alcosan allegheny county sanitary authority

ALCOSAN DRAFT WET WEATHER PLAN

COMPANION DOCUMENT to the

July 31, 2012

About ALCOSAN

History

ALCOSAN was created under the Pennsylvania Municipal Authorities Act in 1946 to design, construct, and operate an interceptor system and treatment plant for residential, commercial, and industrial wastewater. The plant went into service in 1959 as a primary treatment facility to handle wastewater and some wet weather flows. As national environmental awareness grew, it became clear the primary treatment process was insufficient in meeting increased water quality standards. The design of the secondary treatment process began in the late 1960s, and operation of the secondary treatment plant commenced in 1973.

Service Area

There are 314,000 residential, commercial and industrial accounts representing a service population of 836,600 people in 83 communities, including the City of Pittsburgh. The service area spans 309 square miles.

Finances

ALCOSAN is a non-profit organization funded solely by user charges, with capital funds raised through the sale of sewer revenue bonds.

Operations

ALCOSAN is not a county agency, but a joint city-county authority operating under state guidelines.

ALCOSAN owns and operates over 90 miles of sewer lines that convey wastewater from municipal owned and operated systems to the ALCOSAN treatment plant. The 59-acre treatment plant is located along the Ohio River on Pittsburgh's North Side. ALCOSAN treats up to 250 million gallons of wastewater daily, 24 hours a day, 365 days a year.

Governing Authority

ALCOSAN is governed by a seven-member Board of Directors – three appointed by the Mayor of the City of Pittsburgh, three appointed by the Allegheny County Executive, and one joint city-county appointee – each serving a five-year term. The Executive Director is appointed by the Board of Directors to carry out Authority policies.

Mission Statement

To provide cost effective, customer oriented and environmentally conscious wastewater treatment that protects public health and enhances the use of our natural resources.

Key Terms

- Primary Treatment – A physical process that removes solid waste from the sewage and then disinfects.
- Secondary Treatment – A biological process that removes additional waste from sewage using common bacteria, then disinfects.

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July 31, 2012

By now, I hope you have heard about sewer overflows and how they impact public health, water quality, the environment and economic development. This easy-to-read booklet will take you step-by-step through the issue including the plan to mitigate the overflows, the information we used to develop the Wet Weather Plan, and of course, the costs.

While the Plan is easy to dismiss due to its size and technical contents, it provides the research, collaboration and analysis that ALCOSAN painstakingly went through for over 10 years to reach conclusion on the best Plan. It also provides a blueprint on how the region will address federal regulations about sewer overflows.

We strongly urge you to attend a public meeting to voice your opinion on this Plan. The meeting schedule and Plan are available at each municipal office as well as ALCOSAN's website at www.alcosan.org. Your comments on the Wet Weather Plan are encouraged and welcomed.

If you would like a presentation to your group on this subject matter, or would like additional copies of this companion booklet, please contact the ALCOSAN Public Relations Department at (412) 734-8733 or public.relations@alcosan.org.

I want to thank you for your interest and participation in this program as it will be the largest public works project ever in Allegheny County!

Sincerely,

Arletta Scott Williams

Executive Director

3300 Preble Avenue • Pittsburgh, PA 15233-1092 • ph: 412.766.4810

Table of Contents

Introduction

This document provides a brief overview of the draft Wet Weather Plan (WWP), which was released on July 31, 2012 for review and comment by the public and ALCOSAN customer municipalities. The entire WWP is available on the ALCOSAN web site at www.alcosan.org. Comments received during the public comment period (July 31 to October 19, 2012) will be taken into consideration and submitted with the final version of the WWP to be given to the regulatory agencies by January 30, 2013.

On January 23, 2008, ALCOSAN became party to a Consent Decree (CD) issued by the Federal Court in Pittsburgh on behalf of the US Environmental Protection Agency (EPA), PA Department of Environmental Protection (DEP) and the Allegheny County Health Department (ACHD). CDs have been issued to municipalities across the nation to comply with objectives set by the federal Clean Water Act and Combined Sewer Overflow Control Policy, as well as state laws and local regulations. The purpose of these CDs is to improve water quality in receiving waters and protect designated waterway uses that include drinking water, recreation, aquatic life, and others.

This legal document was the result of seven years of negotiations and compromise. The primary requirements for meeting compliance are to eliminate Sanitary Sewer Overflows (SSOs) and control the amount of Combined Sewer Overflows (CSOs) being discharged into the Ohio, Allegheny and Monongahela rivers, and their tributary streams of Chartiers Creek, Saw Mill Run, and Turtle Creek. ALCOSAN's mandate is to:

- develop a WWP that identifies wastewater infrastructure needs through 2046;
- describe actions and facilities needed to meet the requirements of the CD; and
- provide a schedule to complete and operate all improvements by September 30, 2026.

Combined sewer overflow (top); Sanitary sewer overflow (bottom).

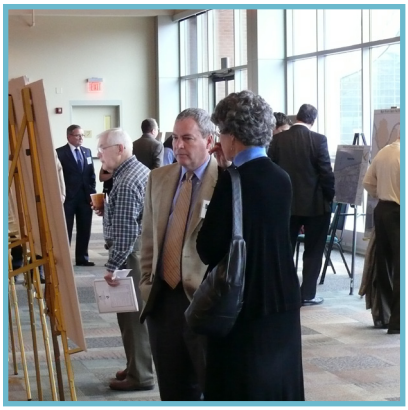
ALCOSAN's approach in developing this WWP was to divide the service area into planning basins. The sewer conditions and needs of each basin were studied to incorporate local requirements into a regional plan. Basin Planning teams of local and national engineers were formed to work with ALCOSAN, a Program Manager, Basin Coordinator, municipal officials, and stakeholders throughout the planning process. The goal was to create a plan that would be affordable and provide equitable solutions for the entire service area.

Key Terms

- Sanitary Sewer Overflows – A discharge of sewage from a separate sanitary sewage collection system during dry or wet weather.
- Combined Sewer Overflows – A discharge of sewage and stormwater (rain or snowmelt) from a combined sewer system during wet weather.

Municipal Coordination

Additional information can be found in Section 2 of the Wet Weather Plan.



Public meeting at the Senator John Heinz History Center (top); ALCOSAN Open House (bottom).

Coordination and communication is critical to the success of a project of this magnitude. Municipal staff, elected officials, engineers, ALCOSAN personnel, special interest groups, and of course, the ratepayers, all have a stake in the WWP's development, implementation, and cost. ALCOSAN knows that planning and implementation cannot be done alone. The coordination and communication efforts began long before the CD was issued and took on a greater significance with the deadlines obligated by the CD.

There continues to be many forms of communication and coordination used to engage the 83 customer municipalities who own and operate their own sewer systems (sewers, pump stations, overflows, etc.). They include meetings (group and one-on-one), exchanging information, commenting on plans, sharing costs for projects that benefit both entities, providing technical expertise, organizing educational forums, providing educational materials, and more.

Examples of municipal coordination include the creation of a 21-member Customer Municipality Advisory Committee appointed by the County Executive. The Committee, comprised of municipal managers and elected officials, was created to provide guidance and feedback from their respective populations and areas during the development of the WWP.

In addition, ALCOSAN and the municipalities worked together to implement a regional flow monitoring system, held quarterly basin planning meetings, and issued newsletters.

Also, a 37-member Regional Stakeholder Group was formed to provide expertise, input and feedback to ALCOSAN during the development of the WWP. Group members represented a broad range of interests throughout the service area such as watershed groups, academia, municipalities, environmental associations, and civic organizations.

Efforts to educate the public about sewer overflows have occurred since the early 1990s, but took on a greater emphasis once ALCOSAN received the CD. The expanded public awareness activities included annual public meetings, development and distribution of WWP-specific fact sheets and educational publications, expansion of the ALCOSAN web site and educational exhibits at public events such as the Pittsburgh Home and Garden Show, the Pittsburgh Boat Show, and the national award-winning ALCOSAN Open House.

Existing Systems Inventory

Additional information can be found in Section 3 of the Wet Weather Plan.

A program this complex required establishing an inventory of existing sewage facilities (sewers, pump stations, storage tanks, etc.) and understanding how the system performs in dry and wet weather conditions. This was a key area where ALCOSAN worked closely with its Customer Municipalities to gather information on the entire system. Almost 17% of the area is served by combined sewers, 52% is served by separate sewers and 31% is mainly non-developed or has septic systems. The WWP must propose technical alternatives to eliminate SSOs, control CSOs, meet water quality standards and increase conveyance and treatment capacity.

ALCOSAN owns over 90 miles of sewer lines, 318 regulator structures, six pumping stations and two ejector stations. Combine this with over 4,000 miles of sewers, 190 municipal regulator structures, and numerous pump stations all owned and operated by the municipalities and there is quite an extensive system to convey sewage flows and a portion of stormwater to the ALCOSAN treatment plant.

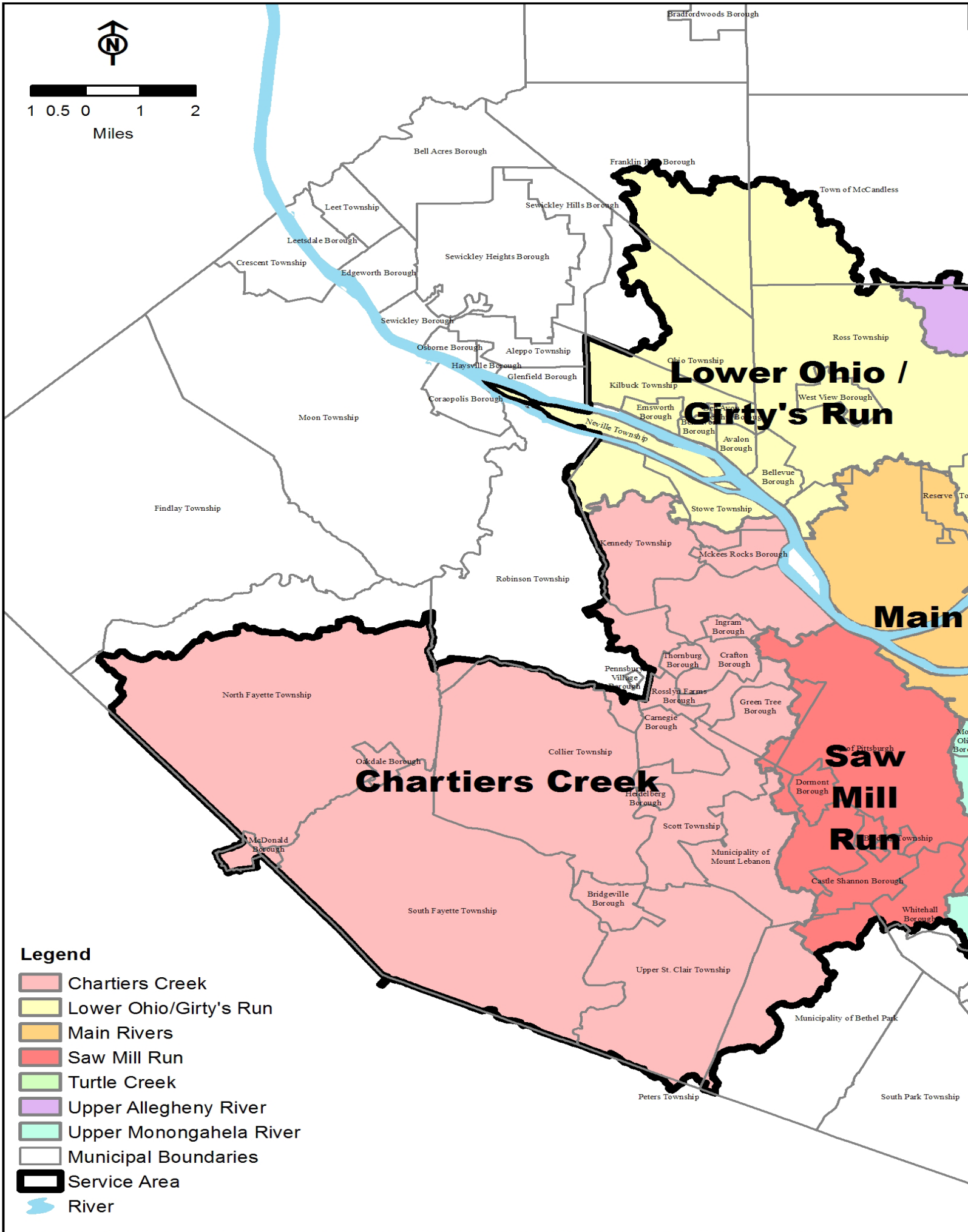
Due to the size and complexity of the ALCOSAN service area, it was divided into seven basin planning areas: Chartiers Creek, Lower Ohio River/Girty's Run, Main Rivers, Saw Mill Run, Turtle Creek, Upper Allegheny, and Upper Monongahela (see Planning Basins Map on next page). A team of engineers and technical professionals, both local and national, used uniform criteria to understand the system so that recommendations to address sewer overflows could be developed.

Key to the planning and design of a recommended solution is the understanding of the quantity of flow, types of flow, and system performance during all weather conditions. Planning had to take into account flows entering the system from rain and snowmelt. Storms and resulting wet weather flow are categorized according to intensity (how many inches of rain fall in a given time), duration (how long the storm lasts), and recurrence interval (how often a storm of that magnitude occurs). Scientists use statistical calculations based on regional weather patterns to determine how often a storm of a given magnitude is likely to occur. A two-year design storm, for example, is a type of storm that has a 50% probability of occurring in any year. It is less severe than a five-year design storm, which is in turn less severe than a ten-year design storm. Wastewater treatment authorities decide on, and use, design storm standards to ensure adequate capacity in the design of infrastructure improvements.

The municipalities are also required to do an assessment of their systems. Municipalities with a sanitary sewer system received Administrative Consent Orders from the ACHD, and those with a combined system received Consent Orders and Agreements from the DEP. These orders stipulate the municipal planning process, which ends with the submission of a feasibility study (plan) on July 31, 2013 (six months following ALCOSAN's Plan submittal).

Key Terms

- Combined Sewers – Sewers designed to carry sewage and stormwater in the same pipe.
- Separate Sewers – Sewers designed to carry only sewage to the treatment plant with a separate storm sewer designed to carry only stormwater to a river or stream.
- Regulator Structures – These units are located within the piping and direct all the dry weather flow to the ALCOSAN system. They also control the quantity of flow diverted to the ALCOSAN treatment plant during wet weather conditions.
- Ejector Stations – An underground pumping chamber that uses compressed air to move sewage out of the chamber into a pressurized sewer line when the sewage in the chamber reaches a predetermined level.



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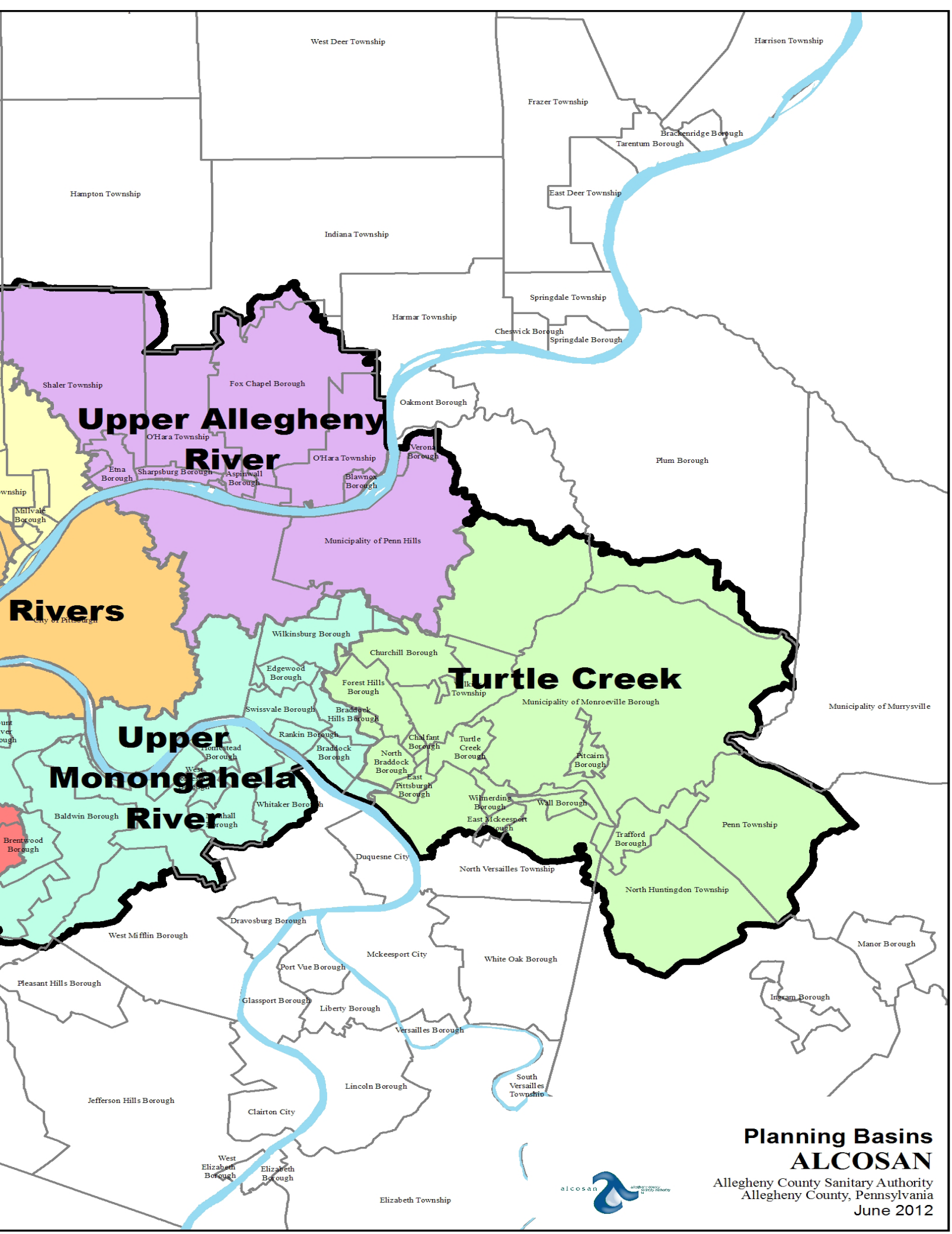

West Deer Township
Harrison Township
Frazer Township
Brackenridge Borough
Tarentum Borough
Hampton Township
East Deer Township
Indiana Township
Springdale Township
Harmar Township
Cheswick Borough
Springdale Borough
Shaler Township
Fox Chapel Borough
Upper Allegheny River
Oakmont Borough
O'Hara Township
Verona Borough
O'Hara Township
Plum Borough
Etna Borough
Sharpsburg Borough
Aspinwall Borough
Blawnox Borough
Millvale Borough
Municipality of Penn Hills
Rivers
Wilkinsburg Borough
Churchill Borough
Edgewood Borough
Forest Hills Borough
Turtle Creek
Municipality of Monroeville Borough
Municipality of Murrysville
Swissvale Borough
Braddock Hills Borough
Rankin Borough
Upper Monongahela River
Homestead Borough
Braddock Borough
Chalfant Borough
Turtle Creek Borough
North Braddock Borough
Pitcairn Borough
East Pittsburgh Borough
Wilmerding Borough
Wall Borough
East McKeesport Borough
Penn Township
Baldwin Borough
Whitaker Borough
Trafford Borough
Brentwood Borough
Duquesne City
North Versailles Township
North Huntingdon Township
Dravosburg Borough
West Mifflin Borough
Manor Borough
Mckeesport City
White Oak Borough
Port Vue Borough
Pleasant Hills Borough
Ingram Borough
Glassport Borough
Liberty Borough
Versailles Borough
Lincoln Borough
South Versailles Township
Jefferson Hills Borough
Clairton City
West Elizabeth Borough
Elizabeth Borough
Elizabeth Township
Planning Basins
ALCOSAN
Allegheny County Sanitary Authority
Allegheny County, Pennsylvania
June 2012

Sewer System Performance Evaluation

Additional information can be found in Section 4 of the Wet Weather Plan.

Flow monitoring device

Engineers use computer models to understand how sewer systems operate so that effective sewer improvements can be designed. The model used by ALCOSAN is a computer program based on specific known information used to simulate conditions that could cause sewage overflows. ALCOSAN developed and implemented a comprehensive Hydrologic and Hydraulic modeling program to understand how the region's sewer systems respond to different weather conditions.

The model uses data collected from monitoring precipitation and flow at various locations within the service area and is programmed to reasonably represent wastewater flow through the collection system. It also simulates future frequency, duration, and volume of sewer overflow discharges from both ALCOSAN and municipal outfalls in the service area.

Under existing conditions with typical rainfall over a 12-month period, the model simulation indicated the following:

- The ALCOSAN system captures and treats approximately 77 billion gallons of wastewater flow annually.
- Approximately 9 billion gallons of wastewater are discharged from a total of 350 ALCOSAN and municipal CSO outfalls.
- Approximately 700 million gallons of wastewater are discharged from a total of 98 ALCOSAN and municipal SSO outfalls.

Key Terms

- Hydrologic Evaluation – The Hydrologic evaluation looks at how stormwater and groundwater reacts during wet weather and measures the direct impact these outside sources have on sewer system flows and overflows.
- Hydraulic Evaluation – The Hydraulic evaluation looks at sewer capacity, how the sewers respond during wet and dry weather, and when and where sewers overflow.
- Receiving Water – A body of water that receives a sewer overflow.
- Recreation Season – The time period is May 15 through September 30 during which people are most likely to have physical contact with rivers and streams. During this time, ALCOSAN notifies the ACHD when the system goes into overflow; an orange CSO flag is raised at participating sites along the river and alerts are issued through the ACHD's River Advisory Program. ALCOSAN also activates a Sewer Overflow Advisory Key (SOAK) on its website to provide the current level of impact on area waterways.

Water Quality

Additional information can be found in Section 5 of the Wet Weather Plan.

A primary objective of the WWP is to improve the water quality in rivers and tributaries impacted by CSO and SSO discharges. A series of monitoring programs were conducted to assess the quality of these receiving waters and the impact of wet weather discharges. These programs included monitoring receiving waters, sanitary sewage, CSOs, and industrial discharges. The results helped to identify areas and pollutants of concern, measure attainment with water quality standards, and establish a baseline for evaluating the effectiveness of future control measures.

- A minimum of three dry weather and three wet weather samples were taken at 51 locations along the main rivers and tributaries. The samples were tested for parameters such as alkalinity, ammonia nitrogen, coliform bacteria, dissolved oxygen, pH, iron, temperature, nitrites/nitrates, and heavy metals.

- A minimum of three dry weather and three wet weather samples were taken at 26 CSO outfalls along the main rivers and tributaries. The samples were tested for parameters such as alkalinity, ammonia nitrogen, coliform bacteria, dissolved oxygen, pH, iron, temperature, nitrites/nitrates, and heavy metals.

  Solids and floatables were collected at select outfalls for assessment. The control technologies used are nets, screens, baffles, and containment booms.

- Water quality is more critical at sensitive areas, such as near water intakes and in recreational areas, particularly during the recreation season when there is more human contact with the water. The service area was surveyed to identify recreational activities and areas. Uses were categorized and grouped by the level of water contact: high, medium, or low/none. This information was used to set priorities for the mapping of sensitive areas.

Sewer Overflow Sign

Water Recreation - Contact Type and Use Categories		
Contact Type	Use Categories	
Primary (PC)	Swimming	Tubing
	Jet Skiing	Wading
	Rope Swinging	Water Skiing
Secondary (SC)	Canoeing	Power Boating
	Fishing	Sculling
	Kayaking	Rowing
Non-Contact (NC)*	Biking	Jogging
	Walking	Picnicking
	Hiking	
* Non-Contact activities occurring along waterway		

Financial Assessment

Additional information can be found in Section 6 of the Wet Weather Plan.

The EPA requires that a Financial Capability Assessment be conducted in order to establish the burden of compliance on both the ratepayer and ALCOSAN. The complex financial and institutional relationship between ALCOSAN and the 83 municipalities it serves provides the context for the WWP's affordability. Not only is ALCOSAN required to address sewer overflows, the customer municipalities are also required to meet the same regulations within their own systems.

This was a task that required much research into the region's demographic and socio-economic data. Based on the most current data, there are communities within the ALCOSAN service area with less than 100 residents to cities, including Pittsburgh, of more than 300,000 residents. Likewise, average household incomes range from $16,000 to more than $220,000. Using this data, ALCOSAN determined that the service area regional median household income was $46,400. In addition, municipal costs to meet federal regulations were estimated with the assistance of the individual customer municipalities, allowing evaluation of the affordability as well as the ability to finance both the ALCOSAN and municipal level programs.

The ALCOSAN average quarterly cost for sewage service in 2012 is $21.83 per month or $262.00 per year. However, 78 of the 83 customer municipalities add a surcharge to create a revenue stream to maintain, repair and replace municipal owned systems. As a result, total wastewater costs across the service area vary from $300 to nearly $600 per year, with an average of $430 per household. Based on calculations, the average household is currently spending 1% of its income on wastewater services. This 1% Residential Indicator falls within the low to medium burden range under EPA guidelines. The guidelines state that 2% or higher constitutes a high burden.

But that number does not tell the whole story. An analysis of economic and demographic trends over the last three censuses do not indicate an expected increase in average household income or an increased residential ability to pay for the WWP in the future.

Key Terms

- Residential Indicator – The percentage of household income dedicated to pay for sewage service.

Future Sustainability

Additional information can be found in Section 7 of the Wet Weather Plan.

The CD requires ALCOSAN's WWP to be sustainable until 2046. Future population and service area growth were estimated to determine associated impacts to future wastewater flow. Population projections were obtained from the Southwestern Pennsylvania Commission (SPC is the regional planning agency serving the Pittsburgh 10-county area) and discussed with customer municipalities. Municipalities also provided projections of their anticipated population growth, as well as planning information, which was integrated into the development and assessment of alternative control measures.

Projected population growth within individual customer municipalities varied greatly, and population decreases were projected in some areas. The system-wide population increase projected for the ALCOSAN service area was approximately 12%.

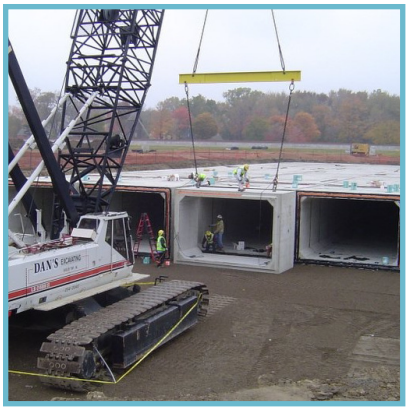
The combined effect of projected population increases, sewershed growth, and planned projects, would increase annual dry weather flow from the customer municipalities to the ALCOSAN system by approximately 5%. Under future conditions, projected increases to dry and wet weather flow would increase the total annual volume of CSO and SSO discharges by approximately 9% to 10 billion gallons.

Projected estimates of changes in the economic and demographic trends within the service area were also determined for planning of future conditions. These included household income and sewer revenue growth; inflation in capital, operations, and maintenance costs; projected billed water consumption; and changes to the ALCOSAN customer base.

Pine Hollow Stream Removal Project (top left); Outfall flap gate improvements (bottom left); Air Preheater Rehabilitation, Energy Recovery Facility (center); Fund for Advancement of Minorities Through Education (F.A.M.E.) Leadership Program students at ALCOSAN (top right); Litter collection effort by ALCOSAN employees (bottom right)

Overflow Control Technology

Additional information can be found in Section 8 of the Wet Weather Plan.



Examples of storage tank construction (top); and a tunnel (bottom).

Wet weather technologies and practices that could be used to control CSO and SSO discharges were researched and evaluated through a multi-phased screening and analysis process. Control technologies were broadly categorized by their ability to:

- REMOVE flow – reduce or eliminate stormwater from entering the sewer collection systems. Measures can range from household conservation to green technologies (i.e. rain gardens, bioretention, porous pavement), sewer separation, and sewer rehabilitation
- MOVE flow – ensure that the existing sewer system has the ability to operate at full capacity. This could include constructing new sewer lines and/or adding pumping facilities.
- HOLD flow – store excess flow until it can be conveyed to the treatment plant by using tanks, tunnels, or the sewer collection system.
- TREAT flow – convey flow to satellite treatment facilities or to the wastewater treatment plant. This would require building satellite facilities and expanding the treatment plant.

Numerous sites were also screened and evaluated for availability, location, size, and routes for the construction of wet weather control facilities. Feasible control technologies and potential control sites were combined with wet weather conditions to develop potential solutions specific to individual basin needs. Potential alternatives were configured, sized, cost estimated, and screened for each basin. Once the most effective potential solutions were identified, they were used to develop Basin-specific and System-wide Alternative Plans.

Green Infrastructure

ALCOSAN recognizes that one strategy to help manage the flow of stormwater is the effective use of green infrastructure. As a regional sewage treatment facility, however, ALCOSAN's primary purpose is not the treatment or management of stormwater. Green infrastructure uses soils, the natural characteristics of land surfaces, and vegetation to reduce, capture, and treat stormwater runoff at its source before it can reach the sewer system. The applications can be site-specific (green roofs, rain harvesting, etc.) or regional (vegetated stream buffers, tree planting). Benefits resulting from green infrastructure include reduced and delayed stormwater runoff volumes, enhanced groundwater recharge, stormwater pollutant reduction, and reduced sewer overflow events.

ALCOSAN has supported the concepts and goals of green infrastructure applications. ALCOSAN is not a regulatory agency, and cannot implement or impose the implementation of green infrastructure on its customer municipalities or ratepayers in order to reduce the volume of stormwater throughout the service area.

In 2011, the EPA released a memorandum encouraging communities to use green infrastructure to manage wet weather. The EPA provides information to help communities to implement green infrastructure, focusing on how green infrastructure should be used within the regulatory and enforcement contexts.

As an environmental steward, ALCOSAN has and will continue to encourage and partner with customer municipalities to educate residents and businesses on the benefits of green infrastructure.

Rain barrel (top); Vegetation to capture stormwater (bottom).

Evaluating Alternatives

Additional information can be found in Section 9 of the Wet Weather Plan.

Each Basin Planning Team evaluated control technologies and potential sites to develop recommendations to control flows within their respective basins. All of those recommendations were gathered and analyzed by the Wet Weather Program Manager to develop various system-wide alternatives.

Each system-wide alternative represented a complete plan to control ALCOSAN and municipal CSOs and SSOs. These alternatives were also reviewed using presumptive and demonstrative approaches. SSO approaches were studied to meet the 2-year storm and 10-year storm level of control.

Based on all of the analyses, it was determined that the most cost effective means of complying with the CD and national CSO Policy is the Demonstration approach. ALCOSAN then chose a control strategy which will eliminate SSOs and control CSOs such that attainment with water quality standards is not precluded by remaining discharges.

As stated earlier, current financial impacts to the ratepayer were studied. Once this control strategy was identified (the Selected Plan), an implementation analysis considered the financial impact on ALCOSAN and the ratepayer, as well as the possibility of meeting the 2026 completion deadline as stipulated in the CD. The analysis concluded that such an aggressive implementation schedule would likely overburden local labor and material resources available to do the work reliably and cost-effectively. Finally, and most importantly, the affordability assessment concluded that implementing the Selected Plan, with an estimated cost of $3.6 billion in 2010 dollars, is cost prohibitive under a 2026 deadline. However, there are provisions in the national CSO Control Policy that allow for phased implementation based on adverse impacts to water quality and on financial capability. There are a number of competing issues to consider. First, the CD requires the elimination of SSOs and control of CSOs. In addition, the WWP is intended to address water quality without restricting regional economic and population growth. Finally, in addition to the requirement stated in the CD for implementation by 2026, there is a separate settlement in place between ALCOSAN and the Pennsylvania Environmental Defense Foundation to eliminate the SSOs in Chartiers Creek by 2019.

Three affordable 2026 alternatives were developed in addition to the Selected Plan. One focuses primarily on SSO control, one prioritizes water quality benefits by maximizing pollutant load reductions, and one is a balance between the other two alternatives.

(continued on next page)

Key Terms

- Presumptive Approach – ALCOSAN is presumed to have done enough if 85% of the combined sewer flow during wet weather is captured and the amount discharged meets water quality requirements.
- Demonstrative Approach – ALCOSAN must scientifically demonstrate that the proposed plan will meet water quality requirements.

SSO Control Priority

This option gives priority to eliminating SSOs. In this scenario, all SSOs throughout the ALCOSAN service area would be controlled to the two-year design storm level of control and there would be a 75% capture of CSOs. The capacity of the ALCOSAN Wastewater Treatment Plant would be expanded to 480 million gallons per day (mgd) for primary treatment and 295 mgd for secondary treatment. Outfalls in sensitive areas would be relocated. A regional tunnel along the three main rivers would be postponed and two retention treatment basins would be constructed along the Monongahela River.

Water Quality Priority

The second option gives priority to improving water quality by diverting the largest overflows to the treatment plant. In addition to a focus on overall water quality, this option pays special attention to protecting areas of high recreational use. In this option, SSOs along the Allegheny River would be controlled to the two-year design storm level of control and there would be an 87% CSO capture. The ALCOSAN Wastewater Treatment Plant would be expanded to 600 mgd for primary treatment and 295 mgd for secondary treatment. Outfalls in sensitive areas would be controlled. This option includes construction of a regional tunnel along the Ohio and Allegheny Rivers, a portion of a regional tunnel along the Monongahela River, and one retention treatment basin along the Monongahela River.

Balanced Priorities

The third option attempts to balance the priorities of CSO and SSO control, water quality improvement, and continued economic development. In this scenario, ALCOSAN SSOs would be controlled to the two-year design storm level of control along Chartiers Creek and there would be a 79% CSO capture system-wide. The capacity of the ALCOSAN Wastewater Treatment Plant would be expanded to 480 mgd for primary treatment and 295 mgd for secondary treatment. Outfalls in sensitive areas would be controlled. Similar to the water quality priority option, the regional tunnel would be partially constructed, with lengths shortened along the Allegheny and Monongahela Rivers. In addition, this option includes a retention treatment basin near Chartiers Creek.

The balanced priorities option was chosen by ALCOSAN to be the Recommended Plan.

Selecting a Plan

Additional information can be found in Section 10 of the Wet Weather Plan.

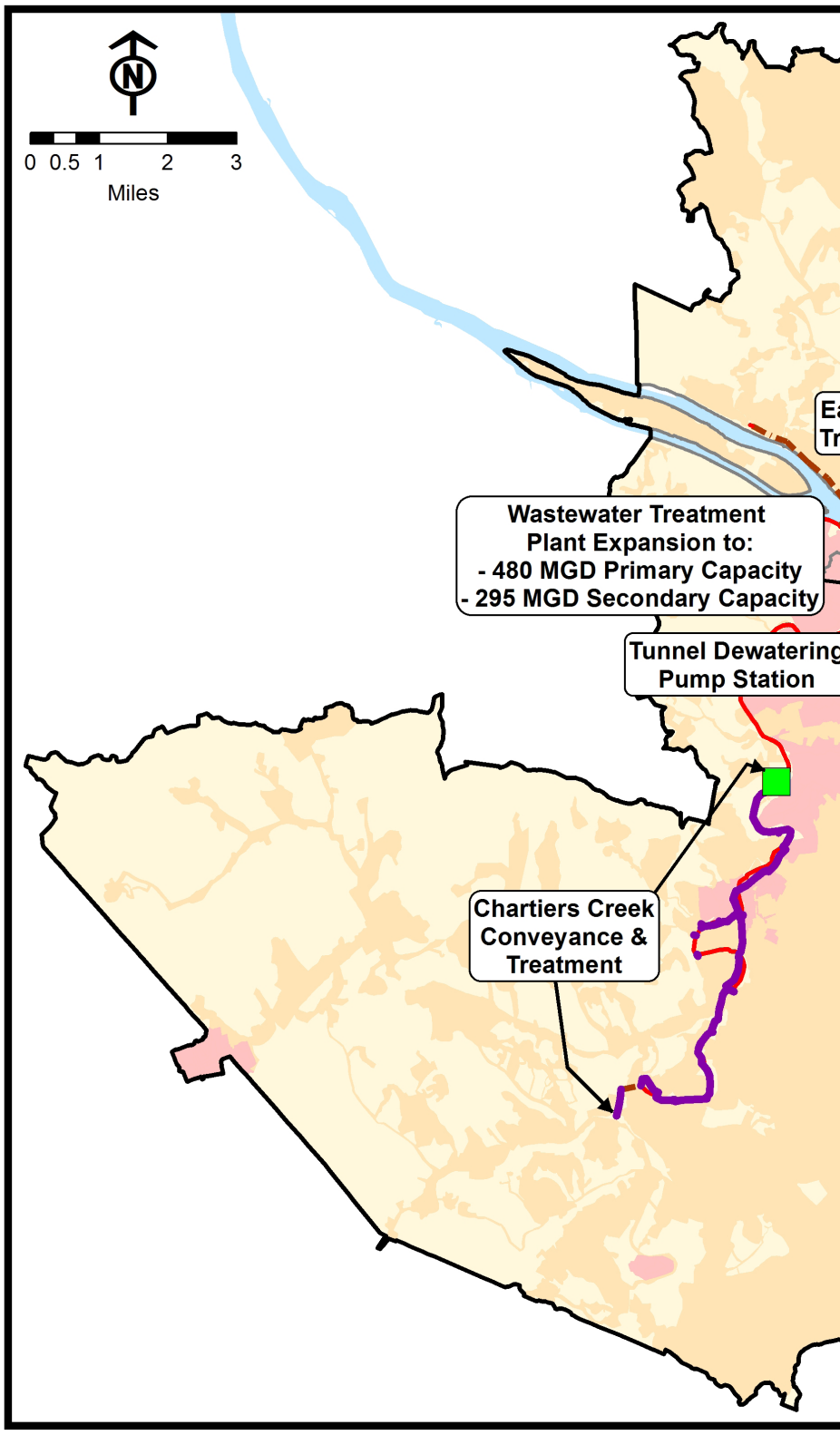
As noted in Section 9 of the WWP, ALCOSAN is proposing a phased course of wet weather control projects.

The WWP will improve water quality for sensitive areas and locations with high recreational use along the main rivers, and comply with the Chartiers Creek CD; SSO discharges will be reduced by approximately 90%; and CSO capture by 79%. Approximately 5.4 billion gallons per year in wet weather overflow volume will be removed from the receiving waters.

Key elements in the Recommended Plan include:

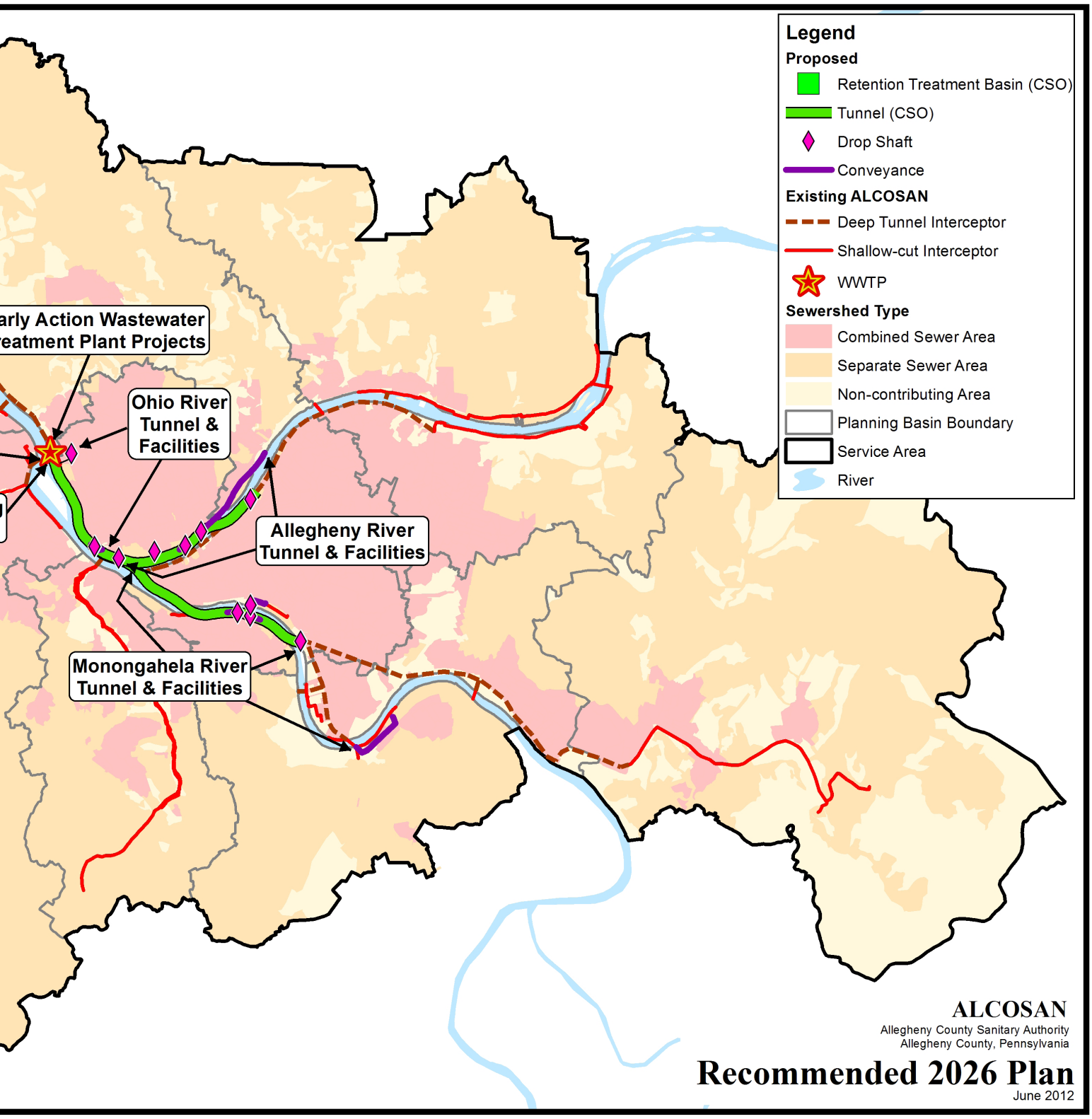
- expanding wet weather treatment capacity at the ALCOSAN treatment plant to 480 mgd for primary treatment and 295 mgd for secondary treatment;
- constructing a system of underground regional storage and conveyance tunnels of up to 15 feet in diameter that will run upstream from the plant along the Ohio, Allegheny and Monongahela rivers;
- constructing new conveyance sewers and a treatment facility to eliminate SSOs and control CSOs; and
- making overall sewer pumping improvements.

This program will be completed by September 30, 2026. ALCOSAN envisions that it will be followed by subsequent phased improvements that will ultimately lead to the full implementation of the Selected Plan.



The Recommended Plan for 2026 is the balanced priorities option at a cost of $2 billion.

Recommended Wet Weather Plan



Implementing the Plan

Additional information can be found in Section 11 of the Wet Weather Plan.

The WWP will be submitted to the regulatory agencies on January 30, 2013. According to the CD, the regulatory agencies are expected to review and approve the WWP no later than January 30, 2014. The deadline in the CD to complete the work as described in the WWP is 12 years and eight months from the approval date. A number of variables, such as affordability, land acquisition, permitting and approvals, unforeseen design and construction issues, and contractor and labor availability, will impact this schedule. All of those items are potential causes for revisions to the project time line.

Construction will also be dependent on municipal improvements. The municipal plans (feasibility studies) will not be submitted to the regulatory agencies until July 2013. After approval of the plans, they will be used by ALCOSAN to establish the basis of final design for flows in both the Selected and Recommended ALCOSAN WWP.

ALCOSAN will implement an Interim and Post-Construction monitoring program that will measure the effect on water quality. Monitoring programs used to design the WWP will be expanded to include data collected before, during and after construction. These programs will include outfall activation monitoring, in-stream water quality sampling, stream flow gauging and rainfall monitoring. ALCOSAN will also use the hydrologic/hydraulic and water quality models to measure the performance of the Program Elements described in Section 10.

The Recommended 2026 Plan will result in approximately $1.5 billion in new capital for ALCOSAN and $500 million total for all of the municipalities within the ALCOSAN service area. As construction will not begin for at least four years, the estimated cost with inflation is $2.8 billion. Funding will be based on a combination of pay-as-you-go and the sale of Sewer Revenue Bonds. However, the cost of the Recommended Plan will result in a regional Residential Indicator of just over 2%. These projections include both the ALCOSAN and municipal costs.

Ratepayers obviously want to know the specific costs and timetable for projected increases. A preliminary assessment by ALCOSAN calls for 10% - 12% annual rate increases for ALCOSAN customers over the course of the Plan. This does not include any rate increases that may be levied by the municipalities. This information will be refined as several milestones are achieved, such as regulatory approval of the WWP, final municipal plan and cost submittal, and financing. Needless to say, rates will increase gradually throughout the course of the WWP implementation.

Next Steps

ALCOSAN customers and stakeholders will have the opportunity to review the WWP and provide comments that will be included with the final submission to the EPA, DEP, and ACHD. The WWP will be available in hard copy at the offices of the 83 customer municipalities within the ALCOSAN service area and at many public libraries.

ALCOSAN will hold a series of day and evening meetings during the public comment period from July 31 to October 19, 2012. After the comment period closes, ALCOSAN will finalize the WWP and submit it to the regulatory agencies by January 30, 2013.

Written testimony will be accepted by mail, e-mail, and at public meetings. Oral testimony will be recorded at advertised public meetings to be convened during the public comment period.

Details on the public meetings, a digital version of the WWP, and more information about the sewage overflow issue are available on the ALCOSAN web site at www.alcosan.org or by calling the ALCOSAN Public Relations Department at (412) 734-8733.

Customer Municipalities in the ALCOSAN Service Area

Aspinwall Borough
Avalon Borough
Baldwin Borough*
Baldwin Township
Bellevue Borough
Ben Avon Borough
Ben Avon Heights Borough
Bethel Park*
Blawnox Borough
Braddock Borough
Braddock Hills Borough
Brentwood Borough
Bridgeville Borough
Carnegie Borough
Castle Shannon Borough
Chalfant Borough
Churchill Borough
Collier Township*
Crafton Borough
Dormont Borough
East McKeesport Borough*
East Pittsburgh Borough
Edgewood Borough
Emsworth Borough
Etna Borough
Forest Hills Borough
Fox Chapel Borough*
Franklin Park Borough*
Greentree Borough
Heidelberg Borough
Homestead Borough
Indiana Township*
Ingram Borough
Kennedy Township
Kilbuck Township
McCandless Township*
McDonald Borough
McKees Rocks Borough
Millvale Borough
Monroeville
Mt. Lebanon
Mt. Oliver Borough
Munhall Borough
Neville Township
North Braddock Borough
North Fayette Township*
North Huntingdon Township*
North Versailles Township
O' Hara Township
Oakdale Borough
Ohio Township*
Penn Hills*
Penn Township*
Peters Township*
Pitcairn Borough
Pittsburgh, City of
Pleasant Hills Borough*
Plum Borough*
Rankin Borough
Reserve Township
Robinson Township*
Ross Township
Rosslyn Farms Borough
Scott Township
Shaler Township
Sharpsburg Borough
South Fayette Township
Stowe Township
Swissvale Borough
Thornburg Borough
Trafford Borough
Turtle Creek Borough
Upper St. Clair Township
Verona Borough*
Wall Borough
West Homestead Borough
West Mifflin Borough*
West View Borough
Western Westmoreland Municipal Authority*
Whitaker Borough
Whitehall Borough
Wilkins Township
Wilkinsburg Borough
Wilmerding Borough

*Communities not served in their entirety

Environmental Excellence Beyond Clean Water

Allegheny County Sanitary Authority (ALCOSAN)

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