill Run Planning Basin
Township of Baldwin	0.0	0.0%	9.5	3.2%
Municipality of Bethel Park/ Bethel Park Municipal Authority	0.0	0.0%	17.6	5.9%
Borough of Brentwood	0.0	0.0%	16.3	5.4%
Borough of Castle Shannon	0.0	0.0%	37.5	12.4%
Borough of Crafton ⁽²⁾	0.0	0.0%	0.0	0.0%
Borough of Dormont	0.0	0.0%	20.2	6.7%
Borough of Green Tree	0.0	0.0%	7.4	2.5%
Municipality of Mt. Lebanon	0.0	0.0%	55.8	18.5%
Borough of Mount Oliver	0.0	0.0%	0.5	0.2%

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Saw Mill Run Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Saw Mill Run Planning Basin
City of Pittsburgh/ Pittsburgh Water and Sewer Authority	144.4	100%	95.0	31.5%
Township of Scott	0.0	0.0%	1.4	0.5%
Borough of Whitehall	0.0	0.0%	40.0	13.3%
Planning Basin Total	144.4	100%	301.4	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: There are areas of Crafton Borough that contribute storm water runoff to the Pittsburgh Water and Sewer Authority (PWSA) sewer system, but there are no public sewers in these areas to convey wastewater flow to the ALCOSAN system.

Municipal CSO and SSO Regulators: The Saw Mill Run Planning Basin contains 50 regulator structures that are owned, operated and maintained by the municipalities or their designated municipal authorities. Of these, 46 are CSO regulator structures located within the City of Pittsburgh. Four are SSO regulator structures, located within Bethel Park, Castle Shannon, and Pittsburgh. Many of the regulator structures have a dedicated overflow outfall, but some clusters of regulator structures share a common outfall discharge pipe. There are six CSO regulator structures along McCartney Street that share a common outfall (CSO 019M001/S-42A), 11 CSO regulators and an SSO regulator share a common outfall near the entrance to the Liberty Tunnel (CSO 015P001), 5 CSO regulators along upper Banksville Road that share a common outfall (CSO 036R001), 5 CSO regulators along Brookline Boulevard discharge to a common roadway culvert and outfall (CSO 095E001), and 2 CSO regulators along Chelton Avenue that share a common outfall (CSO 139B002). Therefore the 46 CSO regulator structures have 21 associated CSO outfalls and the 4 SSO regulator structures have 3 SSO outfalls.

Table 3-32 lists the municipal CSO regulators and outfalls and Table 3-33 lists the municipal SSO regulators and outfalls located within the Saw Mill Run Planning Basin.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-32: Municipal CSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Waters	Owner(s) ⁽¹⁾
MH.11	DC 019S001	Intersection of Freewalt St. & McCartney St.	McCartney Run Regulators share a common outfall CSO 019M001/S-42A	City of Pittsburgh/ Pittsburgh Water and Sewer Authority (Pittsburgh/PWSA)
	DC 019L001	Between McCartney Street & Noblestown Road		
	DC 019K001	Along McCartney Street		
	DC 019J001	Between Ledgesdale St. & Noblestown Rd.		
	DC 040M002	Near Intersection of Obey St. & Noblestown Rd.		
	DC 040M001	Near Intersection of Hartwell St. & Noblestown Rd.		
SMRE-40	DC 034E001	Intersection of Brookside Ave. & West Liberty Ave.	Saw Mill Run Regulators share a common outfall CSO 015P001	Pittsburgh/PWSA
	DC 034N001	Along Pioneer Avenue		
	DC 035M001	Near Intersection of Cape May Ave & West Liberty Ave.		
	DC 035P001	Intersection of Crosby Avenue & Pauline Avenue		
	DC 035S001	Near Intersection of Capital Ave & West Liberty Ave		
	DC 035S002	Intersection of Haddon Way & West Liberty Ave.		
	DC 062C001	Along Pauline Avenue		
	DC 062C002	Along Pauline Avenue		
	DC 062D001	Along Capital Avenue		
	DC 062K001	Near Intersection of Vodell St. & Wenzell Ave.		
	DC 062K002	Along West Liberty Avenue		
MH.18	DC 016N001	Banksville Road and Crane Avenue	Little Saw Mill Run	Pittsburgh/PWSA

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-32: Municipal CSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Waters	Owner(s) ⁽¹⁾
MH.18	DC 035A001	Goldstrom Avenue and Banksville Road	Little Saw Mill Run	Pittsburgh/PWSA
MH.18	DC 035E001	Banksville Road and Coast Avenue	Little Saw Mill Run	Pittsburgh/PWSA
MH.18	DC 036M001	Between Banksville Road & Denlin Street	Little Saw Mill Run	Pittsburgh/PWSA
MH.18	DC 063B001	Between Banksville Avenue & Banksville Road	Little Saw Mill Run Regulators share a common outfall CSO 036R001	Pittsburgh/PWSA
	DC 036P001	Northwest of Banksville Avenue		
	DC 063B002	Between Banksville Avenue & Banksville Road		
	DC 063F001	Along Allendar Ave.		
	DC 036R001	North of Banksville Ave.		
MH.18	DC 016A001	Banksville Road	Little Saw Mill Run	Pittsburgh/PWSA
S-23	DC 060A001	Brook Street	Tributary to Saw Mill Run	Pittsburgh/PWSA
MH.55	DC 034R001	West of Timberland Avenue	Saw Mill Run	Pittsburgh/PWSA
MH-77	DC 096H001	Brookline Blvd. and Jacob St.	Saw Mill Run Regulators share a common outfall CSO 095E001	Pittsburgh/PWSA
	DC 096C001	Intersection of Brookline Blvd. & Greencrest Dr.		
	DC 096C002	Intersection of Brookline Blvd. & Greencrest Dr.		
	DC 096B001	Along Milan Avenue		
	DC 096B002	Near Intersection of Brookline Blvd. & Breining St.		
MH.80	DC 095K001	Queenston Street	Saw Mill Run	Pittsburgh/PWSA
MH-80	DC 097L001	Dorchester Avenue	McDonough's Run	Pittsburgh/PWSA
S-15	DC 138J001	Homehurst Avenue and Hillview Street	Saw Mill Run	Pittsburgh/PWSA
MH-89	DC 138K001	Odette Street	Weyman Run	Pittsburgh/PWSA

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-32: Municipal CSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Waters	Owner(s) ⁽¹⁾
MH-89	DC 138P001	Arcata Street	Weyman Run	Pittsburgh/PWSA
MH-89	DC 139B002	Creedmore Place & Seaton Street	McDonough's Run	Pittsburgh/PWSA
S-15	DC 139B003	Creedmore Place & Seaton Street	McDonough's Run	Pittsburgh/PWSA
S-15	DC 139B001	North of McNeilly Avenue	McDonough's Run Regulators share a common outfall CSO 139B002	Pittsburgh/PWSA
	DC 096K001	Hobson Street		
S-15	DC 139A001	Rockford Avenue near McNeilly Avenue	McDonough's Run	Pittsburgh/PWSA
S-15	DC 096N001	Near Intersection of Sussex Ave & Cedric Ave.	McDonough's Run	Pittsburgh/PWSA
S-15	S1500POCL01A	5 McNeilly Avenue	McDonough's Run	Pittsburgh/PWSA

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as "owners." Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-33: Municipal SSO Regulator Structures in the Saw Mill Run Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Waters	Owner(s) ⁽¹⁾
SMR-CS-42	CS-42A	Canal Street and Rockwood Avenue	Saw Mill Run	Castle Shannon Mt Lebanon
SMR-CS-54	2B255	Milford Drive and Hillcrest Street	Saw Mill Run	Municipality of Bethel Park/ Bethel Park Municipal Authority (Bethel Park/BPMA)
SMR-CS-54	2B264	Milford Drive and Superior Street	Saw Mill Run	Bethel Park/BPMA

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

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3.6 Turtle Creek Basin Characterization

The Turtle Creek (TC) Planning Basin is one of the seven planning basin areas in the ALCOSAN service area. This section provides an overview and summary of the TC basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collection systems within the planning basin area. More in-depth and detailed descriptions of the basin can be found in the February 2009 Turtle Creek/Thompson Run *Existing Conditions Report* (ECR). For this WWP, planning basin populations and model simulation results were refined and updated since the ECR was submitted.

ALCOSAN owns, operates and maintains the regional interceptor system within the basin area with the exception of the Thompson Run interceptor which is owned by the municipalities that are tributary to the interceptor. The Thompson Run interceptor is municipally owned and operated, and is maintained by ALCOSAN under a Service Agreement. The formal name for the basin is the Turtle Creek Planning Basin, although it also can be commonly referred to as the Turtle Creek/Thompson Run basin.

The TC basin is located in the eastern part of the ALCOSAN service area in Allegheny County and extends over an area of approximately 36,600 acres or 57.2 square miles. As shown in Table 3-34, approximately 5 percent of the planning basin population is served by combined sewer systems, 58% is served by separate sanitary sewer systems, and 37% are non-contributing or “out” areas that are either undeveloped or served by individual on-lot septic systems. The sewer system categories are further explained in Section 3.1. According to the 2010 census, approximately 89,400 people are living in the Turtle Creek Planning Basin and 96 percent of the population is provided sewage treatment service by ALCOSAN.

Table 3-34: Combined, Separate and Non-Contributing Areas in the TC Planning Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Population	Percent of Planning Basin Population
Combined Sewer System	3.0	5%	15,165	17%
Separate Sewer System	33.0	58%	70,763	79%
Non-Contributing Areas	21.2	37%	3,442	4%
Planning Basin Total	57.2	100%	89,370	100%

Figure 3-14 is a map of the Turtle Creek Planning Basin which shows the interceptor sewers, the tributary sewershed areas, and diversion structures that regulate sewer flow. The map also shows two categories of municipal trunk sewers. Critical Portions of the Regional Collection (CPRCS) include the municipal regulator structures and the municipal trunk sewers that convey the flow from the regulators to the point of connection (POC) to the ALCOSAN system. Model Extents are other portions of municipal trunk sewers that were selected for detailed hydrologic and hydraulic (H&H) modeling.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

There are 20 municipalities that are located completely or partially within the TC basin. The tributary municipalities are shown in Figure 3-14 and listed in Table 3-35 along with their tributary areas and populations. There are seven municipalities that have areas within their borders where wastewater flow is not directed to the ALCOSAN system but conveyed to other wastewater treatment plants. These municipalities are East McKeesport Borough, the Municipality of Monroeville, North Huntingdon Township, North Versailles Township, the Municipality of Penn Hills, Penn Township, and Plum Borough.

Table 3-35: Tributary Municipalities in the Turtle Creek Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
Braddock Hills Borough	143	0.4%	208	0.2%
Chalfont Borough	100	0.3%	800	0.9%
Churchill Borough	1,016	2.8%	2,451	2.7%
East McKeesport Borough	202	0.6%	1,577	1.8%
East Pittsburgh Borough	236	0.6%	1,826	2.0%
Forest Hills Borough	996	2.7%	6,505	7.3%
Municipality of Monroeville	9,867	27.0%	27,663	31.0%
North Braddock Borough	518	1.4%	2,453	2.7%
North Huntingdon Township	442	1.2%	626	0.7%
North Versailles Township	1,092	3.0%	3,776	4.2%
Penn Hills Borough	2,822	7.7%	11,633	13.0%
Penn Township	1,222	3.3%	3,633	4.1%
Pitcairn Borough	280	0.8%	3,290	3.7%
Plum Borough	674	1.8%	1,605	1.8%
Trafford Borough	745	2.0%	3,231	3.6%
Turtle Creek Borough	607	1.7%	5,379	6.0%
Wall Borough	140	0.4%	559	0.6%
Wilkins Township	1,665	4.5%	6,303	7.1%
Wilkesburg Borough	35	0.1%	247	0.3%
Wilmerding Borough	240	0.7%	2,164	2.4%
Planning Basin Total (Contributing Area)	23,042	63%	85,928	96%
Planning Basin Out Areas	13,571	37%	3,442	4%

Figure 3-14: Turtle Creek Planning Basin

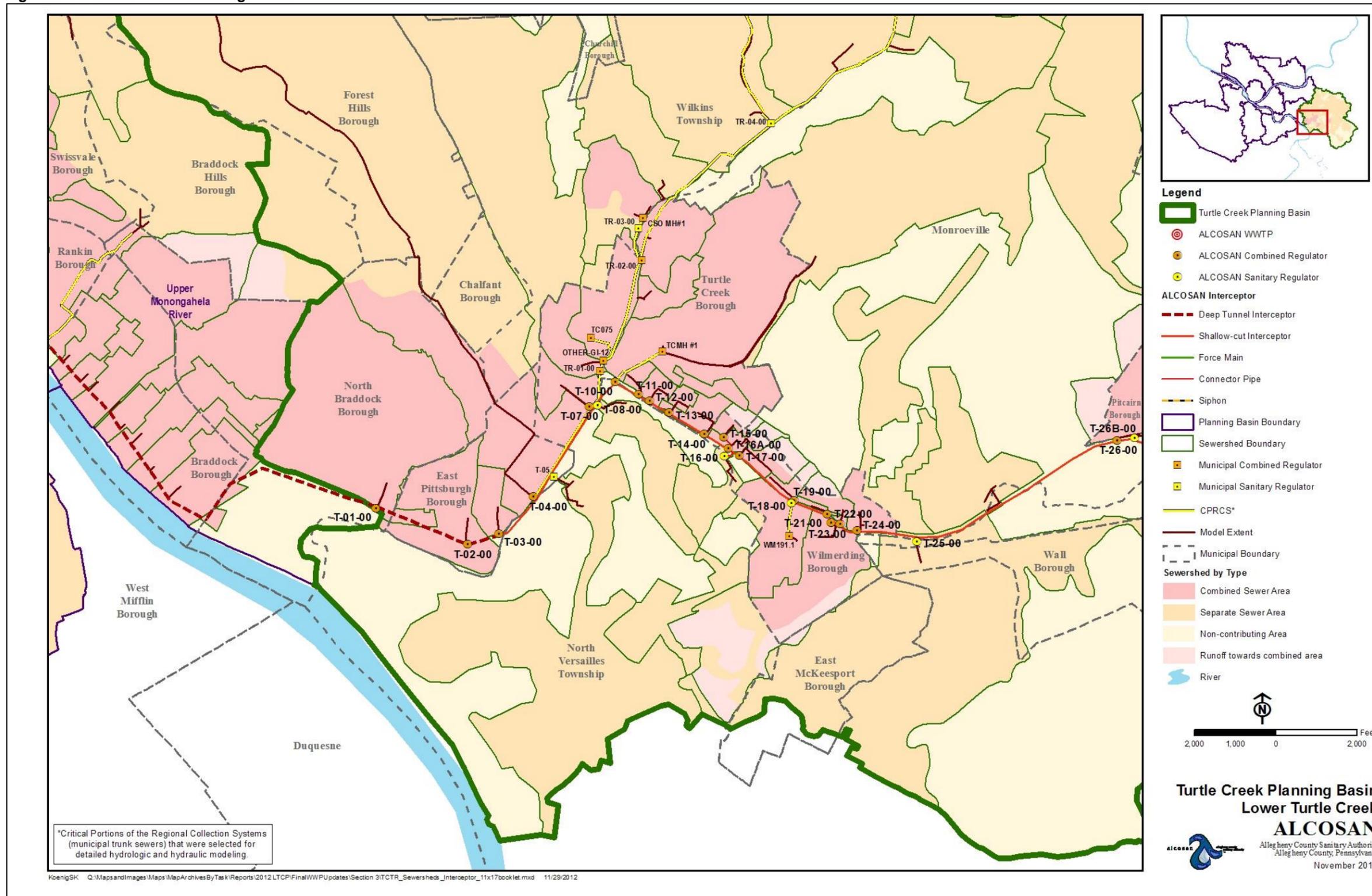


Figure 3-14: Turtle Creek Planning Basin

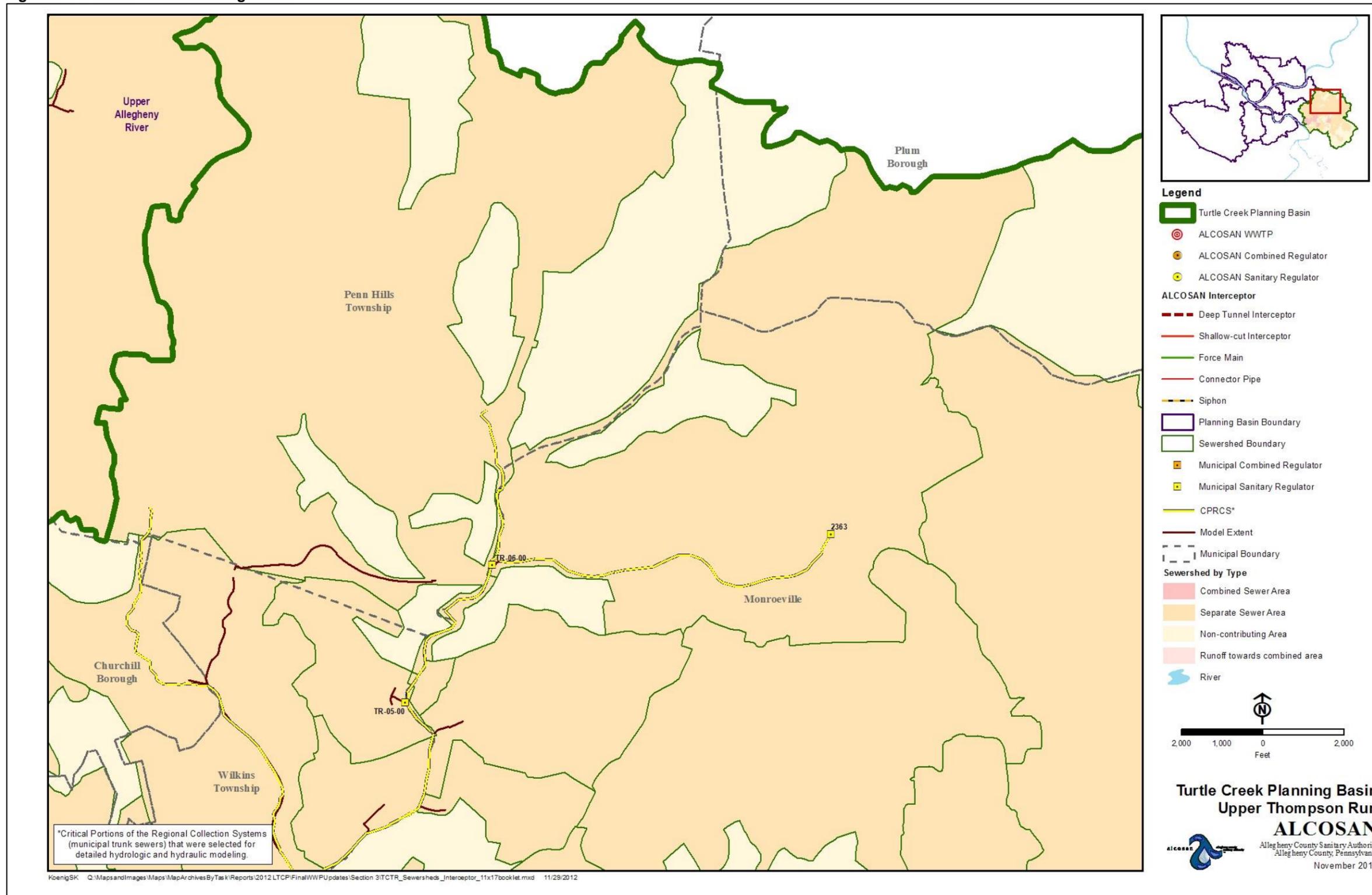
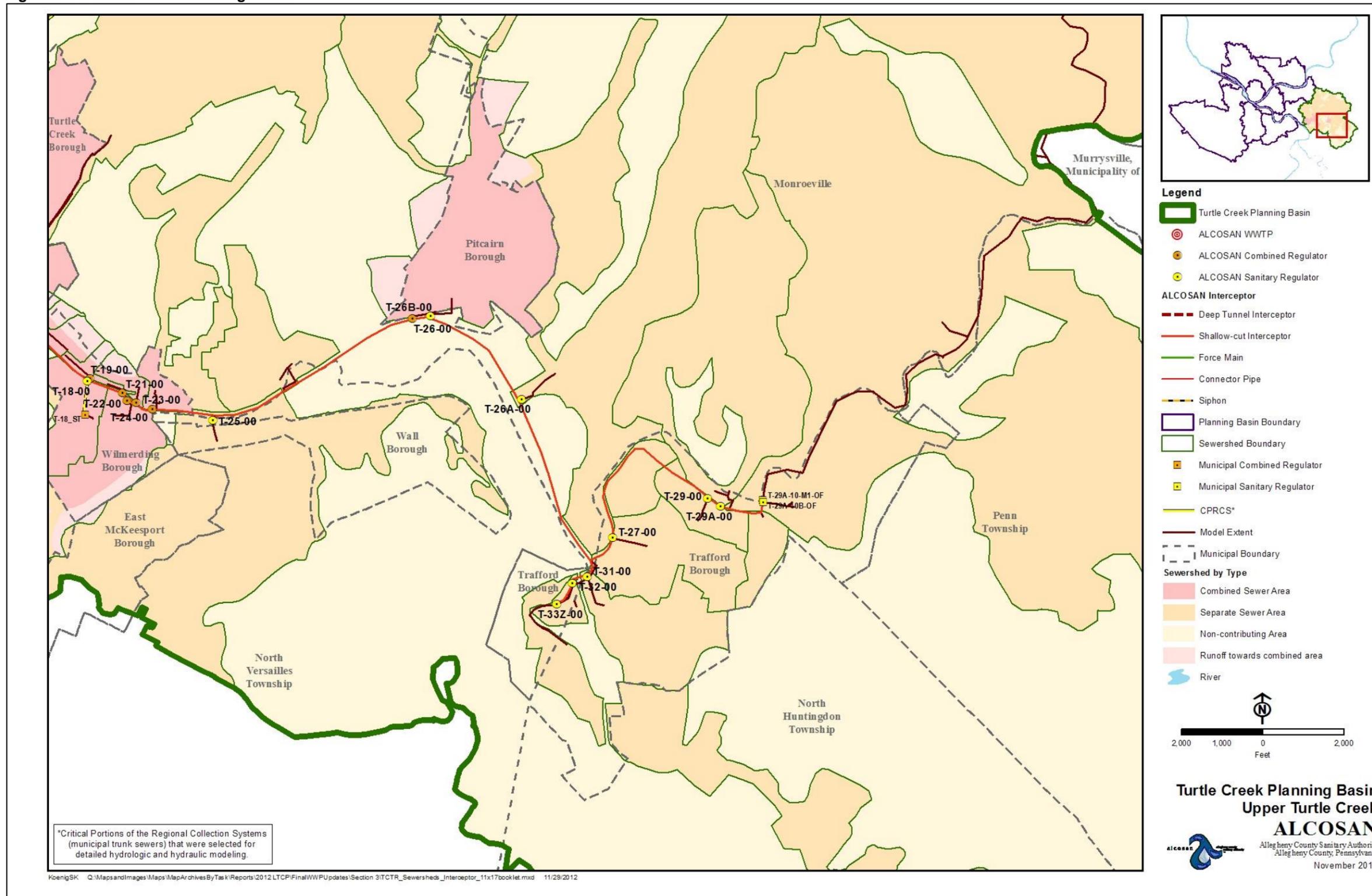


Figure 3-14: Turtle Creek Planning Basin



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3.6.1 Interceptor System Overview

The TC Planning Basin is served by 0.7 miles of deep tunnel interceptors and 6.7 miles of shallow cut interceptors that follow along the banks of Turtle Creek and Thompson Run. ALCOSAN owns, operates and maintains the deep tunnel interceptor and shallow-cut interceptor along Turtle Creek. ALCOSAN does not own the Thompson Run shallow-cut interceptor, but maintains it under a Service Agreement with the four municipalities who contribute flow to and own the Thompson Run interceptor. Flow from the TC basin discharges into the Monongahela River deep tunnel interceptor where the Eleventh Street interceptor relief overflow structure (M-59) releases wet weather flow in excess of the capacity of the interceptor. Flow is then conveyed along the Monongahela and Ohio River deep tunnel interceptor to the ALCOSAN WWTP.

The configuration and alignment of the ALCOSAN interceptor system is shown on Figure 3-14. Overview information on the interceptor system is provided in Table 3-36. More detailed and in-depth descriptions of the interceptor system can be found in Section 3 of the TC ECR.

Table 3-36: Turtle Creek Planning Basin Interceptor Pipe Components:

Planning Basin	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Deep Tunnel Interceptor	54	3,500	0.7	8.6%
Shallow-Cut Interceptor*	8 to 54	35,400	6.7	87%
Other Connector Pipes	varies	1,800	0.3	4.4
Total Basin Length		40,700	7.7	100%

*Note: Does not include the Thompson Run Interceptor (3.8 miles long) which is municipally owned and operated and maintained by ALCOSAN under a Service Agreement

Connections, Regulators and Hydraulic Relief Structures, and Appurtenances: Flows from the municipal collection systems that comprise the Turtle Creek Planning Basin enter the ALCOSAN interceptor system via 51 known points of connection. These include 14 direct connections, at which municipal sewer pipes discharge directly to the ALCOSAN interceptor at a manhole (no regulator structure), 21 connections through combined sewer regulator structures, and 16 connections through separate sewer regulator structures. All the regulator structures have a unique overflow outfall point associated with them. Table 3-37 lists all the ALCOSAN regulator structures located within TC basin. Detailed descriptions and representative drawings of each of the regulating device types listed in the table are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-37: ALCOSAN CSO and SSO Regulator Structures in the TC Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
T-01	CSO	Tipping Gate	No	Docker Hollow (N Braddock Borough)
T-02	CSO	Single Orifice	No	Main Street (East Pittsburgh Borough)
T-03	CSO	Double Orifice	Yes	Braddock Avenue (East Pittsburgh Borough)
T-04	CSO	Double Orifice	Yes	R. B. Turtle Creek 30 E. Pitt Sewer (East Pittsburgh)
T-07	CSO	Double Orifice	Yes	R.B. D/S Thompson Run (Turtle Creek Borough)
T-10	CSO	Double Orifice	Yes	Grant Street and Turtle Creek (Turtle Creek Borough)
T-11	CSO	Double Orifice	Yes	Penn Avenue Highway Bridge (Turtle Creek Borough)
T-12	CSO	Double Orifice	Yes	Eleventh Street (Turtle Creek Borough)
T-13	CSO	Double Orifice	Yes	Ninth Street (Turtle Creek Borough)
T-14	CSO	Double Orifice	Yes	Line Alley (Turtle Creek Borough)
T-15	CSO	Simple Dam	No	4th St. and Airbrake Avenue (Wilmerding Borough)
T-16A	CSO	Double Orifice	Yes	Third Street (Wilmerding Borough)
T-17	CSO	Double Orifice	Yes	Second Street (Wilmerding Borough)
T-19	CSO	Double Orifice	Yes	Right Bank Under Viaduct (Wilmerding Borough)
T-21	CSO	Single Orifice	No	Right Bank Turtle Creek (Wilmerding Borough)
T-22	CSO	Single Orifice	No	L. B. Turtle Creek D/S Miller Street (Wilmerding Borough)
T-23	CSO	Double Orifice	Yes	Miller Street and Turtle Creek (Wilmerding Borough)
T-24	CSO	Double Orifice	Yes	Patton Street (Wilmerding Borough)
T-26	CSO	Double Orifice	Yes	D/S Bridge to Pitcairn RR Yards (Pitcairn Borough)
TR-01	CSO	Single Orifice	No	Turtle Creek Pump Station (Turtle Creek Borough)
TR-02	CSO	Double Orifice	Yes	Church Street (Turtle Creek Borough)

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-37: ALCOSAN CSO and SSO Regulator Structures in the TC Planning Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
T-08	SSO	Double Orifice	Yes	L.B. Turtle Creek approx. 300 ft. D/S from mouth of Thompson Run (North Versailles Township)
T-16	SSO	Double Orifice	No	Left Bank Turtle Creek, 50 ft. below RR Bridge (North Versailles Township)
T-18	SSO	Simple Dam	Yes	Left bank under Viaduct (Wilmerding Borough)
T-25	SSO	Double Orifice	Yes	Left bank approx. 400 ft. downstream of Wall Bridge (North Versailles Borough)
T-26A	SSO	Double Orifice	Yes	Moss Side Boulevard (Municipality of Monroeville)
T-26B	SSO	Double Orifice	No	S. Pitcairn connection for Monroeville Borough, just D/S of Bridge going to Pitcairn RR yards (Municipality of Monroeville)
T-27	SSO	Double Orifice	Yes	Left bank under Pitcairn-Trafford Road Viaduct (Trafford Borough)
T-29	SSO	Double Orifice	Yes	Left bank approx. 600 ft. D/S of Firth Sterling Company fence (Trafford Borough)
T-29A	SSO	Single Orifice	Yes	Left bank approx. 200 ft. D/S of Firth Sterling Company fence (Trafford Borough)
T-31	SSO	Double Orifice	No	Right bank Brush Creek approx. 250 ft. D/S from PA RR Bridge (Trafford Borough)
T-32	SSO	Double Orifice	Yes	Right bank Brush Creek approx. 90 ft. upstream of PA RR Bridge (Trafford Borough)
T-33	SSO	Double Orifice	No	No longer active
TR-03	SSO	Double Orifice	Yes	Larimer Ave. (Wilkins Township)
TR-04	SSO	Double Orifice	Yes	Chalfant Run Culvert (Wilkins Township)
TR-05	SSO	Double Orifice	Yes	Eastmont (Wilkins Township)
TR-06	SSO	Double Orifice	Yes	Lick Run (Municipality of Monroeville)

3.6.2 Municipal Collection System Overviews

The Turtle Creek Planning Basin contains all or portions of 20 municipalities. This section provides a brief overview of information relative to the individual collection systems. Section 5.0 of the Turtle Creek/Thompson Run ECR provides a more in-depth and detailed level of information on each of the municipal collection systems.

Table 3-38 lists the municipalities and the corresponding total length of public collection sewers within the planning basin. Many of the municipalities within the TC basin own, operate and maintain their respective sanitary or combined sewer collection systems. However, there are five authorities within the TC planning basin. In North Huntington Township, for example, the North Huntington Municipal Authority operates and maintains the sewer collection system and the Western Westmoreland Municipal Authority operates and maintains the main interceptor and force main. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP.

There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

The information for this WWP, including the characterizations of combined and separate sewershed areas, was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the ECR was submitted, so WWP and ECR sewer lengths may differ. As was described in Section 3.1, there are two types of sewer systems and two categories of sewershed areas that comprise the sewer portions of the TC Planning Basin, combined sewers and separate sewers.

Table 3-38: Lengths of Sewers within each Municipality in the TC Planning Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Turtle Creek Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Turtle Creek Planning Basin
Braddock Hills Borough	0.0	0.0%	1.8	0.4%
Chalfont Borough	0.0	0.0%	5.0	1.1%
Churchill Borough	0.0	0.0%	21.3	4.6%
East Pittsburgh Borough	9.5	13.4%	0.0	0.0%

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-38: Lengths of Sewers within each Municipality in the TC Planning Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Turtle Creek Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Turtle Creek Planning Basin
East McKeesport Borough	0.0	0.0%	9.4	2.0%
Forest Hills Borough	0.0	0.0%	33.8	7.3%
Municipality of Monroeville / Monroeville Municipal Authority (Monroeville / MMA)	0.0	0.0%	186.4	40.3%
North Braddock Borough	14.2	19.9%	1.2	0.3%
North Huntingdon Township/ North Huntingdon Township Municipal Authority	0.0	0.0%	6.7	1.5%
North Versailles Township/ North Versailles Township Authority (North Versailles/NVTA)	0.0	0.0%	29.6	6.4%
Penn Township/ Penn Township Sewage Authority ⁽²⁾	0.0	0.0%	23.8	5.1%
Municipality of Penn Hills	0.0	0.0%	64.8	14%
Pitcairn Borough	11.6	16.3%	0.0	0.0%
Plum Borough	0.0	0.0%	8.1	1.8%
Trafford Borough	0.0	0.0%	21.6	4.7%
Turtle Creek Borough	23.6	33.1%	0.0	0.0%
Wall Borough	0.0	0.0%	5.9	1.3%
Wilkins Township	1.3	1.8%	42.5	9.2%
Wilkesburg Borough	0.0	0.0%	0.1	0.03%
Wilmerding Borough	11.1	15.5%	0.0	0.0%
Planning Basin Total	71.2	100%	462.1	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: In addition, the Western Westmoreland Municipal Authority operates and maintains the main interceptor and the force main.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Municipal CSO and SSO Regulators: The Turtle Creek Planning Basin contains nine municipal or authority owned overflow regulators. Of these, five are CSO regulator structures and four are SSO regulator structures. Table 3-39 lists all the municipal CSO regulator structures and Table 3-40 lists all the municipal SSO regulators within the TC basin. Three of the municipal regulator structures were previously unknown to ALCOSAN and were brought to the attention of ALCOSAN during the public review and comment period for the draft WWP. These 3 new regulator structures were field verified, are identified in Table 3-40, and were added to the GIS database information.

In addition to these municipal regulator structures, there is an emergency overflow structure associated with the Gascola flow equalization facility located along the Penn Hills trunk sewer. In addition to the overflows from CSO/SSO regulator structures listed in the municipal regulator structure tables, additional overflows can also occur from the other municipal pumping station emergency overflow structures and/or basement back-ups and surcharged or “popping” manhole covers.

Table 3-39: Municipal CSO Regulator Structures in the TC Planning Basin

ALCOSAN POC	Municipal Regulator ID	Location	Owner
T-10	T-10C TCMH #1	Near Monroeville and Lynn Avenue	Turtle Creek Borough
TR-01-6z	T-MH-075 ⁽¹⁾	Along Osborn Street	Turtle Creek Borough
TR-01-6z	GI-12 ⁽¹⁾	Near intersection of Hunter Street and Thompson Street	Turtle Creek Borough
TR-02-04	CSO MH#1	On Larimer Street upstream of intersection with Semmons Street.	Wilkins Township

Note⁽¹⁾: These municipal regulator structures were previously unknown and were brought to the attention of ALCOSAN during the public review and comment period for the draft WWP.

Table 3-40: Municipal SSO Regulator Structures in the TC Planning Basin

ALCOSAN POC	Municipal Regulator ID	Location	Owner ⁽¹⁾
T-29A	T-29A-10-M1-OF	Upstream of ALCOSAN Interceptor MH T-29-A-10 along Forbes Road	Monroeville / MMA
T-29A	T-29A-10B-OF	Approximately 100 feet southeast of ALCOSAN direct connection T-29A-10	Trafford Borough
T-05-02	T-05-OF	Approximately 100 feet upstream of ALCOSAN direct connection T-05-02	North Versailles/ NVTA

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Municipal System Appurtenances: The municipal collection systems include other appurtenances that control wastewater flow conveyed to the ALCOSAN system. Municipal system appurtenances information was compiled from the available municipal system GIS data, and from the Chapter 94 reports submitted by individual municipalities located within the basin. The municipal appurtenances relevant to wastewater flow are pump stations and wastewater storage facilities. There are 14 pump stations in the Turtle Creek Basin that convey flow to ALCOSAN. These municipal sewage pump stations are summarized briefly below.

Monroeville / MMA:

- Hillside Road Extension pump station
- Johnson Road pump station
- Tilbrook pump station
- Woodhaven-1 pump station
- Woodhaven-2 pump station

North Versailles / NVTA

- Crestas pump station
- Eastland pump station
- Westbury pump station

Penn Township / Penn Township Sewage Authority

- Baker School Road pump station
- Deer Run pump station
- Level Green Commons pump station
- McElroy Drive pump station

Municipality of Penn Hills

- Louegay Road pump station

Western Westmoreland Municipal Authority

- Ardara pump station

Wastewater storage facilities include flow equalization tanks. The purpose of these storage facilities is to capture peak wet weather sewage flows, store them until after the storm is over and downstream capacity becomes available, and thus minimize discharges of untreated sewage into nearby waterways. The Municipality of Penn Hills has three wastewater storage facilities that contribute flow to the ALCOSAN system. The pertinent information associated with these facilities is summarized in Table 3-42. It should be noted that the Municipality of Penn Hills is entirely responsible for the ownership, operation and maintenance of these structures.

Table 3-41: Municipal Storage / Flow Equalization Facilities in the TC Planning Basin

Equalization Tank	Municipality	Associated ALCOSAN POC	Location	Equalization Tank Capacity (gallons)
Jefferson Road	Municipality of Penn Hills	T-04-02	West of McKenzie Drive on Jefferson Road	450,000
Rodi Road	Municipality of Penn Hills	T-04-02	North of Purity Drive on Rodi Road	350,000
Gascola	Municipality of Penn Hills	T-04-02	Along Thompson Run, northwest of Thompson Run Road	2,050,00

3.7 Upper Allegheny River Basin Characterization

The Upper Allegheny River (UA) Planning Basin is one of the seven planning basins in the Allegheny County Sanitary Authority's (ALCOSAN) collection system. This section provides an overview and summary of the Upper Allegheny basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collections within the planning area. More in-depth and detailed descriptions of the basin can be found in the September 2009 Upper Allegheny *Existing Conditions Report* (ECR). For this WWP, planning basin populations and model simulation results were refined and updated since the ECR was submitted.

The UA Planning Basin stretches across an area approximately 27,218 acres or 42.6 square miles. As shown in Table 3-42, approximately 17% of the planning basin area is served by combined sewer systems, 65% is served by separate sanitary systems, and 18% is non-contributing areas that is either undeveloped or served by on-lot disposal systems within the ALCOSAN service area. The sewer system categories are further explained in Section 3.1. According to the 2010 census, approximately 113,000 people are living within the Upper Allegheny Planning Basin and 99% are provided sewage treatment service by ALCOSAN.

Table 3-42: Combined, Separate and Non-Contributing Areas in the Upper Allegheny River Basin

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Service Population	Percent of Planning Basin Population
Combined Sewer System	7.4	17%	46,447	41.1%
Separate Sewer System	27.6	65%	64,851	57.4%
Non-Contributing Areas	7.6	18%	1,659	1.5%
Total	42.6	100%	112,957	100%

Figure 3-15 is a map of the UA basin which shows the interceptor sewers, tributary sewershed areas, and diversion structures that regulate sewer flow. The map also shows two categories of municipal trunk sewers. Critical Portions of the Regional Collection (CPRCS) include the municipal regulator structures and the municipal trunk sewers that convey the flow from the regulators to the point of connection (POC) to the ALCOSAN system. Model Extents are other portions of municipal trunk sewers that were selected for detailed hydrologic and hydraulic (H&H) modeling.

There are 15 municipalities that are located completely or partially within the Upper Allegheny Planning Basin. The tributary municipalities are shown in Figure 3-15 and listed in Table 3-43 along with their tributary areas and populations.

Table 3-43: Tributary Municipalities in the Upper Allegheny River Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	Population	Percent of Planning Basin
Borough of Aspinwall	202	0.7%	2,799	2.5%
Borough of Blawnox	160	0.6%	1,425	1.3%
Borough of Churchill	16	0.1%	8	0.0%
Borough of Etna	384	1.4%	3,431	3.0%
Borough of Fox Chapel	4,535	16.6%	5,239	4.6%
Township of Indiana	257	0.9%	753	0.7%
Town of McCandless	56	0.2%	309	0.3%
Township of O'Hara	3,219	11.8%	8,064	7.1%
Municipality of Penn Hills	3,763	13.8%	21,276	18.8%
City of Pittsburgh	4,061	14.9%	37,383	33.1%
Township of Ross	839	3.1%	3,705	3.3%
Township of Shaler	4,381	16.1%	20,915	18.5%
Borough of Sharpsburg	256	0.9%	3,393	3.0%
Borough of Verona	241	0.9%	2,471	2.2%
Borough of Wilkinsburg	15	0.1%	127	0.1%
Planning Basin Total (Contributing Area)	22,382	82%	111,298	99%
Planning Basin Out Areas	4,863	18%	1,659	1%

3.7.1 Interceptor System Overview

The UA drainage basin is served by 2.6 miles of deep tunnel interceptors and 7.6 miles of shallow cut interceptor. Shallow-cut portions of the interceptor system are constructed along the north and south shore of the Allegheny River. The north shore interceptor system consists of gravity lines with pipe diameters ranging between 12 and 30 inches and force mains from Squaw Run and Montrose pump stations with diameters ranging between 8 and 18 inches. The south shore interceptor consists of gravity lines with pipe diameters between 18 and 42 inches along Allegheny River Boulevard and force mains from Verona and Sandy Creek pump stations with diameters ranging between 12 and 30 inches.

Figure 3-15: Upper Allegheny River Planning Basin

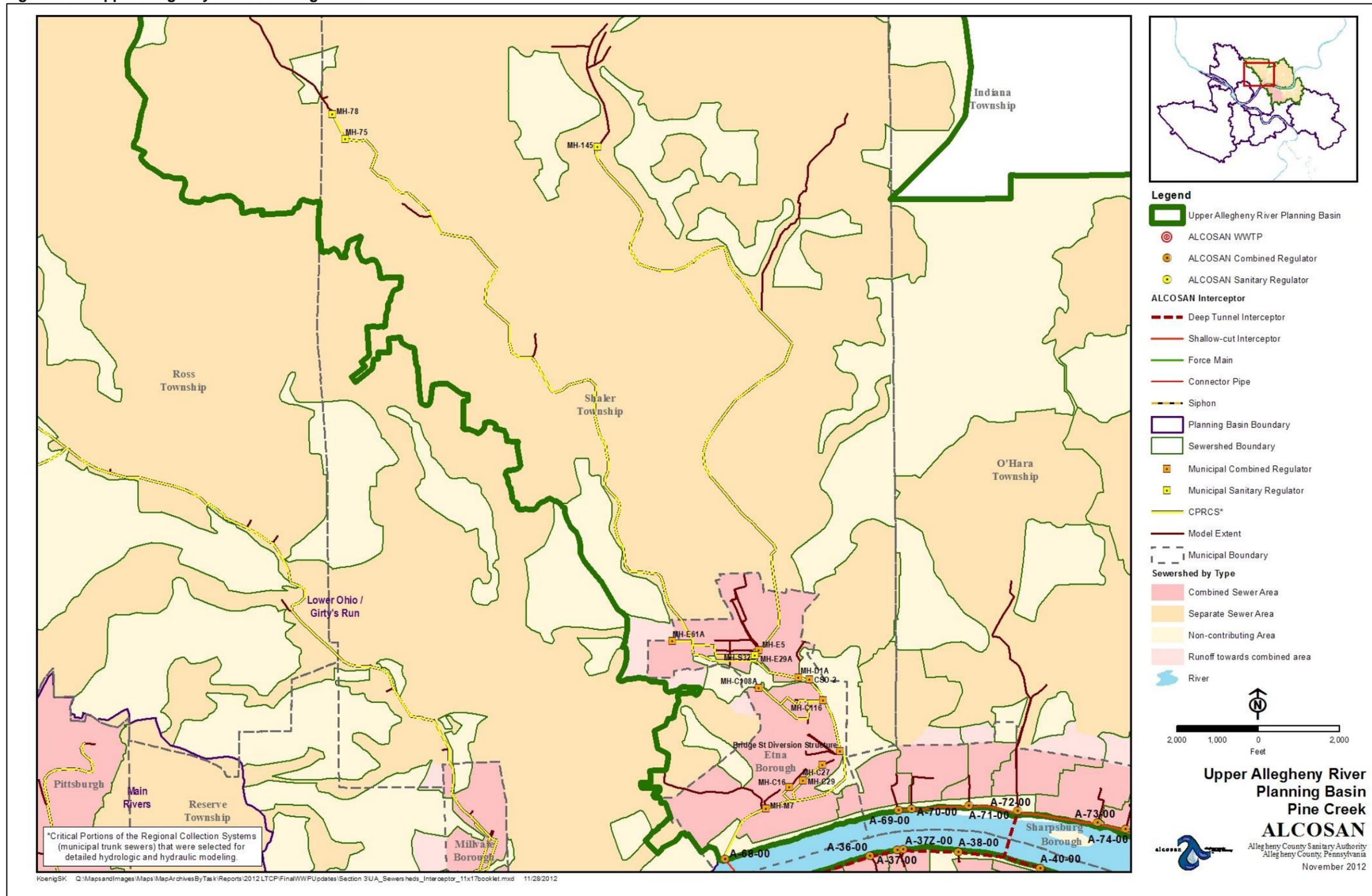


Figure 3-15: Upper Allegheny River Planning Basin

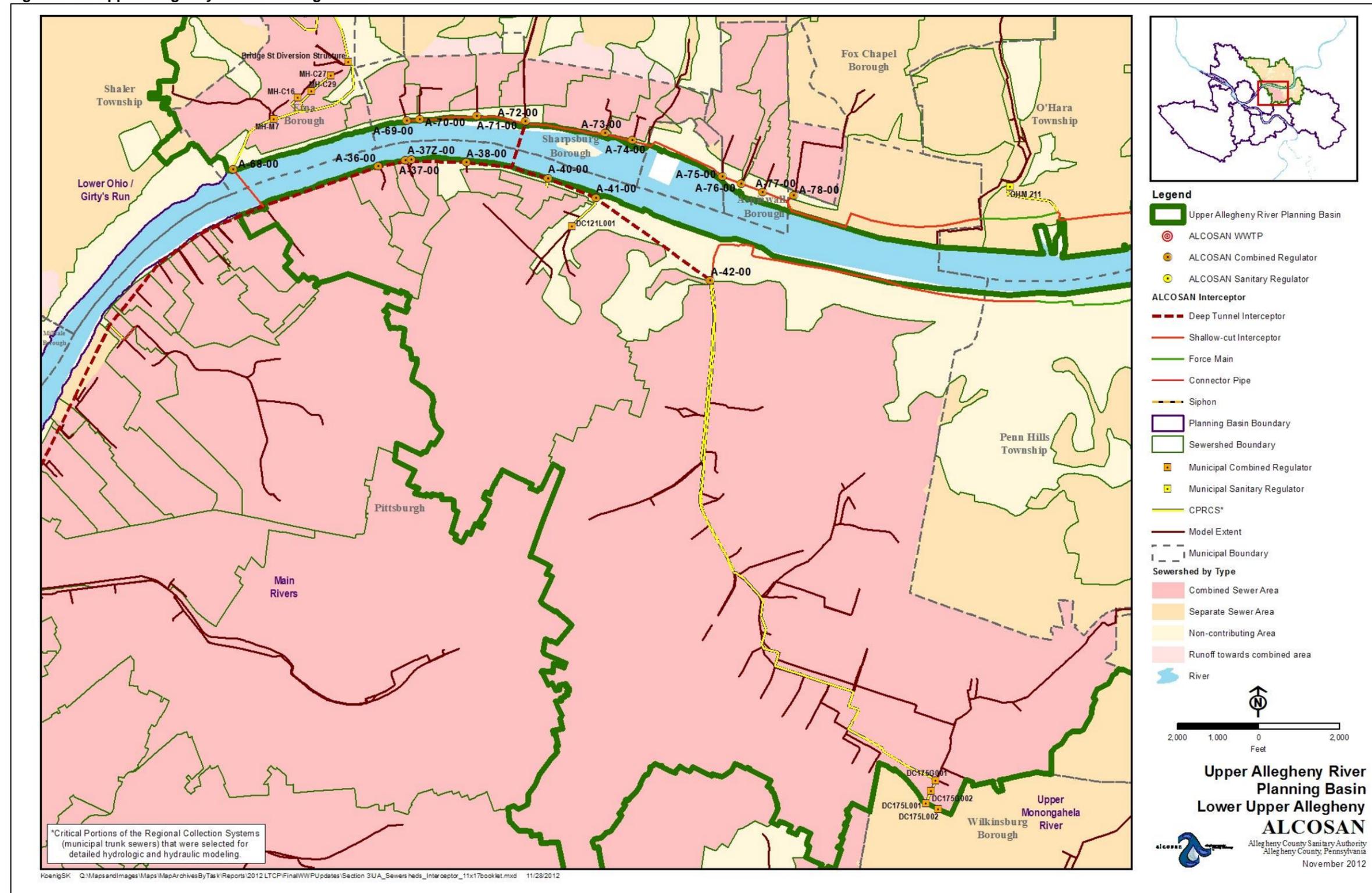
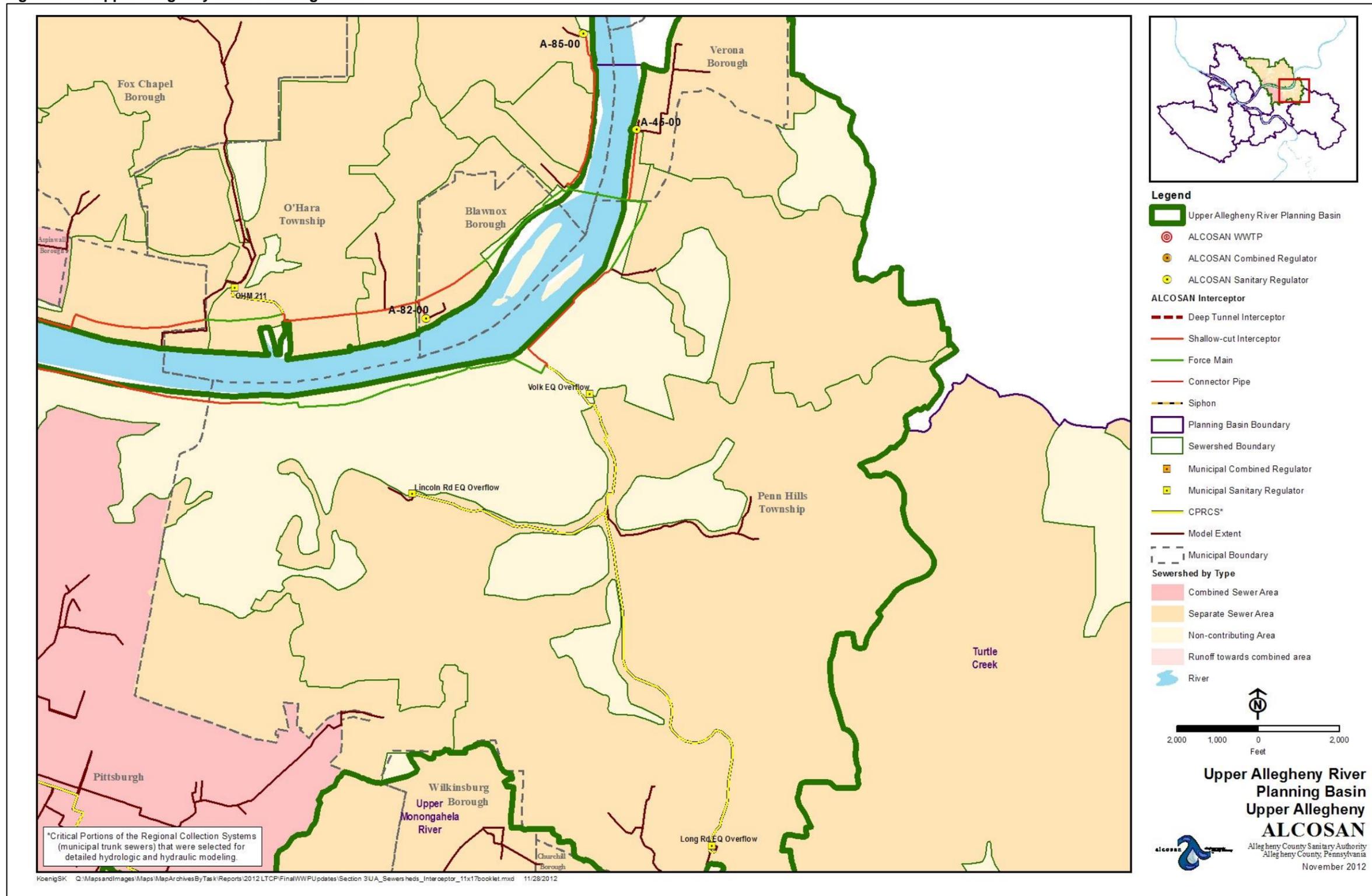


Figure 3-15: Upper Allegheny River Planning Basin



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A 48-inch diameter deep-tunnel interceptor extends along the south shore of the Allegheny River downstream of Washington Boulevard. The north shore shallow-cut interceptor connects in to the deep-tunnel interceptor on the south shore through the Morningside Junction river crossing and drop-shaft. The configuration of the ALCOSAN interceptor system is depicted in Figure 3-15. Overview information on the interceptor system is provided in Table 3-44. More detailed and in-depth descriptions of the interceptor system can be found in Section 3.0 of the Upper Allegheny River Basin ECR.

Table 3-44: Upper Allegheny River Planning Basin Interceptor Pipe Components

ALCOSAN Conveyance System Component	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Deep Tunnel Interceptor	48	13,700	2.6	19%
Shallow-Cut Interceptor	12 to 42	40,000	7.6	56%
Force Main Pipe	8 to 30	16,400	3.1	23%
Other Connector Pipes	varies	1,200	0.2	1.7%
Total Basin Pipe Length		69,451	13.5	100.0%

Pump Stations: There are four pump stations in the Upper Allegheny Basin that are owned, operated and maintained by ALCOSAN. Two pump stations, Montrose Pump Station and Squaw Run Pump Station, are located in O’Hara Township along the north shore Upper Allegheny shallow-cut interceptor. The remaining two pump stations, Sandy Creek Pump Station in the Municipality of Penn Hills and Verona Pump Station in Verona Borough, are located along the south shore Upper Allegheny shallow-cut interceptor.

Connections, Regulators and Hydraulic Relief Structures, and Appurtenances: Flows entering the Upper Allegheny interceptor system are controlled by 23 regulator structures. There are six additional points of connection between municipal trunk sewers and the ALCOSAN interceptor that are direct connections to an ALCOSAN manhole without a regulator structure. All the regulator structures have a unique overflow outfall point associated with them except the upper and lower A-42 regulator structures which share a common outfall point. Table 3-45 presents a list of the ALCOSAN regulator structures in the UA Basin and the corresponding types of regulating devices. Detailed descriptions and representative drawings of these regulator structure categories are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*. The overflow pipe outfalls that are submerged are equipped with flap gates to prevent intrusion from the Allegheny River into the ALCOSAN system. In addition to the CSO and SSO regulator structures there are four emergency interceptor relief overflows (IROs) located along the shallow-cut interceptors, each located just upstream of the Montrose, Sandy Creek, Squaw Run and Verona pump stations. These IROs discharge only in an emergency when there is a mechanical failure at a pump station. Flows are controlled at each of the IRO structures by simple overflow weirs and each of the IRO outfalls has a flap gate.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-45: ALCOSAN CSO and SSO Regulator Structures in the Upper Allegheny River Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
A-35	CSO	Tipping Gate	Yes	57 th St. and river crossing – City of Pittsburgh
A-36	CSO	Tipping Gate	Yes	62 nd Street – City of Pittsburgh
A-37	CSO	Tipping Gate	Yes	Voltz Way – City of Pittsburgh
A-37z	CSO	Simple Dam	No	120 ft. upstream of A-37 – City of Pittsburgh
A-38	CSO	Tipping Gate	Yes	Gatewood Way – City of Pittsburgh
A-40	CSO	Tipping Gate	Yes	Chislett Street – City of Pittsburgh
A-41	CSO	Tipping Gate	Yes	Heth's Avenue – City of Pittsburgh
A-42 (Upper)	CSO	Tipping Gate	No	Negley Run – City of Pittsburgh
A-42 (Lower)	CSO	Tipping Gate	No	Negley Run – City of Pittsburgh
A-45	SSO	Single Orifice	Yes	Fairview Avenue – Verona Borough
A-68 (2 gates)	CSO	Tipping Gate	Yes	Pine Creek – Etna Borough
A-69	CSO	Tipping Gate	Yes	5 th Avenue – Sharpsburg Borough
A-70	CSO	Tipping Gate	Yes	Davidson Street – Sharpsburg Borough
A-71	CSO	Tipping Gate	Yes	13 th Street – Sharpsburg Borough
A-72	CSO	Tipping Gate	Yes	16 th Street – Sharpsburg Borough
A-73	CSO	Tipping Gate	Yes	19 th Street – Sharpsburg Borough
A-74	CSO	Tipping Gate	Yes	22 nd Street – Sharpsburg Borough
A-75	CSO	Tipping Gate	No	Western Avenue – Aspinwall Borough
A-76	CSO	Tipping Gate	No	Center Avenue – Aspinwall Borough
A-77	CSO	Tipping Gate	No	Eastern Avenue – Aspinwall Borough
A-78	CSO	Tipping Gate	No	Brilliant Avenue – Aspinwall Borough
A-82	SSO	Single Orifice	Yes	First Street – Blawnox Borough
A-85	SSO	Single Orifice	No	Powers Run – O'Hara Township

3.7.2 Municipal Collection System Overviews

There are 15 municipalities that contribute to the Upper Allegheny Planning Basin. This section provides a brief overview of information relative to these individual municipal collection systems. A much more detailed description of the municipalities and their collection systems is provided in Section 4 of the Upper Allegheny ECR.

Table 3-46 lists the approximate total length of public collection sewers within the basin for each municipality. The information for this WWP, including the characterizations of combined and separate sewershed areas, was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. The GIS database was updated and refined since the ECR was submitted, so WWP and ECR sewer lengths may differ. As was described in Section 3.1, there are two types of sewer systems and two corresponding categories of sewershed areas that comprise the sewer portions of the UA Planning Basin, combined sewers and separate sewers. The Municipality of Penn Hills owns and operates three flow equalization facilities located within the UA Basin. These equalization facilities: Volk, Lincoln Road and Long Road are used to control peak wet-weather flows conveyed and discharged to the ALCOSAN interceptor system.

Many of the municipalities within the UA basin own, operate, and maintain their respective sanitary or combined sewer collection system. However, there are a total of four authorities and one private entity within the UA Planning Basin: the Deer Creek Drainage Basin Authority, the Fox Chapel Sanitary Authority, the McCandless Township Sanitary Authority, and the Pittsburgh Water and Sewer Authority. The Borough of Verona uses a service contract with the Pennsylvania Municipal Service Company to operate and maintain their collection sewers. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP.

There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-46: Lengths of Sewers within each Municipality in the Upper Allegheny River Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Allegheny Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Allegheny Planning Basin
Borough of Aspinwall	9.5	5.1%	0.0	0.0%
Borough of Blawnox	0.0	0.0%	6.7	1.6%
Borough of Churchill	0.0	0.0%	0.1	0.0%
Borough of Etna	15.8	8.5%	0.0	0.0%
Borough of Fox Chapel/ Fox Chapel Sanitary Authority	0.0	0.0%	72.6	17.1%
Township of Indiana/ Deer Creek Drainage Basin Authority	0.0	0.0%	3.9	0.9%
Township of McCandless/ McCandless Township Sanitary Authority	0.0	0.0%	1.2	0.3%
Township of O'Hara	0.0	0.0%	72.5	17.1%
Municipality of Penn Hills	0.0	0.0%	117.3	27.7%
City of Pittsburgh/ Pittsburgh Water and Sewer Authority	150.1	80.5%	2.3	0.6%
Township of Ross	0.0	0.0%	23.7	5.6%
Township of Shaler	0.0	0.0%	114.4	27.0%
Borough of Sharpsburg	11.1	5.9%	0.0	0.0%
Borough of Verona	0.0	0.0%	8.89	2.1%
Borough of Wilkesburg	0.0	0.0%	0.4	0.1%
Planning Basin Total	186.5	100%	424.1	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Municipal CSO and SSO Regulators: There are 17 municipal or authority owned combined sewer regulator structures and 8 sanitary sewer regulator structures located in the UA basin. In addition to the SSO regulator structures, there are three outfalls associated with each of the three flow equalization facilities located within Penn Hills Borough. Most of the CSO and SSO regulator structures have a unique outfall point associated with them. However, the four City of Pittsburgh/Pittsburgh Water and Sewer Authority CSO regulators within the A-42 sewershed share a common outfall pipe and a few of the Borough of Etna CSO regulators share a common outfall pipe. Table 3-47 lists the municipal CSO regulator structures and Table 3-48 lists the municipal SSO regulator structures, including the emergency overflow structures associated with the three flow equalization facilities located along Penn Hills trunk sewers. In addition to the overflows from municipal system CSO/SSO regulator structures listed in the table, there can be additional overflows from the other municipal pumping station emergency overflows and/or basement back-ups and surcharged or “popping” manhole covers.

Municipal Pump Stations: There are 13 municipal pump stations located within the UA basin that are summarized briefly below.

Indiana Township:

- Ottawa Hills pump station
- Park Place pump station

Municipality of Penn Hills:

- Lincoln Road pump station
- Tyler Road pump station
- Quigley Run pump station
- Churchill pump station
- Long Road pump station

O’Hara Township:

- Middlecrest pump station
- Crofton pump station
- Fox Hall Number 1 pump station
- Fox Hall Number 2 pump station

Shaler Township:

- Saxonburg Road pump station
- Ridgeview Farms pump station

Table 3-47: Municipal CSO Regulator Structures in the Upper Allegheny River Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner ⁽¹⁾
A-68	Bridge Street Diversion Structure	Just west of Route 28 Ramp	Pine Creek	Etna
A-68	CSO 2	Between State Hwy 8 and Butler St (NW of Muni Regulator MH-C116)	Pine Creek	Etna
A-68	MH-C108A	Near intersection of Maplewood Street & Hickory Street	Pine Creek	Etna
A-68	MH-C116	Between State Hwy 8 and Butler St (SE of Muni Regulator CSO 2)	Pine Creek	Etna
A-68	MH-C16	Cherry Street, approx. 200 feet south of intersection with Center Street	Pine Creek	Etna
A-68	MH-C27	Near intersection of Cherry Alley and Sycamore Street	Pine Creek	Etna
A-68	MH-C29	Intersection of Sycamore Street and Summerset Street	Pine Creek	Etna
A-68	MH-D1A	Butler Street approx. 170 ft. east of intersection with Kittanning Street	Pine Creek	Etna
A-68	MH-E29A	Between Dewey Street & Pine Alley	Pine Creek	Etna
A-68	MH-E5	End of Dewey Street	Pine Creek	Etna
A-68	MH-E61A	Near intersection of Greely Ave and Sheridan Alley	Pine Creek	Etna

Table 3-47: Municipal CSO Regulator Structures in the Upper Allegheny River Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner ⁽¹⁾
A-68	MH-M7	Between Poplar Street and Route 28 Ramp	Pine Creek	Etna
A-41	DC121L001	On Pittsburgh Zoo Parking Lot Road	Allegheny River	City of Pittsburgh/ Pittsburgh Water and Sewer Authority (Pittsburgh/PWSA)
A-42	DC175G001	Intersection of Susquehanna Street and Rosedale Street	Nine Mile Run	Pittsburgh/PWSA
A-42	DC175G002	Intersection of Madiera Street and Rosedale Street	Nine Mile Run	Pittsburgh/PWSA
A-42	DC175L001	Intersection of Rosedale Street and Hill Avenue	Nine Mile Run	Pittsburgh/PWSA
A-42	DC175L002	Hill Ave, approx. 350 feet east of intersection with Rosedale Street	Nine Mile Run ⁽²⁾	Pittsburgh/PWSA

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: The dry weather flow from this sewershed is diverted to the A-42 POC and the wet weather flow is directed to Nine Mile Run.

Table 3-48: Municipal SSO Regulator Structures in the Upper Allegheny River Basin

ALCOSAN POC	Municipal Regulator ID	Location	Receiving Stream	Owner
A-42A	Volk EQ Overflow	Volk Flow Equalization Facility	Sandy Creek	Penn Hills
A-42A	Long Road EQ Overflow	Long Road Flow Equalization Facility	Unnamed Tributary to Chalfant Creek ⁽¹⁾	Penn Hills
A-42A	Lincoln Road EQ Overflow	Lincoln Road Flow Equalization Facility	Unnamed Tributary to Allegheny River	Penn Hills
A-68	MH-75	Intersection of Springwood Drive and Hodil Road	Little Pine Creek	Shaler
A-68	MH-78	Intersection of Scott Avenue and Autumnwood Drive	Little Pine Creek	Shaler
A-68	MH-145	Intersection of East Sutter road and Butler Plank Road	Pine Creek	Shaler
A-68	MH-S32	End of Pine Alley	Pine Creek	Shaler
A-80	OMH-211	Intersection of Fox Chapel Road and Margery Drive	Squaw Run	O'Hara

Note⁽¹⁾: The dry weather flow from this sewershed is diverted to the A-42A POC, and the wet weather flow is directed to an unnamed tributary to Chalfant Run

3.8 Upper Monongahela River Basin Characterization

The Upper Monongahela (UM) Planning Basin is one of the seven planning basins that comprise the Allegheny County Sanitary Authority (ALCOSAN) service area. This section provides an overview and summary of the Upper Monongahela Planning Basin including details of the applicable ALCOSAN interceptor system and the tributary municipal collections within the planning basin area. More in-depth and detailed descriptions of the basin can be found in the March 2009 Upper Monongahela *Existing Conditions Report*.

The UM basin stretches across an area of approximately 19,367 acres or 30.3 square miles. As shown in Table 3-49, approximately 18% of the area in the UM planning basin is served by combined sewer systems, 66% is served by separate sanitary sewer systems, and 16% is non-contributing areas that may be undeveloped or served by on-lot disposal systems within the ALCOSAN service area. The sewer system categories are further explained in Section 3.1. According to the 2010 census, 116,800 people are living within the UM basin and 99% are provided sewage treatment service by ALCOSAN.

**Table 3-49: Combined, Separate and Non-Contributing Areas
in the Upper Monongahela River Basin**

Type of Sewer Collection System	Basin Area (square miles)	Percent of Planning Basin Area	Service Population	Percent of Planning Basin Population
Combined Sewer System	5.5	18%	31,789	27%
Separate Sewer System	20.1	66%	84,422	72%
Non-Contributing Areas	4.7	16%	599	1%
Planning Basin Total	30.3	100%	116,809	100%

Figure 3-16 is a map of the UM Planning Basin which shows the interceptor sewers, tributary sewershed areas, and diversion structures that regulate sewer flow. The UM basin is bordered to the north by Upper Allegheny River and Main Rivers basins, to the east by the Turtle Creek/Thompson Run basin, and to the west by Saw Mill Run basin. To the south, the planning basin limits correspond with the jurisdictional border of the ALCOSAN service area with adjacent sewerage districts.

There are 21 municipalities that are located completely or partially within the Upper Monongahela Planning Basin. The tributary municipalities are shown in Figure 3-16 and listed in Table 3-50 along with their tributary areas and populations.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-50: Tributary Municipalities in the Upper Monongahela River Planning Basin

Municipality	Area (acres)	Percent of Planning Basin	2010 Population	Percent of Planning Basin
Baldwin Borough	2,653	13.7%	12,332	10.6%
Braddock Borough	348	1.8%	2,160	1.8%
Braddock Hills Borough	400	2.1%	1,625	1.4%
Brentwood Borough	553	2.9%	5,616	4.8%
Churchill Borough	118	0.6%	543	0.5%
Edgewood Borough	376	1.9%	3,125	2.7%
Forest Hills Borough	5	0.03%	13	0.01%
Homestead Borough	366	1.9%	3,175	2.7%
Mount Oliver Borough	205	1.1%	3,269	2.8%
Munhall Borough	1,461	7.5%	11,384	9.7%
North Braddock Borough	295	1.5%	2,418	2.1%
Penn Hills Township	7	0.04%	77	0.1%
City of Pittsburgh	4,520	23.3%	28,024	24.0%
Pleasant Hills Borough	8	0.04%	116	0.1%
Rankin Borough	194	1.0%	2,124	1.8%
Swissvale Borough	692	3.6%	9,005	7.7%
West Homestead Borough	519	2.7%	1,929	1.7%
West Mifflin Borough	1,256	6.5%	6,442	5.5%
Whitaker Borough	187	1.0%	1,282	1.1%
Whitehall Borough	842	4.3%	5,941	5.1%
Wilkinsburg Borough	1,353	7.0%	15,585	13.3%
Planning Basin Total (Contributing Area)	16,359	84%	116,210	99.49%
Planning Basin Out Areas	3,010	16%	599	0.51%

Figure 3-16: Upper Monongahela River Planning Basin

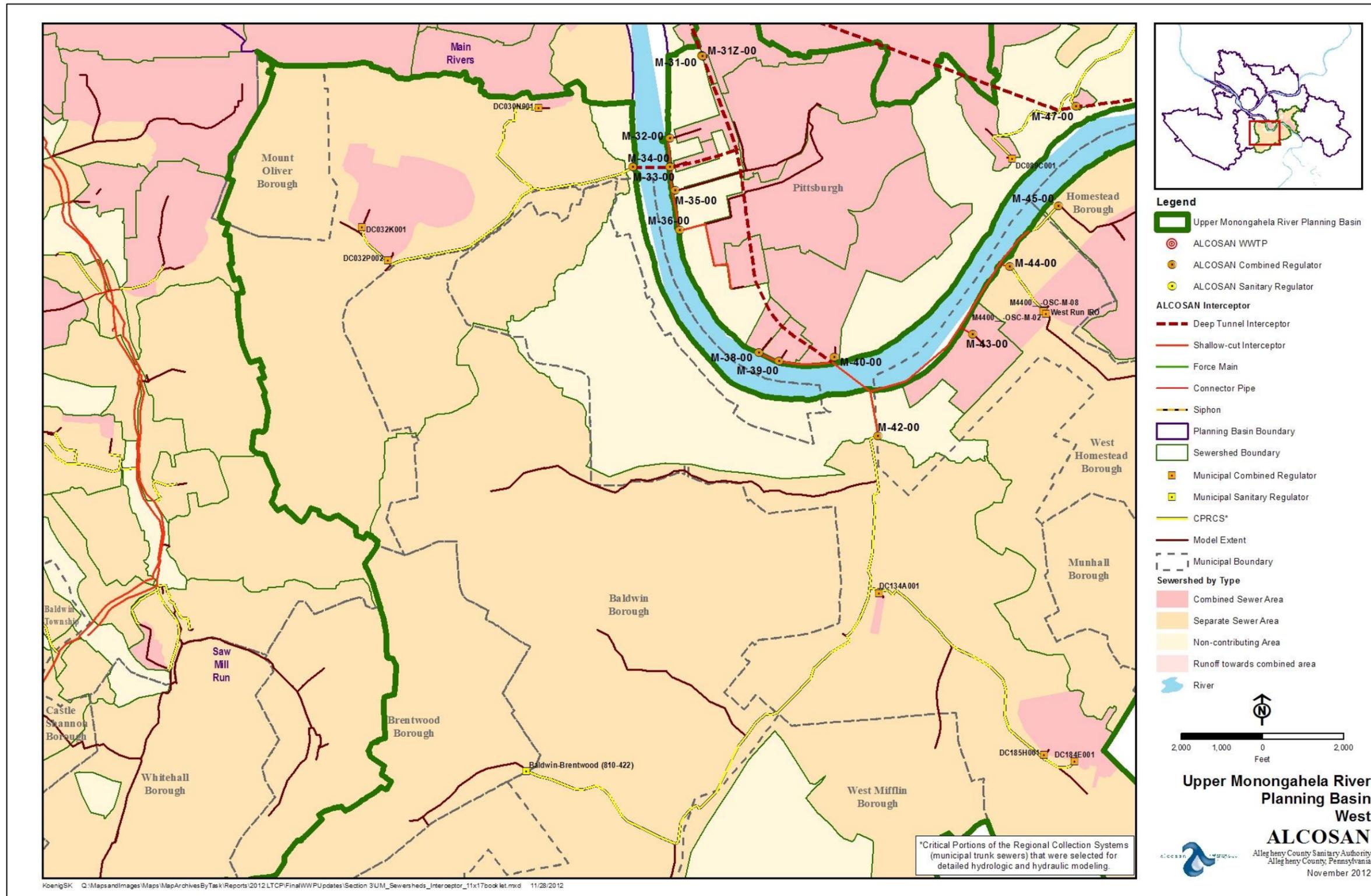


Figure 3-16: Upper Monongahela River Planning Basin

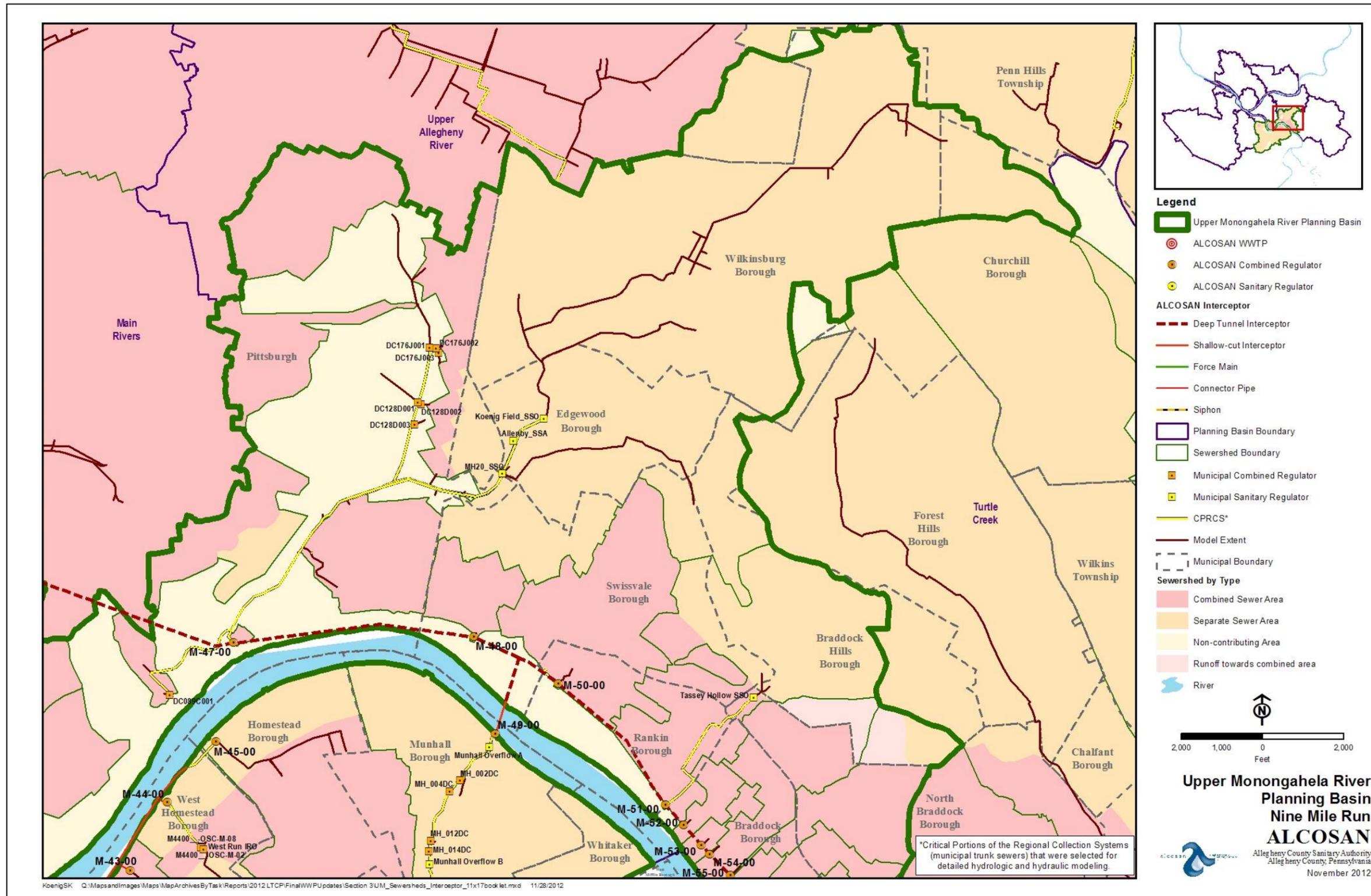
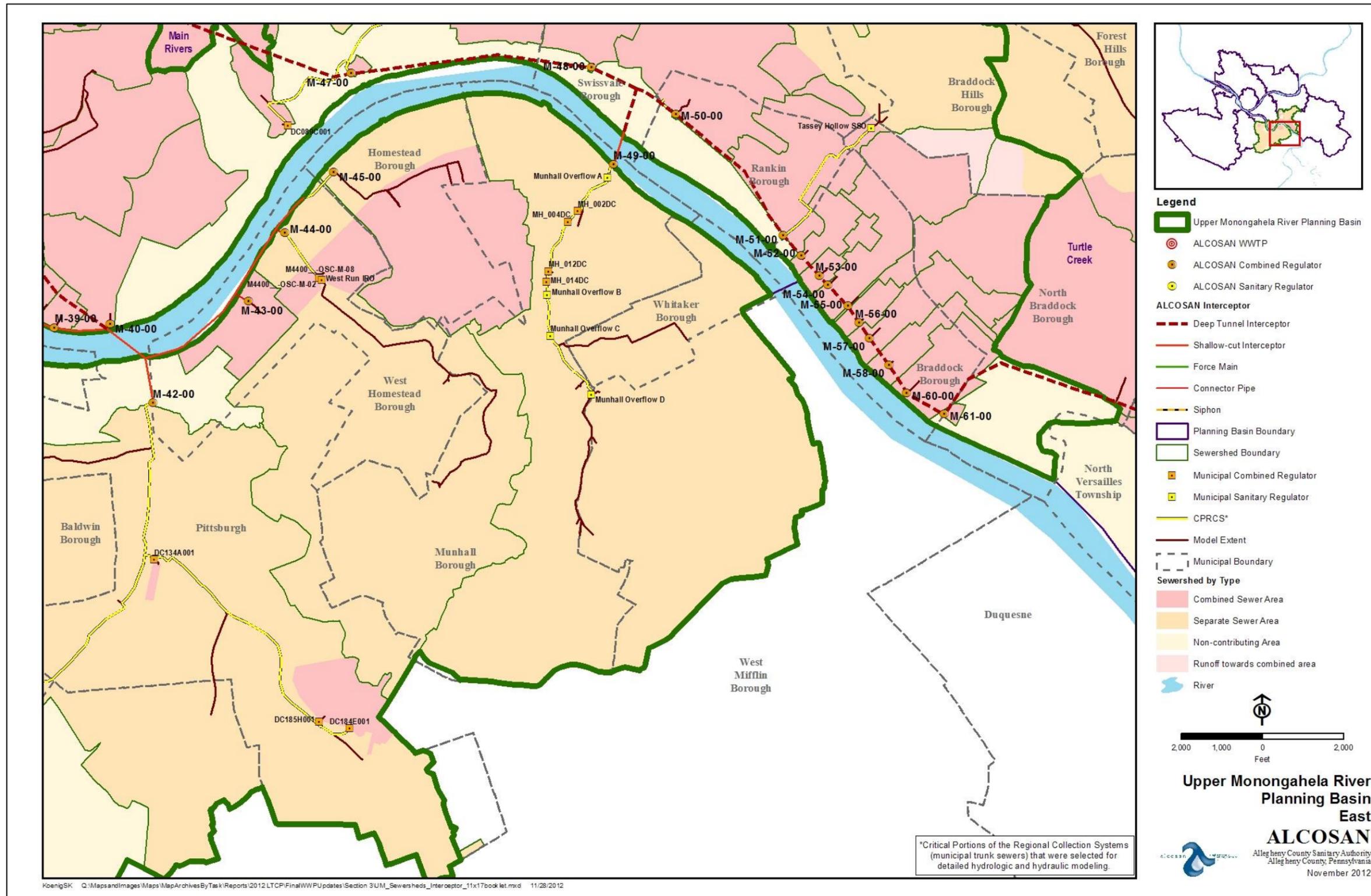


Figure 3-16: Upper Monongahela River Planning Basin



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3.8.1 Interceptor System Overview

The UM Planning Basin is served by approximately 10.5 miles of ALCOSAN sewer pipe that receives flow from all of portions of 21 municipalities at 30 points of connection with municipal trunk sewers. Comprised of a Deep Tunnel System, a Shallow-Cut System and other connecting pipes, collected flows are conveyed approximately nine miles to the ALCOSAN (Woods Run) Wastewater Treatment Plant (WWTP) along the Ohio River.

There are two distinct deep tunnel reaches or branches situated within the UM basin. The main segment of the deep tunnel system starts at the Four Mile Run Access Shaft (M-30, which is located outside of the UM basin) and extends upstream approximately 6.8 miles to the Eleventh Street Access Shaft (M-59). The Hazelwood-Glenwood branch also begins at the Four Mile Run Access Shaft and extends approximately 2.0 miles along Second Avenue to the Glenwood Access Shaft (M-41).

There are three distinct shallow-cut interceptor segments situated within the UM basin. The Hazelwood segment has two segments totaling approximately 2,100 feet that both discharge to the M-33 drop shaft connection to the deep tunnel interceptor. The Glenwood segment extends approximately 1,800 feet and connects the M-38 sewershed to the Glenwood Access Shaft (M-41). The South Shore segment begins at the Glenwood Access Shaft and after crossing the Monongahela River extends underneath the river approximately 5,700 feet to the M-45 sewershed in Homestead.

The configuration of the ALCOSAN interceptor system is depicted in Figure 3-16. Overview information on the interceptor system is provided in Table 3-51. There are no inverted siphon pipes within the UM Planning Basin. ALCOSAN owns and operates one pneumatic ejector station, the Melancthon Ejector station, which is located in the City of Pittsburgh’s Hazelwood neighborhood. Municipal pump stations within the municipal collection systems are described in Section 3.8.2. Within the Upper Monongahela planning basin there are three access shaft connections, located at ALCOSAN structures M-41, M-46, and M-59, which are used for monitoring and maintenance access to the deep tunnel interceptor.

Table 3-51: Upper Monongahela River Planning Basin Interceptor Pipe Components

ALCOSAN Conveyance System Component	Range of Pipe Sizes (inches)	Approximate Length		Percent of Total Length
		(feet)	(miles)	
Shallow-Cut Interceptor	12 to 36	15,800	3.0	29%
Deep Tunnel Interceptor	24 to 66	38,500	7.3	70%
Other Connector Pipes	varies	900	0.2	1.6%
Total Basin Pipe Length	-	55,200	10.5	100%

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Connections, Regulators and Hydraulic Relief Structures and Appurtenances: Flows from the municipal collection systems that comprise the UM basin enter the ALCOSAN interceptor system through 29 combined sewer system regulator structures. There are no ALCOSAN sanitary sewer system regulator structures located within the UM basin. Of the regulator structures, there are 25 variable orifice tipping-gate regulator structures, two single orifice regulator structures, one double orifice regulator structure and one simple dam regulator structure. All the regulator structures have a unique overflow outfall point associated with them. Detailed descriptions and representative drawings of these regulator structure categories are provided in the March 1996 *System Hydraulic and Hydrologic Characterization Report*. Also included is one interceptor relief overflow (IRO) located at ALCOSAN structure M-59. Table 3-52 lists all the ALCOSAN regulator structures located within the UM Planning Basin.

Table 3-52: ALCOSAN CSO Regulator Structures in the Upper Monongahela River Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
M-31	CSO	Tipping Gate	No	Rutherglen Street (City of Pittsburgh)
M-31Z	CSO	Simple Dam	No	Rutherglen Street (City of Pittsburgh)
M-32	Regulator is now abandoned and sealed			
M-33	CSO	Tipping Gate	Yes	Longworth Street (City of Pittsburgh)
M-34	CSO	Tipping Gate	Yes	Beck's Run (City of Pittsburgh)
M-35	CSO	Tipping Gate	Yes	Hazelwood Avenue (City of Pittsburgh)
M-36	CSO	Tipping Gate	Yes	Tecumseh Street (City of Pittsburgh)
M-37	CSO	Single Orifice	No	Melancthon Street Ejector Station (COP)
M-38	CSO	Single Orifice	Yes	Vespucius Street (City of Pittsburgh)
M-39	CSO	Tipping Gate	Yes	Renova Street (City of Pittsburgh)
M-40	CSO	Tipping Gate	No	Alluvian Street (City of Pittsburgh)
M-42	CSO	Tipping Gate	Yes	Streets Run (City of Pittsburgh)
M-43	CSO	Tipping Gate	Yes	Mesta Street (West Homestead Borough)
M-44	CSO	Tipping Gate	Yes	West Run (West Homestead Borough)
M-45	CSO	Tipping Gate	No	Homestead (Homestead Borough)
M-47 (3 gates)	CSO	Tipping Gate	Yes	Nine Mile Run (City of Pittsburgh)
M-48	CSO	Tipping Gate	No	Swissvale (Swissvale Borough)

Table 3-52: ALCOSAN CSO Regulator Structures in the Upper Monongahela River Basin

ALCOSAN ID	Overflow Type	Regulating Device	Flap Gate (Yes / No)	Location
M-49	CSO	Tipping Gate	Yes	Whitaker Run (Munhall Borough)
M-50	CSO	Tipping Gate	No	Rankin-Swissvale (Rankin Borough)
M-51	CSO	Tipping Gate	No	Rankin-Braddock (Braddock Borough)
M-52	CSO	Tipping Gate	No	Second Street (Braddock Borough)
M-53	CSO	Tipping Gate	Yes	Fourth Street (Braddock Borough)
M-54	CSO	Tipping Gate	No	Fifth Street (Braddock Borough)
M-55	CSO	Tipping Gate	No	Sixth Street (Braddock Borough)
M-56	CSO	Tipping Gate	Yes	Seventh Street (Braddock Borough)
M-57	CSO	Tipping Gate	Yes	Eighth Street (Braddock Borough)
M-58	CSO	Tipping Gate	Yes	Ninth Street (Braddock Borough)
M-59 (IRO)	CSO	Adjustable Weir	Yes	11th Street Overflow (Braddock Borough) Outfall 005
M-60	CSO	Double Orifice	No	Eleventh Street (Braddock Borough)
M-61	CSO	Tipping Gate	No	Thirteenth Street (North Braddock Borough)

3.8.2 Municipal Collection System Overviews

This section provides a summary of the 21 municipal collection systems within the Upper Monongahela Planning Basin. A much more detailed description of the municipalities and their collection systems is provided in Section 5 of the Upper Monongahela Planning Basin ECR.

Table 3-53 lists the total length of public collection sewers within the planning basin for each municipality. Most of the municipalities within the UM basin own, operate and maintain their respective sanitary or combined sewer collection system. However, there are a total of four authorities within the UM Planning Basin: the Munhall Sanitary Sewer Authority, the Penn Hills Authority, the Pittsburgh Water and Sewer Authority, and the West Mifflin Sanitary Sewer Authority. A list of the municipal wastewater authorities within the ALCOSAN service area is provided in Section 6 of the WWP.

There are a variety of alternative institutional arrangements between these authorities and their respective municipalities. Some authorities own, operate, and maintain the collection sewer systems on behalf of the municipality. Some operate and maintain the sewers, and others have

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

lease management agreements with their respective municipalities. When the regulatory agencies issued Consent Order and Agreements (COAs) and Administrative Consent Orders (ACOs) for a series of required sewer system activities, they were issued jointly to both the municipalities and the municipal authorities. Therefore, because of the complex variety of institutional arrangements between authorities and their respective municipalities, in the WWP both are indicated as “owners” in the narrative and summary tables regarding the collection systems, regulator structures, and CSO/SSO outfalls.

The information was obtained from the regional GIS database to which each of the ALCOSAN communities contributed their system information. As was previously described in Section 3.1, there are two types of sewer systems and two corresponding categories of sewershed areas that comprise the sewered portions of the UM planning basin, combined sewers and separate sewers. The City of Pittsburgh/Pittsburgh Water and Sewer Authority owns and operates three pump stations within the UM basin. A pump station is located along Browns Hill Road in the Nine Mile Run sewershed and the Rogers Street and Mifflin Road pump stations are located within the Streets Run sewershed. The Borough of Churchill owns and operates the Blackridge Pump station located along Collins Road. The Borough of Wilkinsburg owns and operates two pump stations. The McNary pump station is located near the border with Churchill and the Fairmont pump station lifts flows into the Nine Mile Run sewershed. The Borough of West Mifflin/West Mifflin Sanitary Sewer Authority owns and operates the Homeville pump station. The pump station directs flow away from the ALCOSAN system and flows from the tributary sewershed are only conveyed to the ALCOS NM-49 sewershed when flows exceed the pump station capacity or when the pumps station is offline for any reason.

Table 3-53: Lengths of Sewers within each Municipality in the Upper Monongahela River Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Monongahela Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Monongahela Planning Basin
Baldwin Borough	0.0	0.0%	70.0	17.7%
Braddock Borough	14.7	10.0%	0.0	0.0%
Braddock Hills Borough	0.0	0.0%	9.4	2.4%
Brentwood Borough	0.0	0.0%	21.3	5.4%
Churchill Borough	0.0	0.0%	3.8	1.0%
Edgewood Borough	0.0	0.0%	13.6	3.4%
Forest Hills Borough	0.0	0.0%	0.2	0.1%
Homestead Borough	12.1	8.2%	2.6	0.6%
Mount Oliver Borough	0.0	0.0%	11.4	2.9%

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-53: Lengths of Sewers within each Municipality in the Upper Monongahela River Basin

Municipality/ Municipal Authority ⁽¹⁾	Combined Sewers		Separate Sewers	
	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Monongahela Planning Basin	Total Length of Public Sewers in the Planning Basin (miles)	Percent of Upper Monongahela Planning Basin
Munhall Borough/ Munhall Sanitary Sewer Municipal Authority	5.4	3.7%	45.7	11.5%
North Braddock Borough	13.2	9.0%	0.0	0.0%
Penn Hills Township	0.0	0.0%	0.3	0.1%
City of Pittsburgh/ Pittsburgh Water and Sewer Authority	67.6	46.1%	70.2	17.7%
Borough of Pleasant Hills/ Pleasant Hills Authority	0.0	0.0%	0.3	0.1%
Rankin Borough	12.4	8.4%	0.0	0.0%
Swissvale Borough	17.2	11.7%	11.3	2.9%
West Homestead Borough	4.0	2.8%	9.7	2.5%
West Mifflin Borough/ West Mifflin Sanitary Sewer Authority	0.0	0.0%	33.5	8.5%
Whitaker Borough	0.0	0.0%	5.2	1.3 %
Whitehall Borough	0.0	0.0%	26.0	6.6%
Wilksburg Borough	0.0	0.0%	61.7	15.6%
Planning Basin Total	146.7	100%	396.3	100%

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated. Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Municipal CSO and SSO Regulators: There are 29 municipal owned regulator structures in the Upper Monongahela Planning Basin. Of these, 20 are CSO regulator structures and 9 are SSO regulator structures. With the exception of the City of Pittsburgh/Pittsburgh Water and Sewer Authority CSO regulators within the Nine Mile Run sewershed, all the municipal CSO and SSO regulators have a unique outfall point associated with them. The six regulators within the Nine Mile Run sewershed share a common outfall in Frick Park. Table 3-54 lists the municipal or authority owned CSO regulator structures and Table 3-55 lists the municipal or authority owned SSO regulators that are located within the UM Planning Basin.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-54: Municipal CSO Regulator Structures in the Upper Monongahela River Basin

ALCOSAN POC	Regulator ID Municipality	Location	Receiving Waters	Owner(s) ⁽¹⁾
M-49	MH_002DC ⁽²⁾	Along Homestead Run between Ravine Street and Creek Street	Homestead Run	Borough of Munhall/ Munhall Sanitary Sewer Municipal Authority (Munhall / MSSMA)
M-49	MH_004DC ⁽²⁾	Along Homestead Run between Ravine Street and Creek Street	Homestead Run	Munhall / MSSMA
M-49	MH_012DC ⁽²⁾	Along Homestead Run near Ravine Street	Homestead Run	Munhall / MSSMA
M-49	MH_014DC ⁽²⁾	Along Homestead Run near Ravine Street	Homestead Run	Munhall / MSSMA
M-34	DC030N001	Intersection of Arlington Avenue and Castel Street	Becks Run	City of Pittsburgh/ Pittsburgh Water and Sewer Authority (Pittsburgh/PWSA)
M-34	DC032K001	Intersection of Mountain Avenue and Wagner Street	Becks Run	Pittsburgh/PWSA
M-34	DC032P002	Intersection of Wagner Street and Becks Run Road	Becks Run	Pittsburgh/PWSA
M-42	DC134A001	Between Ganges Way and Hillburn Street	Streets Run	Pittsburgh/PWSA
M-42	DC184E001	Oakleaf Drive	Streets Run	Pittsburgh/PWSA
M-42	DC185H001	Mifflin Road	Streets Run	Pittsburgh/PWSA

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-54: Municipal CSO Regulator Structures in the Upper Monongahela River Basin

ALCOSAN POC	Regulator ID Municipality	Location	Receiving Waters	Owner(s)⁽¹⁾
M-47	DC089C001	Under Homestead Bridge	Monongahela River	Pittsburgh/PWSA
M-47	DC128D001	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-47	DC128D002	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-47	DC128D003	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-47	DC176J001	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-47	DC176J002	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-47	DC176J003	Along Fern Hollow Storm Culvert (Frick Park)	Nine Mile Run	Pittsburgh/PWSA
M-44	M4400_-OSC-M-02	Intersection of Station Alley and West 7th Street	West Run Storm Culvert	West Homestead
M-44	M4400_-OSC-M-08	Intersection of Station Alley and West 7th Street	West Run Storm Culvert	West Homestead
M-44	West Run IRO	Along West Run Interceptor upstream of West 7th St.	West Run Storm Culvert	West Homestead

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.

Note⁽²⁾: The Munhall Sanitary Sewer Municipal Authority Source Flow Reduction Study (Dec 2017) indicates this outfall has been reclassified from a CSO to an SSO, and that outfall MH_04OF (now referred to as SSO 004) has been permanently sealed. ALCOSAN will confirm.

ALCOSAN Clean Water Plan
Section 3 - Existing Conditions

Table 3-55: Municipal SSO Regulator Structures in the Upper Monongahela River Basin

ALCOSAN POC	Regulator ID Municipality	Location	Receiving Waters	Owner(s) ⁽¹⁾
M-42	Baldwin-Brentwood (810-422)	On Brentwood Road near Maranatha Creek	Streets Run Tributary	Brentwood
M-47	MH20_SSO	Braddock Avenue at I-376 Ramp	Nine Mile Run	Edgewood
M-47	Allenby_SSO	Along Boyd Street	Nine Mile Run	Edgewood
M-47	Koenig Field_SSO	Koenig Field in Edgewood	Nine Mile Run	Wilksburg
M-49	Munhall Overflow A	Approx. 350 upstream of ALCOSAN Regulator M-49	Homestead Run	Munhall / MSSMA
M-49	Munhall Overflow B	Along Homestead Run near Ravine Street	Homestead Run	Munhall / MSSMA
M-49	Munhall Overflow C	Along Homestead Run near intersection of Coal Street and Ravine Street	Homestead Run	Munhall / MSSMA
M-49	Munhall Overflow D	Along Homestead Run near Greensprings Avenue	Homestead Run	Munhall / MSSMA
M-51	Tassey Hollow SSO	Approx. 450 feet east of intersection of Hawkins Avenue Wilkins Avenue	Tassey Hollow	Swissvale

Note⁽¹⁾: In communities where municipal authorities exist, both the municipality and authority are indicated as “owners.” Actual institutional arrangements for owning, operating and maintaining the sewer systems vary among individual communities.