

### Upper Montgomery Joint Authority

# COMMUNITY OUTREACH AND ENGAGEMENT

Jennifer Leister, Executive Director Jason DiPietro, Operations Manager

# Meet the Presenters:

#### Jennifer Leister, Executive Director



Jennifer joined UMJA in 2012, initially in the role of Laboratory Technician, and then stepping into the role of Assistant Superintendent.

In 2018, Jennifer became the Executive Director as the Authority began the construction of a \$28 million plant upgrade. She jumped into leadership, navigating the large construction project as well as management of 10 operators and administrative staff.

As Executive Director, Jennifer prioritizes high quality wastewater treatment, while empowering her staff and engaging positively with the community.

#### Jason DiPietro, Operations Manager



Jason became Operations Manager in 2022, overseeing both the wastewater treatment plant and the UMJA collection system operations.

With a decade of experience in the wastewater industry, he expertly manages daily operations including advanced biological treatment while supervising the many facets of a collection system that spans three boroughs: East Greenville, Red Hill and Pennsburg.

In all of his work, Jason exemplifies a commitment to the UMJA mission: maintaining an environment that protects the health, well-being, and quality of life for our customers and the public at large

## The Upper Montgomery Joint Authority

The Upper Montgomery Joint Authority (UMJA) owns and operates a 2.0 MGD wastewater treatment plant and sewer collection system serving the boroughs of East Greenville, Pennsburg, Red Hill and a portion of the Upper Hanover Township.



"For the health, well-being, and quality of life for our customers and the public at large."



## Welcoming Upper Perkiomen Fine Art Students

Fine art students from Upper Perkiomen High School visit UMJA to paint manholes and more at the wastewater treatment plant.

Real World Experience Youth Engagement Property Beautification



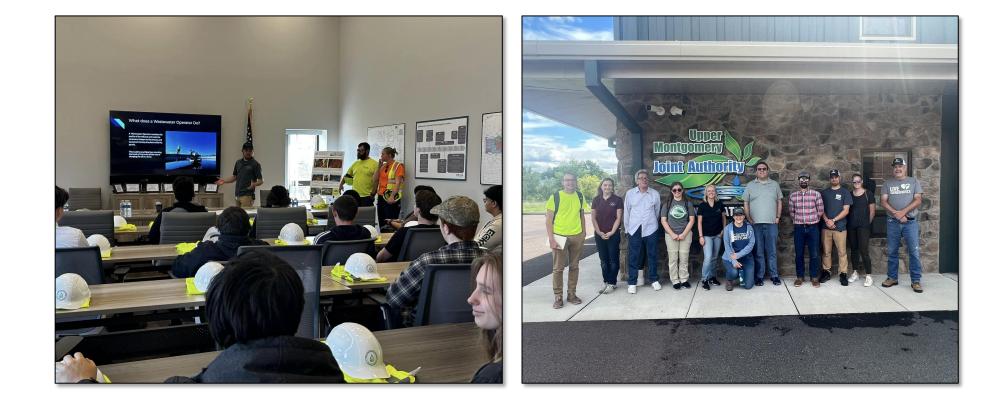
### Welcoming Plant Tours

From students to professionals, we welcome groups of all kinds to tour our facility, explore our plant upgrade, and learn more about UMJA.

Community Awareness

Industry Exposure

Environmental Education



### Perkiomen Watershed Conservancy Summer Camp Tour





In July, UMJA worked with The Floating Classroom Science Program which offers a variety of camps for Middle and High Schoolers. Students explored Green Lane Reservoir in kayak and canoes, learning more about ornithology, botany, water quality, aquatic species, and watershed dynamics! As part of their experience, the students kayaked to the Treatment Plant and took a tour to gain knowledge of real-world applications, all in the context of water-based adventures. Afterwards the students were treated to a picnic lunch!



## Watershed Involvement

UMJA staff participates annually in the Perkiomen Watershed Stream Cleanup, cleaning up trash and more!

Community Presence & Environmental Stewardship





A joint venture between Hereford Elementary School, PA Fish and Boat Commission and Trout Unlimited. Second grade students participated in learning stations related to Water Quality. Stations were manned by community volunteers to provide hands-on experiences in fly tying, macroinvertebrates, riparian buffers, wastewater treatment, watersheds and rain gardens, and fly rod casting.





#### Youth Engagement Community Partnerships

## ACE Mentorship Program

A collaboration between Upper Perkiomen High School and UMJA, students engaged in an 8-week long afterschool program.

Each week took a deep dive into the wastewater industry, led by different industry professionals and program partners.





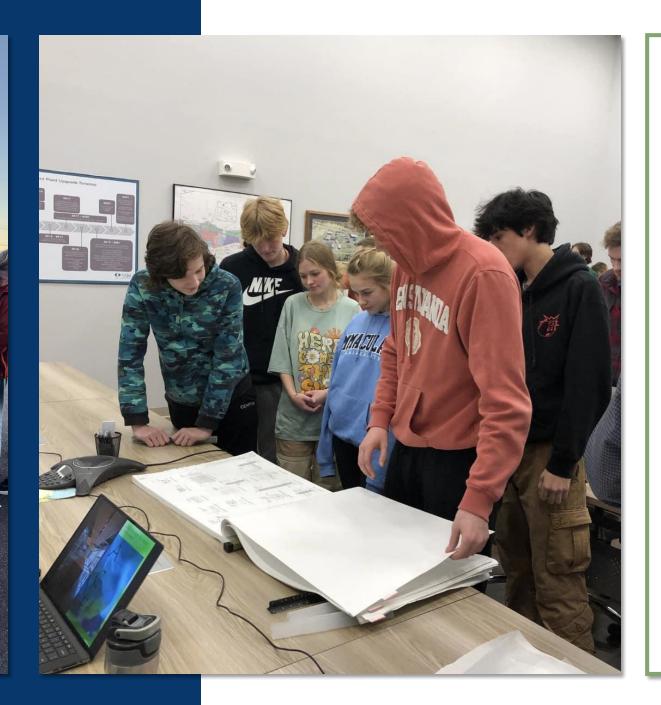
Weekly topics centered around architecture, construction and engineering including lessons and hands-on experiences.

Provided programming for 25 students over a total of 20 hrs.

Community partnerships Youth engagement Hands-on experience

Industry experts mentored students, providing professional skills as well as an insight into real-world application.





The UMJA/Upper Perkiomen High School partnership is the first of its kind for ACE Greater Philadelphia.

It has quickly become a model program for future partnerships with community organizations and industry professionals.





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### **Program Impact**

Following the ACE Program, students joined UMJA staff for the annual stream clean up event, putting their knowledge into action in an impactful way.

"This experience was incredibly valuable to my development and understanding of what I would like to pursue in college and later in life."















### BIRD TOWN PENNSYLVANIA



birdtownpa.org

## **Our Newest Partnership:**

Bird Town Pennsylvania works in partnership with local municipalities and like-minded organizations to promote community-based conservation actions to create a healthier, more sustainable environment for birds, wildlife, and people.

Community Partner Development

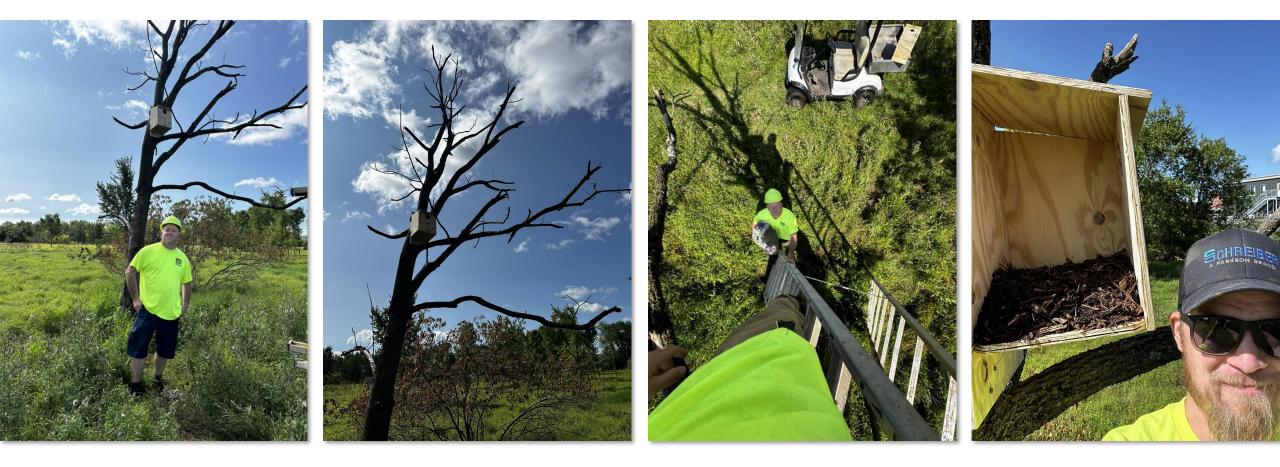
Conservation and Sustainability











#### **Supporting Bird Town:**

UMJA staff took some time out of their daily routine to build and install two Kestrel Bird boxes. The Kestrel is one of many species of birds that call the UMJA peninsula their home.

## Community

### Connections

From local events to industry conferences, we enjoy every opportunity to nurture relationships and share information about UMJA.

Public Awareness Industry Exposure Supporting Local Initiatives



**Eagle Scout Project** 

Jacob Heffner, a local scout from Troop 108 completed a project of creating an eagle nest platform tower here at the UMJA plant. This was Jacob's Eagle Scout service project.

Youth Engagement

Wildlife Conservation

**Environmental Stewardship** 



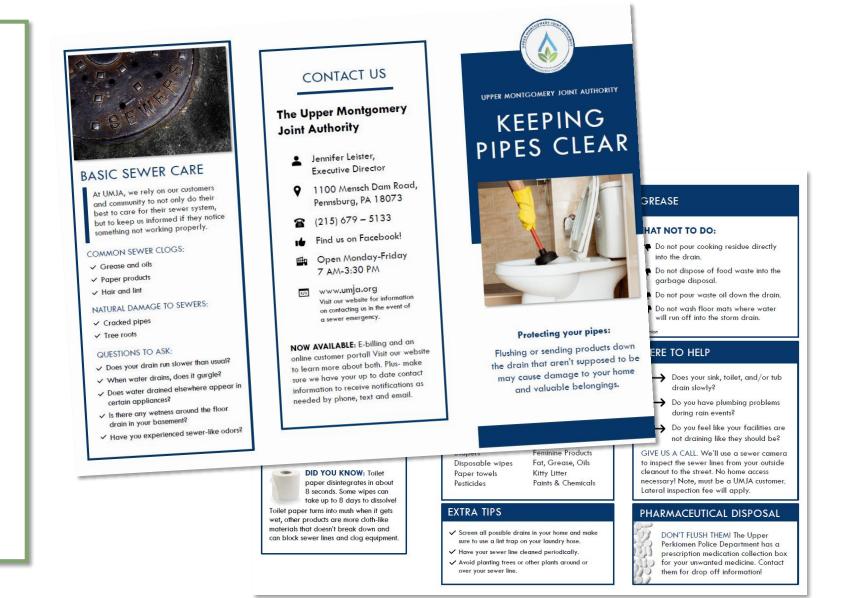




### **Senior Center**

UMJA staff visited a senior center to chat with the residents regarding the process of wastewater and the importance of NOT flushing wipes

Public Awareness Industry Exposure







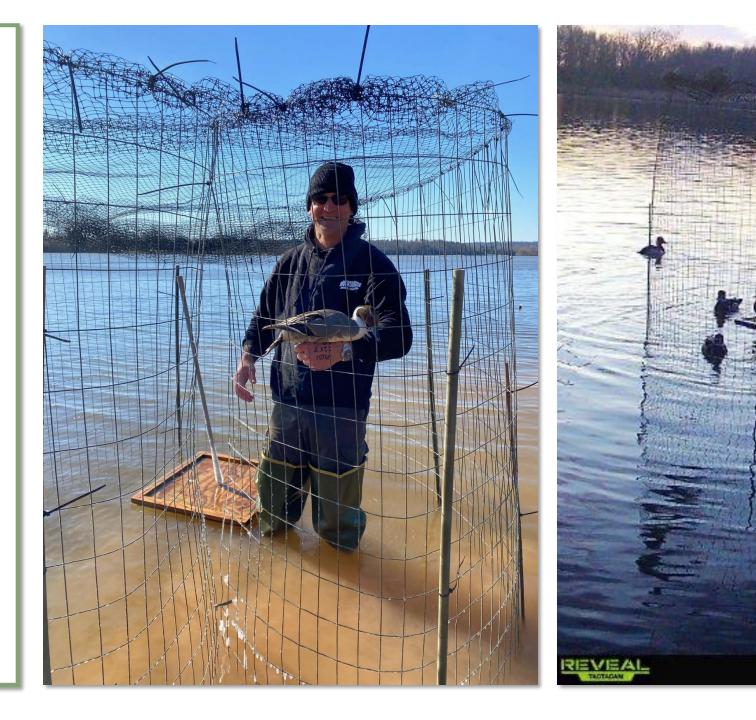
UMJA employees and family members volunteered their time at a local church making hot meals during winter for those in need. UMJA donated the ingredients to make Shepard's Pie – preparing 160 meals in total.

### **Duck Banding**

Bill Car a Land Manager for the PA Game Commission, is part of the Waterfowl Banding Project. Our site is an annual landing station for the banding project.

Wildlife Conservation

**Environmental Stewardship** 







Over the past 3 years, Bill has caught and banded a few hundred birds! The purpose of the project is to track waterfowl migration and recruitment assessments.

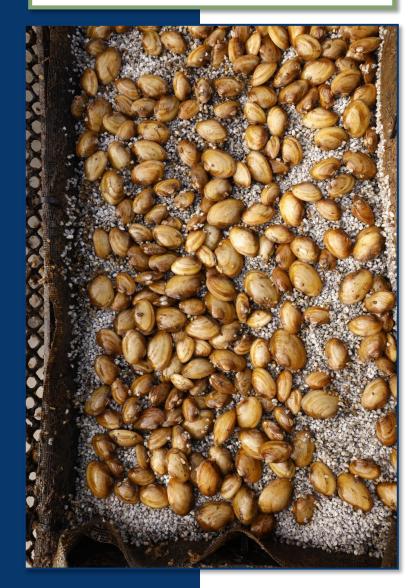
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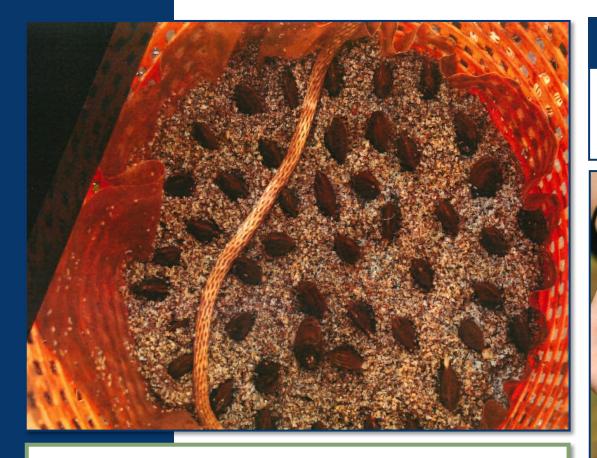
### **Mussel Project**



Using large waterbodies, like Green Lane reservoir, as grow out facilities for juvenile mussels produced in the PWD demonstration laboratory at the Fairmount Water Works or at the Harrison Lake hatchery in Virginia.







Mussels filter particles out of the water, provide habitat for smaller animals, and help stabilize stream bottom sediments.

#### Partners

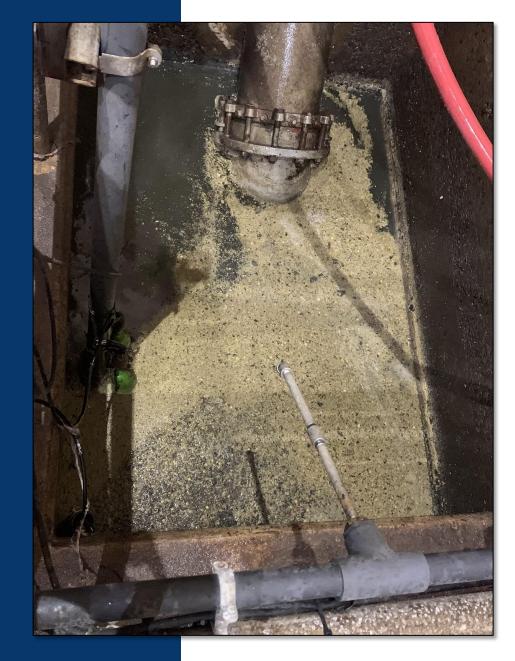








Tens of thousands of mussels reared here will contribute to restocking many streams for future generations.



## F. O. G. Program

In 2020, UMJA staff implemented the F.O.G Program due to an influx of fats, oils and grease at the plant and the effects it has on the new biological process. The approach was to educate the business owners and give them a visual of the effects on the business sewer lateral.

Community Education Environmental Education

## F. O. G. Program

**Step 1:** Televise the business sewer lateral and show the FOG.

**Step 2:** Have a meeting with the business owner to go over the program and show its effects at the place of business.

**Step 3:** A soft approach was taken to allow the business to implement this program. We knew it was going to take time for them to develop the program internally. Most businesses were given a large grace period to get a trap installed or to get on a regular cleaning schedule.



## Community Biosolids

UMJA offers biosolids at the treatment plant FOR FREE. Biosolids are the decomposed solid waste after sewage has been treated chemically and organically. The resultant biosolids are rich in nitrogen (fertilizing component) and are safe for use in landscaping and agriculture.





In 2023, UMJA gave away 3.2 tons to local residents in 2 &15 lb. bags located at the plant. The same year, UMJA also gave away 64.50 tons of biosolids to local farmers at no cost.



#### National Weather Service

Did you know that the Upper Montgomery Joint Authority plant location has been part of the National Oceanic and Atmospheric Administration since 1963?



20 Years of Service Gregory Young 10 Years of Service Jennifer Leister 10 Years of Service Jason DiPietro

BIRD TOWN

#### Bird Town Partnership

UMJA is proud to announce that we are joining forces with Red Hill Borough by partnering with Bird Town Pennsylvania.

Bird Town is an all-volunteer organization that provides a network and resources for residents to create a healthier ecological space where they live. Their mission is to promote community-based conservation actions to create a healthier, more sustainable

environment for birds, wildlife and people. Bird Town coordinate with municipal leaders to engage in many programs such as

habitat restoration, renovation of parks and public spaces, and the removal of invasive plants. They work with the community to educate and develop science programs, pop-up gardens, community bird walks, backyard habitat recognition

programs, and bird feeding tips.

UMJA staff and visitors will be recording the bird sounds that are seen and heard around the reservoir and reporting them to the Comell Lab of Omithology



We look forward to our new partnership and living up to our mission of maintaining an environment that protects the health, well-being and quality of life of our residents

within the Valley.

Stay tuned for details about our community events!

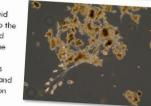
#### the Lab...

vated Sludge is the process of treating wastewater using a biological tion that involves microorganisms and oxygen. The activated sludge is own mud-like substance that is mixed with the incoming wastewater in teration tank. We call this "Mixed Liquor".

goes through a series of aerobic (with oxygen) and anaerobic ut oxygen) chambers. These chambers allow the microorganisms to with the wastewater and remove/ break down certain chemicals and ints from the water, including pathogens (microorganisms that cause e), Ammonia, and Phosphorous.

ed liquor is then settled in large tanks called clarifiers. The d sludge thickens as it settles to the bottom, while the clear liquid the surface. This liquid is further treated before discharge into the The settled activated sludge from this process is then pumped the aeration tank, to start the process over again. Because the s living microorganisms, some of the sludge will have to be to allow for a healthy system. The sludge being removed gets to our digesters. The digesters are large tanks used to hold and e microorganisms before the requirements for land application





tgomery Joint Authority has received the "2024 Beneficial Use of ward" from the Pennsylvania Water Environment Association for ng exemplary management practices related to biosolids

s award was established by PWEA to acknowledge ry facilities in the area of biosolids management and with PA DEP regulations



#### Upper Montgomery Joint Authority

Check out our Member spotlight article in "The Authority". Highlighting our after school program with students from Upper The Perkiomen Watershed Conservancy Summer Camp kayaked over from Green Lane Park to the plant to learn about our



Pages 19 and 30



### Community **Newsletter**

Industry **Awareness** 

Community **Education** 

defined as the decomposed solid waste after sewage sludge d chemically and organically at the treatment plant. The ds are rich in nitrogen (fertilizing component) and are safe indscaping and agriculture applications. ed... arie and Sam on their 5 year on on his 10 year anniversary

#### MEMBER SPOTLIGHT

#### UPPER MONTGOMERY JOINT AUTHORITY INTRODUCES HIGH SCHOOLERS TO AN ALTERNATIVE CAREER PATH IN A FIRST OF ITS KIND AFTER SCHOOL PROGRAM

By Jennifer Leister, Executive Director, Upper Montgomery Joint Authority and Madison Kaley, Senior Marketing Specialist, Spotts, Stevens and McCoy

Engage, excite, and enlighten. For over 20 years, the ACE (Architecture, Construction, Engineering) Program of Greater Philadelphia has provided local high school students with opportunities to explore careers in architecture, construction, and engineering. Experiential learning such as the ACE Program offers numerous benefits, including hands-on experience, practice with realworld program solving, and advanced career readiness upon graduation.

Through the ACE Mentor Program, industry professionals mentor students, providing essential life and professional skills as well as a deep insight into the real-world application of many diverse career paths. The program aims to provide high school students with not only impactful programming, but continued support as they navigate academic and career preparation programs.

During the Winter and Spring of 2024, through a collaboration between Jennifer Leister and Jason DiPietro of Upper Montgomery Joint Authority (UMJA) and Angela Traub from Upper Perkiomen High School, students engaged in an 8-week long afterschool program.

The UMJA/Upper Perkiomen High School program, designed for students interested in wastewater management as well as the design and construction industries, provided programming for 25 students over a total of 20 hours.

Meeting on Tuesday afternoons after school, students took a deep dive into the industry and explored various career opportunities and paths. Each week, guided by different industry professionals, students engaged in interactive activities that offered true insights into the careers they were studying.

Weekly topics centered around architecture, construction, and engineering. Some of the hands-on experiences included: building mock sewer laterals based on specifications provided by a field inspector; designing unique floor plans with an architect; discovering the benefits of freshwater mussels with Drexel University's Academy of Natural Sciences; constructing a replicated model of the UMJA Aeration Tank; and even witnessing a demonstration of how a liner is placed into a compromised pipe.

Continued on page 39



he collaboration with community partners for each week of

e program not only gave students direct access to industry ofessionals, but also aimed to increase community awareness and estment in local vouth.

e UMJA/Upper Perkiomen High School partnership is the first of its d for ACE Greater Philadelphia.

#### made the program unique:

We maintained consistent attendance during the program's after school hours

Students grades 9-12 willingly participated, with diversity in gender, race/ethnicity, ability, socioeconomic status

Multiple adults came together to supervise, both from UMJA and UPHS

Free and within walking distance from the high school

Regular communication from the program facilitators

Genuine interest from our local industry partners/mentors

With plans of a site tour or two next year

uickly become a model program for future partnerships with unity organizations and industry professionals.

pact continues today! Following the program, students joined taff for a local stream cleanup event, putting their knowledge ion in an impactful way. Additionally, students that participated rogram are eligible to apply for ACE scholarships for posteducation.

mentorphilly.org and follow @acementorphilly on social learn more about how ACE supports high school students ng for their future career goals! To read more about A/Upper Perkiomen High School program, visit Upper nery Joint Authority on Facebook where weekly updates red throughout the program!

nery Joint Authority (UMJA) is located in Pennsburg, Montgomery County serving 3,600 residents within the Borough's of Pennsburg, ist Greenville. Our mission is to operate and maintain a wastewater treatment plant and collection system in a socially, ethically and responsible manner. We aim to protect the health, well-being and quality of life of our customers.

ently completed a 20-million-dollar upgrade at the treatment plant and is currently working to remediate main sewer lines, rvice laterals within the collection system

ong community outreach and have partnered with many organizations such as Upper Perklomen School District Art and Science ntor Program, Hereford Elementary Trout Release and numerous tours of the treatment plant. We recently partnered with Bird nction with the Delaware Estuary Academy of Natural Sciences of Drexel University and Aqua, we are participating in the Green agation program. UMJA also participates in the Perkiomen Watershed Clean-up annually and produces and provides free Biosolids cal residents and farmers for lawns and gardens.

has been honored with numerous awards for excellence, ingenuity, hard work and dedication to serving our community.

#### Student Testimonial:

The opportunity was not something I would normally take, but I was interested by it, especially the engineering and architecture segments. Stepping outside my comfort zone actually made this a good experience. I can't think of anything disliked about the course. Everybody involved was very helpful and friendly, and what we were taught was engaging and interesting. Overall, it was a nice thing to do for a few months, and for those who are truly considering a future in the careers discussed in.

Andrew - UMJA/Upper Perkiomen High School partnership participant.





Authority Magazine **Partnership** Recognition

#### Industry Recognition

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- Student Testimonial: "The ACE Mentorship Program allowed me to form connections with people who have already taken the path that I'm wanting to pursue later in life. Overall, this experience was incredibly valuable to my development
- and understanding of what I would like to pursue in college and later in life." Beatrice - UMJA/Upper Perkiomen High School partnership participant.











#### ACHIEVING DRAMATIC **IMPROVEMENTS IN FLOW RATES**

Upper Montgomery Joint Authority(UMJA) Credits Successful I&I Reduction Program

By: Jennifer Leister, Upper Montgomery Joint Authority

In 2010, the Upper Montgomery Joint Authority (UMJA) faced a major challenge: the Department of Environmental Protection (PADEP)'s determination that the wastewater treatment plant was hydraulically overloaded due to excessive Inflow and Infiltration (I&I).

FLOW METERING AND

COLLECTION INSPECTIONS

In 2013, UMJA launched a

comprehensive flow metering program

mains, and laterals. Based on these

accommodate new development.

and conducted inspections of manholes,

prevent overflows, free up capacity, and

REHABILITATION MATERIALS,

METHODS AND ACHIEVEMENTS

Of top priority was the use of proper

rehabilitation materials and methods, ensuring long-term success and value

add to the system. Utilizing cured-in-

<FIG 1.png> (use left hand side of

composite) Figure 1. OBIC Composite

The Mr. Manhole system was also

easily cut out and replace manhole frames.

collection system.

Polyurea Lining System

Fast forward to today: thanks to many successful 16-1 reduction projects as well as considerable efforts by UMJA, dramatic improvements in flow rates during wet weather events have been achieved.

(2013)

#### BACKGROUND

The Upper Montgomery Joint Authority is a regional sewer authority in Montgomery County, Pennsylvania, serving a population of approximately 8,300 in the boroughs of Red Hill, Pennsburg, East Greenville, and parts of Upper Hanover Township. The authority owns and operates a sanitary sewer collection system and a wastewater treatment plant (WWTP), which is permitted for an average daily flow of 2.0 million gallons per day

(MGD). The plant's actual hydraulic design capacity is 2.77 MGD, but it often experiences peak flows exceeding 15 MGD during heavy wet weather events. Since being established as hydraulically overloaded, UMJA has made significant strides in infrastructure improvements at both the treatment plant and throughout the collection system. This includes substantial upgrades to the wastewater treatment plant, culminating in a \$28 million upgrade in 2022, costing over \$10/gallon to construct. Throughout these efforts, the UMJA Board has been very supportive and proactive in ensuring the necessary improvements

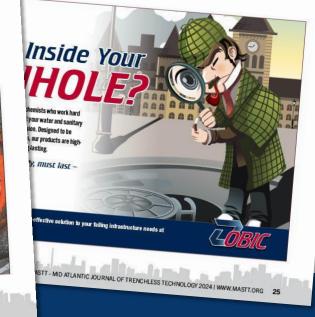
are realized.

**"THE NUMBER OF** SSOS OCCURRING WAS REDUCED SIGNIFICANTLY."



Figure 1. OBIC Composite Polyurea Lining System

 At least 82,000 LF of CIPP lining LF in 2023 alone) · 714 laterals have been CIPP lined 123 manholes have been lined Nearly 40 manholes have been raised to grade in low-lying areas At least 500 properties have been inspected for illegal connections The majority of these improvements were completed by Performance Pipelining, Inc. (PPI), with PPI completing about 90 percent of the



#### PROGRESS AND ACHIEVEMENTS

To date, UMJA has successfully ontinued the rehabilitation. tackling necessary infrastructure improvements. Some achievements Include

 More than 85,000 linear feet (LF) or main line and laterals have been televised

has been installed in 8-inch and 10inch diameter sewer mains. (12,200 actual rehabilitation work.

### **Trenchless** Technology Magazine

#### Industry Recognition

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# Thank you!

## Upper Montgomery Joint Authority www.umja.org | Find us on Facebook!

Jennifer Leister, Executive Director | Jason DiPietro, Operations Manager