

# MUSSEL PROPAGATION PROGRAM supported by UMJA in conjunction with

Aqua Pennsylvania, Inc., and Montgomery County Parks, Trails & Historic Sites Department.

Today, populations of freshwater mussels are greatly reduced throughout North America, and are the subject of restoration efforts across the Delaware Estuary and its watershed. During the past 20 years, researchers from the Academy of Natural Sciences of Drexel University, Partnership for the Delaware Estuary (PDE), Philadelphia Water Department and US EPA Region 3 have been focused on freshwater mussel research and propagation projects within the lower Delaware River watershed, including the mussel propagation program at Green Lane Reservoir supported by **Upper Montgomery Joint Authority**, Aqua Pennsylvania, Inc., and Montgomery County Parks, Trails & Historic Sites Department.

The latest effort is referred to as the PDE-led Mussels for Clean Water Initiative (MuCWI), with generous funding for the construction phase of MuCWI being furnished by the Pennsylvania Infrastructure Investment Authority (PENNVEST), which will include a new mussel hatchery facility to be built at Bartram's Garden in Philadelphia. The MuCWI vision will be to produce large numbers of juvenile mussels at this facility, rear them up at satellite grow out facilities in the region, including Green Lane Reservoir, and then relocate the larger-sized mussels to restoration sites in streams and rivers. This effort is needed because successful large-scale restoration efforts of freshwater mussels are currently constrained by the lack of hatchery propagation facilities and rearing capacity within the region.

What are Freshwater Mussels?



Freshwater Mussels are bivalve mollusks that live in lakes, rivers, and streams; similar to saltwater mussels that live in the ocean. North America has the largest diversity of fresh-

water mussels in the world! Mussels have an outer shell that protects their soft bodies inside and you can find them on the bottom of lakes, streams and rivers, buried in the mud or nestled among rocks.

Mussels can move! They have a large muscular foot that can slowly move them to different locations nearby; this foot also helps them anchor down when they find a good spot. In addition, mussels are filter feeders; they draw water in through a siphon (tube) and filter out the microscopic algae and sediment particles for food.

Why are Freshwater Mussels Important?



Because mussels are filter feeders, they act as natural purification systems for lakes, rivers, and streams. They filter out harmful algae and nutrients that may be attached to the suspended particles, which leads to cleaner water. One adult mussel can filter ~10 gallons of water a day during its growing season! Mussels also stabilize stream bottoms and improve the benthic (bottom) habitats, providing additional places for other small animals to live.

What's happening to freshwater mussels?

Unfortunately, ~70% of North American mussel species are considered threatened, endangered, or of special concern. They are one of the most endangered groups of organisms in our country. Some reasons for the decline in mussel populations are increased flooding, decreases in water quality, historic construction of dams that prevented fish hosts from migrating upstream, and watershed land development. Mussels are slow growing animals, and many species cannot recover quickly after large disturbances.

The Importance of Green Lane Reservoir

Restoring mussel populations to waterbodies where they once were plentiful isn't easy. There aren't enough freshwater mussels out there to relocate to these historic locations. One way to get around this problem is to raise juvenile mussels in a hatchery. In a mussel hatchery, adult and juvenile mussels, and their fish hosts, are given the perfect environment for reproduction! Once the juveniles are ready to leave the hatchery, it's important they have a safe place to grow and get big before they are relocated into a stream or river.

Green Lane has demonstrated that it has the ideal growing conditions e.g., water quality, sufficient dissolved oxygen and food availability, and a relatively protected environment, to grow out mussels over the course of several years. We have been very successful in growing out several species of mussels in the reservoir and the growth rates are very good compared to our other propagation facilities in SE Pennsylvania. The data gathered to date will provide important information that will be used to expand our propagation program and help us continue raising juvenile freshwater mussels to repopulate our local streams and rivers for future generations!

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September 4, 2020



## Fall Newsletter

September 30 2020

### A MESSAGE FROM THE BOARD

In a community with a few thousand homes, it only takes a few improperly connected sump pumps working in wet weather to cause a sanitary sewer backup into basements, streets and waterways.

Sump pumps are used to pump groundwater to the outside of the basement of buildings. This groundwater may be discharged to exterior yard, nearby catch basin or storm drain. A sump pump is considered **ILLEGAL** when connected to the sanitary waste piping (sewer).

**Fun Fact: One incorrectly installed sump pump can add up to 7,200 gallons per day of clear water to the wastewater system. That is as much water as an average sized residential swimming pool!**

Sump systems, similar to backwater sanitary valves, are not maintenance free. In order to best protect your home from flood damage, follow the pump's manufacturer's recommendation for servicing and maintenance of our pumps. Sump pump discharge lines need to be equipped with a check valve which prevents the water contained in the pipe above the sump pump from flowing back into the sump when it shuts off. Discharging a sump pump into the City's sanitary sewer system might seem like a easier and more attractive option than running a discharge tube from the sump pump to the exterior, but it is illegal.

Property owners can be directly impacted in terms of health and property damage. A sewer system that is over capacity because of inflow can lead to sewer backups into the basement of your or your neighbors home. Sewer backups can result in health risks from wet and contaminated basements as well as thousands of dollars of damage that can take weeks to repair.

Together as a community, we can prevent these types of issues, which keeps us all safe.

### SMOKING OUT SEWER LEAKS

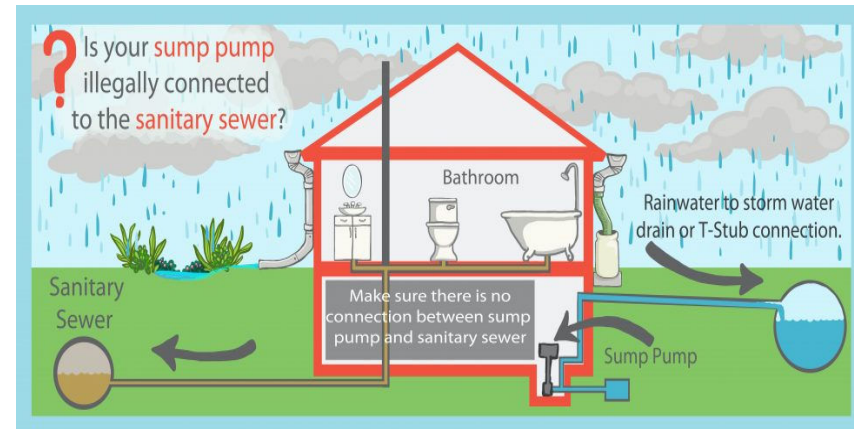
The Upper Montgomery Joint Authority will be conducting leak tests of the sanitary sewer system in your area by forcing smoke into the lines. This smoke will help locate places where storm and other surface waters are entering the sewers as well as reveal sources of sewer odors. Leak testing is part of our continuing effort to provide a safe, economical, efficient, and environmentally sound sewer system throughout our service area. While most residents will never see or smell the smoke, UMJA wants you to have as much information as possible about the testing. A special non-toxic smoke will be used in these leak tests. The smoke is manufactured for this purpose and, therefore, leaves no residuals or stains and has no effect on plants and animals. The smoke has a distinctive, but not unpleasant odor. In the unlikely event that you should have direct contact with the smoke, you may experience some minor irritation of the respiratory passages. These problems last only a few minutes where there is adequate ventilation. Traces of the smoke or its odor enter your house or building, it is an indication that gases and odors from the sewer also may enter. Evidence of smoke in your home during the smoke testing should be immediately reported to UMJA testing crew and to your plumber. Location, identification, and correction of the source of smoke entering your house is strongly recommended. While the UMJA testing crew will render all possible assistance, the correction of any defects in the pipes and sewer on private property is the responsibility of the owner.



# Superintendent's Message

Waste water treatment systems that are in place today were built to keep waterways clean for you to use. Preventing sewage overflows keep our rivers clean and healthy. Keeping inflow out of your wastewater system can reduce negative impact to the environment. When wastewater system becomes over capacity due to inflow there is not only potential for sewage to backup into homes and businesses, but also for overflows into the road, drainage areas and streams.

Like our roads, wastewater systems are designed to handle the peak capacity — heavy rainfall for sewers is like rush hour for roads. To provide enough sewer capacity for now and future generations, the sewer pipes and treatment facilities are designed for those peak flows. The more clear water entering the system, the bigger all those facilities need to be and the more they cost. Reducing peak flow caused by excessive inflow means communities and the region can spend less on those larger pipes and treatment plants.



## The Upper Montgomery Joint Authority has continued to make improvements in collection systems

### East Greenville Borough

- ◆ On School Alley and Third Street the mainline is now completely lined. This flows down Third Street to the Main interceptor then to the treatment plant.
- ◆ The north side of Hamilton Road had the mainline completely lined. This flows to Blaker Drive, Third Street, then to the main interceptor.

### Pennsburg Borough

- ◆ On Washington Street there were a total of 5 manholes rehabbed. Washington Street is now completely sealed.
- ◆ On Fourth Street, all laterals were lined to the transition, which flows to Pottstown Ave, then to the treatment plant.
- ◆ On Cherry Street in Pennsburg the mainline was lined. This flows to 4<sup>th</sup> Street, then to Pottstown Ave.

### Red Hill Borough

- ◆ On 6<sup>th</sup> Street in Red Hill, all the laterals were lined to the transition. This flows to the Red Hill Gun Club Pump Station.
- ◆ On Adams Street in Red Hill the mainline was lined. This flows to Red Hill Gun Club Pump Station.

## PROPOSED WORK IN THE PROCESS

**Mainline Lining** Dotts Street in Pennsburg, Jefferson Street in East Greenville, Cherry Street in both East Greenville and Pennsburg, 2<sup>nd</sup> Street in Pennsburg, Silk Alley in Pennsburg

**Lateral Lining** School Alley in East Greenville & 3<sup>rd</sup> St in East Greenville

**Manhole Rehabilitation Projects** School Alley in East Greenville, Cherry Street in E. Greenville/Pennsburg 2<sup>nd</sup> Street in Pennsburg, Silk Alley in Pennsburg

## Save Water, Save Money

Saving water, saves money! With many of us spending more time at home, here are some tips for how you can conserve water.

**Check & Fix Leaks.** Small household leaks can add up to thousands of gallons lost every quarter. Not fixing leaks is like throwing money down the drain. Check your plumbing fixtures periodically. If you find any leaks, fix them!

In the kitchen, waiting to run the dishwasher until the load is completely full can save the average family 320 gallons of water. Also keeping a pitcher of cold water in the fridge instead of letting the tap water run cold.



Leaky Toilets can easily go unnoticed. A easy way to check for a leak is to remove the tank lid on the toilet, then drop a small amount of food coloring into the tank. After 10 to 15 minutes check the bowl, if you see dye it's a sign you have a leak.

Clean water (from rainspouts, sump pumps, etc.) should be diverted into your lawn so it can be recycled naturally — sending clean water to the wastewater treatment plant overflows our capacity and increases our costs by processing water that does not need to be — those costs are then funneled back to the consumer in higher rates.



## No Fog, No Clog

**Fats, Oils and Greases** can cause havoc in sewers. When not disposed of properly, FOG components congeal and accumulate along the walls of the sanitary sewers.

This constricts the pipes, impedes the flow of wastewater, and raises the potential for blockage. Grease also affects the proper operation of pump stations, leading to sewage accumulation in wet wells. Either of these situations can eventually result in a sanitary sewer overflow in which wastewater is discharged from a manhole, or wastewater enters homes and businesses. This is both an environmental issue and a public health concern, in which sewage can contaminate the ground, local bodies of water, and any property with which the wastewater comes into contact.



The best practice is to remove oil and grease from dishes, pans, fryers, and griddles. Let the grease cool first, then skim, scrape or wipe the grease off. The, throw the grease in the trash. Many people may not realize that rinsing off oil and grease with hot water simply sends the grease down the sewer lines to coagulate. Also, garbage disposals do not keep grease out of the system. These units are simply designed to shred solid materials into small pieces.

**Therefore, we ask you not to put any fats, oils, or greases, even in diluted form, down your drain.**