

# Lake Shenandoah Stormwater Control Authority

## General Information and Answers to Frequently Asked Questions

### **The Problem**

A watershed is all of the land area that drains to a set point in the landscape. Watershed boundaries are defined by the topography. The land area that ultimately drains to Lake Shenandoah is within a single watershed boundary.

Over the past 20-plus years, land in the Lake Shenandoah watershed has been developed into residential subdivisions and other types of developments. These developments occurred under different stormwater management standards based on when they were designed. Over the years, increasing amounts of runoff have shown that some of the older infrastructure is no longer adequate for carrying runoff away from homes and roadways. This results in periodic flooding of a number of homes and roadways in the area, which damages properties and impedes access.

### **LSSCA Proposal Summary**

The Lake Shenandoah Stormwater Control Authority has been formed to facilitate improvements to stormwater infrastructure in the Lake Shenandoah watershed, with the goal of reducing the frequency of urban flooding that occurs in several neighborhoods. These improvements may include new detention ponds, improved ditches, and culvert upgrades.

### **Estimated Total Expenses**

The anticipated total costs of improving the infrastructure have been estimated below:

- Engineering Costs - \$150,000
- Acquisition of properties and easements - \$2,000,000
- Construction of mitigation strategies - \$800,000 - \$2,400,000 (specific strategies not yet chosen)
- Ongoing operation & maintenance costs over 10 years - \$200,000

**Total = \$3.15 - \$4.75 M**

Grant funding to offset costs will be pursued but is not guaranteed. Grant programs exist through various agencies for funding of stormwater infrastructure improvements. The grants are competitive, and application does not guarantee funding. The County is currently pursuing multiple grant-funding opportunities for the Lake Shenandoah watershed. Cost-share funding is also available from the Virginia Department of Transportation for roadway improvements. Securing this funding is also competitive.

### **What fees will be charged?**

In order to pay for the mitigation work, the Lake Shenandoah Stormwater Control Authority proposes to fund the improvements by collecting a fee from property owners within the Lake Shenandoah watershed. The fee is proposed to be based on square feet of rooftop area. Many localities in Virginia have similar fees. The currently proposed rate of \$0.10/sq. ft. of rooftop area, assessed across all structures in the watershed will result in \$440,000 collected per year. Assessed over a 10-year period, a total of \$4.4 million will be collected, which

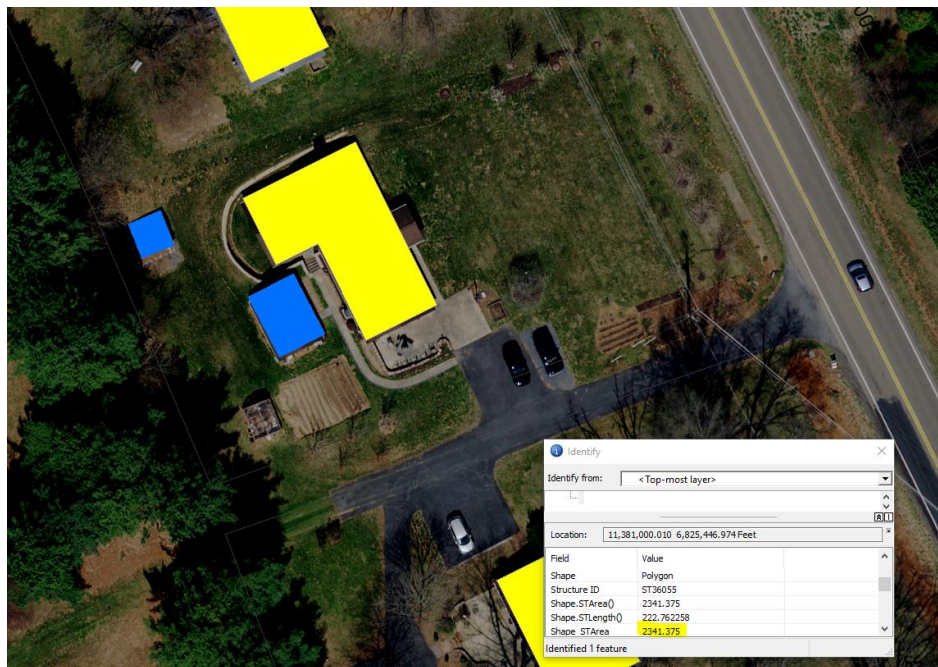
should be adequate to cover the costs outlined above. If the total costs turn out to be lower than expected, the annual fee would be reduced accordingly.

**Why is the fee based on rooftop area?**

Rooftop area is a good indicator of how much rain will leave a property as stormwater runoff rather than soaking into the ground. It is also very straightforward to measure, which helps keep administration costs low. County GIS maps already contain data for the total rooftop area of structures. This data is collected by either using handheld GPS units to map the outline of each structure at the time it is built or by using aerial photography. An example is shown below.

**Example:**

In this image, the yellow shapes are houses. The blue shapes are accessory buildings such as detached garages or sheds. The information box in the lower right hand of the image provides the area of each one of those shapes. It is important to note that the rooftop area will not be the same as the square feet of living space of your home. The rooftop area is a top-down measurement of the surface of your roof.



That information is then put into a table that links account numbers for each structure, and calculates a fee based on the rooftop area at the currently proposed rate of \$0.10/square foot.

Account Number	Structure	Square Feet of Rooftop	Fee (\$0.10 X sq. ft.)
31549	Shed	171.7	\$17.17
31549	Shed	464.7	\$46.47
31549	Home	2341.4	\$234.14
<b>TOTAL FEE:</b>			<b>\$297.78</b>

### **My property doesn't flood, why should I be charged for infrastructure upgrades?**

Infrastructure improvements are designed to accommodate runoff from all properties in the watershed. Even if your property doesn't experience flooding, the water that flows from your roofs, mowed lawns, and parking areas during rains will make its way into the ditches and pipes designed to carry away the surface runoff. Runoff from all properties accumulates in the system, causing flooding in low-lying areas where the existing infrastructure is inadequate to handle the total amount of water.

### **What have developers done to mitigate runoff?**

Subdivisions within the Lake Shenandoah drainage area were developed over many years under varying standards pertaining to stormwater management. These developments were designed to meet the regulations at the time they were constructed. Even under older regulations, many of the subdivisions were required to have stormwater detention ponds. Newer developments have designed stormwater management systems to the higher standards that are currently in place.

### **What are some of the specific improvements being considered?**

Several options are currently being considered as infrastructure improvements. One project that looks very cost-effective is a new detention basin on the south side of Taylor Spring Lane. Other strategies being considered are channel improvements in the Highland Park subdivision area and a second detention basin area that would improve conditions from approximately Shen Lake Drive down to Lake Shenandoah.

### **Why doesn't the County just stop approving development within the watershed boundary?**

Just as was the case when your home or business was built, the County has an obligation to respond to the public need and demand. The County has chosen to focus development in areas with available water and sewer, roadways, and other infrastructure; in the County's seven towns; and around the City of Harrisonburg.

### **Why not make the developers (past or future) pay for the stormwater improvements?**

There is no mechanism to make past developers, builders, or owners contribute toward the needed improvements, particularly because past developments met then-current standards. Recent and future developments are being held to current, higher stormwater standards. The costs to meet those standards will be reflected in development costs, purchase prices, and rental prices for homes and businesses in the drainage area. Through the market economics, additional costs to developers ultimately still come back to homeowners and renters.

### **Why should those within the Lake Shenandoah watershed boundary bear the costs? Why not cover the expense with countywide tax revenues?**

The County's General Fund revenues may be utilized to fund projects and services that benefit the County as a whole. Funding to construct the fire and rescue station on Port Republic Road is an example of such a project. While the station may primarily benefit those in the area, all County residents have the potential to travel in the area, visit the hospital and businesses, and benefit from the station. The station is also part of the provision of emergency services for the entire County, serving as backup to the areas beyond their immediate service area, as needed.

If all County citizens were assessed a tax, all should see some level of benefit. The flooding in most areas of the County does not result from urban stormwater. If it were so, costs would likely be greater per parcel and would extend well beyond the 10-year borrowing proposed for the Authority and may limit how and when the urban flooding from stormwater in the Lake Shenandoah watershed could be addressed.