THREE RIVERS WATERKEEPER®

COMMENTS TO THE ALLEGHENY SANITARY AUTHORITY
ON ITS LONG TERM CONTROL PLAN
By John Stephen
Executive Director

For better and worse ALCOSAN is leading our region into the green/gray tipping point. The good is that the agency managed an impressive level of analysis, research and testing to inform its Long Term Control Plan. As a result we have a thorough base line inventory of the current condition of wastewater infrastructure and water quality. Thank you for that work.

The bad is that ALCOSAN launched its Long Term Control Plan public discussion process by arguing it has limits, legal and financial, and had no choice but to present a plan that lacks innovation. For a region that prides itself on its history of invention and risk-taking, there is nothing in your report that inspires or motivates. As a result we get a multi-billion dollar public investment that can only be admired by the money chasers and sadly hides the largest public works project in our region's history underground and beneath our Rivers' surface.

The quality of our waterways is a regional issue and this tipping point should be met with a regional call to arms; with engineers being joined by financiers, lawyers and politicians to meet the challenge. Lawyers need to draft laws that allow ALCOSAN (or its partner agencies) to do more than just treat water at the end of the collection system and financiers need to invent means to finance storm water controls wherever they are efficient and needed.

At previous public meetings I have heard ALCOSAN leadership state more than once that its charter limits its ability to implement green infrastructure…that its charge is to deal with the water sent to it by its customer municipalities. That is a restrictive interpretation for convenience of ALCOSAN staff.

ALCOSAN was created by Allegheny County in 1946 under the Municipality Authorities Act to undertake a county-wide project "for a prompt abatement of the pollution of the waters of the Commonwealth caused by the currently existing practice of discharge of sewage." That remains the need today. Years of study and project proposals and intermunicipal machinations during the post-War era led to the City taking a more active role in project finance and Board leadership through approval of the Project Z agreement and changes to project scope. Like other agreements Project Z can be changed if necessary to meet new Water Quality standards and laws.

That is where we are. Years of study and project proposals in the early 21st century have led us to a tipping point where we once again must redefine the bureaucracy and administration for how we manage wastewater. Admittedly it is actually the ALCOSAN Board and those that appoint those members that need to fully address this issue…and I hope they are listening because they must be part of the solution.

623 East 8th Ave.
Homestead, PA 15120
412-589-9411
threeriverswaterkeeper.org
WATERKEEPER ALLIANCE MEMBER

ALCOSAN also seems restricted by the finances…the costs of the project, the cost of the bonds, and the need to capture rates to pay off those bonds. Again, since what matters is the quality of our rivers and streams and limiting the amount concrete we put in them, we urge you to study alternative, distributive water management techniques that lessen the need to transport ALL of the waste water to a central treatment plant. Maybe this makes it harder to capture revenue needed to pay off multi-Billion dollar bonds, but our Rivers deserve these efforts and the financial innovation to achieve clean streams.

Before we sink billions of dollars into 12 foot diameter pipes lining our Rivers and riverfronts, we ask that there be a credible and intensive study of how to support community-scale efforts that can substantially reduce the impact to our Rivers with upstream treatment. I am not proposing that we can eliminate all the pipes and all the downstream investment, but I am proposing that the gray intensive approach is an inflexible approach driven by habits in thinking and larger rules and regulation, that CAN be changed.

ALCOSAN reminded us often during the public discussion process that its authority only reaches to the collector pipes; and those pipelines are long. Well, it takes a lot of water to wash waste through those pipes; therefore the system needs some storm water. So water in the system is an essential ingredient and water, the river, is the receiver of the by-products.

Let's consider a different model. A model that would require that agencies and districts cooperate, that ALCOSAN evolves to efficiently serve the whole wastewater system and that the infrastructure of Pittsburgh evolves towards a real sustainable future. Wastewater treatment has changed a lot in 20 years. There are amazing models of treatment plants, some local, that recycle everything, and produce products that help ecosystems meet nutrient needs.

ALCOSAN could be a leader at this critical time and change the conversation. How about some of the billions of funds being discussed going towards new plants, state of the art biological plants, assets to districts. ALCOSAN could be a national leader by evolving to manage a group of smaller treatment plants, converting to basically biological systems, instead of larger pipes channeling water to one plant.

While ALCOSAN transitions into a whole system wastewater treatment utility, the rest of Pittsburgh can begin to daylight and reconnect their stream systems, capture storm waters, infiltrate everywhere, change the roads, put up rain barrels, disconnect downspouts, and design rain gardens.

Let's use this tipping point to put an end to the "end-of-the-pipe" mentality. No more excuses. We created public waste systems to do what we could to treat our waters long ago; but the game has changed and our systems must change too. We are now partners with nature, not the rulers of nature.

October 19, 2012

Dear Arletta Scott Williams:

Three Rivers Rowing Association

- Washington's Landing Boathouse
- Millvale Boathouse and Training Center

300 Waterfront Drive
Pittsburgh PA 15222
412.231.8772
Fax: 412.231.5337
www.threeriversrowing.org

On behalf of the over 2,000 members and users of the Three Rivers Rowing Association, I wish to comment on the ALCOSAN Wet Weather Plan.

- As daily users of the rivers, TRRA is particularly concerned about water quality and is interested in supporting all efforts to clean up the water. Additionally, our everyday operations are focused on the Allegheny River and the riverfront, so we support solutions with minimum negative impacts to this sensitive area.

- Although we appreciate that the current Wet Weather Plan is attempting to address water quality issues, we feel it does not do enough. First, it does not sufficiently address the problem of unsafe or unclean water according to ALCOSAN's own determination. Secondly, it appears on the map in the plan that the locations of some storage and conveyance facilities may interfere with TRRA rowing operations at our Millvale or Washington's Landing Boathouses, possibly during their construction and during their operations. These boathouses serve as base of operations for eight high schools, three college teams and countless corporate and masters rowers. In all, over 2,000 members of the community would be impacted and any projects in this area should engage TRRA in the planning.

- We realize that that to accomplish cleaner water there will be an effect on our operations. However, the current proposal is not adequate because it does not include upstream remediation or incorporate technologies such as green infrastructure that would reduce source pollution. A better effort is needed to improve water quality and lessen the impact to the riverfronts.

According to your literature, this is the largest public work project ever in Allegheny County. Given this, it is incumbent that it be done right. We hope to see a more effective, less disruptive proposal emerge. Thank you for the opportunity to provide comment.

Yours Truly,

Rick Brown
Executive Director
412-231-8772
rickbrown@threeriversrowing.org

pennsylvania environmental council

October 19, 2012

Ms. Arletta Scott Williams
Executive Director
ALCOSAN
3300 Preble Avenue
Pittsburgh, PA 15233

Dear Director Williams:

The Pennsylvania Environmental Council ("PEC") respectfully submits these comments to the Allegheny County Sanitary Authority ("ALCOSAN") as part of the public comment period on ALCOSAN's Draft Wet Weather Plan (dated July 31, 2012). PEC is a statewide nonprofit organization committed to sensible and sustainable solutions to environmental issues, and has been deeply involved in water quality and stormwater issues for much of its 42-year history.

For Western Pennsylvania, the problem of controlling sanitary sewer overflow and combined sewer overflow ("SSO" and "CSO", respectively) is among the most complex environmental challenges of this era. The cost, magnitude and complexity of this problem, together with the fragmented local government structure that exists in this region, make this a particularly formidable problem technically, economically and politically.

PEC has been a leader in promoting comprehensive, integrated solutions for addressing this challenge throughout Pennsylvania. Our work in a number of Pennsylvania communities, including Philadelphia, has led to demonstration projects, municipal planning code changes, information exchange programs, and public planning recommendations aimed at creating a foundation for widespread green infrastructure as a significant component of cost-effective wet weather pollution abatement strategy.

We commend ALCOSAN for a thorough response to the specific requirements of the federal consent decree. The technical merits of its data collection, flow monitoring and system engineering are of great value for stormwater management planning in this region. In fact, we believe that the expansion of the primary treatment facility as designed in the selected plan should move forward as proposed in order to maximize its capacity.

However, this plan is constrained by the parameters of the federal consent decree, the sequencing of the municipal consent orders and required feasibility studies, the composition of local governments in this region, and the pending regionalization evaluation. Moreover, this sequencing has rendered this process out of a logical and proper order and has required ALCOSAN to develop an engineered solution without regard for what the municipal feasibility studies might conclude.

Central Regional Office
800 North Third Street
Suite 304
Harrisburg, PA 17102
phone: 717-230-8044
fax: 717-230-8045

Northeast Regional Office
175 Main Street
Luzerne, PA 18709
phone: 570-718-6507
fax: 570-718-6508

Southeast Regional Office
1315 Walnut Street
Suite 532
Philadelphia, PA 19107
phone: 215-545-4570
fax: 215-545-4594

Southwest Regional Office
22 Terminal Way
Pittsburgh, PA 15219
phone: 412-481-9400
fax: 412-481-9401

Beyond that, we take exception to the conclusions reached in ALCOSAN's analysis and to the recommendations called for in the selected plan. ALCOSAN acknowledges that its selected wet weather plan will not meet the water quality guidelines called for in the consent decree, and that to achieve such a standard would pose an excessive economic burden on ratepayers. The selected plan fails to address a number of fundamental issues critical to successfully achieving compliance with the necessary water quality regulations by failing to promote an integrated, comprehensive regional solution that will result in reduced sewage and storm sewer overflow *at the source*. Consequently, the selected plan falls well short of providing an effective solution for our region given the available resources and opportunities.

Consequently, we believe there are at least four structural deficiencies with the federal consent decree and the wet weather plan that ALCOSAN will submit on January 31, 2013.

Source Reduction – The fundamental cause of our region's CSO/stormwater problem is the volume of wet weather-related flow created throughout the region that overwhelms the system's collection, conveyance and treatment capacity. The gray infrastructure solution proposed by ALCOSAN does nothing to address this root cause and consequently reduce the scale of a required constructed system.

First and foremost, sanitary sewer overflow is an illegal discharge and therefore poses both an environmental and public health imperative that must be addressed. By coordinating municipal and ALCOSAN operations in a way not currently envisioned and instituting a financial model which incentivizes source reduction, CSO and stormwater flowing into the sewage treatment system can be reduced and the required conveyance system can be developed at a more appropriate scale. A number of organizations in this region have been looking at various source reduction strategies for some time now, but the process prescribed by the consent decree and municipal consent orders places acceptance of the ALCOSAN wet weather plan ahead of source reduction at the municipal level. The ability to integrate source reduction in a comprehensive regional strategy will enable Allegheny County to achieve the greatest reduction possible of CSO and stormwater discharges for the lowest possible cost.

Inconsistent Process – We are concerned that the process imposed by the consent decree that has guided the development of the ALCOSAN wet weather plan is inconsistent with the process driving the municipal feasibility studies. These 83 municipalities send their stormwater and many send their sanitary sewer flow to the ALCOSAN system, a circumstance that would most certainly be affected through source reduction and green infrastructure.

To be most effective, the municipalities would design source reductions strategies at the community level to reduce the total volume of flow entering the ALCOSAN system. This would then enable ALCOSAN to design a collection, storage and treatment solution at a scale and cost that would meet the needs of the region. Unfortunately, the prescribed process for compliance is reversed and consequently does nothing to reduce water pollution at its source or minimize load on ALCOSAN's required treatment capacity.

As a result, the consent decree has the force and effect of dictating an outdated and costly solution that does not serve the long-term interests of this region, particularly at a time when better technology and green infrastructure strategies are readily available.

Service Fee Revenue Model – In 1949, ALCOSAN began entering into individual agreements with the 83 municipalities that now comprise its collection system. These agreements are binding contracts that specify the terms and conditions for ALCOSAN's acceptance of sanitary and storm sewer flow from each municipality. As such, ALCOSAN charges its municipal customers on the basis of water consumption, not how much water is put back into the collection system for treatment. This financial model does nothing to incentivize source reduction, nor does it provide an accurate basis for covering ALCOSAN's true costs for the service it provides. Hence, given the circumstances, we assert that now is the proper time to review these agreements in a manner that is more consistent with the regional priorities of stormwater and water quality management.

Other metropolitan areas, such as Philadelphia and Minneapolis, have reversed this revenue model to place the burden–and thus, the opportunity–on commercial and industrial property owners for achieving the highest possible source reduction, including grants and tax incentives for adopting green infrastructure measures. These strategies, while admittedly enacted under a single user agreement and not 83 separate agreements, have been very effective at reducing storm sewer overflow entering the traditional "gray" collection infrastructure.

We are mindful of the fact that unlike Philadelphia and many other urban jurisdictions, ALCOSAN does not own the collection system infrastructure at the municipal level, and under the terms of its agreements is obligated to accept whatever flow its customers send. However, the ALCOSAN wet weather plan makes no effort whatsoever to address this fundamental flaw in our region's ability to control its sanitary and storm sewer overflow. The magnitude of the benefits derived from incentivizing source reduction, as evidenced in other jurisdictions, is most compelling and is sufficient cause for addressing how this condition can be rectified.

Green Infrastructure –Green infrastructure as a CSO/stormwater control measure is not addressed at all in the ALCOSAN wet weather plan, despite the fact that much planning and development work on such strategies has been underway in Western Pennsylvania, collectively representing important progress toward bringing this larger problem under control. A number of well-established groups have been leading the way in identifying green infrastructure opportunities throughout this region and have made great strides in advancing collective understanding and support.

The Pennsylvania Environmental Council and a number of organizations such as the Green Infrastructure Network, 3 Rivers Wet Weather, and many others continue to demonstrate the efficacy of green infrastructure as a strategy for significantly alleviating our region's stormwater management problem. A number of high profile demonstration projects collectively represent a significant investment in resources and capabilities in this field. An important purpose of these projects has always been to establish a baseline of results that could be scaled up and included as a meaningful element in any regional stormwater management plan. In fact, green infrastructure has been successfully utilized in other jurisdictions and should be a significant element in the ALCOSAN wet weather plan.

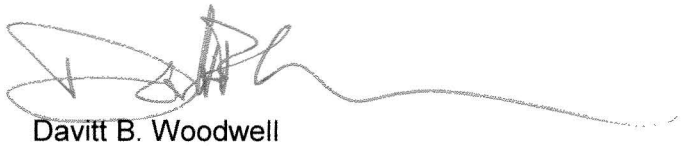
For the reasons outlined above, we maintain that the ALCOSAN wet weather plan as currently written constitutes an outdated and ineffective solution to a problem for which newer, more effective source-based solutions currently exist. The Pennsylvania Environmental Council

cannot support this plan as written, and therefore joins ALCOSAN in urging that the federal consent decree be reopened and revised and that specific attention be given to the following changes:

- Authorize the expansion of the treatment capacity of the Woods Run Treatment facility as planned
- Adjust the sequence of the completion of the municipal feasibility studies to occur prior to the development of a revised ALCOSAN wet weather plan.
- Require that green infrastructure be a significant element in any wet weather plan for Allegheny County.
- Require that source reduction be required as the first step in the stormwater collection process at the municipal level.
- Provide ALCOSAN with additional time to complete a revised wet weather plan incorporating these and other changes. The 2026 deadline for completion of all gray infrastructure construction should remain unchanged.

Given the cost and impact of this proposed project on the region, it is essential to "get it right" at this critical juncture and ensure that all of the resources being brought to bear on addressing this problem are used prudently and efficiently. For the reasons stated above, we maintain that ALCOSAN's selected plan represents a lost opportunity that will have lasting consequences for generations to come, and urge ALCOSAN to adopt these recommendations in a revised wet weather plan.

Respectfully submitted,



Davitt B. Woodwell
Executive Vice President
Western Pennsylvania Region
Pennsylvania Environmental Council
22 Terminal Way
Pittsburgh, Pennsylvania 15219
(412) 481-9400

October 19, 2012 **FINAL**

TO: Allegheny County Sanitary District (ALCOSAN)

FROM: Merritt Bussiere, Research Director
Pittsburgh UNITED/Clean Rivers Campaign

RE: A Story about a Rust Belt, River Town

I'm with the Clean Rivers Campaign. We're the Grassroots Campaign, working with our environmental, community and faith-based partners, talking to rate payers and municipal officials throughout the Service Area, providing education and information, developing local leaders, and pushing the as yet unexplored opportunity to realize substantial green infrastructure investment throughout the ALCOSAN Service Area.

Thank you for all the effort that you and your public and private partners put into developing the draft Wet Weather Plan. We at the Clean Rivers Campaign know you are working hard to meet the tough terms of the Consent Decree.

That said, the draft plan is basically an old, gray, industrial, underground program for collecting, conveying, storing and treating system flows.

While we know the "Big Fix" for the ALCOSAN Service Area cannot be accomplished without some gray facilities, and we understand that green infrastructure is just one important form of source reduction, we strongly believe that this is an historic, literally once in our lifetimes, opportunity to make a significant investment in green infrastructure.

We further believe that serious green investment must happen first. Then any gray facilities needed to meet the federal Consent Decree requirements can be designed and constructed. Billions of dollars will be provided by area rate payers to underwrite the Big Fix. Let's invest this money in revitalizing rate payers' communities while reducing system flows.

Let's think for a moment about a city that is characterized by:

- Steep slopes
- Clay soils
- Brownfields
- Many small, rainfall events each year
- It's a Rust Belt, River Town that's suffered with the decline of old-line manufacturing but has smartly re-organized and diversified its economy in recent decades emphasizing higher education and the financial sector
- The region's sanitary district, which has numerous municipal customers, is under a federal consent decree to meet the standards established by the Clean Water Act and about to embark on a once-in-a-lifetime investment of public dollars

The city is Cincinnati, Ohio.

Although their initial Wet Weather Plan was rejected by the regulators, the Metropolitan Sewer District of Greater Cincinnati is today pursuing a Wet Weather Improvement Plan that has two parallel tracks:

1. A Big Gray Solution
2. A request for 3 additional years to develop an Alternative Plan that blends source reduction, including green infrastructure, with gray consolidation and conveyance. They'll have another 6 years to implement this alternative with the goal of removing 2 billion gallons of water per year in just the first phase.

In December 2012, the Alternative Plan will be submitted. The MSD of Greater Cincinnati is a recognized leader and catalyst in community revitalization, showing visible results in and around the city. Developing and maintaining strong partnerships, the district has launched programs such as:

- Project Groundwork targets cleaner streams, improved protection of public health, and enhancements to the communities where rate payers work, live, and play.
- Sustainable Infrastructure Initiatives look to optimize CSO reduction and community benefit including green jobs.
- The Communities of the Future program utilizes "triple bottom line" analysis and outcomes to guide watershed planning and project development.

What's happening in Cincinnati? Creativity. Initiative. Innovation A more holistic approach that sees and acts on the links between source reduction, neighborhood development and community quality of life. And, above all, a problem-solving approach that uses all the tools in the Wet Weather Toolbox.

If Cincinnati can do this, why not Pittsburgh? If the MSD of Greater Cincinnati can do this, why not ALCOSAN?

I am Allison Chin, President of the Sierra Club, the oldest and largest grassroots environmental organization in the nation. On behalf of our 2 million members and supporters, we want to thank ALCOSAN for drafting their Wet Weather Plan (WWP) and for this opportunity to comment on that Plan. The Sierra Club is a partner in the Clean Rivers Campaign and supports the campaign's position that green infrastructure on scale must be part of the ALCOSAN Plan. Implementation of green solutions will not only clean our water, but will create family-sustaining jobs, rebuild our neighborhoods, clean our air, and result in the most benefit for the least cost to our community! We are particularly proud that the Clean Rivers Campaign has received enthusiastic endorsement from a diverse array of community, business, and environmental organizations.

Certainly, solving the problem of sewage overflows in the ALCOSAN Service Area will require some gray facilities. But we strongly believe that this is an historic once-in-our-lifetime opportunity to make a substantial investment in green infrastructure that will benefit public health and clean water, create community amenities, and save ratepayers' money.

We understand that embracing green infrastructure represents a fundamental shift in thinking and practice. Traditional but outdated thinking has been to use extensive concrete piping and collection systems to move stormwater as far away as quickly as possible. Green solutions use nature's natural filters – plants, trees, soils and their contours – to manage stormwater where it falls, before inflow and infiltration overloads local sewer systems.

Unlike buried gray infrastructure, the benefits of green investment are quite visible in the community. Green investment creates neighborhood amenities and recreational opportunities, increases property values, sparks neighborhood revitalization and enhances local business development by potentially creating new short- and long-term jobs. Green investment also reduces flooding, reduces energy use and improves air and water quality.

Additionally, pursuing green solutions to stormwater overflows can open up significant public project financing options that aren't available for gray infrastructure. The U.S. EPA is currently investing significant resources to help communities implement green solutions into their wet weather plans. We believe that all of these added benefits of green infrastructure need to be part of the equation when considering an overall approach that will best serve Pittsburgh's residents and ratepayers.

We understand that the Pittsburgh area is unique. There are steep slopes, clay soils, multiple jurisdictions, numerous rainfall events and the system treatment facilities are located at the "end of the pipe." But every region has barriers, and many share some of the same barriers as the ALCOSAN Service Area. Progressive sanitation districts treat these barriers as challenges and opportunities, pursuing smart new partnerships and embracing new funding and financing initiatives with creativity. They've developed a different culture, a different ethic and mindset about how to creatively address stormwater management.

At the Sierra Club, we see many jurisdictions around the United States struggling to manage overflows. We're seeing sanitary districts not so different from your agency explore and implement wet weather plans that include both strong green and gray components. Many are choosing to maximize green infrastructure for stormwater control first, and then looking at the gray facilities required to complete the project.

There are many progressive cities and regions to learn from where they're embracing green strategies, including Cincinnati, Chicago, the District of Columbia, Kansas City, Louisville, Milwaukee, Seattle, Syracuse, and over a dozen smaller municipalities along the Ohio River. In New York City, green maintenance jobs are now considered one of the key benefits of implementing green infrastructure. In Pennsylvania, Philadelphia and Lancaster are national leaders in using green investment to ensure their futures as green cities with safe clean waterways.

Many districts have determined that green approaches will save their ratepayers money. But whatever you spend, whether green costs the same amount as a gray system or less, if we are going to spend billions of dollars to solve a water quality and public health problem, why not do so in ways that have so many added benefits to our communities? Why not approach this massive project as an opportunity and an investment in the future, instead of as a cost?

We hope that all future negotiations with the agencies are truly creative and collaborative processes. We offer the services of the national Sierra Club in helping with those negotiations to find the best solution for Pittsburgh.

Testimony to Alcosan Board on Friday, October 19, 2012
Representing Kingsley Association - Scott Pitz, Project Manager
- Juan Castellanos, Community Outreach
- Carla Boyd, Retrofit Builder
Representing Larimer - Donna Jackson - member of Larimer Green Team
member of Larimer Consensus Group

I am Scott Pitz of the Kingsley Association. With me today are Juan Castellanos of Kingsley and Miss Donna Jackson of both the Larimer Consensus Group and the Larimer Green Team. Thank you for allowing us to speak today.

The citizens of Larimer have put in 10's of thousand of hours on a grass roots effort to redevelop Larimer. I would like to honor Miss Donna and the efforts of all of her peers in envisioning a NEW Larimer, a Larimer that will be rebuilt as a sustainable community based upon foundational green principles. I am in awe at their dedication and love for their community. Thank you, Miss Donna.

We at Kingsley seek to assist the citizens in Larimer in any way we can, encouraging and equipping them through partnerships with experts that can assist them in understanding solutions to the challenges. To that end, we have engaged with partners to develop a GIS map of the Larimer neighborhood, allowing us to identify drainage patterns and points of pooling. The community has begun an internal collaborative process to learn and implement dynamic and scalable community-based storm water management solutions. This includes the use of domestic rain barrels, the actual building of rain gardens, and the pilot storm water retention system at the EECO center on the corner of East Liberty Blvd and Larimer Blvd.

We all believe that collaborative action with all parties is the best way to lift up community, the disadvantaged, and the democratic process in the city of Pittsburgh. Leaving this work to a small group of experts and contractors shortchanges the opportunities available to disenfranchised communities like Larimer. The scope and depth of this project could and should provide training and employment opportunities across the County. Rain gardens, bioswales, permeable surfaces, small scalable rain catchment systems - all these can be implemented at community levels to reduce the storm water flow into the municipal system.

The citizens of Larimer and the Kingsley Association are eager to work with this Board in this important project. We feel personally connected in that our storm water feeds into the Washington Blvd bathtub where people so tragically died in the recent past. Let's

look for a new model of collaboration that will make Pittsburgh proud. Let's look for a new model of cooperation that will continue to enhance Pittsburgh's reputation as a Green City.

Thank You!

PennFUTURE
Every environmental victory grows the economy.

Citizens for Pennsylvania's Future
Regional Enterprise Tower
425 Sixth Avenue, Suite 2770
Pittsburgh, PA 15219-1843
P 412-258-6660 / 800-689-1843
F 412-258-6666
info@pennfuture.org
www.pennfuture.org

October 19, 2012

By Hand Delivery

Allegheny County Sanitary Authority (ALCOSAN)
3300 Preble Avenue
Pittsburgh, PA 15233

Re: ALCOSAN Draft Wet Weather Plan

Dear Sir or Madame:

On behalf of Citizens for Pennsylvania's Future (PennFuture) and its members living in the ALCOSAN service area, we write to provide comments on the referenced ALCOSAN Draft Wet Weather Plan (WWP), submitted by ALCOSAN as required under the Consent Decree issued on January 23, 2008, and executed by ALCOSAN, the United States Environmental Protection Agency (EPA), the Pennsylvania Department of Environmental Protection (DEP) and the Allegheny County Health Department (ACHD).

PennFuture is a public interest membership organization that works to create a just future in which nature, communities and the economy thrive. PennFuture has done extensive work to protect and improve surface waters within the ALCOSAN service area and throughout the Commonwealth, including work on controlling sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs). Most recently, PennFuture, along with partners Natural Resources Defense Council (NRDC) and Clean Water Action, conducted an independent review of the CSO long term control plan update (LTCPU) submitted by the Philadelphia Water Department (PWD), commonly known as *Green City, Clean Waters*, which was instrumental in improving the draft plan originally submitted by PWD and in helping PWD obtain regulatory approval of an improved final plan.

Our comments on the WWP follow:

1. **The WWP should have considered the large scale deployment of green infrastructure as one of the alternatives in its Alternatives Analysis.**

A number of municipalities across the country are discovering that the large scale deployment of green infrastructure is providing a cost effective means of complying with regulatory requirements, including the control of SSOs and CSOs. In Philadelphia, green infrastructure is projected to cost billions of dollars less than traditional infrastructure would cost to satisfy regulatory requirements. One reason for the savings is that green infrastructure can be coordinated with planned capital projects to eliminate upfront construction costs (as well as limit inconvenience to residents).

In addition to being less expensive in certain cases, green infrastructure can also make it easier for municipalities to meet regulatory requirements. Because it reduces pollutant loads in

addition to managing volume, green infrastructure allowed PWD to satisfy the requirements of "presumption" approach iii., "[t]he elimination or removal of no less than the mass of the pollutants identified as causing water quality impairment . . . for the volumes that would be eliminated or captured for treatment under paragraph ii." when it was unable to meet "presumption" approach ii. itself, "[t]he elimination of the capture for treatment of no less than 85% by volume of the combined sewage collected in the CSS during precipitation events on a system-wide annual average basis." Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18,688, 18692-93 (Apr. 19, 1994). To the extent ALCOSAN elected to meet the "demonstration" approach because it was having difficulty meeting the requirements of the "presumption" approach in a cost-effective manner, green infrastructure may provide an alternative means for ALCOSAN to do so.

Green infrastructure also begins to manage stormwater immediately with each individual green infrastructure installation, which can be completed in days, whereas traditional infrastructure does not begin to manage stormwater until construction of a huge capital project is complete, which can take several years. Finally, apart from managing stormwater, green infrastructure provides a number of secondary benefits that are not provided by its traditional counterpart, including: limiting surface water erosion and habitat destruction; creating passive recreational areas; reducing heat-related deaths; saving energy; improving air quality; offsetting climate change; creating new green jobs; beautifying communities; and increasing property values. ALCOSAN's ratepayers will long regret that their hard-earned dollars were used to purchase infrastructure that is for the most part buried underground, serves only one purpose, uses huge amounts of electricity to operate, and does not even begin to manage stormwater until many years down the road, when that money could have been used on infrastructure that provides all of these other benefits, as it is beginning to do in other municipalities across the country.

Unfortunately, ALCOSAN's ratepayers have not been able to ascertain whether large scale deployment of green infrastructure would have been a cost effective means for ALCOSAN to comply with its regulatory obligations to control SSOs and CSOs because ALCOSAN did not give it any meaningful consideration in its Alternatives Analysis. ALCOSAN should ask its regulators for additional time to consider a large scale deployment of green infrastructure alternative, and its regulators should grant the request.

2. **ALCOSAN should not be granted any extension of the September 30, 2026 deadline to complete and operate all improvements to control SSOs and CSOs set forth in the Consent Decree until it embraces an integrated municipal stormwater and wastewater planning approach.**

The Consent Decree requires ALCOSAN to complete and operate all improvements to control SSOs and CSOs by September 30, 2026. Consent Decree ¶¶ 17-20. The WWP seeks an extension of that deadline.

On June 5, 2012, EPA issued a memorandum on the subject "Integrated Municipal Stormwater and Wastewater Planning Approach Framework" (Memorandum). http://www.epa.gov/npdes/pubs/integrated_planning_framework.pdf. That memorandum

attached an "Integrated Municipal Stormwater and Wastewater Planning Approach Framework" dated May, 2012 (Framework). The Framework stated:

> Integrated planning will assist municipalities on their critical paths to achieving the human health and water quality objectives of the [Clean Water Act (CWA)] by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to make capital investments.
>
> Integrated planning can also facilitate the use of sustainable and comprehensive solutions, including green infrastructure, that protect human health, improve water quality, manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.

Framework at 1-2. The EPA website that houses the Memorandum and Framework appropriately cautions:

> The integrated planning approach is not about lowering existing regulatory or permitting standards or delaying necessary improvements. Rather, it is intended to be an option provided to help municipalities meet their CWA obligations by optimizing the benefits of their infrastructure improvement investments through the appropriate sequencing of work.

http://cfpub.epa.gov/npdes/integratedplans.cfm (emphasis added). Nevertheless, in practice, EPA appears to offer greater scheduling flexibility to those municipalities that have embraced an integrated planning approach that uses sustainable and comprehensive solutions, including green infrastructure. As indicated in the previous section, however, the WWP fails to do so. Until ALCOSAN embraces the kind of integrated planning approach described in the Memorandum and Framework, it should not be granted the scheduling flexibility that it requests.

3. An independent construction cost consultant should be retained to ground-truth the projected costs of the various alternatives.

As part of their independent review of *Green City, Clean Waters*, PennFuture and its partners retained a construction cost consultant to confirm that PWD did not understate the cost of its preferred alternative and/or overstate the cost of the other alternatives in order to reach a predetermined outcome. *See* Memorandum from NRDC, PennFuture, and Clean Water Action to DEP and EPA 3, Ex. B (Dec. 16, 2009) http://www.pennfuture.org/UserFiles/File/Legal/Water20091216_MemoRecommend_LTCPU_BG.pdf. The same kind of analysis would be useful here, albeit for a slightly different reason.

If ALCOSAN decides to move forward with its Selected Plan instead of a large scale deployment of green infrastructure alternative, it will be important to know whether its estimated planning level capital cost of approximately $3.6 billion in 2010 dollars is accurate, as that figure forms the basis for ALCOSAN's request for an extension of the September 30, 2026 deadline imposed by the Consent Decree to complete and operate all improvements to control SSOs and CSOs. As stated in the previous section, ALCOSAN should not be granted any scheduling flexibility until it embraces integrated planning. If, however, ALCOSAN's regulators are

inclined to grant ALCOSAN an extension to implement the Selected Plan, they should do so only if $3.6 billion does not grossly overstate the cost of that plan.

4. **An independent rate expert should be retained to verify that ALCOSAN's affordability analysis conformed to EPA guidance.**

As part of their independent review of *Green City, Clean Waters*, PennFuture and its partners also retained a rate expert to confirm that PWD did not understate the limits of what the city and its ratepayers could afford to spend on CSO control. *See* Letter from NRDC and PennFuture to EPA (July 31, 2012) http://www.pennfuture.org/UserFiles/File/Legal/WaterPhilaSewer_IndepReview_20120731_BG.pdf. A similar analysis would be useful here.

EPA has issued guidance on how to assess financial capability and develop an appropriate implementation schedule. *See* http://www.epa.gov/npdes/pubs/csofc.pdf. An independent rate expert should be retained to verify that ALCOSAN's affordability analysis conforms to this guidance to determine whether ALCOSAN's representation that $3.6 billion (or whatever an independent construction cost consultant were to conclude the Selected Plan would cost) is cost prohibitive under a 2026 timeframe.

Thank you for your consideration of these comments. If you have any questions, please do not hesitate to contact us.

Sincerely,

Brian Glass
215-545-9695
glass@pennfuture.org

Heather Langeland
412-258-6684
Langeland@pennfuture.org

ALCOSAN PUBLIC MEETING

OCTOBER 19, 2012

- Identify yourself including name, title, and address for the record.

- Thank ALCOSAN for their hard work over the past 10 years. This is a huge undertaking and we commend you on your diligence.

- ALCOSAN has had numerous meetings with the Pittsburgh Water & Sewer Authority (or P-W-S-A) over the years to discuss this plan. We appreciate the ongoing dialogue.

- As the largest infrastructure project in the history of Allegheny County, we all must remain committed to ensuring it's done right.

- P-W-S-A is the largest customer in the ALCOSAN service area and with such a significant stake in the outcome it is incumbent that The PWSA provides official comments on the record.

- Our role at P-W-S-A is to provide clean safe drinking water. We are always in support of protecting our most valuable natural resource. We want our water to be safe for drinking, recreation and aquatic life. We support efforts that will reduce combined sewer overflows.

AFFORDABILITY

  - The affordability of ANY plan to do just that is our #1 concern.

  - The EPA's criteria for says that the sewer bill should be no more than 2% of the Median Household Income. This criteria does not consider the water bill. Our customers pay a combined water and sewer bill every month. They don't care which line item is for what. PWSA has already had to make tough decisions based on our own regulatory compliance and our combined bill is already 2.2% of Pittsburgh's Median Household income. They can't afford to pay any more.

  - PWSA applauds ALCOSAN in advocating for the revised $2 billion dollar plan; however, even this revised plan is unaffordable to Pittsburgh residents. The lower cost ALOCSAN plan would cost 2.3% of Pittsburgh Median Household Income, and double the current cost to our ratepayers.

GREEN SOLUTIONS

ALCOSAN has stated that it cannot require green infrastructure because it does not have land use planning authority. This is true. However, as the regional provider of

sewage treatment ALCOSAN should provide guidance on green infrastructure solutions to the entire region as it did in 2010 when they engaged in a variety of these activities to educate and expose our municipalities to Green options.

- ALOCSAN should review a variety of possibilities and recommend best practices that are reasonable for residents and business in Allegheny County.

ECONOMIC VITALITY

- There will be significant impacts on our entire community – and PWSA would like to encourage ALCOSAN to fully consider the economic impact on tourism and business in the north shore where the proposed deep tunnel would be located.

- A program of this magnitude will require years of construction and associated concerns that PWSA is already sensitive to, including long-term quality of life issues such as: noise, traffic, debris and odor.

- ALCOSAN has considered satellite plants. However, the cost/benefit needs to capture more than just the trade-off between plants upstream and expanding the ALCOSAN facility. It must capture the impact on some key businesses in Pittsburgh that would be impacted by expanding tunnels. This includes: ALOCA, the Pirates, the Steelers, the Carnegie Science Center, etc...

COST SHIFTING

- PWSA would like to see ALCOSAN minimize the financial impact on other agencies.

- The original $3.6 Billion dollar plan included municipal costs estimated to be $0.5 Billion dollars. According to the EPA affordability rate, this was too expensive for ratepayers.

- ALCOSAN reduced the cost of the plan by $2 Billion dollars by deferring components of ALCOSAN's facilities but none of the municipal projects. A more effective way of attaining affordability may be to defer components of the municipal projects in municipalities where affordability is harder to achieve. This would have the same regional impact but would target savings to communities with less financial resources.

- ALCOSAN's $2 Billion dollar plan eliminated facilities in Saw Mill Run that are required to accommodate identified upstream municipal improvements. This has

created a high degree of uncertainty in PWSA's planning efforts and has the potential to further increase costs to our customers.

RATE STRUCTURE

- We know that CSO's must be reduced.
- We support improving water quality in the rivers.
- We need to see a rate structure that considers the impact that this plan has on city residents and businesses.
    - ✓ By the EPA's own measure, they can't afford even the reduced plan.
    - ✓ This will have a negative effect on business and quality of life
    - ✓ The City residents bear the burden for the entire region. A disproportionate amount of ALCOSAN's regional facilities are located within the City of Pittsburgh. Roughly 63% of the ALCOSAN service population and 81% of the ALCOSAN service area lie outside of the City of Pittsburgh. However, the preponderance of facilities that ALCOSAN has proposed for construction lie within the Pittsburgh city limits.

I thank you for providing P-W-S-A with the opportunity to comment on the ALCOSAN Wet Weather Plan. We applaud the efforts put into it and look forward to working with you to develop a plan that protects and improves the environment in a way that is affordable and does not inadvertently disrupt Pittsburgh's growing and increasingly vibrant economy.

Arletta Scott Williams
Executive Director
Allegheny County Sanitary Authority
3300 Preble Avenue
Pittsburgh, PA 15233

October 18, 2012

Re: ALCOSAN Draft Wet Weather Plan

Dear Ms. Williams,

This letter comments on the Draft Wet Weather Plan that ALCOSAN recently released, and is presented by the Mt. Lebanon Environmental Sustainability Board (ESB). We are a Board of seven residents that is appointed jointly by the Mt. Lebanon Commission and the Mt. Lebanon School Board. Our mission is to assist the Commission and School Board with environmental and sustainability issues and to provide a means for residents to voice concerns about environmental matters in the community.

As an Environmental Sustainability Board, our focus is to aid the Municipality of Mt. Lebanon in exploring programs and practices that promote environmental awareness and environmentally improved practices. As part of our work, we have examined issues related to Stormwater including Non-structural Stormwater Best Management Practices, also known as ***Green*** infrastructure. It should be apparent that if all communities employed ***Green*** infrastructure to reduce wet weather rate of flow and amount of flow, then a significant component of the overflow and treatment problem in the ALCOSAN System would be eliminated. ALCOSAN can, and should, be a leader in community outreach and education to better inform local communities of their ability to reduce their contribution to downstream overflows or to ALCOSAN's treatment capacity issues.

ALCOSAN's Draft Wet Weather Plan

The draft plan proposes to reduce the wet weather problem by installing storage capacity, additional interceptor sewers, and expanding the Woods Run treatment facility. The storage capacity increases are created with huge tunnels along the three rivers and a storage tank in the South Hills. The proposed solution consists entirely of expansion of these Structural Stormwater Best Management Practices, also known as ***Gray*** infrastructure. Flows are captured and managed within concrete storage structures and the stored water is then pumped out for treatment and release. This approach assumes that wet weather inflows to the sewer system are unavoidable. An alternative approach is to prevent clean wet weather flows from entering the sewers. In developed portions of the County where the sewers are combined, it would be difficult and expensive to install a new separate storm sewer system. However, there are alternatives that take advantage of the natural ability of soils and landscapes to absorb precipitation and storm runoff through infiltration. These ***Green*** alternatives demand more attention in the wet weather plan. Major cities in the US, such as Philadelphia and Denver, have decided to address their wet weather sewer problems with a strong emphasis on ***Green*** infrastructure. The ALCOSAN Plan

dismisses ***Green*** alternatives in two paragraphs on page 8-19. We find this dismissal unconvincing. Given the huge cost of the presented plan, ALCOSAN should have required a detailed analysis of ***Green*** alternatives. This review should include an expansive presentation of existing ***Green*** technologies and the success/failure of plans that emphasize their use.

Several ***Green*** options that were not presented in the plan and deserve consideration are outlined below:

- **For residential properties** – green roofs, rain barrels, rain gardens, vegetated swales, and pervious paving
- **For commercial properties, institutional properties, and large scale sites** – green roofs, rain barrels, rain gardens, vegetated swales, pervious paving, retention ponds, wetland restoration, stream reclamation.

Several structural options that combine ***Gray*** and ***Green*** technologies are outlined below:

- **For residential properties, commercial properties, institutional properties, manufacturing uses and large scale sites -** underground storage solutions, such as cisterns & sump pits, which hold stormwater until it has time to percolate into the soil; and underground storage solutions, which permit stored stormwater runoff to be pumped to the surface for irrigation, janitorial, industrial, or manufacturing uses.

In conclusion, the high cost of the presented plan clearly demands that ***Green*** alternatives be considered. Major cities facing similar water sewer issues have identified ***Green*** technologies as a valuable tool in lessening wet weather problems. The absence of this consideration is the ALCOSAN draft plan is conspicuous. ALCOSAN must make a fair evaluation of innovative ***Green*** options before it advances the recommendations contained in the current plan.

Sincerely,

Mt Lebanon Environmental Sustainability Board

Robert S Hedin, Ph.D., Chairperson
Brett Aristegui
Andrew Baram, MBA
Elaine Cappucci, School Board Liaison to Environmental Sustainability Board
Matt Hoover, MSES, AICP
Kathleen A. Hrabovsky, AIA, LEED AP (BD+C and ID+C), MSSD
Steve Noorbakhsh, LEED AP (BD+C)
Pam Scott, PA Certified Pesticide Applicator

cc: Clean Water Action – Tom Hoffman

ALCOSAN Wet Weather Proposal
Public Hearing – October 19, 2012
3300 Preble Ave
Pittsburgh, PA

Comments from: Barbara Grover, Chair, Allegheny Group of the Sierra Club, 425 N. Craig St. Suite 202, Pittsburgh, PA 15213

On behalf of the Allegheny Group of the Sierra Club, I strongly urge ALCOSAN to revise its Wet Weather Proposal to include 80-100% 'green' solutions. The billions of dollars required to implement the current 'tunnels-under-the-river' solution can be better used to provide long-term, sustainable solutions that capture the water where it falls. Green solutions provide both environmental and aesthetic benefits and probably economic ones as well.

For an example of an effort that has been quite successful in Buffalo, NY, see the Oct. 11, 2012 Article (www dot buffalorising.com/2012/10/green-streets-mean-both environmental-and-aesthetic-benefits-for-buffalo.html). The description of the problem given there has a very familiar ring: "On really rainy days, the stormwater will overwhelm the wastewater treatment system" said Jessie Fisher of Buffalo Niagara Riverkeepers. "Since we have a combined system, the stormwater mixes with our raw untreated sewage and both the stormwater as well as the sewage waste overflow into our local waterways." Buffalo installed bioretention planters, pervious pavement and rain garden inlets among other 'green' items. You could surely work to get the communities in Allegheny County that are involved in ALCOSAN to consider such solutions.

I am on the board of the Squirrel Hill Urban Coalition. Our community is also concerned with storm-water problems. Many of the businesses and homes in Squirrel Hill have been plagued with flooded basements for many years. In September 2011, a presentation was given offering 'green' ways to capture the first 1"-1.5" of rainfall which would do the job. The plan was the result of thinking by a group of Pittsburgh based companies (Mellora Environmental Design, Andropogon, Rothschild Doyno Collaborative, and Cosmos Technologies Inc.) The solutions included putting in curb cuts to direct runoff into cobble swales which directed water into "Infiltration trenches", planting trees, establishing a wildflower meadow, and installing permeable sidewalks. I am confident that advice from such firms could provide realistic, functional ways to focus on green solutions in your proposal.

We look forward to seeing a revised proposal that includes 'green' solutions so that the rain water is captured where it falls and all sewage waste gets to the water treatment plant.

Thank you for your attention.

Clean Rivers Campaign
Friday, October 19th Press Event/Public Comment
Ted Popovich - Ratepayer from Ben Avon
6606 Virginia Avenue, Pittsburgh, PA 15202

Today, I am here to emphasize green solutions over gray ones.

As an engineer by training, I could be in **awe** of the enormity and complexity of the ALCOSAN proposals, to eliminate the discharge of raw sewage into our streams and rivers. Perhaps, the Roman Empire builders of aqueducts and cisterns would be. I am NOT in awe.

Let me give you more insight. In early 1999, the Borough of Ben Avon, enacted Ordinance No. 902 prohibiting the discharge of storm water or ground water into its sanitary sewers. As a result my downspouts were re-directed into the yard, a rain barrel, and the driveway. In addition, water runoff was slowed even more by partially replacing the asphalt driveway with gravel.

Prior to the ordinance, a terraced "backyard" was put into place with flowering plants, shrubs and trees, admittedly for aesthetic reasons. Nevertheless, this made a huge difference in slowing rain water runoff.

As you can see, ratepayers like me can be an integral solution to the problem. We want a workable plan in which we are partners and that we all can afford. A green plan is the best answer. How do we do that? Let me give you some examples.

Impervious surfaces such as rooftops, paved driveways, patios, and parking lots, are major contributors to rainwater runoff. The District of Columbia Water and Sewer Authority has established an **Impervious Area Charge** based upon the amount of impervious area on a property. What a great incentive for a property owner to hold and absorb rainwater where it falls. Sign me up!

Lancaster, PA, has a plan to use rain gardens, porous pavements, green roofs and wetlands to prevent large amounts of water from getting to its sanitary systems. An original gray plan consisted of storage tanks which would have cost $280 million. The EPA approved its subsequent $100 million green plan. That's almost one-third of the gray plan cost!

The ratepayers have voted...the votes have been counted...the winner is GREEN

NINE MILE RUN
WATERSHED ASSOCIATION
702 South Trenton Ave., Pittsburgh, PA 15221
info@ninemilerun.org / www.ninemilerun.org
412 371-8779 / Fax 412 371-1157

October 19, 2012

Ms. Arletta Scott Williams
Executive Director
Allegheny County Sanitary Authority
3300 Preble Avenue
Pittsburgh, PA 15233

RE: Comments on Alcosan Draft Wet Weather Plan

Dear Ms. Williams,

Thank you for the opportunity to offer comments on ALCOSAN's proposed Wet Weather plan. As Executive Director of the Nine Mile Run Watershed Association, my comments are offered from the point of view of our small urban watershed. As you may be aware, the Nine Mile Run stream in Frick Park was the site of the largest and most successful urban stream and wetlands restoration that has taken place anywhere in the United States. That $7.7 million dollar project turned a dangerous and polluted eyesore into a significant regional amenity. However, water quality is not yet adequate, and the restoration work that was done is endangered by every large rain event that occurs in the region. The volume and velocity of stormwater entering the stream is far too high.

We also have a significant number of homeowners in our watershed who regularly experience localized flooding and basement backups during severe rain events. And in some parts of our watershed, childhood asthma rates are far higher than the national average, and lower income residents who cannot afford air conditioning struggled to keep cool, and even to survive, during this past summer's extended heat wave.

With these realities top of mind, we are extremely concerned that the Wet Weather Plan recommended by ALCOSAN not only will not bring us into compliance with water quality standards by 2026, but it does nothing to address any of the problems we face in our watershed. But we know that there is an alternative that could help achieve the requirement of the consent decree, and would also address all of the local problems I have mentioned, while bringing additional benefits to the community. That would be to take the approach of dealing with rain where it falls, and keeping it out of the sewer system, through the use of green infrastructure.

My organization has firsthand experience with the utility of this approach on a residential level, having carried out the largest rain barrel program in the region, installing 1600 rain

barrels on watershed homes over the last eight years. We have also built 25 rain gardens over the last three years, some inside our watershed and some in other parts of Allegheny County. All are functioning as intended, infiltrating rain into the ground and evaporating it into the air, rather than sending into our sewers to add to sewer overflows. We are also currently planting 500 trees in Wilkinsburg with funding from PennVest specifically for the purpose of stormwater management, using the highest standards for planting and maintenance. So we know that these technologies are feasible and effective. However, to really address this problem on scale, other green solutions such as green roofs, permeable paving, and large bioswales, will be needed and will make a much larger contribution to solving the problem than rain barrels do.

We see that other cities around the country have been implementing these technologies and monitoring them for years, so we know the data is available to show how this can work. And those cities have saved money on their overall plan to eliminate sewer overflows, thereby placing a smaller burden on ratepayers. We refuse to accept the notion that none of these solutions can work here in our region, and that we are therefore consigned to living without the benefits they could bring.

Installing green infrastructure in our watershed on the scale necessary to reduce sewer overflows would also safeguard the stream restoration, as much less stormwater would be rushing into the stream when it rains, and what does reach it would be less polluted. Our watershed residents would no longer be replacing furnaces and water heaters on a regular basis due to basement back-ups. And the trees and green roofs would be cleaning the air to help lessen the severity of asthma for our children, while keeping our communities cooler in the summer, relieving the burden on our low-income seniors.

We can't afford to move forward with the current plan, so we call on ALCOSAN to petition the EPA to re-open the consent decree for the express purpose of taking the time to do a real plan for green, before we start building grey.

Sincerely,

Brenda L. Smith
Executive Director

Unite Here Local 57
S Gateway Center Suite 615
Pittsburgh PA 15222

October 19th, 2012

Alcosan Meeting

Clean Rivers Campaign

- My name is Reggie Wallace. I am a resident of Pittsburgh and an Executive Board Member of UNITE HERE Local 57, the hospitality workers' Union. We are Pittsburgh's Warm Welcome for the guests who visit our region.
- The 2,000 members of Local 57 and our families stand in support of investment in green solutions in the largest public works project to happen in our lifetimes.
- We believe that green solutions are the right investment for several reasons:
- Green solutions will create construction jobs in the early phases of the project and
- Green solutions will create long-term jobs in the maintenance of the infrastructure and green spaces resulting from this approach.
- Unlike an approach that wastes billions of dollars on underground storage tunnels, green solutions are likely foster jobs in the hospitality and service industries as trees and green spaces are planted in urban areas, allowing for the revival of neighborhood business districts.
- We are 100% certain that no neighborhood boutique hotels will be built in sewer tunnels.
- We believe that Pittsburgh's 3 rivers are a source of natural beauty that, once freed of raw sewage, may serve as an attraction for visitors and a boon to the regional tourism industry.
- And finally, hospitality families deserve, as all Allegheny County residents do, to breathe clean air, drink clean water, and to pay a reasonable cost for public utilities.
- For all these reasons, the families of UNITE HERE Local 57 urge Alcosan to adopt green solutions.

STATEMENT OF BOB WENDELGASS
PRESIDENT, CLEAN WATER ACTION
ALCOSAN PUBLIC INPUT SESSION
OCTOBER 19, 2012

Thank you for the opportunity to provide input on the proposed ALCOSAN Wet Weather plan. My name is Bob Wendelgass and I am the President of Clean Water Action. Clean Water Action in a nationwide citizens' organization of 1 million members working in 15 states. Like our nation's landmark clean water law – the Clean Water Act – we are celebrating our 40th anniversary this year. Our founder, David Zwick, was known for his work exposing our nation's water crisis and helping to devise the solutions that would become the Clean Water Act. He recognized then, and it is still true now, that citizen engagement is crucial to meeting the fishable, swimmable, drinkable zero pollution goals of the Clean Water Act.

We've made incredible progress in cleaning up our rivers, lakes and streams, and our communities are healthier and more vibrant for it. However, the unfinished business of the Clean Water Act and 21st century challenges mean we still have a long way to go. Managing how water flows through our communities is one of those challenges.
Every time it rains in Pittsburgh, and in many other cities, the sewer system is overwhelmed and millions of gallons of untreated sewage flow directly into our rivers. Due to the obvious pollution problems this causes, the Clean Water Act requires communities to address stormwater runoff.

We believe that 21st century water management innovations must be part of the plans to solve stormwater pollution challenges in Pittsburgh and in our region. A cornerstone of Clean Water Action's work is preventing pollution where it starts rather than cleaning it up after it has happened. The same principle applies to working with nature instead of against it when it comes to managing water in our communities. Water management innovations and "green infrastructure" need to be part of the mix. These are not futuristic or idealistic notions. These approaches are mainstream, commonsense solutions that not only can help meet pollution-reduction goals but can also cost less, create jobs and make our communities more resilient to climate change and more pleasant places to live.

Our organization has been a strong supporter of the bold green iniative developed by the Philadelphia Water Department to reduce overflows into Philadelphia's rivers. The initiative uses green approaches as much as possible, targeting both city and private sector investment into efforts to manage rainwater on site and reduce flows into the city's sewer system. This is the most affordable and effective approach for Philadelphia, with multiple benefits for the city and its residents.

I'm told that solving the combined sewer overflow problem in Allegheny County will be the single largest public works investment your region has ever seen. That is all the more reason to consider all of your options and to make sure the benefits and costs of those options are appropriately weighed. The benefits of green infrastructure approaches are proven: more pollution prevented for less cost, jobs, cleaner air, higher property values, revitalized communities and cooler urban temperatures.

Statement from the Clean Rivers Campaign at the ALCOSAN Public Hearing

October 19, 2012

Good morning,

State name for the record: Barney Oursler, 841 California Avenue, 15212, Executive Director Pittsburgh UNITED; Pittsburgh UNITED Coordinates the Clean Rivers Campaign.

We are here, as the public comment period comes to an end, to give voice to solutions that have not been fully explored – green solutions that will not only help to solve our sewer problem, but will also bring our communities the family-sustaining jobs, revitalized business districts, higher property values, reduced flooding, and improved air quality necessary to create thriving neighborhoods. We know that we must spend ~~in the~~ billions of dollars to clean our waterways and stop raw sewage from flowing into our rivers, but we believe that investment should buy a cleaner, greener, more sustainable Pittsburgh – one that we are proud to leave for future generations.

Throughout the public comment period we have thanked ALCOSAN for its hard work in putting together a plan. We have acknowledged that green solutions, alone, cannot fix 100 percent of our sewer problem. We are grateful that the ALCOSAN and municipal infrastructure in place today is getting some much-needed updates and care.

But, throughout that same public comment period, we have been met with excuses, outdated and ineffective solutions, and a rigid, unbending mentality that has done nothing to address ratepayers' overwhelming call for innovative, beneficial and more affordable green solutions. Throughout the public comment period, Arletta Scott Williams, the Executive Director of ALCOSAN, has referred to this plan saying, "This is my plan." But the truth is this is OUR plan. Every ratepayer, each one of us, has a stake in this plan. We will pay for it, and we will be responsible for the future we leave our children and grandchildren.

Despite the comments of detractors who say the Clean Rivers Campaign isn't "Real People," here we are...#xxxx (insert # of attendees) strong. More than 50 organizations and businesses representing thousands of people and more than 800 individuals have endorsed our campaign. We have done workshops in the our communities, we have knocked on doors; we have spoken in our places of worship; we have called our members and spoken to our neighbors; And we have attended every public comment meeting. THAT is community outreach. THAT is engaging the public.

The Clean Rivers Campaign is made up of average, unorganized citizens who have gotten organized and come together because we share the same values and vision for our region. That vision is that....

Green investments should be the first priority as we create a plan to solve the sewer problem.

- Fixing our sewer system to stop flooding and overflows of raw sewage into our rivers will be the **largest-ever public works investment** in Allegheny County.

- As concerned citizens and ratepayers who are making this investment, we must seek solutions that provide the **most benefit to our communities and region**.

- **Green solutions** that catch rain water where it falls, such as trees, rain gardens, porous pavement, and green roofs, will **create** family-sustaining **jobs**, increase the **value** of our homes, **revitalize** business districts, **cost less** and **grow** new industries, **beautify** our communities, and **improve** our air quality.

Cities and regions around the country are tackling their sewer challenges creatively. Sewer authorities like ALCOSAN in places like Milwaukee, Cincinnati, Chicago, and Cleveland are taking REAL responsibility for reducing flow with green infrastructure. Like ALCOSAN, some of these authorities don't own the municipal

land where installation must occur. Some have steep slopes and clay soils. Some have increasingly heavy rain. Some have brownfields. Some have all of the above, but rather than viewing these as roadblocks or excuses, they are considered challenges to be met and overcome with cooperation and ingenuity and the political will to make VISIONARY choices.

Therefore, we call on the leaders, staff, and board of ALCOSAN to fully study, explore and prioritize green infrastructure solutions before gray pipes and tunnels. We ask that you heed our appeal to learn from the best technologies that cities around the country and around the world have to offer. And, we demand the visionary thinking that will fix our sewer problem and bring the most benefit to our communities.

The future of our region depends on it.

Greetings,

Thank you for this opportunity to comment on the Alcosan draft plan to improve water quality in our region.

My name is Martha Isler; I reside at 5655 Darlington Road, City of Pittsburgh. I am Chair of the "Pittsburgh Shade Tree Commission," a quasi-governmental entity charged with restoring and maintaining the city's tree population. I am also a founding and current Board Member of the non-profit "Tree Pittsburgh," with a mission to protect and grow the Urban Forest.

These two organizations have serious concerns about the plan that ALCOSAN intends to submit to the EPA in January. We see it as based on "Old Thinking" about how to manage rain. We need to take a long view – consider our next generation; we believe that we have the resources in this region to figure this out!

You all probably know that trees are mini-reservoirs, controlling runoff at the source. It is a fact that trees intercept rainfall and help to reduce the amount of storm water that runs into storm drains – helping to lesson the burden on our combined sewer overflow system.

This is especially important in an urban setting with a significant quantity of impervious surfaces in such close proximity to our three rivers. Our healthy urban trees can reduce the amount of runoff and pollutant loading in receiving waters in three primary ways:

1. Leaves and branch surfaces intercept and store rainfall, thereby reducing runoff volumes and delaying the onset of peak flows.

2. Root growth and decomposition increase the capacity and rate of soil infiltration by rainfall and reduce overland flow.

3. Tree canopies reduce soil erosion and surface transport by diminishing the impact of raindrops on barren surfaces.

According to an analysis commissioned by Tree Pittsburgh in 2008, the City's approximate 30,000 street trees alone intercepted 41.8 million gallons of storm water annually, for an average of just over 1,400 gallons per tree. These figures are calculated using a model developed by the USDA Forest Service - a model that has been tested time and time again, and which serves as the standard across the nation.

I'm providing this background because the Shade Tree Commission and Tree Pittsburgh both advocate for green infrastructure as a viable and smart compliment to any grey plan that is proposed to improve water quality by reducing storm water runoff. Trees provide additional social, economic, health, and environmental benefits to City residents that the "grey" infrastructure solutions obviously cannot.

The "Grey Plan" indicates that we will be investing only in "Old Thinking" traditional sewer solutions such as large pipes, underground storage tunnels, and treatment facilities. And even this investment of billions won't solve our problem long term?

It's interesting what I've heard since I agreed to come to this hearing." Everyone has said, really, there is nothing that can be done, Alcosan treats sewage for 83 municipalities, and they can't control what municipalities do? OK, I understand that. But in any government regulatory environment, quasi-governmental, business and in life – there are consequences for actions.

I'd like to question that? If municipalities refuse to capture and filter runoff before it enters the sewer system, or refuse to institute "green" infrastructure including both natural and constructed systems - then charge them more – the fee should reflect the adverse impact on our clean water. That's only logical? Isn't it? Where are the proposals to increase fees to those who cause the problem?

Where is the "New Thinking," that proposes incentives for malls and parking lots to do the right thing. We know that roof gardens on these huge mall complexes and huge bog boxes would help. Where are the proposals to decrease fees to those who are trying to reduce their storm water footprint - to actually solve the problem rather than push it done the road? Why can't we work with the municipal clients to achieve a sustainable solution?

And why do we all pay for the environmentally hazardous practices of some? We shouldn't, that's why we ask that you consider the positive impact and benefits to the community when green alternatives – green roofs, rain gardens, trees, permeable pavement, and rain barrels to name a few – are employed. As a community we cannot give up on this unique opportunity to make a lasting impact.

Tree Pittsburgh and the Pittsburgh Shade Tree Commission are ready and willing to work cooperatively with ALCOSAN to help them develop and implement a greener plan.

In conclusion, one thing we know for sure, we're going to see significant rate increases. Why not have at least some of our money "go green" and work on our behalf and on behalf of generations to come?

Thank you again for this opportunity to comment.

ALCOSAN WET WEATHER PLAN TESTIMONY

Good afternoon, my name is (Jay Rickabaugh and I'm the Project Manager) for the Congress of Neighboring Communities, CONNECT. On behalf of the more than 650,000 rate payers in the ALCOSAN service area that live in the 37 communities of the urban core of Allegheny County and their elected and appointed officials who represent them, we are here to express our concerns with the wet weather plan.

Over the past four years, our communities have gathered annually to, by resolution, express our support for green infrastructure and source reduction technology to reduce the costs of an entirely gray infrastructure plan. We know that tunnels, tanks and increasing treatment capacity are necessary components, but we believe we can drastically diminish the bill our taxpayers will be footing. We've said so in words, and backed it up with action.

Our communities are working together to identify Green Infrastructure opportunities where they are cost effective and appropriate on a municipal level so that Green Infrastructure can be a part of our Feasibility studies. Many have already begun to implement rain gardens and green streetscapes, programs for rain barrels, downspout disconnection, and even storm water utilities. It takes political capital, courage and capacity to bring these things to reality and our communities are stepping up to the plate..

It's time ALCOSAN does the same. Of course it's true that local municipalities make the decisions on how street trees are planted, how porous the pavement is on their streets and the ordinances that developers are required to obey with regards to storm water management.

However, so long as ALCOSAN treats all ratepayers equally regardless of how much source flow municipalities reduce, there is no significant incentive to implement strategies that retain stormwater on site. Continuing this practice renders the cost effectiveness of utilizing source reduction in the Wet Weather Plan moot

Ensuring municipalities receive a fair return on their initial investment and index-responsive compensation for the ongoing maintenance and administration of such programs from ALCOSAN is the only way major projects of significance will break ground across our region to complement whatever remaining necessary gray infrastructure needs to be accommodated.

We call upon you to reevaluate your rate structure, investigate stormwater mitigation credits for customer municipalities, provide matching funds to leverage alternate resources and other ways to ensure the system in place rewards communities like ours that take proactive steps to make our consent decree compliance as affordable as possible for the ratepayers of our region.

Public Comments on the ALCOSAN Wet Weather Plan

ALCOSAN Public Meeting
Sheraton Station Square
October 17, 2012

Richard H McClelland
Ross Township

Introduction

I am Dick McClelland, a 30-year homeowner in Ross Township. As a way of background, I have a Bachelor Degree in Civil Engineering ...and... a Masters Degree in Engineering Administration. Both are from Case Institute of Technology. I have substantial gas utility management experience from which I've retired.

I have also put a site on the web: www.alcosancost.com That's... alcosancost ...all stuck together. My comments today can be viewed and even downloaded from this site.

Thank you for the opportunity to briefly comment on the Alcosan $2 billion Wet Weather plan. Its 1,200 plus pages are a comprehensive and impressive document. Obviously, a lot of effort went into it. However, I think there is a significant danger that it will cost a lot more than $2.8 billion dollars when the construction dust settles ...but... I'll get into that later.

In my written comments, color graphics are included that make them more understandable. To make life easier, they are in the hard copy ...and.... on the CD that I have submitted.

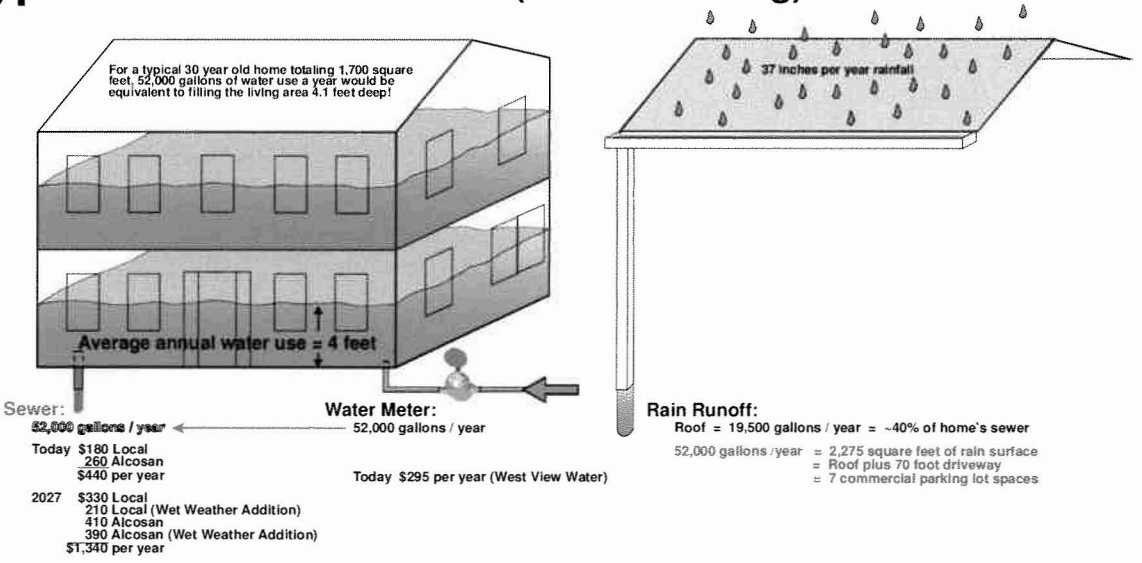
To those of you in the audience, I have a few copies that you can look at ...and... I will be around for a couple of hours if you have comments or questions.

Probably more usefully: I have put these remarks with full color graphics on the web at alcosancost-dot-com. Simply Google alcosancost all stuck together.

The applicable site will be your first hit. Simply go to its main page and look for the green arrow with red type at the top of the page. Clicking will enable you to view —and even print— these comments ...as well as even supporting materials like the Reading List documents in Figure 11.

Firstly, a Typical Alcosan Home and it's billing

Typical Alcosan Home (use and billing)* . . .



*Average is 52,000 gallons per year of sewer billing. Sewer use is based directly on water meter readings.

Figure 1

As a start, it might be useful to those of you who are new to get a bit of an understanding as to how we got here.

Figure 1 shows a Typical Alcosan Home and residential user. In this case I've shown a typical 30-year-old residence. It's a two story with 17 hundred square feet of living area. As an average customer, it puts 52 thousand gallons a year into the sewer.

That's tough to visualize. However, imagine its living area is filled with four feet of water. That's 52 thousand gallons worth.

As shown, all that water that's going to the sewer is supplied through a water meter. If, like me, you live in the North Hills, your water company is West View Water. They are an efficient, competent and low cost supplier. They pump it from the river, filter it, chlorinate it, pump it through pipes they own, and also own and read the water meter. Those 52 thousand gallons cost me $295 a year.

Pittsburgh Water would be about 30 percent more; American Water in the south would be over 100 percent more expensive.

If you look around your house, you will find a water, a gas, and an electric meter. You won't find a sewer meter! The assumption —which is generally reasonable— is that all the water you use goes down the sewer. In effect, your water meter is also your sewer meter. Alcosan or your local sewer provider gets the meter info from your water company to make up your sewer bill.

Of course, the hook is if you have an underground lawn sprinkler system and use it frequently in the summer. That outside water isn't going down the sewer. The solution is a deduct sprinkler meter which you install and Alcosan reads. The downside is that a plumber's installation is around $500 ...and... you will have to pay Alcosan $110 a year to come read it every three months! I've added a deduct meter it and found the Alcosan people to be very competent and quite pleasant to deal with.

In any event, the sewer flow from your home typically flows down toward the river. Then Alcosan picks it up in tunnels it installed along the river, treats it, and puts it back in the river —hopefully below your water company's intake!

For the average Alcosan customer as shown in Figure 1, this sewer service costs $440 per year. An average of $180 of this goes to your local municipality or sewer authority. Some municipalities take more like $300. In any event, Alcosan gets $260 of your sewer bill ...and... all their customers pay the same rate per thousand gallons of sewer use.

The bottom line is that the water which costs you $295 to buy ...will cost you $440 to throw away back into the river from which it came!

As shown in the bottom left, by 2027 that throw-away sewer cost will be $1,340 per year. In other words, what cost you $295 to buy will cost you almost five times as much to throw away!

As shown, $600 —or almost 50%— of that $1340 per year are the Wet Weather Plan costs we're discussing today.

Before we leave Figure 1, look at the right hand side! This shows the home's roof. Rain will make about 19,000 gallons a year into your downspouts. That's 40 percent of your sewer flow!

Indeed, the annual runoff from your roof and a 70-foot drive way would about equal the sewer flow from your home! Moreover, just the rain on seven parking spaces at a local store or mall will equal a home's sewer discharge. Furthermore, the rain flows occur in a few hours ... rather than spread over a month like your sewer use. If rain flows get into a sewer carrying your home's own sewer discharge, that's a serious change.

Secondly, a Typical Alcosan Home and it's sewer connections

Typical Alcosan Home (sewer connection) . . .

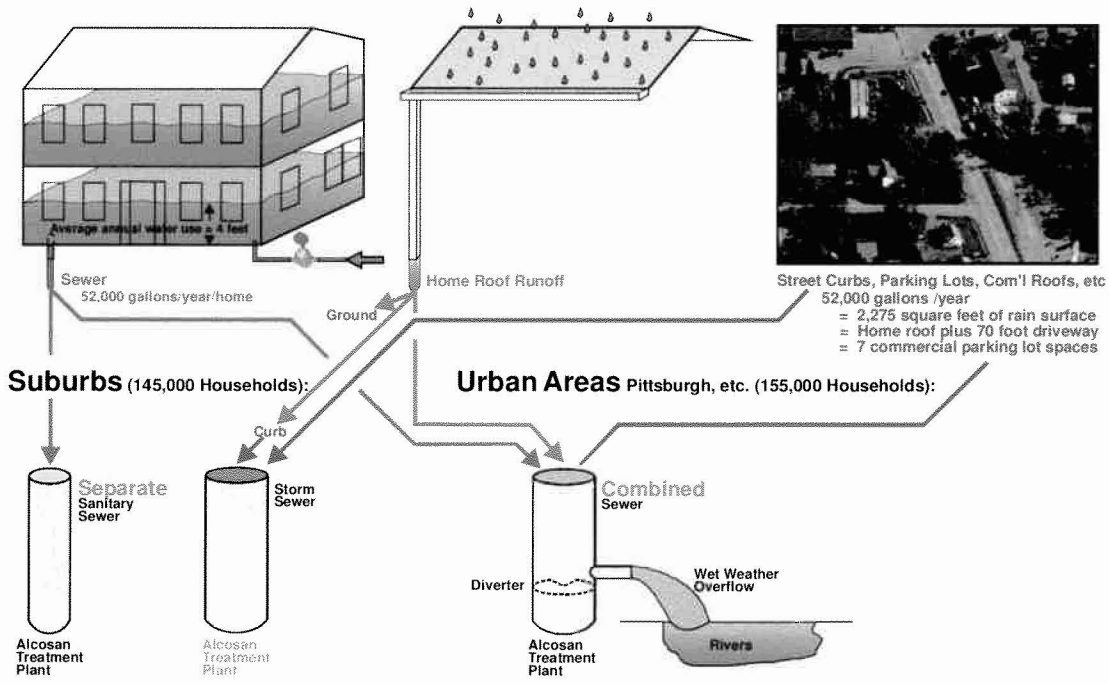


Figure 2

Figure 2 shows a typical Alcosan home and its sewer connections. The upper half shows potential sewer inputs. These are: a typical Alcosan home, it's roof, and nearby roads and parking lots. The arrows show how these flows are connected to the region's sewer types and resulting issues if any.

The bottom half of the figure shows our area's two sewer types. The left half is a typical county suburb. As shown, suburbs typically have a separate sanitary sewer and also a storm sewer for rainwater. There are around 145 thousand households using this type of separate system. Most were built after the 1940's as suburban population boomed and environmental sewer rules started to tighten.

Moreover, just the rain on seven parking spaces at a local store or mall will equal a home's sewer use. Furthermore, the rain flows occur in a few hours … rather than spread over a month. These flows go into a separate storm sewer. If excess rain flows get into a sanitary sewer carrying your home's own sewer discharge, that's a serious change that needs repaired.

The bottom, right-hand side of Figure 2 shows an older combined sewer system. Here, both sewage from your home and rain from street curbs go into a single pipe. This applies to around 155 thousand households in Alcosan's service area. Up to the 1900's these old pipes ran directly into the river without treatment. In the 1950's, Alcosan was formed due to environmental pressure. It built tunnels along the rivers to pick up sewer flows and transport them down-river to a new treatment plant. This is on the north shore of the Ohio River near Pittsburgh's Brunot Island.

Diverters, called regulators, were then installed in the region's combined sewer river outlets. A regulator is a fancy version of a flat horizontal plate in the sewer. Flows underneath the plate go to Alcosan for treatment.

During rainstorms, known as Wet Weather, the excess flow of mixed sewage and rainwater are discharged to the rivers. This might be from a few to over 50 locations depending on the rainfall event. Depending on the specific sewer, the total annual overflow duration could range from a half day to over 10 days. Obviously in combined sewer areas, a major problem are roofs, parking lots, and streets feeding into the sewers. Remember: an area equaling only seven parking spaces produces as much sewer input as a home!

Again I apologize for not having poster charts. However, I'm an interested home owner albeit with an engineering degree and background. I don't have a budget for a fancy show and tell posters. However, as I said in the introduction...

You can go to alcosancost.com via Google. From the top of that site's main page, you can easily view or download all of this including all of the illustrations, graphs, and tables.

Basin Profiles and implications

Figure 1-7: ALCOSAN Planning Basins

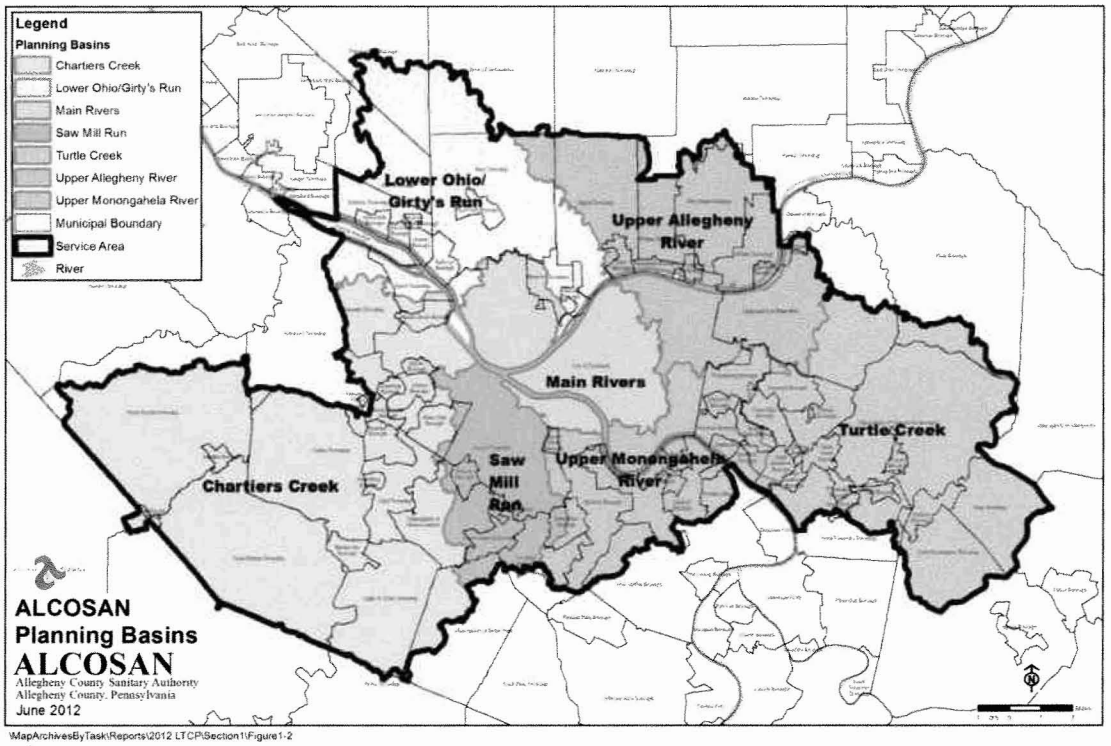


Figure 3

Figure 3 shows the seven Alcosan Planning Basins. These include Pittsburgh —known as Main Rivers— in the center. The six surrounding basins border rivers like slices of a pie. They are named for the key river or

creek in them. If you want to know which basin that you are in, you can refer to Figure 3 ...or look up the Plan's Figure 1-7 on page 1-10.

Planning Basin Households, Sewer Profiles, Billing, and Alcosan Capital Costs . . .

Alcosan Planning Basin:	Households: Combined Sanitary w Storm	Households: Separate Sanitary Sewer	Households: Total	Overflow (Mil Gal/Yr): Combined Sanitary w Storm	Overflow (Mil Gal/Yr): Separate Sanitary Sewer	Wet Weather Cost Allocation: Equal per Overflow Gal ($/year/home)	Wet Weather Cost Allocation: Equal per Household ($/year/home)	Wet Weather Cost Allocation: Basin Change ($mil/yr)	Alcosan Investment ($mil) Today's Dollars
Chartiers Creek	15,975	4,685	20,660	1,034	184	$1,850	$1,340	-$10	$354
Lower Ohio / Girty's	7,728	29,814	37,542	334	324	$1,070	$1,340	+$10	0
Main Rivers (Pittsburgh)	66,077	2,267	68,343	2,825	0	$1,518	$1,340	-$12	0
Saw Mill Run	16,168	28,190	44,358	434	0	$924	$1,340	+$18	0
Turtle Creek	6,319	29,485	35,803	148	45	$842	$1,340	+$17	0
Upper Allegheny	19,365	27,021	46,387	2,208	43	$1,654	$1,340	-$14	0
Upper Monongahela	13,245	35,175	48,421	1,954	76	$1,529	$1,340	-$9	0
Total	144,877	156,638	301,514	8,937	672	Both produce $404 mil per year		Basin Subtotal	$354
								Regional Conveyance Tunnels	613
								Woods Run Treatment Expansion	484
								Total Alcosan	$1,451
								Municipal Capital Costs	$530
								Total Wet Weather Capital Cost (Today's 2012 Dollars)	$1,981
								Total Wet Weather Capital Cost (2026 Completion at 3.1% Inflation)	**$2,772**

Source: **Table 3-3, Table 4-2, and Table 10-1 in the ALCOSAN Wet Weather Plan. Households are based on 2.4 persons each. Manhole overflows have been allocated back to Sanitary Sewers on the basis of overflow gallons. Wet Weather cost portion of household billing in 2026 is $600 annually per Table 11-12 plus $740 for other costs.**

Table 1

Table 1 shows the Alcosan planning basins and highlights their profiles. It is pulled together from key information scattered throughout the Plan. The data shows that 23 percent of the households are in the Main Rivers (Pittsburgh) basin. As could be expected, households here in Main Rivers are 97 percent on older combined sewers, the main source of river pollution. The other six basins individually range from 7 to 15 percent of Alcosan households. Within this ring of six basins, two-thirds of the households are on far less-polluting separate sewers.

The next columns show combined and separate sewer overflows to the rivers. This is the cause of the Wet Weather Plan that we are talking about today. Combined sewer overflows total over 8,300 million gallons per year. In comparison, overflows from separate sewers are only 672 million gallons a year. Thus, combined sewer overflows represent an astonishing 93 percent of the problem. Main Rivers (Pittsburgh) represents nearly 30% of the problem. The Upper Allegheny basin is not far behind at 23 percent.

Essentially Alcosan proposes in 2027 that all of today's homeowners will have a sewer bill averaging $1,340 a year. As shown in Table 1, all would pay the same for equal water meter use. This is how things are done now.

Alternately you could imagine a concept where the new Wet Weather costs are allocated back to basins based on their sewer overflows. This, after all, is what caused the problem in the first place ...and... its total cost. Table 1 shows the resulting costs to homeowners if allocated by basin overflows. Then, the annual homeowner cost would range from $842 in Turtle Creek to $1,850 in Chartiers.

Thus, in the equal homeowner Alcosan billing lottery, some basins win and some loose. The winners are the Chartiers, Main Rivers, Upper Allegheny, and Upper Mon basins —all shown in green. Each sees their basin's total household cost go down by some $10 million annually. Under equal household cost billing, the losers subsidizing other basins are: Lower Ohio Girty's, Saw Mill Run, and Turtle Creek. Their total household's subsidization of other basins ranges from $10 to $18 million per year.

The "Third Party Review of the ALCOSAN Regional Long Term Wet Weather Control Concept Plan" is a remarkable 2002 report. It is an innovative and thoughtful report whose Section 9 addressed cost issues like uniform household cost versus inter-basin overflow allocation billing. While no longer on the Alcosan site, it remains available at alcosancost-dot-com.

However and as Alcosan indicates in the Plan, essentially nothing has been done to consider anything other than uniform billing throughout the basins using homeowner water meters. Alcosancost has looked at a couple of options. For example, a $250 dollar a year vehicle tax would bring in about 40 percent of the Alcosan 2027 consumer revenues. This would essentially start to address the runoff to combined sewers from parking lots and streets. It might also take some pressure off seniors who are unlikely to own multiple cares per household.

Alternately, an impervious-area combined-sewer tax of $600 dollar per year per 1,000 square feet on commercial and industrial sites would bring in the same amount per gallon that residential owners are paying for their own sewer use.

Another option would be to say to the state or federal government: "You have X miles of roads whose runoff contributes Y gallons of combined sewer overflows. Our homeowners will be paying Z million dollars a year to fix their share. Send Alcosan a check of "D" dollars each year for your share."

However, given the current state of play …and… lack of interest by any of the parties, it is unlikely that any innovative revenue approaches will be considered unless one or more key municipalities aggressively seize this issue.

Lastly, the far right column of Table 1 shows the related Alcosan and municipal Wet Weather Plan capital costs.. These total $1.981 billion —essentially for-all-intents-and-purposes— $2 billion dollars in 2012 money. Inflation and escalation will bring this to at least $2.8 billion by 2027!

It's tough to grasp those kinds of costs. Here are a couple of ways put the billions of dollars in perspective.

That $2.8 billion is equivalent to an $8.5 thousand dollar investment by you that you must pay off in twenty years.

Alternately, the cost and complexity is equivalent to building a new Hoover Dam and related canal to California. Hoover was the largest and most complex construction of the 1930's decade. Except that Hoover Dam was paid for by 30 million households …and… it had design, planning, and construction legends doing it. This 'Pittsburgh' Hoover Dam is going to be paid for by only 330,000 families including yours.

Customer Billing in 2027 Initial Issues

The previous table provided a sneak preview of the $1,340 annual homeowner sewer bill in 2027. This Table 2 surfaces a few initial issues in that proposed bill.

The upper bullet section has to do with Alcosan's normal —non Wet Weather— cost. It is expected to increase from $260 dollars a year now to $410 dollars a year by 2027. This is principally due to normal Alcosan Operations and Maintenance expenses that are increasing by 4 percent a year. Indeed, during the previous ten years to 2009, these costs actually grew a 4.7 percent rate! In contrast, future customer incomes are projected to grow at 2.5 percent a year. As shown by the upper red action arrow, Alcosan needs to better control its O&M expense growth.

The lower bullet section has to do with how similar municipal and Alcosan Wet Weather Plan costs yield different homeowner sewer bill markups. There are $530 million of projected municipality capital costs in the Wet Weather Plan. Yet, the Wet Weather Plan outlays by municipalities are estimated to cost residential households a new $210 dollars a year in 2027! However, this projected consumer bill cost is

Plan's Customer Billing in 2027 (initial issues) . . .

- **Projections show Alcosan's residential customer 'normal' billing rising from $260 per year in 2012 to $410 in 2027**
  - Operation & Maintenance is a major component of today's Alcosan customer bill. It is projected to rise from $151 per customer today to $267 in 2027, an increase of 4% per year!
  - Instead, if this O&M cost were controlled so as to not exceed a 2.5% household income inflation, Alcosan 'normal' residential customer bills in 2027 would decline by $48 to $362 a year.

Alcosan should better control annual Operating and Maintenance cost increases.

- **The Wet Weather Plan requires spending $1,451 million on Alcosan capital costs ...and... $530 million on municipal capital costs**
  - The Plan's resulting homeowner Wet Weather annual bills in 2027 are $390 from Alcosan and $210 from the municipalities. That's $0.27 *($390/$1,451)* to the customer's bill per million capital spent by Alcosan compared to $0.40 *($210/$0.530)* per million for sewer capital spent by the municipalities.
  - Why are customer's bills 47% higher when a municipality makes a capital dollar sewer expenditure compared a similar Alcosan expenditure? Is it O&M cost?

    If applicable, what can be done to reduce that inefficiency?

    What are the projected Wet Weather capital cost expenditures by municipality?

    What are the resulting annual cost increases on residential homeowners by the municipality?

    Do significant inequities exist between projected local customer cost increases between municipalities?

Alcosan should promptly tabulate and release the preliminary projected municipal costs portion of the Plan.

This should include municipality by municipality: project summaries, estimated capital costs, and the projected resulting costs to residential homeowners.

Table 2

almost 50 percent higher when a municipality spends a dollar on Wet Weather Plan construction ...compared to when Alcosan spends a same dollar on Wet Weather Plan construction! Why the difference? Is it municipal operating costs ...or... is it inefficiency?

There are essentially no cost details for these municipal outlays in the Plan. Indeed, they are not even tabulated by municipality. Nor is their any indication of the cost impacts on customers by municipality.

As the red action arrow indicates, Alcosan should promptly tabulate and release the preliminary projected municipal cost portion of the plan. For each municipality this should include: project summaries, estimated capital costs, and projected annual costs to homeowners.

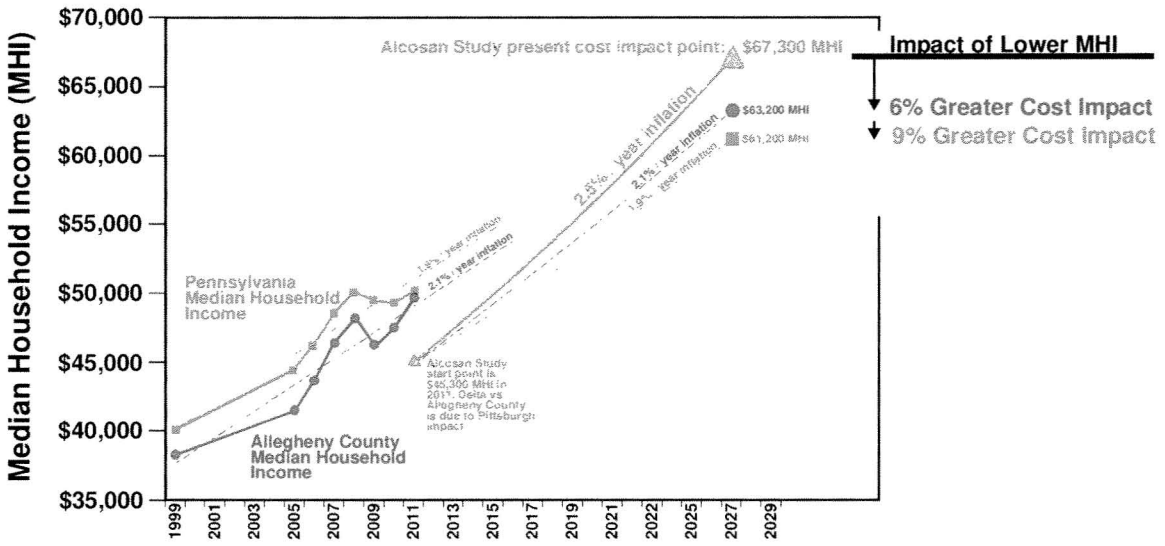
There will be more on capital costs and their reliability in a few minutes. But first, a few comments on estimating the affordability of these costs to consumers.

Projecting Median Household Income in 2027

Median Household Income —or MHI for short— is the middle household income. For example, assume that you grab 21 people from this audience and line them in order of increasing income. Then the middle person in the line is the median or middle income. This is felt to better represent the typical income than calculating an average which would usually be biased upward by a small number of high-end incomes.

The EPA measures cost impact by dividing the applicable sewer bill increase by the MHI. The first part of the Plan costed the impact by keeping everything in today's 2012 dollars and using present MHI's. However, the final part of the Plan projected costs out to 2027 and then compared those costs with a projected MHI in 2027.

Over Estimating 2027 MHI Understates Cost Impact . . .



- **Also, Allegheny County has an exceptionally large proportion of fixed income retirees**

Figure 4

To make that projection, the Plan assumed that incomes would grow at 2.5 percent per year based on long term historic data. In comparison, Figure 4 shows MHI growth for Pennsylvania and for Allegheny county from 1999 to 2011. The growth rates measured 1.9 percent a year for Pennsylvania and 2.1 percent a year for Allegheny County. As a matter of fact, Pennsylvania MHI has been flat for the last three reporting years. Considering how the economy is still stalled, I think the Plan could have made a convincing case for using 1.9 or 2.1 percent growth a year —rather than the 2.5% growth that the Plan used.

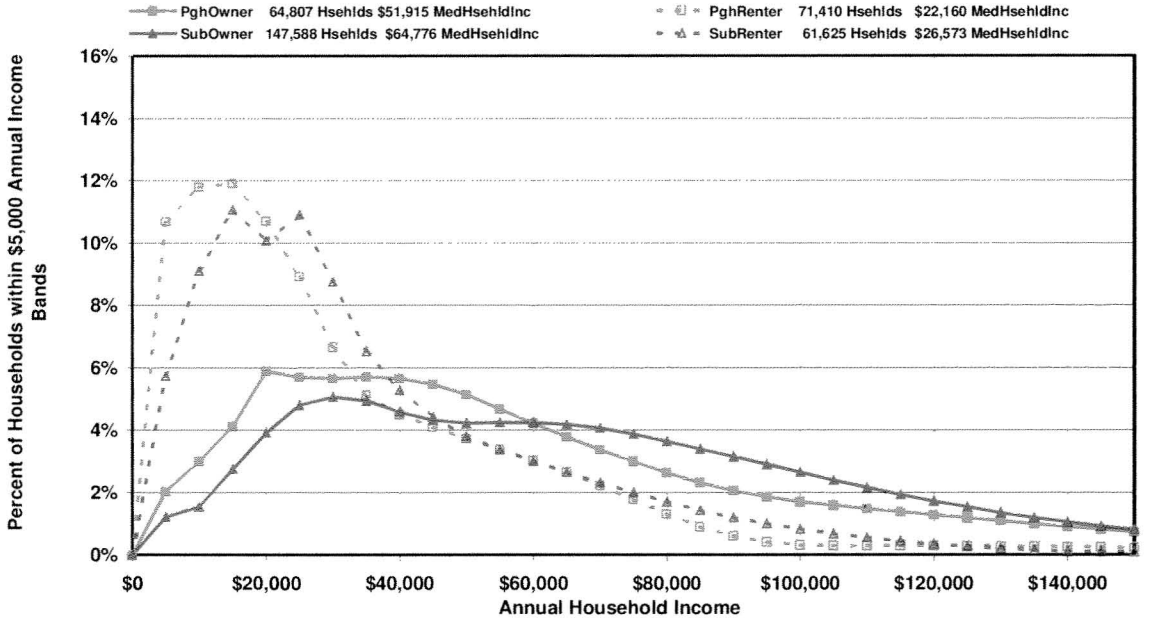
The result would have been a projected MHI of $61 to $63 thousand —rather than the $67 thousand used in the Plan to measure sewer bill impacts. This would have raised the resulting cost impact by six to nine percent. Thus, the Alcosan Plan potentially left cost impact dollars 'on the table' by using too high a projected MHI..

Furthermore, as noted at the bottom of Figure 4, Allegheny County has an exceptionally large population of fixed income retirees. Sixty five and older represents 16.6 percent of the population. This was relegated to one page in Section 6 of the Plan. Even more noteworthy —but uncovered— is that 31.7 percent of the county's households are on some type of Social Security income. These factors make these households particularly sensitive to increased costs like sewer bills. It would have been useful to weave these elements into the final affordability section of the Plan.

Median Household Income and Alcosan Cost Impact

The Wet Weather Plan has very impressive maps showing the impact of future sewer cost increases. The EPA requires this impact be measured by sewer cost as a percent of the Median Household Income —or MHI for short. Impacts are considered objectionably high when the sewer cost is over 2 percent. Section 11 of the Plan shows that this would apply to about three fifths of households. A four percent impact would apply to one in every 20 households.

Household Income and Alcosan Impact . . .



Alcosan Impact as Percent of Median Household Income:

Pgh Owner 2.2%	Pgh Renter 5.1%	}	Composite 3.0%
Sub Owner 1.9%	Sub Renter 4.0%		

Figure 5

The Plan also looks at the 83 municipalities in Alcosan's service area. Almost half are rated as high impact —over 2 percent— and four municipalities have a sewer cost over 4 percent. However, a look at detailed census data reveals a much more alarming sewer cost impact.

The top of Figure 5 tabulates the household incomes for Pittsburgh and for Suburban Owners and Renters in Alcosan's service area. The red lines are for Pittsburgh; blue lines are for the surrounding suburbs. Solid lines are for Owners; dashed lines are for Renters.

How was the data developed? Many people don't realize that all of the census data is reported by numbers of people in various categories. Moreover, both Pittsburgh and Allegheny County are reported. Thus, suburban data can be calculated by simply subtracting Pittsburgh numbers from Allegheny County numbers. For example, this yields 130,000 households in Pittsburgh and 390,000 in Allegheny County suburbs.

Moreover, census tabulations are available for both owners and renters at stated income bands. Since Alcosan's households are known, the net result is that Pittsburgh plus 52.6 percent of Allegheny County suburbs is an excellent proxy for Alcosan service area households. More detailed work yields the resulting household income distributions shown in Figure 5.

The curves show the percent of the groups that are within $5 thousand dollar income bands. Pittsburgh and Suburban Renter household incomes are the two upper curves on the left. Owners are the lower flatter curves. Two things are striking.

Pittsburgh and Suburban Renter curves look markedly alike; as do Owner curves to each other. The difference is that Renters have a lot more members in households under $30 thousand dollars of income. In contrast, the Owner curves are much flatter and more spread out to the high end.

Given the curves and their percentages, getting an accurate median or middle household income —or MHI for short— is a remarkably trivial exercise. The results are tabulated at the top of the chart. This includes the number of households for each group and its related Median Household Income. Pittsburgh Owners —as well as Suburban Owners and Renters— are each about equal in size at 65 thousand households each. The big contrast is that Suburban Owners represent twice as many households as each of the other groups.

Median incomes for Renters are in the $25 thousand range ...but... as might be expected, Owners have much higher incomes. Owners are in the $50 to $65 thousand MHI range. Generally, Suburban MHI's are about 20 percent higher than those of the equivalent Pittsburgh group.

Instead of using census tables to roughly approximate the Alcosan cost impact, exact census records can be used. This powerful tool is downloadable geographic census database called PUMA —short for Public Use Microdata Area. This is a custom set of actual census records for individual households that also include applicable statistical weighting data.

For example, PUMA household census records for Allegheny County are described by 3,600 records with weights ranging from 15 to almost 500 people per record. Moreover unlike census record tables, available companion information can be custom tailored for each record such as: own or rent; incomes; number of people living in the household; complete costs such as rent, mortgage payments, utility bills, sewer and water; and many other items.

Because these form a database set, companion calculations can also be performed. For example, sewer bills based on the number of persons in the household! For this analysis, the $1,340 per household bill in 2027 was deescalated back to 2010 dollars by 2 percent per year and then divided by the average 2.38 persons per household. This yields $402 dollars of sewer cost in 2010 per household member. Records can also be sorted and totaled by such things as household income bands. Thus, operating on PUMA databases yields a very powerful tool for 'actually opening the hood and inspecting how key parts of the car's engine actually work'.

Based on stated MHI's and Own-Rent database segregation, very specific Alcosan cost impacts can be discovered and refined with remarkable accuracy. The results are shown at the bottom of Figure 5.

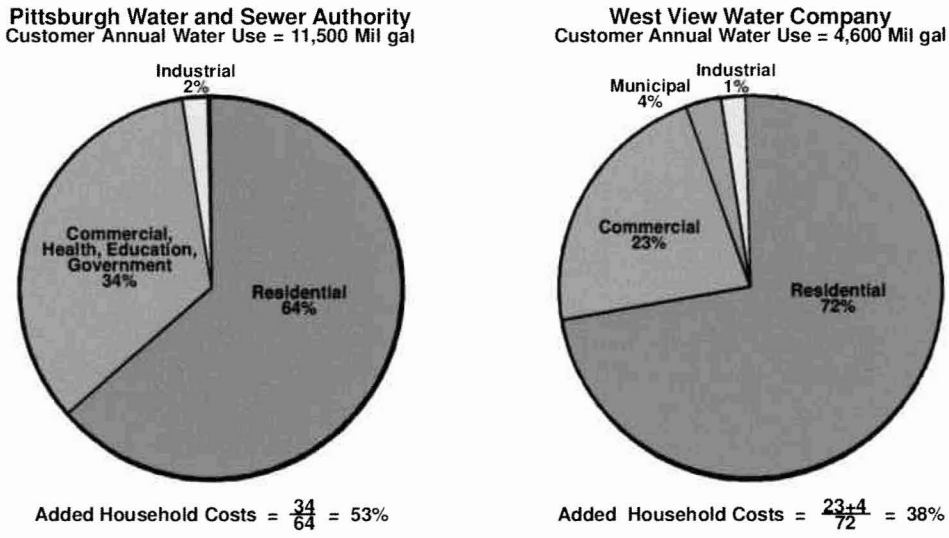
Pittsburgh and Suburban Owners show a sewer cost impact of 2.2 and 1.9 percent of MHI. The impact on renters is even more dramatic. The Alcosan Plan's cost impact on Renters is 5.1 percent in Pittsburgh ...and... an almost equally excessive 4.1 percent in the Suburbs. Indeed the household weighted cost impact on all four groups is a very high 3.0 percent!

These Alcosan cost impacts appear far more concerning than those actually discussed in the Plan. A minor reason for the increase is the selected 2.0 percent income adjustment. However, the dominant factor appears to be that the persons per household at the Median Household Incomes are generally higher than expected from group census averages. This increases the applicable Alcosan sewer costs in the MHI sectors. Thus, a lot could be gained by a discussion in the Plan about the impact on Pittsburgh and Suburban Owners and Renters.

Additional Sewer Cost Impacts Need to be Included

Figure 6 shows the water use breakdowns —and thus sewer billing— for the two key suppliers within the Alcosan system. These are for Pittsburgh Water and Sewer ...and... for West View Water. Residential use is shown in blue. Commercial and local uses are in shades of red. What little industrial use left is shown in yellow.

Additional Household Costs (due to pass thru) . . .



- **Added Household Costs adjustment** = 44% based on a weighting of 39% to Pittsburgh and 61% to Suburban (West View)
- **Should be discussed and quantified in Plan ...and... raised with EPA for valid cost impact inclusion**
- **Should be included in Alcosan cost discussions with its consumers***

****Also: At a $1,000 added annual cost inside Alcosan's service territory and all other things being equal, a smart home buyer would pay $14,400 less for a home inside Alcosan's service territory as compared to a similar home outside it's territory!***

Figure 6

In making this analysis, some commercial use in Pittsburgh Water was moved to residential. It was obvious from internal numbers that some apartment building master metering was classified as commercial. Again, the charts report water meter use ...and... thus show sewer bills.

Residential households have no recourse when their sewer costs go up. However, most commercial users do ...and... will pass their cost increases thru to their own customers! One way or another due to such cost increases, the chicken will ultimately come home to roost on the door step of residential users.

To the area's tax payers chagrin, schools and municipalities have become very good at raising taxes to cover costs —including water and sewers. One reason is they are not hampered by the inconvenience of tax rate increases being subject to voter approval. Increased sewer costs will rapidly appear on residential users door step from these groups.

Significant health care users exist in the system. These organizations will be just as good at marking up sewer bills as they are at marking up aspirin. The residential consumer will wind up paying that tariff in either insurance costs or direct bills.

Restaurants and the full gamut of commercial establishments will also pass increased sewer costs along to customers. It's a fallacy to assume that any commercial enterprise has excess profits laying around to simply absorb these kinds of costs as the EPA might assume.

Thus, most if not all, of the increased commercial sewer costs will also come out of the residential household's pocket in the end. The only exceptions to local household impacts might be office buildings

and hotels. However, a Florida and a national EPA composite survey put office building water use at only 10 percent of commercial; hospitality, at 10 to 15 percent!

These household pass-thru commercial sewer costs are significant! They total another 44 percent of the direct sewer cost to households. In other words, the planned $1,340 in 2027 may actually become something like $1,930 cost to residential households!

As Figure 6 indicates: Alcosan can, and should, make the argument in the Plan that these indirect costs add another potential $590 dollars a year on residential households ...and... that the $590 addition is both real and significant. Failure to cite this adder also misleads consumers as to what the real cost actually is when the Plan's construction is complete.

An interesting side note is the possible impact on home prices as shown in the bottom of Figure 6. If the Wet Weather plans increase a homeowner's sewer cost by a $1000 dollars: then all other things being equal, a smart home buyer would pay $14 thousand less for a home inside Alcosan's service territory as compared to a similar home outside Alcosan's service territory!

A major problem: cost overrun likelihood

Recent Project Problems . . .

- **Jefferson County Sewer System**
  - **Signed EPA Consent Decree**
  - **Original estimate was $1.2 billion, Final expenditure was $3.3 billion**
  - **Final cost had a 175% overrun**
  - **Plagued by construction mismanagement, cronyism, bribery, questionable financial practices**
  - **New treatment plant had to rebuilt, under river tunneling cost increased 67% and was abandoned**
  - **Now in bankruptcy**

- **Pittsburgh PAT North Shore Connector Tunnel**
  - **1.2 miles long**
  - **Original estimate was $350 million, Final expenditure was $550 million (after an $80 million scope reduction)**
  - **Final cost had an 80% overrun**

- **Harrisburg Incinerator**
  - **Relatively simple, commonplace technology**
  - **Initial facility cost $104 million but failed new environmental regulations**
  - **Revamp and expansion cost $80 million plus $25 million for a different contractor to finish**
  - **Debt now $320 million incl $50 million of financing fees**
  - **Harrisburg Authority board member 'pleads' ignorance; city faces Bankruptcy**

Figure 7

As if all this wasn't enough, I would like to spend the last few minutes discussing a significant key concern that overhangs all of the aforesaid issues. The Plan —and its cost to households— is based on a predicted construction cost of $1.981 billion dollars today —which will cost $2.772 billion in 2026 when construction is complete at the work sites.

What if the estimated cost is wrong? What if there are substantial cost overruns? Is either likely? How have other projects fared?

This is indeed the 'elephant in the room'!

What could go wrong ...and... How bad could it get?

Remember that the projected future homeowner costs are a direct result of construction costs. If construction costs go up 40 percent, then the projected $600 dollars a year Wet Weather component increases $240 dollars a year ...and... your annual household sewer bill is no longer $1,340 dollars a year; but is rather, $1,600 dollars a year!

Figure 7 shows how some key projects have fared —two of which are of local interest.

The poster child of what can go wrong with an EPA consent decree is Jefferson County Alabama. When they signed the consent decree they thought the project cost was $1.2 billion. When the dust settled, their construction cost was $3.3 billion —a 175 percent cost overrun! Their project implementation was plagued with mismanagement, cronyism, and questionable financial practices. Their new treatment plant had to be rebuilt; and under-river tunneling costs increased 67 percent before being abandoned. Jefferson County is now bankrupt.

The second is of significant local interest: PAT's North Shore Connector. It is only 1.2 miles long and was initially estimated at $350 million dollars. The final cost will be $550 million dollars even after deleting parts of the project. This is an 80 percent overrun. More significantly, it a significant warning to Alcosan. Thirty percent of Alcosan's projected construction cost is for deep conveyance tunnels along Pittsburgh rivers. A similar overrun would increase Alcosan's projected 2026 construction cost by almost $700 million dollars. Not a happy prospect.

The third project is the infamous Harrisburg incinerator. Estimated to cost $104 million, it failed new environmental regulations. After a revamp and expansion projected at $80 million and even switching contractors, Harrisburg is now $320 million in debt —of which an astonishing $50 million dollars is for financing fees! The city now faces bankruptcy.

The icing on the cake is that one of the Harrisburg Authority board members is publicly 'pleading' ignorance in knowing what was going on! To my mind, any public authority board member that screws up this badly with public dollars should go to jail for at least a year.

Major Project Cost Overruns

Major Project Cost Overruns . . .

Anonymous Contractor:
"Engineer's estimates represent the cost of construction in heaven.

Murphy's Law:
"Anything that can go wrong will!"

Project	Estimated Cost and Date of Estimate	
	Original	Latest or Actual
Transportation		
Boston "Big Dig"	$2.6b (1985)	$14.6b (2002)
Denver International Airport	$1.7b (1989)	$4.8b (1995)
Virginia "Mixing Bowl"	$241m (1994)	$676m (2003)
Seattle light rail system	$1.7b (1996)	$2.6b (2000)
Kennedy Center parking lot	$28m (1998)	$88m (2003)
Energy		
Yucca mountain radioactive waste	$6.3b (1992)	$8.4b (2001)
Hanford nuclear fuels site	$715m (1995)	$1.6b (2001)
Idaho Falls nuclear fuels site	$124m (1998)	$273m (2001)
National ignition laser facility	$2.1b (1995)	$3.3b (2001)
Weldon Springs remedial action	$358m (1989)	$905m (2001)
Defense (per unit)		
F/A-22 Raptor fighter	$89m (1992)	$248m (2002)
V-22 Osprey aircraft	$23m (1987)	$90m (2001)
RAH-66 Comanche helicopter	$31m (2000)	$52m (2002)
CH-47F cargo helicopter	$8m (1998)	$18m (2002)
SBIRS satellite system	$732m (1998)	$1.6b (2002)
Patriot advanced missile	$4m (1995)	$10m (2002)
EX-171 guided munition	$39,000 (1997)	$147,000 (2002)
Medicaid		
Special hospital subsidy	$100m (1987)	$11b (1992)
Medicare		
Part A (HI), cost in 1990	$9b (1965)	$67b (1990)
Home care benefits, cost in 1993	$4b (1988)	$10b (1993)
Other		
1996 farm law (over seven years)	$47b (1996)	$118b (2002)
International Space Station	$17b (1995)	$30b (2002)

Source: Government Schemes Cost More Than Promised
Edwards Cato Institute 2003

Figure 8

Major construction cost overruns are unfortunately not uncommon. In fact as shown in the table on the right of Figure 8, Boston 'Big Dig' was expected to cost $2.8 billion dollars. By the time it was done, its cost was $14.6 billion dollars. That cost overrun was an astounding 460 percent! Inept cost estimating combined with poor —some say almost criminal— construction

management created its cost overrun.

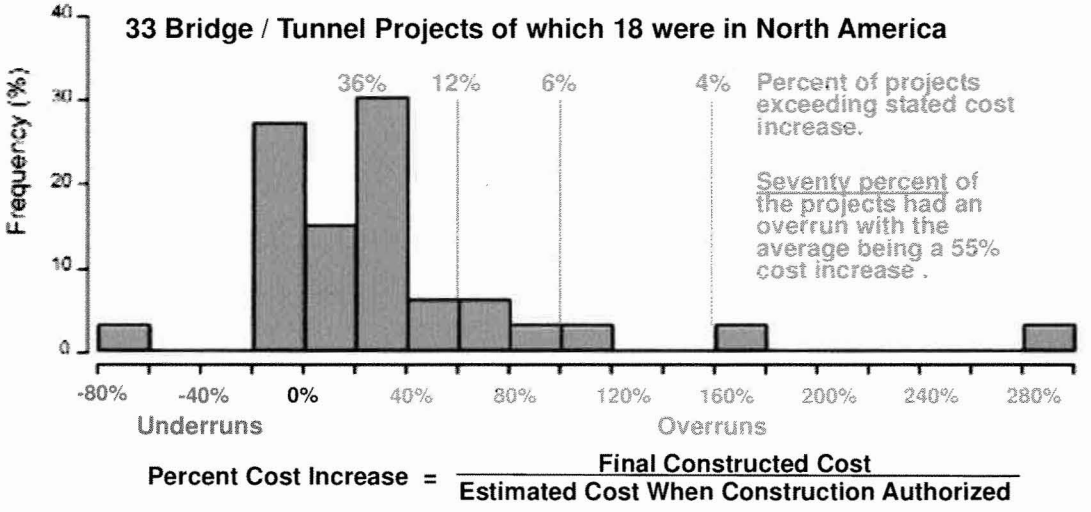
The Denver Airport overran almost 200 percent; Seattle's light rail system overran by over 50 percent! Indeed, it looks like a relative of the PAT North Shore tunnel. DoD overruns like the Raptor are perhaps understandable ...but... things like roads, bridges, and airports are pretty well defined. They should be relatively easy to accurately cost estimate. After all, they are all above ground —unlike tunnels where you can't see the project work area.

Why do so many projects have significant cost overruns? The basic answer is 'hubris'. Hubris is essentially thinking you know things that you really don't. As one contractor put it: "Engineer's cost estimates are for projects built in heaven." Helping the effect of hubris along is Murphy's Law.

We have all run into it. It basically says that: "If anything can go wrong it will!" Both interfere with making good project cost estimates and with successful project management to help control costs. Either is bad enough; but taken together, they yield catastrophic cost overruns like Boston's Big Dig.

Typical Bridge and Tunnel Cost Overrun Experience

Typical Project Experience w Bridge / Tunnels . . .



Flyvbjerg:
"The evidence shows that it is sound advice for policy and decision makers as well as investors, bankers, media, and the public to take any estimate of construction costs with a grain of salt, especially for rail and fixed-link [bridge and tunnel] projects." **Source: Underestimating Costs in Public Works Projects Flyvbjerg APA Journal 2002**

Romero:
"Cost estimating for underground transit [is] too dangerous to "Guesstimate".
Source: Article Title Romero Jacobs Associates Capital Projects Process

Figure 9

Even normal projects experience major cost overruns. Bent Flyvberg, a well published Danish expert looked at 258 large transportation projects. Their average size was $350 million. Thus, each was large enough to have spent substantial amounts on getting good cost estimates. They, no doubt, used quality estimating procedures and tools.

Figure 9 shows the results for the applicable 33 bridge and tunnel projects. The estimated cost at the time the project was approved for construction was compared with the project's actual cost at construction completion.

The results are striking. As shown on the green side, only 30 percent of the projects had cost under runs. In contrast, 70 percent of the projects had over runs ...with the average being a 55 percent cost increase over the initial construction estimate. Thus, bridge and tunnel projects were consistently under estimated even with the best of tools.

Flyvberg cautions that decision makers and the public should take any estimate of construction cost with a grain of salt, especially for bridges and tunnels! Indeed, there seems to be a bias toward under estimating completion costs ...or... perhaps Murphy's Law simply happens more often to bridges and tunnels.

The title to another instructive article worth reading by Victor Romero pretty much says it all: Cost estimating for underground transit [is] too dangerous to "Guesstimate." Again, underground tunnels along the rivers represent a troubling $850 million of Alcosan's projected costs.

Alcosan Capital Cost Estimate Procedure

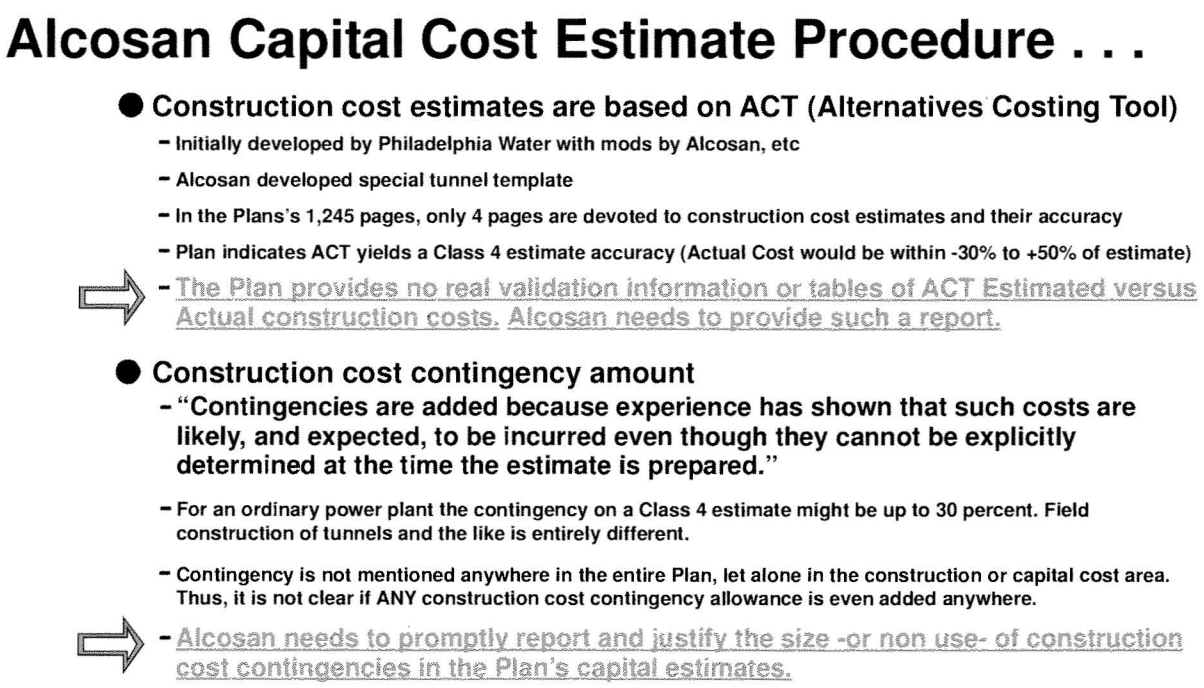


Figure 10

Alcosan's cost estimates are developed through a Philadelphia Water model called ACT as shown as the first bullet in Figure 10. Alcosan and some of the consultants have updated it. It's description —which occupies four pages in the Plan— states it yields a Class 4 estimate. This means the final actual constructed cost should be in the range from 30-percent-less to 50-percent-more than the Alcosan estimate in the Plan.

This is shown in bullet points and black text. Recommended Alcosan action items are shown in red along with an action red arrow.

The Plan itself provides no real validation information or tables of ACT estimates versus actual construction costs. Thus, Alcosan needs to provide needed assurance via a published report.

The second bullet deals with a key element called "construction cost contingency." As highlighted in the Figure, contingencies are added to a Stage 4 estimate because experience shows that these added costs are likely —and expected— to be incurred even though they can not be explicitly determined at the time the estimate is prepared.

In other words, a contingency is not merely a nice to have comfort; for a good estimate it is absolutely necessary! For example, even a run-of-the-mill utility power plant will often have a 30 percent contingency at this stage of the estimating process.

Such a contingency is not even mentioned anywhere in the Plan, let alone in the construction or capital cost sections. Thus, it is not clear if any construction cost contingency has been added any where or any place to the Plan's estimates.

Thus, as highlighted in red, Alcosan needs to promptly report and justify the size —or non use— of construction cost contingencies in the Plan's capital estimates.

Alcosan Capital Cost Management Procedures

Alcosan Capital Cost Management Procedure . . .

- **Plan's Adaptive Management** (Section 11)
  - Principally deals with demographic, financing, and municipal flow factors
  - Does not mention cost overruns or their impacts except obliquely as %MHI customer impacts
  - Any "Adaptive Management" plan should include construction cost as a component
  - Alcosan needs to clarify with the EPA what happens if cost overruns exceed 10%
- **Engineering, Estimating, Bidding, and Construction Management**
  - Largely unaddressed except for one page in Section 11
  - Basically says that Woods Run previously used Alcosan internal design and construction management supplemented with external consultants. Intends to do the same with WWP.
  - Alcosan needs to develop and release a detailed construction design, estimating, bidding, and management plan that assesses resources, performance, costs, and risks. Municipality engineers should review and comment.

Recommended Reading*:

- Government Schemes Cost More Than Promised Cato Institute
- Underestimating Costs in Public Works Projects pdf Flyvbjerg APA Journal
- Cost Estimating For Underground Transit: Too Dangerous to "Guesstimate" pdf Romero Jacobs Associates
- Estimate Accuracy: Dealing with Reality Hollmann AACEI
- MaPro's take on Contingency and Management Reserve Valgarosson Mannvit
- Document Project Readiness by Estimate Class Using PDRI Zaheer Fluor
- Broken Buildings, Busted Budgets: How to fix America's Trillion Dollar Construction Industry LePatner

Use Google to locate by word search on title with pdf added where listed

Figure 11

This next figure assesses some key capital cost management procedures. This goes to the heart of the customer cost issue.

Section 11 of the Plan refers to Adaptive Management as highlighted at the top of Figure 11. However, this Adaptive Management refers to demographic, financing, and municipal flow changes. Conspicuously absent are adaptive plans for capital cost overruns —except for a few sentences dealing with cost impact as a percent of Median Household Income.

As highlighted by the red action arrow ...and... by the red text, any Adaptive Management plan should include construction cost as a distinct component —even if the EPA isn't particularly interested in it.

As keyed by the second red arrow, Alcosan also needs to clarify with the EPA what happens if —and more likely when— when construction costs overrun. Is Alcosan supposed to keep blindly building to its customers billing detriment? Is there even a reset button? If so, at what point?

A second critical cost management issue is how Alcosan will perform: design, estimating, bidding, and construction management. All are vital components. As you have seen in Figure 7, Figure 8, and Figure 9; a less than stellar performance can —and will— cost Alcosan customer's hundreds of millions of dollars.

This area is largely unaddressed in the Plan except for one page in Section 11. Alcosan indicates that for Woods Run, it used internal design and construction supplemented by outside consultants. Alcosan then states it will do the same for this Wet Weather Plan which I suspect is ten times larger.

Is this a good idea? Maybe or maybe not!

As shown by the red action arrow, Alcosan needs to develop and publish a detailed construction plan. It should look at design, estimating, bidding, and construction management from the viewpoint of resources, performance, costs, and risks. Then, municipality engineers should review and comment.

As indicated, these are highly important ...and... potentially quite expensive issues. Even an informed public is highly desirable. In blue at the bottom of Figure 11 is some recommended reading.

These are listed in a suggested order of reading. Rather than give complicated links, simply type the name in Google and you will be taken to the article. All the searches have been tested. Use pdf where shown to get the best link.

Alcosan Board of Directors

Alcosan is about to embark on a very serious cost endeavor unlike anything they have ever undertaken in magnitude. Boards of Directors are supposed to be experienced ship captains that guide such things to untraumatic conclusion.

The top of Figure 12 highlights the Present Status. While not meaning to be disparaging, Alcosan's Board is mostly composed of elected politicians and union organizers. None appear to have an engineering degree. No objective person could reasonably conclude that such a composition is qualified to oversee capital construction undertakings costing hundreds of millions a year.

There are also some warning flags. Alcosan's O&M budget has been growing a four percent a year for a decade ...and... that four percent annual cost increase is embedded in the Plan. In contrast, the income of Alcosan's customers has been growing at only two percent a year. Minutes of Board meetings are not even available on Alcosan's web site.

The first red action item and arrow simply throws some sunshine into the mix with easily available minutes. Actually, the video taping is also critical. It gives you a good idea of what is really going on in terms of interactions and experience without having to trudge down to Alcosan's plant in the dark hoping to get a seat.

Alcosan Board of Directors . . .

- **Present Status**
  - Mostly composed of elected politicians and union organizers. None with engineering degrees.
  - Not well qualified to lead a major construction undertaking costing hundreds of millions a year
  - No Board Minutes published on Alcosan internet site. Alcosan O&M increasing at 4% per year and now embedded in Plan's future
  - ⇨ All Board Minutes should be published on the Alcosan www site. Board meetings should also be video taped and then posted on the Alcosan www site.
  - ⇨ Because Alcosan is entering a new $3 billion construction future, it is timely that the Board should commission a published assessment detailing the current practices and potential future savings and issues associated with such construction options as: PLAs or nonPLAs, union or nonunion construction, and any other such money saving or risk reduction options deemed even remotely possible.
- **Future Status**
  - ⇨ In the likely event that the Board can not be reconstituted with more suitable construction and capital project experience, a special Capital Project Supervisory Committee (CPSC) should be formed under the Board. The CPSC will have responsibilities for monitoring, reviewing, assessing, and recommending elements to, and for, the Board relating to the design, estimating, bidding, and project management of Capital Project constructions.
    - CPSC reports to Board. Board must accept/reject any proposal within 30 days. Also, municipalities may request a CPSC meeting to broach an issue of concern. CPSC will post minutes on Alcosan www site with sunshine type confidentiality protections.
    - Five members. One by the Board; one by the Municipalities; three by CPSC search with approval by Board and CPSC. The Alcosan Board member can not function as Chairman of the CPSC.
    - All members must have engineering degree, substantial management experience with $100 million per year responsibility, must not be holding political office, or affiliated with any key contractor, etc.
    - Must select and participate in in-house AACEI or similar seminars. Board members and municipality engineers may also attend these.

Figure 12

The second action arrow is crucial considering where we are heading. Alcosan is entering a new $3 Billion construction future. The Board and we need to think now about how we are going to get there. It is very timely for the Board to commission a published assessment. It would detail current practices and potential future savings and issues associated with fundamental construction options such as: PLAs or nonPLAs, union or nonunion construction ...and... any other such money saving or risk reduction options deemed even remotely possible. Potentially at stake are tens —if not hundreds— of millions of dollars of customer costs or savings!

As far as Future Status, it is probably unlikely that the Board will be reconstituted with one having more appropriate management and construction experience. However, there is an alternate option that appears reasonable, suitably productive, and non-confrontational.

This would be to form a Capital Project Supervisory Committee under the Board. This CPSC would have responsibilities for: monitoring, reviewing, assessing, and recommending elements to, and for, the Board relating to design, estimating, bidding, and project management of Capital Project constructions.

The CPSC would report to the Board. The Board would have to accept or reject any CPSC proposal within 30 days. Also, municipalities could request a meeting with the CPSC to broach an issue of concern.

This CPSC would have five members. One would be appointed by the Board ...and... one by the Municipalities. The other three would be by a CPSC search whose results were approved by the Board and the CPSC.

Moreover, a CPSC member would have to have an engineering degree; substantial management experience with $100 million a year responsibility; must not be holding political office; or affiliated with any key contractor; etc. Additionally a CPSC member would have to select and participate in AACEI or similar seminars. Board members and municipal engineers could also attend these.

In effect, establishing the CPSC should add a valuable additional resource to successful implementation of the Plan and potentially broaden municipal support. Moreover, the CPSC has the potential to detect and solve a lot of problems while potentially mitigating —if not avoiding— tens of millions of misspent customer dollars or cost overruns.

Conclusion

I appreciate your and the audience's patience and attention.

I hope these comments will prove useful and helpful. The Wet Weather Plan is an awesome responsibility and cost. It will be the equivalent of building Hoover Dam paid for by only 300 thousand families. In the end, success will depend not on hope; but rather, on good people, on good plans, and on good contractors ...and... still even then, on a fair amount of luck. As PAT found out with their North Shore Connector, Murphy is very much alive and well.

Again, I apologize for not providing handouts. However, you can download a virus safe pdf of this presentation at alcosancost for viewing or printing.

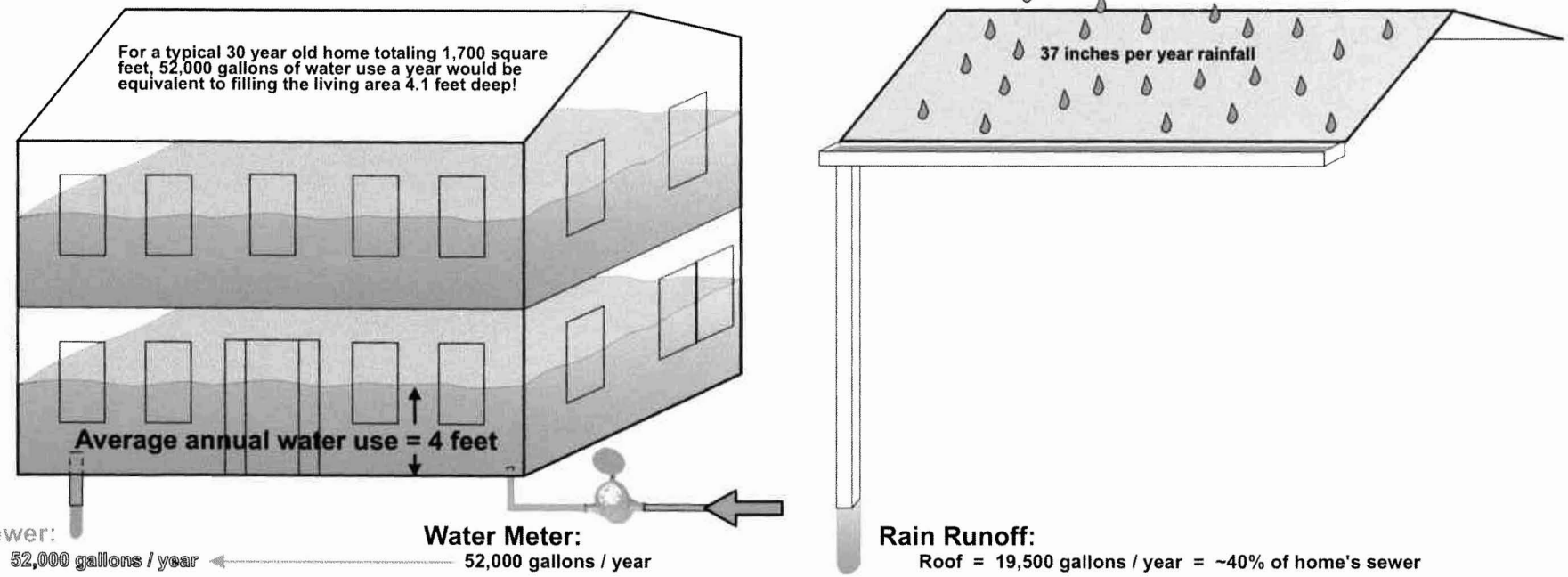
Again: simply Google alcosancost —that's a l c o s a n c o s t— all stuck together as one word. The top of its main page has a green arrow button with red letters to view —and even print— these comments and graphic material.

Again the website is www-dot-alcosancost-dot-com with alcosancost all stuck together.

Thank you.

Richard H McClelland
www.alcosancost.com
October 17, 2012

Typical Alcosan Home (use and billing)* . . .



Sewer:
52,000 gallons / year

Today $180 Local
260 Alcosan
$440 per year

2027 $330 Local
210 Local (Wet Weather Addition)
410 Alcosan
390 Alcosan (Wet Weather Addition)
$1,340 per year

Water Meter:
52,000 gallons / year

Today $295 per year (West View Water)

Rain Runoff:
Roof = 19,500 gallons / year = ~40% of home's sewer

52,000 gallons /year = 2,275 square feet of rain surface
= Roof plus 70 foot driveway
= 7 commercial parking lot spaces

*Average is 52,000 gallons per year of sewer billing. Sewer use is based directly on water meter readings.

Figure 1

Typical Alcosan Home (sewer connection) . . .

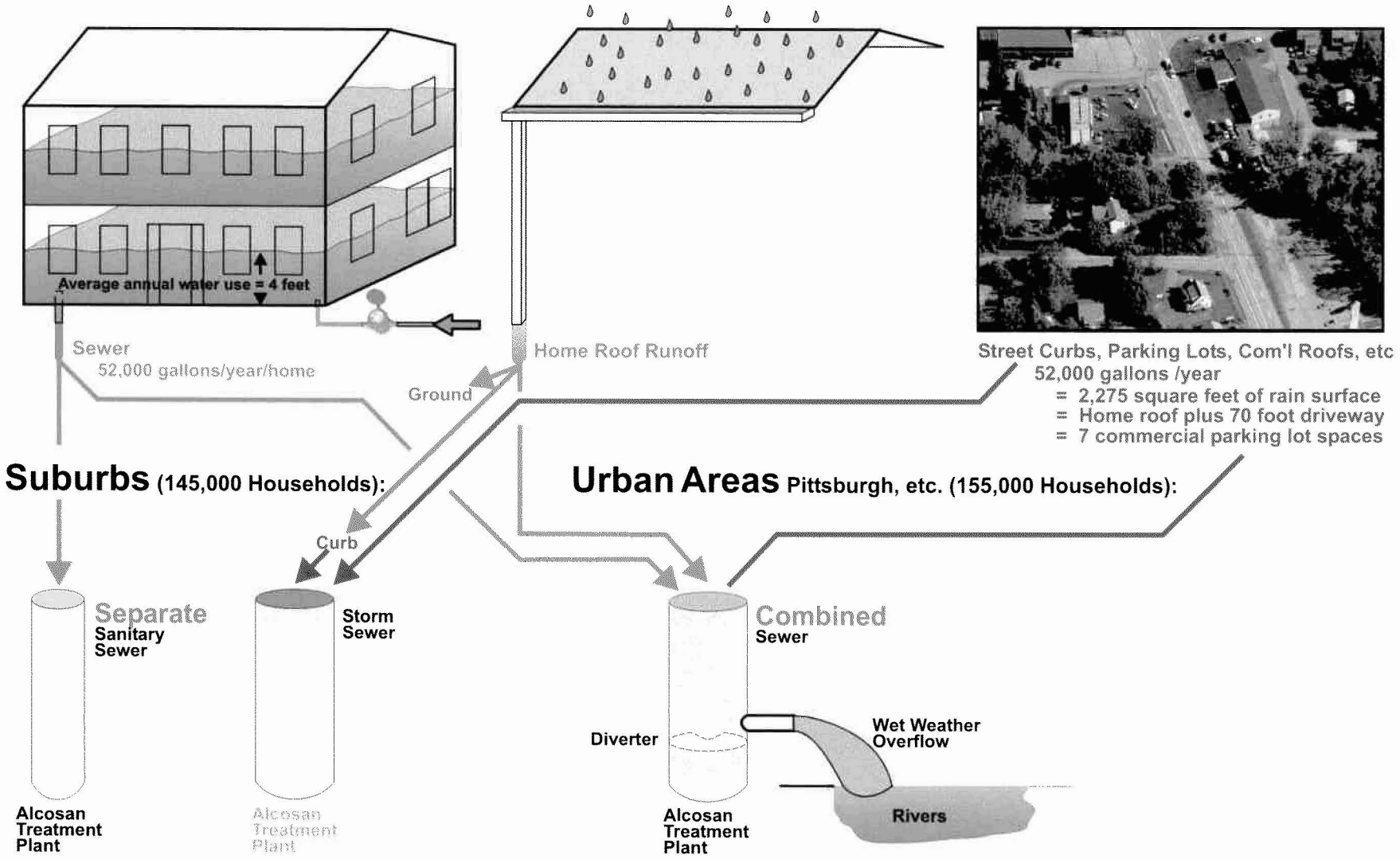
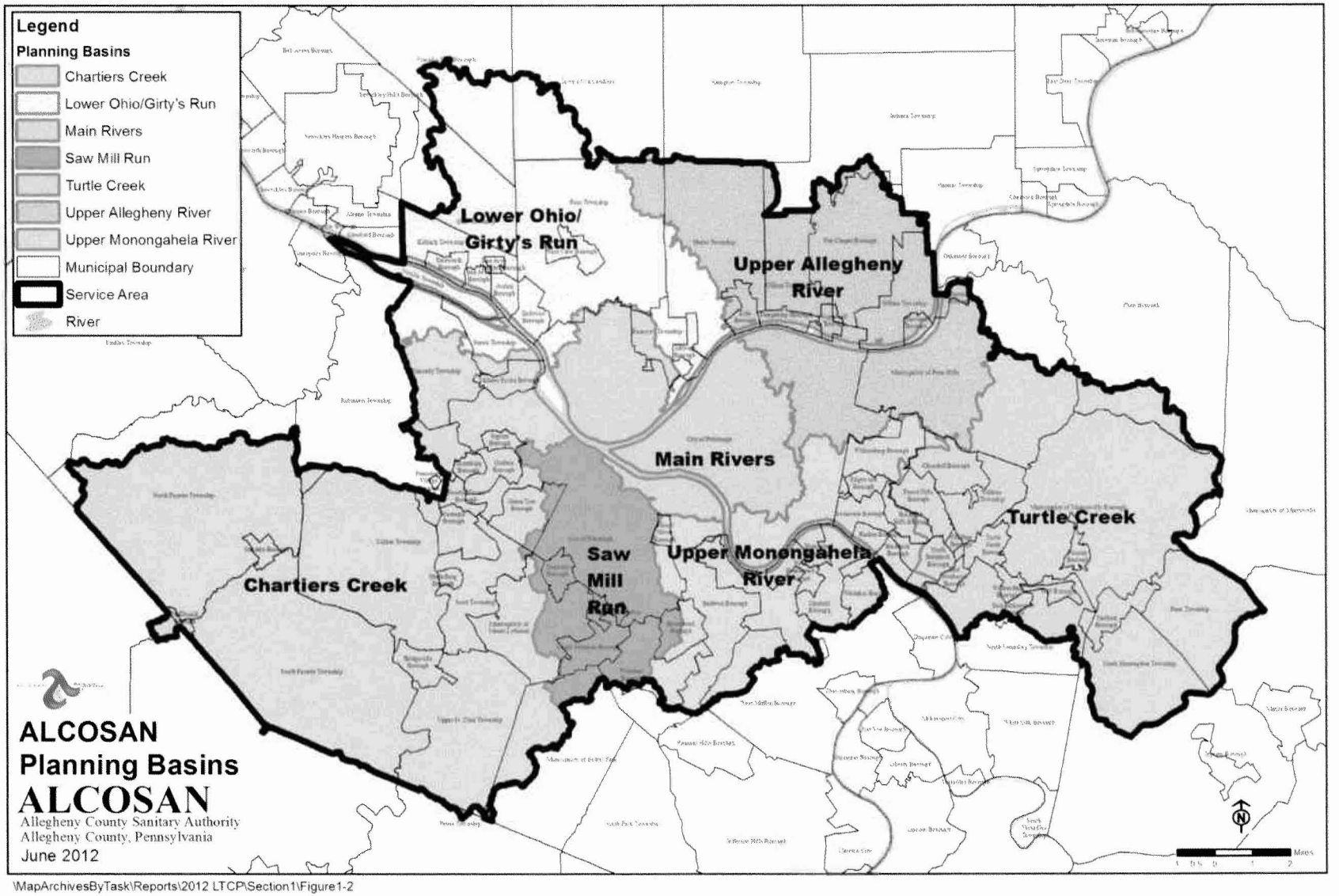


Figure 2

Figure 1-7: ALCOSAN Planning Basins



\MapArchivesByTask\Reports\2012 LTCP\Section1\Figure1-2

Figure 3

Planning Basin Households, Sewer Profiles, Billing, and Alcosan Capital Costs . . .

Alcosan Planning Basin:	Households: Combined Sanitary w Storm	Households: Separate Sanitary Sewer	Households: Total	Overflow (Mil Gal/Yr): Combined Sanitary w Storm	Overflow (Mil Gal/Yr): Separate Sanitary Sewer	Wet Weather Cost Allocation: Equal per Overflow Gal ($/year/home)	Wet Weather Cost Allocation: Equal per Household ($/year/home)	Wet Weather Cost Allocation: Basin Change ($mil/yr)	Alcosan Investment ($mil) Today's Dollars
Chartiers Creek	15,975	4,685	20,660	1,034	184	$1,850	$1,340	-$10	$354
Lower Ohio / Girty's	7,728	29,814	37,542	334	324	$1,070	$1,340	+$10	0
Main Rivers (Pittsburgh)	66,077	2,267	68,343	2,825	0	$1,518	$1,340	-$12	0
Saw Mill Run	16,168	28,190	44,358	434	0	$924	$1,340	+$18	0
Turtle Creek	6,319	29,485	35,803	148	45	$842	$1,340	+$17	0
Upper Allegheny	19,365	27,021	46,387	2,208	43	$1,654	$1,340	-$14	0
Upper Monongahela	13,245	35,176	48,421	1,954	76	$1,529	$1,340	-$9	0
Total	144,877	156,638	301,514	8,937	672	Both produce $404 mil per year		Basin Subtotal	$354

Regional Conveyance Tunnels	613
Woods Run Treatment Expansion	484
Total Alcosan	$1,451
Municipal Capital Costs	$530
Total Wet Weather Capital Cost (Today's 2012 Dollars)	$1,981
Total Wet Weather Capital Cost (2026 Completion at 3.1% Inflation)	**$2,772**

Source: Table 3-3, Table 4-2, and Table 10-1 in the ALCOSAN Wet Weather Plan. Households are based on 2.4 persons each. Manhole overflows have been allocated back to Sanitary Sewers on the basis of overflow gallons. Wet Weather cost portion of household billing in 2026 is $600 annually per Table 11-12 plus $740 for other costs.

Table 1

Plan's Customer Billing in 2027 (initial issues) . . .

- **Projections show Alcosan's residential customer 'normal' billing rising from $260 per year in 2012 to $410 in 2027**

  Operation & Maintenance is a major component of today's Alcosan customer bill. It is projected to rise from $151 per customer today to $267 in 2027, an increase of 4% per year!

  Instead, if this O&M cost were controlled so as to not exceed a 2.5% household income inflation, Alcosan 'normal' residential customer bills in 2027 would decline by $48 to $362 a year.

⇨ Alcosan should better control annual Operating and Maintenance cost increases.

- **The Wet Weather Plan requires spending $1,451 million on Alcosan capital costs ...and... $530 million on municipal capital costs**

  The Plan's resulting homeowner Wet Weather annual bills in 2027 are $390 from Alcosan and $210 from the municipalities. That's $0.27 *($390/$1,451)* to the customer's bill per million capital spent by Alcosan compared to $0.40 *($210/$0.530)* per million for sewer capital spent by the municipalities.

  Why are customer's bills 47% higher when a municipality makes a capital dollar sewer expenditure compared a similar Alcosan expenditure? Is it O&M cost?

  If applicable, what can be done to reduce that inefficiency?

  What are the projected Wet Weather capital cost expenditures by municipality?

  What are the resulting annual cost increases on residential homeowners by the municipality?

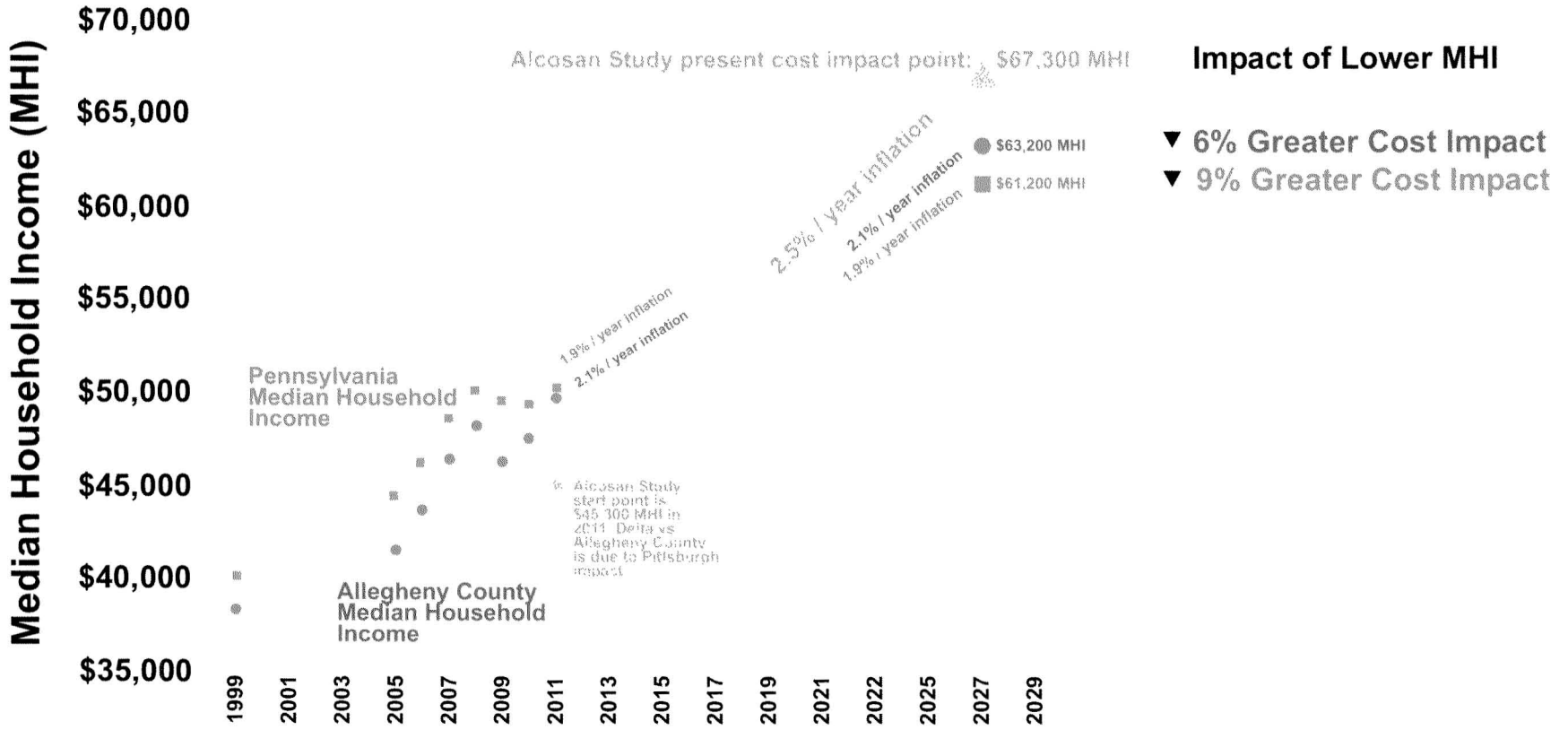
  Do significant inequities exist between projected local customer cost increases between municipalities?

⇨ Alcosan should promptly tabulate and release the preliminary projected municipal costs portion of the Plan.

This should include municipality by municipality: project summaries, estimated capital costs, and the projected resulting costs to residential homeowners.

Table 2

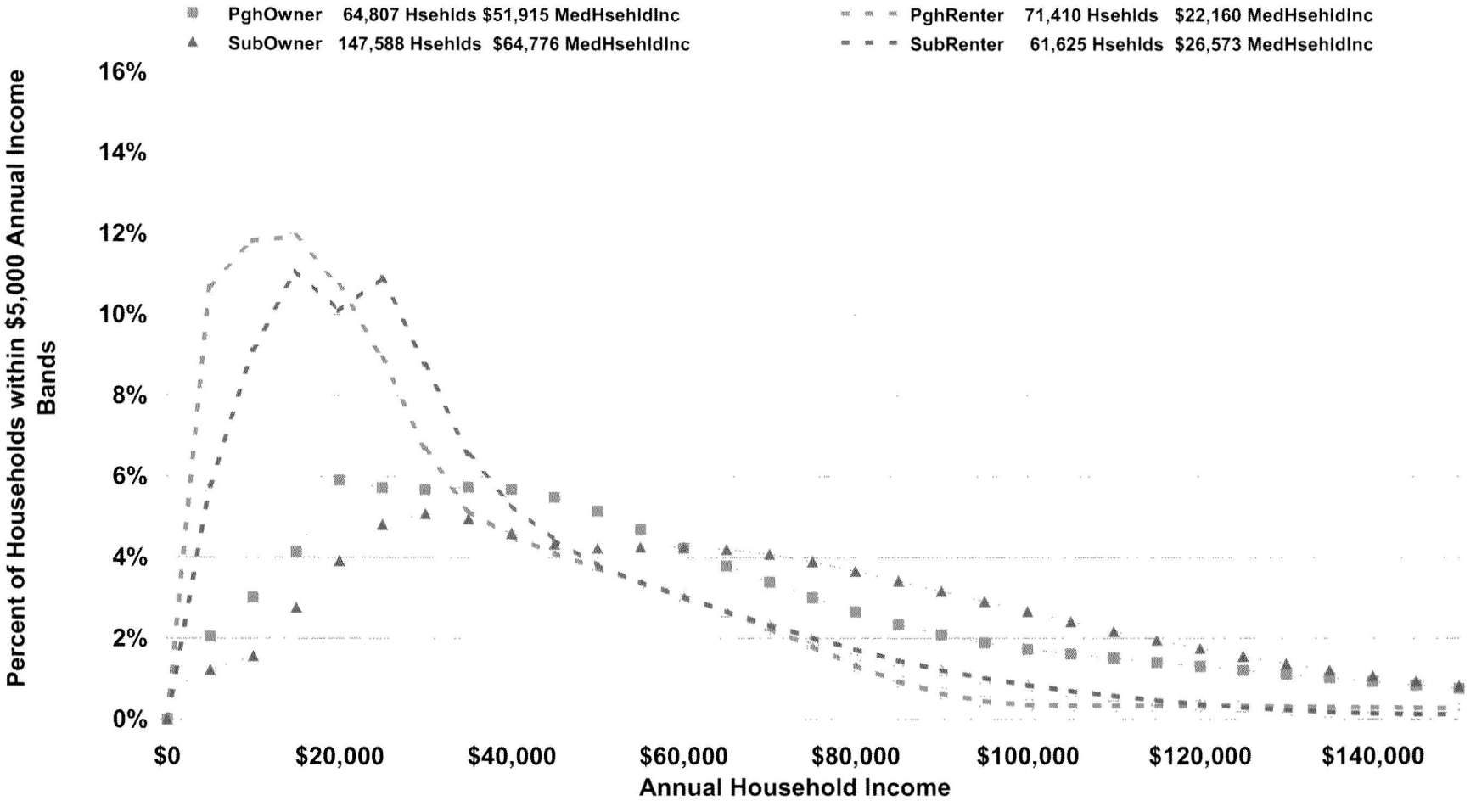
Over Estimating 2027 MHI Understates Cost Impact . . .



- Also, Allegheny County has an exceptionally large proportion of fixed income retirees

Figure 4

Household Income and Alcosan Impact . . .



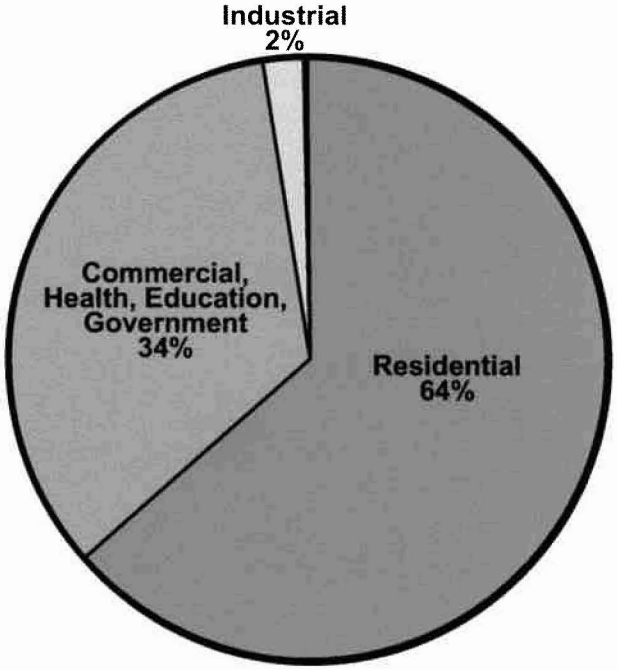
Alcosan Impact as Percent of Median Household Income:

Pgh Owner	2.2%	Pgh Renter	5.1%	Composite 3.0%
Sub Owner	1.9%	Sub Renter	4.0%	

Figure 5

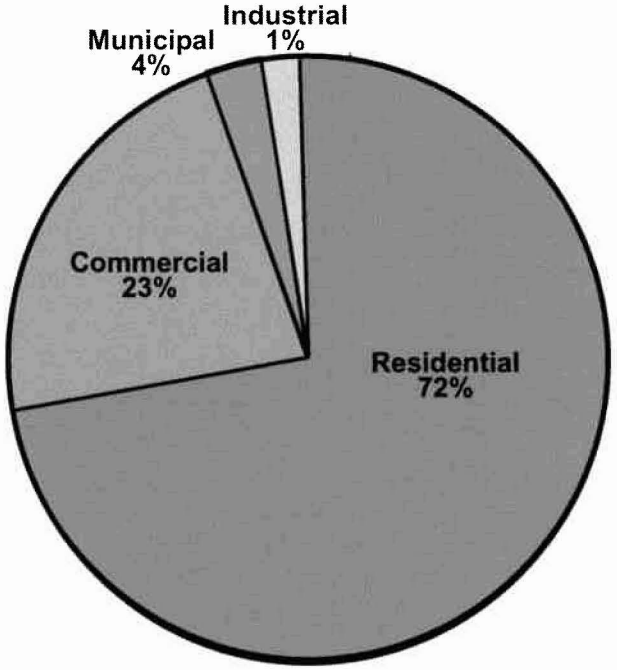
Additional Household Costs (due to pass thru) . . .

Pittsburgh Water and Sewer Authority
Customer Annual Water Use = 11,500 Mil gal



Added Household Costs = $\frac{34}{64}$ = 53%

West View Water Company
Customer Annual Water Use = 4,600 Mil gal



Added Household Costs = $\frac{23+4}{72}$ = 38%

- **Added Household Costs adjustment = 44%** based on a weighting of 39% to Pittsburgh and 61% to Suburban (West View)
- **Should be discussed and quantified in Plan ...and... raised with EPA for valid cost impact inclusion**
- **Should be included in Alcosan cost discussions with its consumers***

**Also: At a $1,000 added annual cost inside Alcosan's service territory and all other things being equal, a smart home buyer would pay $14,400 less for a home inside Alcosan's service territory as compared to a similar home outside it's territory!*

Figure 6

Recent Project Problems . . .

● Jefferson County Sewer System

- Signed EPA Consent Decree
- Original estimate was $1.2 billion, Final expenditure was $3.3 billion
- Final cost had a 175% overrun
- Plagued by construction mismanagement, cronyism, bribery, questionable financial practices
- New treatment plant had to rebuilt, under river tunneling cost increased 67% and was abandoned
- Now in bankruptcy

● Pittsburgh PAT North Shore Connector Tunnel

- 1.2 miles long
- Original estimate was $350 million, Final expenditure was $550 million (after an $80 million scope reduction)
- Final cost had an 80% overrun

● Harrisburg Incinerator

- Relatively simple, commonplace technology
- Initial facility cost $104 million but failed new environmental regulations
- Revamp and expansion cost $80 million plus $25 million for a different contractor to finish
- Debt now $320 million incl $50 million of financing fees
- Harrisburg Authority board member 'pleads' ignorance; city faces Bankruptcy

Figure 7

Major Project Cost Overruns . . .

Anonymous Contractor:
"Engineer's estimates represent the cost of construction in heaven.

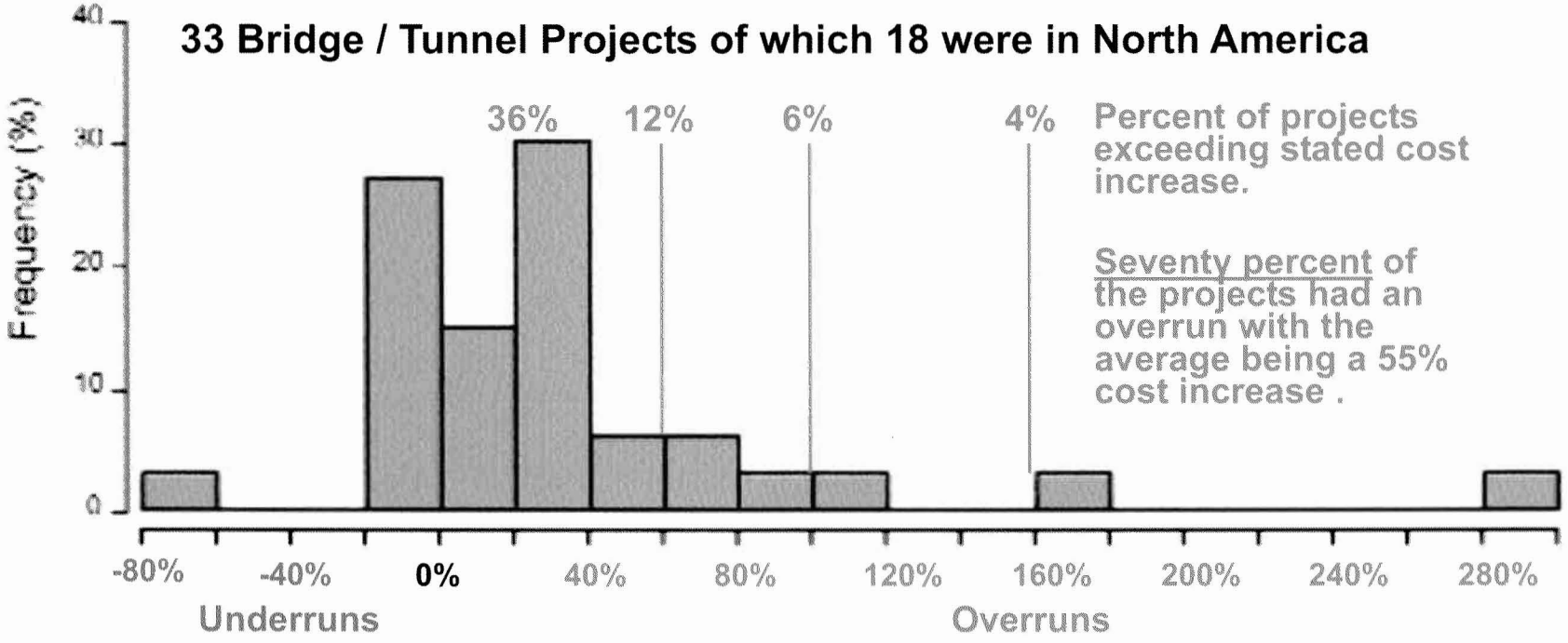
Murphy's Law:
"Anything that can go wrong will!"

Project	Estimated Cost and Date of Estimate	
	Original	Latest or Actual
Transportation		
Boston "Big Dig"	$2.6b (1985)	$14.6b (2002)
Denver International Airport	$1.7b (1989)	$4.8b (1995)
Virginia "Mixing Bowl"	$241m (1994)	$676m (2003)
Seattle light rail system	$1.7b (1996)	$2.6b (2000)
Kennedy Center parking lot	$28m (1998)	$88m (2003)
Energy		
Yucca mountain radioactive waste	$6.3b (1992)	$8.4b (2001)
Hanford nuclear fuels site	$715m (1995)	$1.6b (2001)
Idaho Falls nuclear fuels site	$124m (1998)	$273m (2001)
National ignition laser facility	$2.1b (1995)	$3.3b (2001)
Weldon Springs remedial action	$358m (1989)	$905m (2001)
Defense (per unit)		
F/A-22 Raptor fighter	$89m (1992)	$248m (2002)
V-22 Osprey aircraft	$23m (1987)	$90m (2001)
RAH-66 Comanche helicopter	$31m (2000)	$52m (2002)
CH-47F cargo helicopter	$8m (1998)	$18m (2002)
SBIRS satellite system	$732m (1998)	$1.6b (2002)
Patriot advanced missile	$4m (1995)	$10m (2002)
EX-171 guided munition	$39,000 (1997)	$147,000 (2002)
Medicaid		
Special hospital subsidy	$100m (1987)	$11b (1992)
Medicare		
Part A (HI), cost in 1990	$9b (1965)	$67b (1990)
Home care benefits, cost in 1993	$4b (1988)	$10b (1993)
Other		
1996 farm law (over seven years)	$47b (1996)	$118b (2002)
International Space Station	$17b (1995)	$30b (2002)

Source: Government Schemes Cost More Than Promised
Edwards Cato Institute 2003

Figure 8

Typical Project Experience w Bridge / Tunnels . . .



$$\text{Percent Cost Increase} = \frac{\text{Final Constructed Cost}}{\text{Estimated Cost When Construction Authorized}}$$

Flyvbjerg:
"The evidence shows that it is sound advice for policy and decision makers as well as investors, bankers, media, and the public to take any estimate of construction costs with a grain of salt, especially for rail and fixed-link [bridge and tunnel] projects." Source: Underestimating Costs in Public Works Projects Flyvbjerg APA Journal 2002

Romero:
"Cost estimating for underground transit [is] too dangerous to "Guesstimate".
Source: Article Title Romero Jacobs Associates Capital Projects Process

Figure 9

Alcosan Capital Cost Estimate Procedure . . .

- **Construction cost estimates are based on ACT (Alternatives Costing Tool)**
  - Initially developed by Philadelphia Water with mods by Alcosan, etc
  - Alcosan developed special tunnel template
  - In the Plans's 1,245 pages, only 4 pages are devoted to construction cost estimates and their accuracy
  - Plan indicates ACT yields a Class 4 estimate accuracy (Actual Cost would be within -30% to +50% of estimate)
  - ⇨ The Plan provides no real validation information or tables of ACT Estimated versus Actual construction costs. Alcosan needs to provide such a report.

- **Construction cost contingency amount**
  - **"Contingencies are added because experience has shown that such costs are likely, and expected, to be incurred even though they cannot be explicitly determined at the time the estimate is prepared."**
  - For an ordinary power plant the contingency on a Class 4 estimate might be up to 30 percent. Field construction of tunnels and the like is entirely different.
  - Contingency is not mentioned anywhere in the entire Plan, let alone in the construction or capital cost area. Thus, it is not clear if ANY construction cost contingency allowance is even added anywhere.
  - ⇨ Alcosan needs to promptly report and justify the size -or non use- of construction cost contingencies in the Plan's capital estimates.

Figure 10

Alcosan Capital Cost Management Procedure . . .

- **Plan's Adaptive Management** (Section 11)
  - Principally deals with demographic, financing, and municipal flow factors
  - Does not mention cost overruns or their impacts except obliquely as %MHI customer impacts
  - Any "Adaptive Management" plan should include construction cost as a component
  - Alcosan needs to clarify with the EPA what happens if cost overruns exceed 10%

- **Engineering, Estimating, Bidding, and Construction Management**
  - Largely unaddressed except for one page in Section 11
  - Basically says that Woods Run previously used Alcosan internal design and construction management supplemented with external consultants. Intends to do the same with WWP.
  - Alcosan needs to develop and release a detailed construction design, estimating, bidding, and management plan that assesses resources, performance, costs, and risks. Municipality engineers should review and comment.

Recommended Reading*:

- Government Schemes Cost More Than Promised Cato Institute
- Underestimating Costs in Public Works Projects pdf Flyvbjerg APA Journal
- Cost Estimating For Underground Transit: Too Dangerous to "Guesstimate" pdf Romero Jacobs Associates
- Estimate Accuracy: Dealing with Reality Hollmann AACEI
- MaPro's take on Contingency and Management Reserve Valgarosson Mannvit
- Document Project Readiness by Estimate Class Using PDRI Zaheer Fluor
- Broken Buildings, Busted Budgets: How to fix America's Trillion Dollar Construction Industry LePatner

**Use Google to locate by word search on title with pdf added where listed*

Figure 11

Alcosan Board of Directors . . .

● Present Status

- Mostly composed of elected politicians and union organizers. None with engineering degrees.
- Not well qualified to lead a major construction undertaking costing hundreds of millions a year
- No Board Minutes published on Alcosan internet site. Alcosan O&M increasing at 4% per year and now embedded in Plan's future

⇨ - All Board Minutes should be published on the Alcosan www site. Board meetings should also be video taped and then posted on the Alcosan www site.

⇨ - Because Alcosan is entering a new $3 billion construction future, it is timely that the Board should commission a published assessment detailing the current practices and potential future savings and issues associated with such construction options as: PLAs or nonPLAs, union or nonunion construction, and any other such money saving or risk reduction options deemed even remotely possible.

● Future Status

⇨ - In the likely event that the Board can not be reconstituted with more suitable construction and capital project experience, a special Capital Project Supervisory Committee (CPSC) should be formed under the Board. The CPSC will have responsibilities for monitoring, reviewing, assessing, and recommending elements to, and for, the Board relating to the design, estimating, bidding, and project management of Capital Project constructions.

- CPSC reports to Board. Board must accept/reject any proposal within 30 days. Also, municipalities may request a CPSC meeting to broach an issue of concern. CPSC will post minutes on Alcosan www site with sunshine type confidentiality protections.
- Five members. One by the Board; one by the Municipalities; three by CPSC search with approval by Board and CPSC. The Alcosan Board member can not function as Chairman of the CPSC.
- All members must have engineering degree, substantial management experience with $100 million per year responsibility, must not be holding political office, or affiliated with any key contractor, etc.
- Must select and participate in in-house AACEI or similar seminars. Board members and municipality engineers may also attend these.

Figure 12

no name
10-19-12

There does not appear to be any significant non-contract-based limitation on the ability of ALCOSAN to transfer monies to local governmental entities in order to have implemented green infrastructure and low impact development (GI/LID) that would contribute to the resolution of the CSO problems generally and of the consent decree specifically.

To the extent that what limitations exist are contractual in nature, so long as ALCOSAN and the other contracting parties mutually agree to the transfer of funds, there appears to be no statute, rule, administrative order, or ordinance at the state or local level that would prevent or limit such transfer.

With regard to the Municipality Authorities Act, state case law, ALCOSAN's articles of incorporation and its by-laws, the ALCOSAN-USEPA consent decree, and the Project Z Agreement, there does not appear to be anything that would expressly prohibit or limit the transfer of monies for GI/LID development.

The Municipality Authorities Act provides broad general authority and does not limit transfer of monies related to GI/LID development. While its focus can often be on infrastructure such as "sewer systems" and "sewage treatment works", nothing suggests that that focus is to the exclusion of GI/LID practices.

The ALCOSAN-USEPA consent decree, far from limiting the transfer of monies for GI/LID development, encourages partnership between ALCOSAN and customer municipalities that will, among other things, manage "contributions" to prevent exceedances of system capacity. On the face of it, such language would cover GI/LID development, which USEPA encourages.

The two main obstacles to ALCOSAN's ability to transfer monies are:

- At least one Trust Indenture (from 1997) with PNC Bank appears to limit ALCOSAN's capital expenditures to grey infrastructure. See, for example, § 6.02.
- Many of the documents that govern what ALCOSAN can and cannot do were drafted at a time when there was little or no serious consideration given to GI/LID. As a result, there is a great deal of explicit focus on infrastructural capacity (pipes, interceptors, treatment, basins, etc.) but little focus on capacity-easing through contribution management (i.e. reducing the volume of stormwater that enters the ALCOSAN system). To put it another way, apart from the Trust Indenture, there is nothing that prohibits the transfer of monies for GI/LID development, but there is also little to expressly promote it.

To the extent that there is the political will to edit certain governing documents in order to better promote implementation of GI/LID for capacity-easing through contribution management, any such edits to the Project Z Agreement would likely be supported by USEPA, and any such edits to the Trust Indenture (from 1997) and other similar financial documents would be a simple matter of contract and of mutual agreement of the contracting parties (as opposed to changing a state statute or agency rule or local ordinance).

10-19-12

Maren Leyla Cooke
6745 Forest Glen Road, Pittsburgh, PA 15217
412-251-5814 maren.cooke@gmail.com

My name is Maren Cooke, and I live in the city of Pittsburgh.* We are fortunate to be able to live on the edge of Frick Park, and I can tell you in one word the reason why we chose to live there: trees. The positive effects of trees on quality of life are numerous and well-documented: casting welcome shade in the summer and shielding us from cold winter winds; improving air quality both directly and through reduced energy use; muffling sound from traffic and industry; providing wildlife habitat, shelter, and food sources to maintain necessary biodiversity; affording aesthetic beauty and recreational opportunities; for all these reasons increasing property values and hence the tax base -- and, most germane to the issue at hand, trees can contribute substantial reduction in erosion and flooding.

As we've settled into our home, we've been renovating it using as many green approaches as possible. In addition to things like photovoltaic panels, passive solar design, insulation, local wood and stone, and recycled, reused, and salvaged materials, we have implemented many methods of rainwater harvesting and storage on our own property in order to reduce our impact on the watershed -- and get a lot of use out of Pittsburgh's significant rainfall while we're at it -- we have several rain barrels, a rain garden, and a roof garden as well as productive, multilayered gardens all around the property rather than pavement or lawn. Hundreds of people have visited our home to learn about permaculture, green building, renewable energy, and watershed issues, and many are working to shrink their own environmental footprint.

Sewer overflows are more than inconvenient and unhealthy; they are dangerous. I was caught in street flooding the same afternoon that four people died on Washington Boulevard. I was in Squirrel Hill, and I was lucky -- as soon as I drove into the over-the-hood water at Forbes and Wightman, I ducked up into a nearby driveway, and my car actually survived the experience. My cellphone didn't, as it was in my pocket when I went back into the water to assist another stranded motorist:

* where I am an Urban Ecosteward, a Tree Tender, ~~and~~ serve on the board of GASP, and do environmental education under the name Putting Down Roots which is an endorser of the Clean Rivers Campaign.

You have pointed out that ALCOSAN doesn't control the land and facilities upstream, and can't mandate green infrastructure modifications. But through rate-setting, discounts, and other incentives you can certainly encourage greener, more distributed solutions such as permeable pavement, rainwater harvesting and storage, green roofs, increased open space and vegetation, and generally wiser, more affordable, and more sustainable development (and, like trees and rainwater harvesting for crops and landscaping, most of these approaches have many other benefits as well). ALCOSAN has been educating the public about watershed issues for years, and it would be in line with your mission to follow through with your Wet Weather action plan.

I'd also like to point out that the multiple municipalities comprising the ALCOSAN service area can be seen as an opportunity as well as a challenge -- individual municipal systems and rate structures can be tried out, and the effects on outflow measured.

Just like one should always insulate and weather-seal a house before getting a really huge furnace (no matter how efficient it might be), ALCOSAN should pursue these upstream green-infrastructure approaches by all possible means before committing to huge, costly, disruptive, energy-intensive downstream tanks and tunnels.

Thanks for your time and consideration, and I hope that you are able to reconsider your draft Wet Weather Plan with more diverse avenues such as differentiated rates and other incentives to implement the green infrastructure that will benefit our region in so many ways.