

Everything Goes Where the Stormwater Flows: Residential Strategies to Protect Our Waterways!

Tuesday July 26, 2023

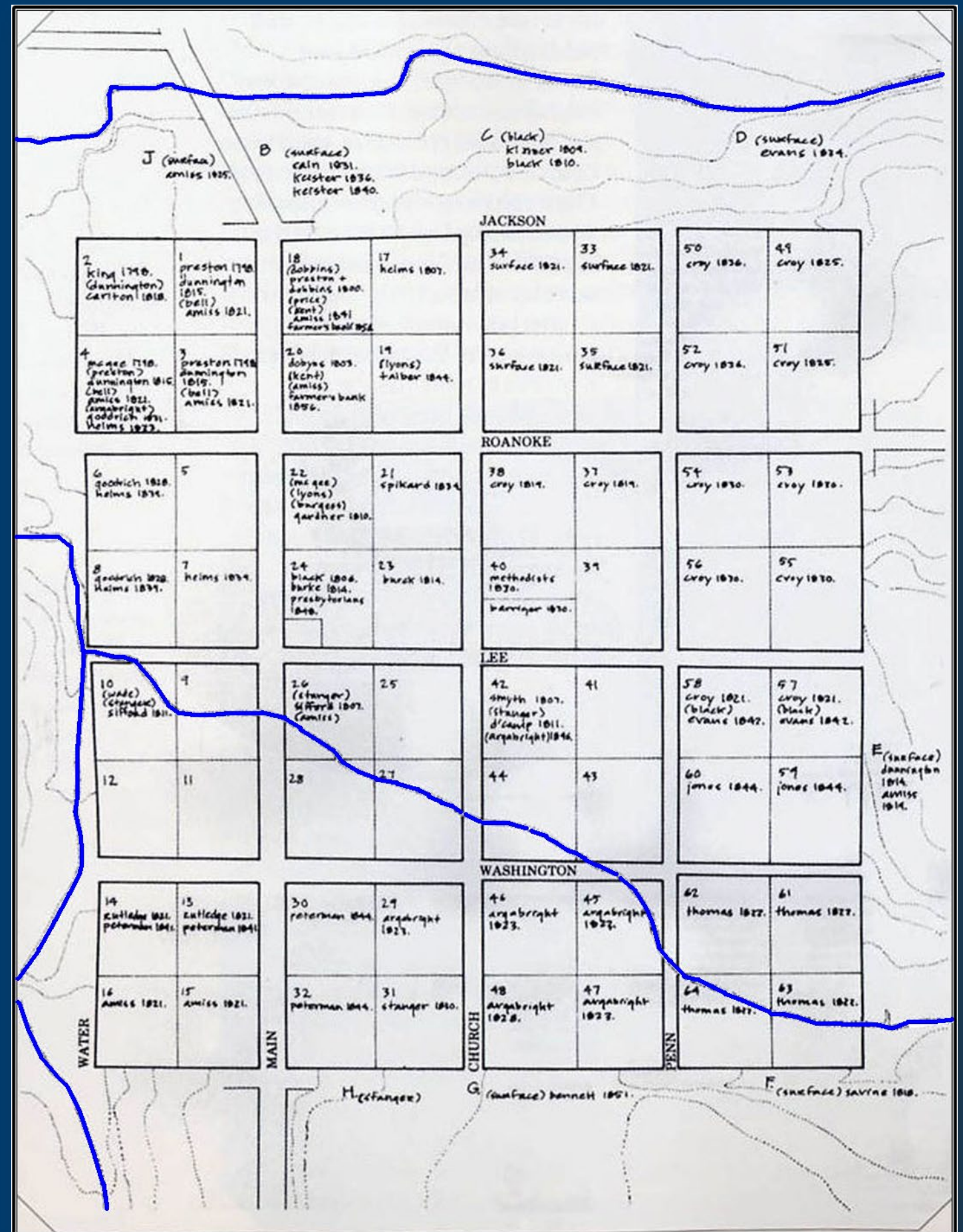
Kafi Howard – Town Engineer

khoward@blacksburg.gov

(540) 443-1354

Brief History

- Established in 1798
- Stroubles Creek was the primary water source for Blacksburg and VT up until the mid-1950's

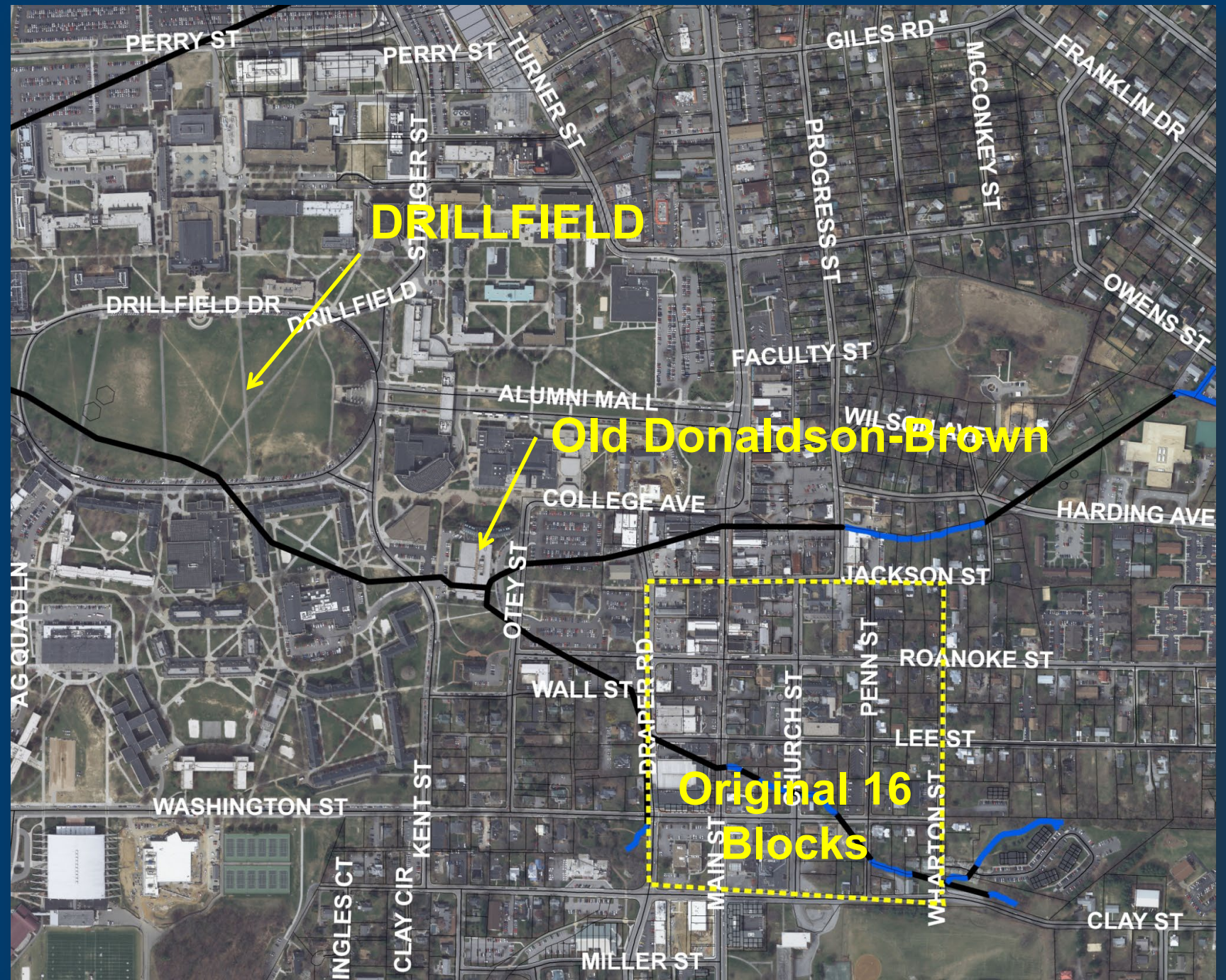


Brief History

Population ~45,000

In the last 200 years, the stormwater landscape has changed.

Now, most of the creek is piped and is hidden beneath our feet.



Stroubles Creek Downtown

- Passes under residential areas, downtown and under campus.
- Surface water quality has deteriorated.
- No longer an asset, but a burden.



Drainage Challenges

- Areas downstream of construction often see more sediment laden water.
- Some areas see erosion due to excessive runoff.
- Areas with large drainage areas see more frequent flooding.
- Infrastructure everywhere is ageing.



Woodbine Subdivision

Flooding in Blacksburg

Flooding: Stormwater runoff from intense rainfall can at times exceed the carrying capacity of the stormwater piping system, creating a backup in the system which can lead to the flooding of roads, yards, and structures.



Webb Street @ Tech Terrace and The Edge

Aging Infrastructure Across Town



Pipe Failures:

Aging infrastructure can suddenly fail, causing road collapses, sinkholes and emergency construction repairs.

2021 Tall Oaks and Hethwood Blvd.

Water Quality in Blacksburg

Stormwater Pollution: When rain falls, stormwater flows across impervious surfaces such as sidewalks, driveways, parking lots, and rooftops.

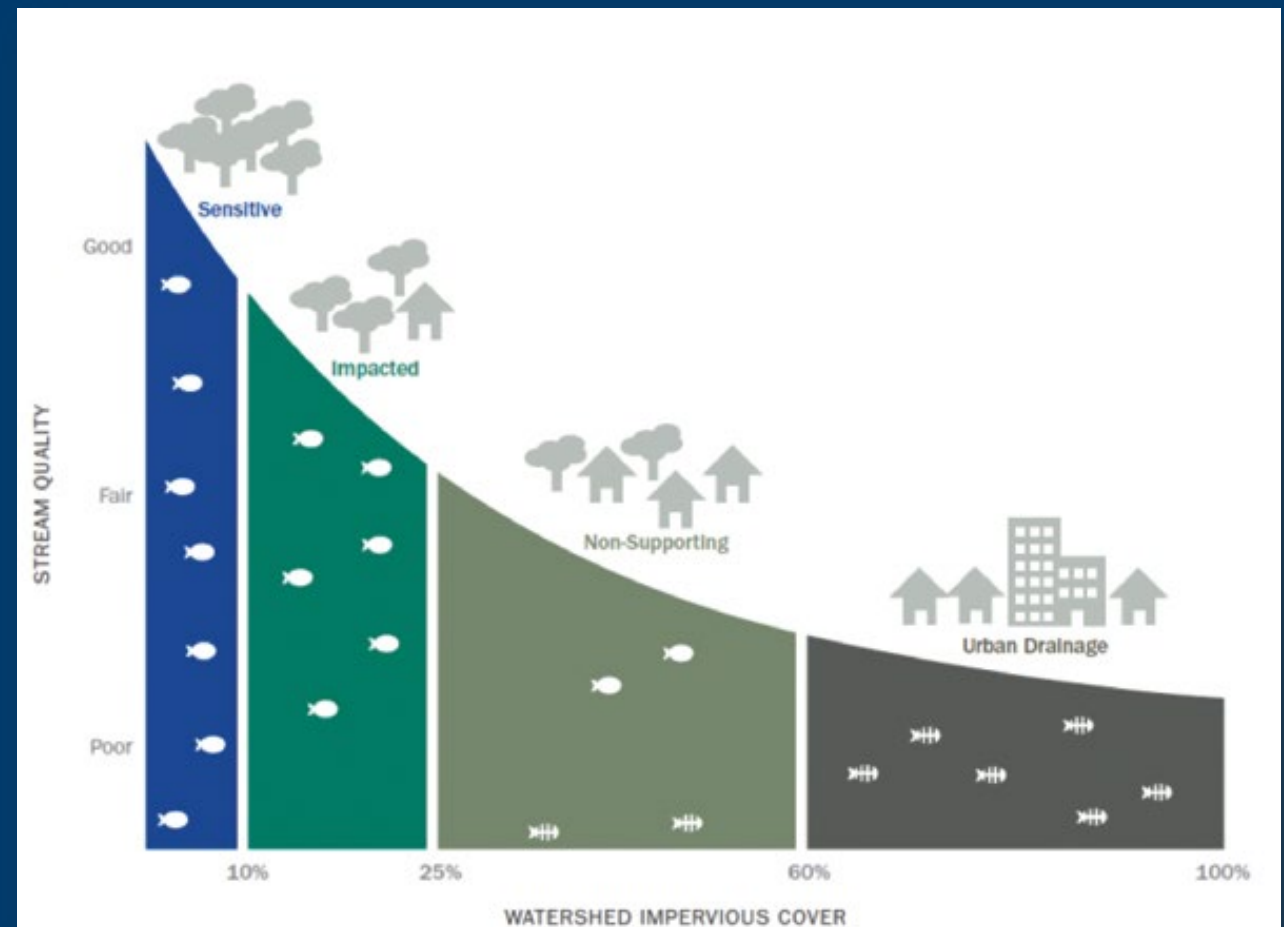
It mobilizes contaminants and animal waste, picks up chemicals such as oil, pesticides, trash, and sediment, and transports them downstream to streams, rivers, and ultimately the oceans.



Water Quality in Blacksburg

All Waterways in the Town are “Impaired” i.e. not meeting state water quality standards

- Stroubles Creek – Sediment and Bacteria
- Cedar Run & Wilson Creek – Sediment, Bacteria & PCBs
- Toms Creek – Temperature & Bacteria



What is the Town doing?

Development of new projects with water quality BMPs incorporated into the design.



Urban Bioretention



Stream Restoration



Porous pavers



Stream & Stormwater Education Events

Stormwater Utility Fee

- Maintenance
- Stormwater Improvements
- Compliance with State Permitting (VSMP and MS-4)
- Infrastructure Mapping & Modeling
- Water Quality Monitoring
- Inspection and Oversight of Private Facilities
- Public Education
- Watershed Planning
- Reporting

Regulations and Enforcement



All stormwater requirements stem from the Clean Water Act of 1972



State of Virginia (*Dillon Rule State*)

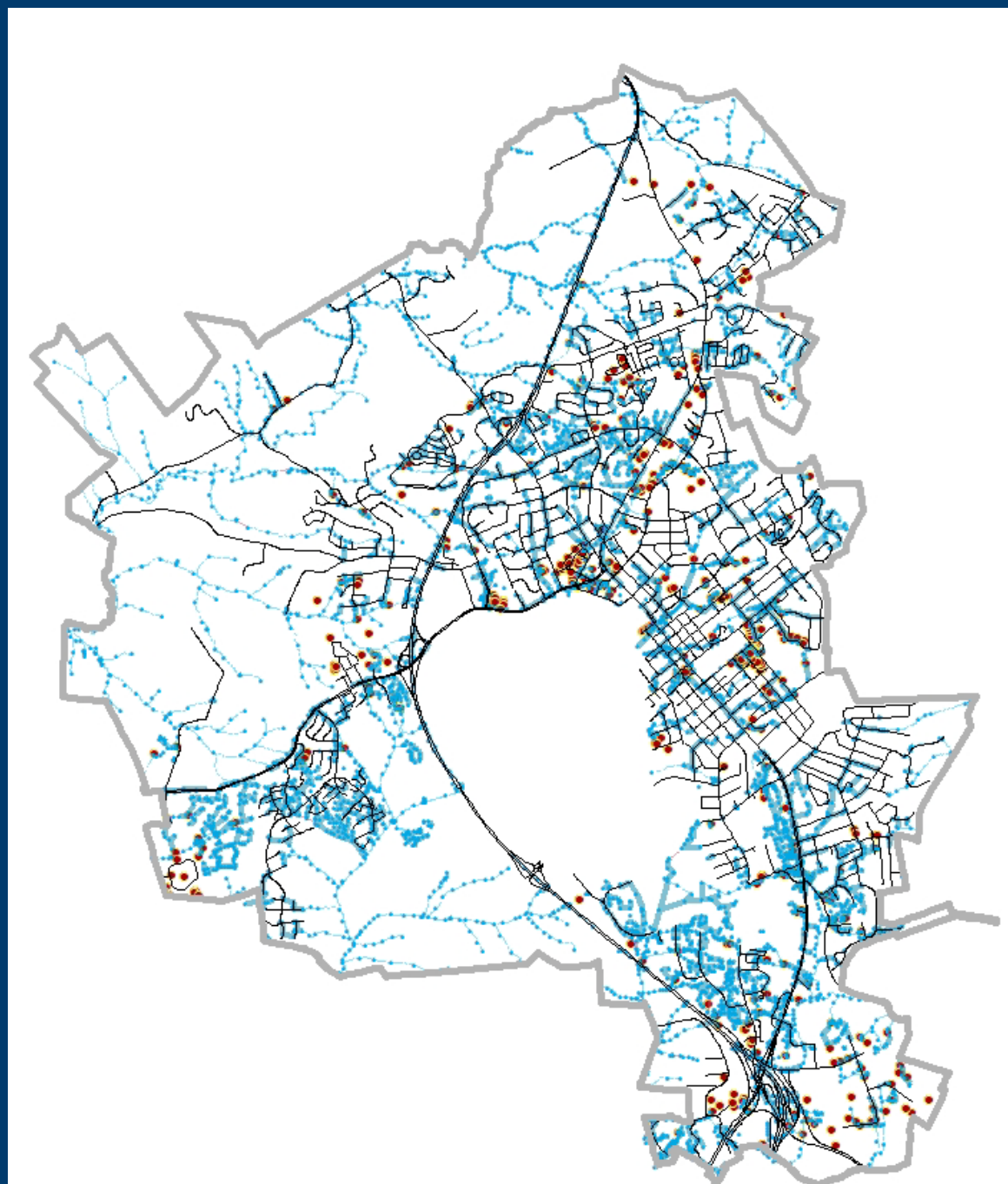


Town is delegated authority over local regulations (*with a few exceptions*)



What Can You Do to Help?

- Keep learning (like today). New and helpful information is always being introduced.
- Install a Rain barrel or Rain Garden at your residence.
- Use Sustainable Landscaping methods.
- Notify the Town if you see improper behavior.
- Try to use good housekeeping habits in general.



What Can You Do to Help?

Keep Learning and Stay Involved

- Local organizations coordinate education and outreach events, litter pickups, stream clean-up days and more. Examples of these organizations are:
 - Sustainable Blacksburg
 - NRV Master Gardeners
 - New River Land Trust
 - New River Watershed Roundtable
 - And many more...



What Can You Do to Help?

Install a Rain Barrel

- Reduce Runoff, Erosion, Pollution, Flooding, Sewer Backups and Save \$\$ on water bill.
- The NRV Master Gardener Association often hosts rain barrel workshops every year.
- ...or you can purchase a ready-made setup from a big box store (Home Depot or Lowes).



What Can You Do to Help?

Install a Rain Garden

- Rain Garden is a low area which will naturally collect water.
- This area is then vegetated with plants that can absorb and infiltrate the rainfall.
- These serve to reduce runoff, absorb nutrients as well as provide recharging groundwater sources.
- Not recommended for Karst yards.



What Can You Do to Help?

Use Sustainable Landscaping Methods:

One size does not fit all. Make sustainable landscaping choices to fit your circumstances.

- Could be as simple as following the directions for the application of lawn fertilizers & pesticides.
- Be aware of the difference between natives and invasives, as they interact with local habitat differently.
- Select landscaping that is suitable for your specific location. Water-loving plants for wet areas, drought tolerant for drier areas, shady plants..etc



What Can You Do to Help?

Notify us when you see improper habits:

Be an Environmental Steward for the Town as a whole:

- Call if you see someone dumping waste, chemicals or any pollutants into the local waterways.
- Educate those around you about pet waste pickup and disposal.
- Be patient with those who don't fully understand how the stormwater system works. Lets share and not shame.



What Can You Do to Help?

Other Good Habits:

- Never dump anything down a storm drain.
- Address leaking cars or equipment quickly.
- Don't litter and pick up after others.
- Allow down spouts to infiltrate (if appropriate).
- Vegetate bare spots in yard with a suitable ground cover.
- Compost.



Questions?

Kafi Howard – Town Engineer
khoward@blacksburg.gov
(540) 443-1354