

WHAT IS ACT 167 AND WHY DOES IT MATTER? LUZERNE CONSERVATION DISTRICT PROSPECTIVE



From droplets

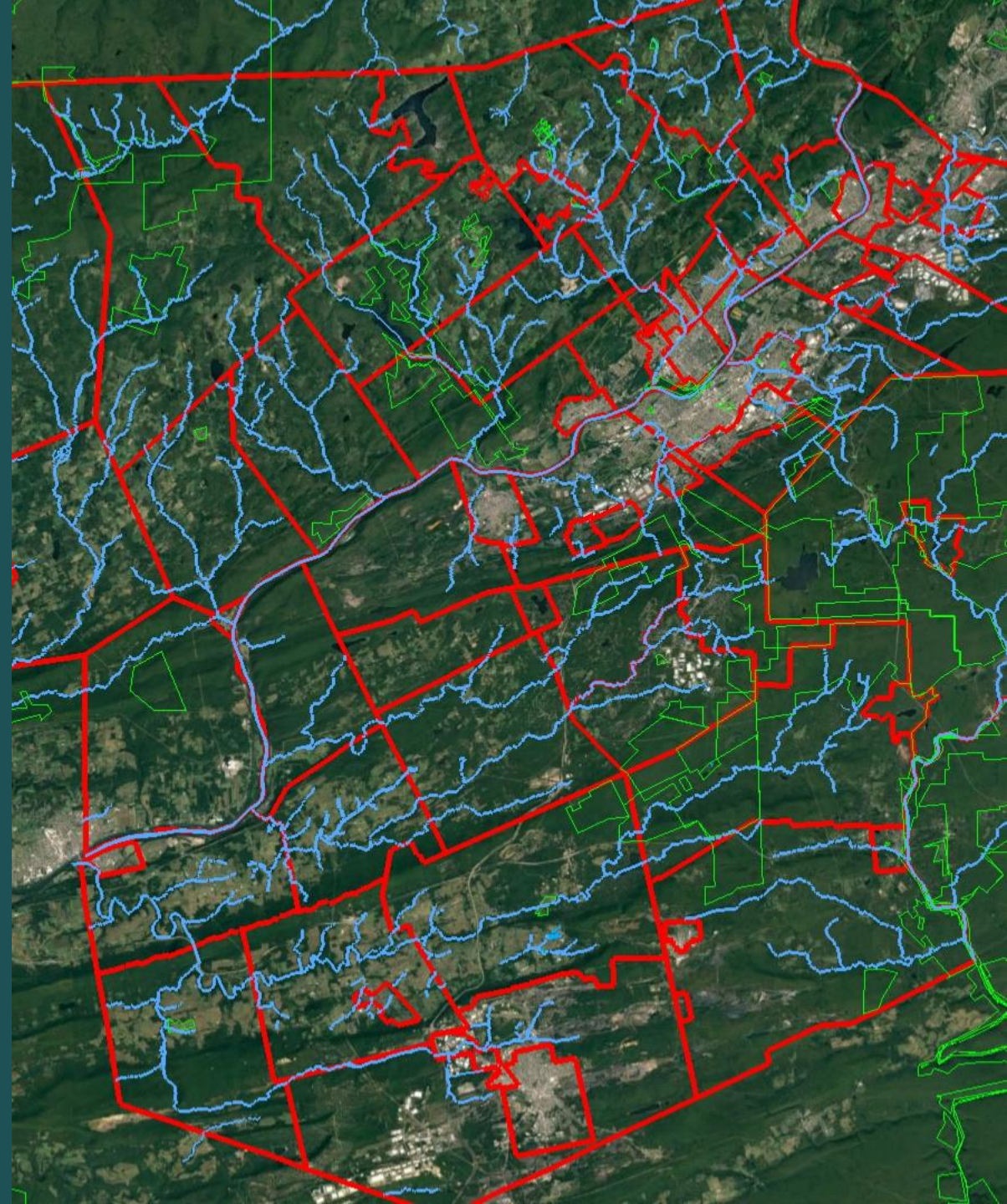
*How to aid your Municipality to
protect your people, infrastructure
and waters from damages*

To floodwaters



Luzerne County Act 167 Master Stormwater Management Plan

- ▶ Approximately >420 waterways are in 906 square miles of Luzerne County
- ▶ Intention was to reduce extreme runoff from impacting waterways and developed areas downstream caused by impervious human development during storms
- ▶ Over time water quality enhancement and groundwater recharge were included in the stormwater management goals to reduce loss of clean fresh water and protect from soil loss



Common Terms in Stormwater Management

Positive Terms

Pervious areas including grass fields, forested areas, non developed areas

Watershed area is a measured surface area that contributes water flow to a specified point downslope

Natural Watershed area is a term that identifies all surface areas that drain to a specific point of land, lake, pond or waterway, typically in an undisturbed location

BMP – Best Management Practice involves designed human protection of water quality and quantity entering and leaving a developed site

Evapotranspiration involves evaporation and uptake of water into vegetation releasing the water to the atmosphere as water vapor and reducing runoff

Groundwater Absorption involves the recharge of water from surface storms to the water table under the earth that supplies wells, springs and stream baseflow

Not so Positive Terms

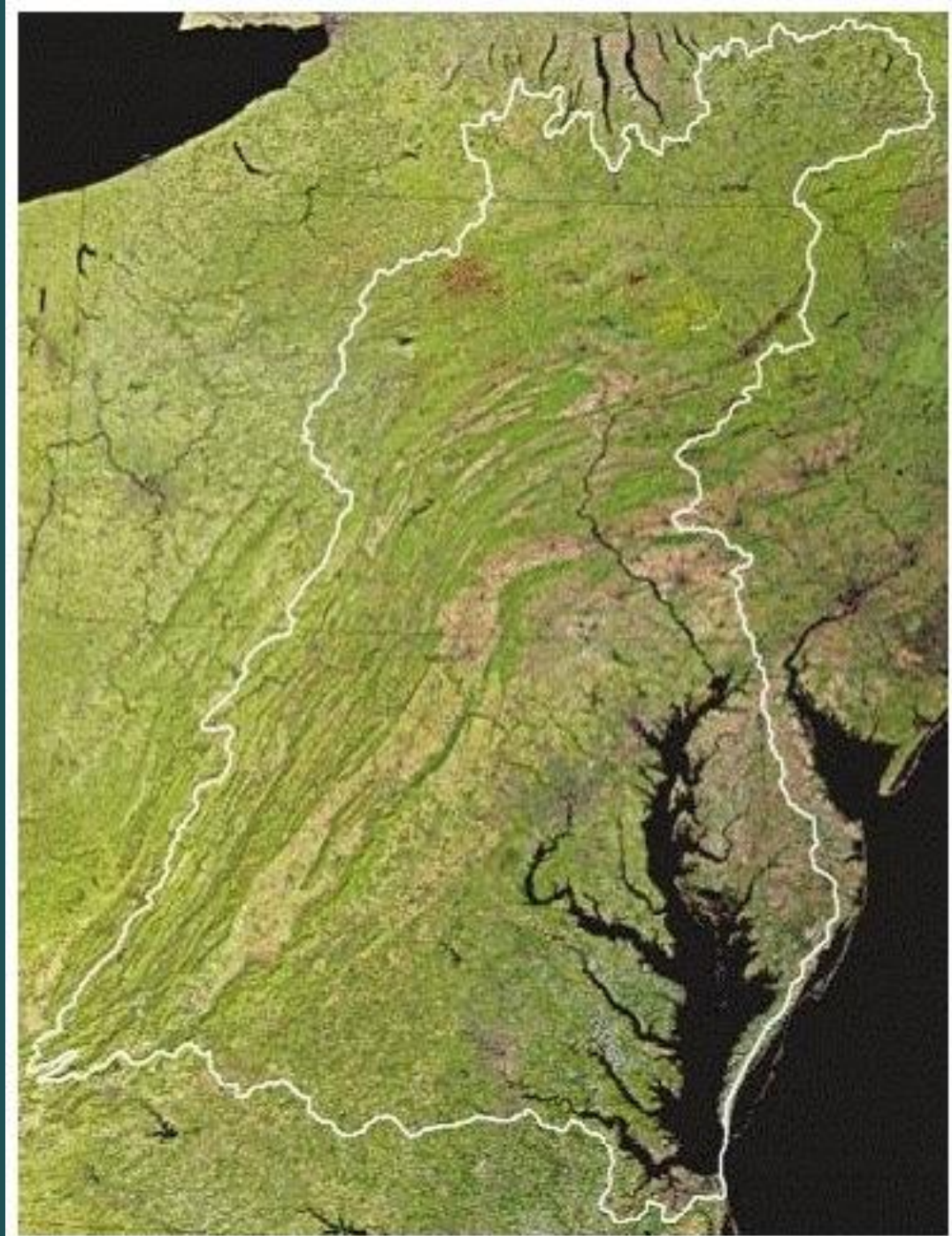
Impervious areas includes, building roof, paved parking and driveways

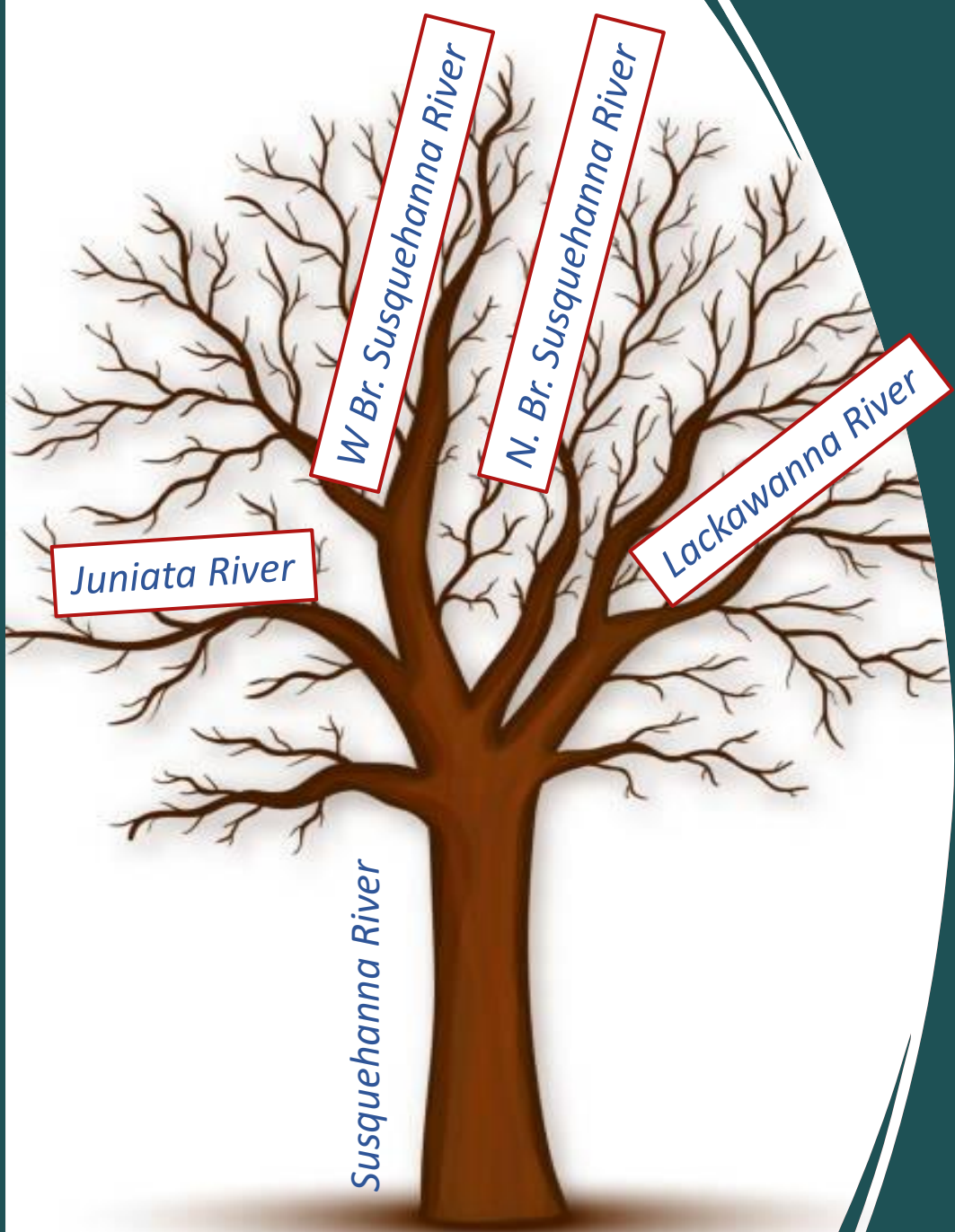
Urban Watershed area is typically dominated by impervious surfaces reducing all ground water absorption and increasing stormwater runoff velocity, quantity and pollutant loads impacting waterways downstream

Non-Stabilized Soil locations with disturbed soils that would create soil loss to waterways, lakes and ponds during a storm event without vegetation structure to protect from erosion

Luzerne County includes Delaware and Susquehanna River Basins

- ▶ Original intention was to protect from changes in runoff flows from impervious human development
- ▶ Secondary intention was to minimize small storm flood impacts
- ▶ Third was to protect waterways from extreme flows that create high sediment movement in waterways
- ▶ With time water quality enhancement and groundwater recharge were included
- ▶ Susquehanna River basin is a focus area due to damages caused to the Chesapeake Bay by contaminants from upstream watersheds including runoff from Luzerne County





Watersheds are similar to trees, from streams & rivers to the estuaries

- ↳ Each stream branch creates the flows to be maintained to reduce flooding & contamination impacts downstream
- ↳ Every tributary drainage needs protections from heavy flows and pollution or the river (trunk) becomes damaged
- ↳ State, County and Municipal governments are the first protection of watersheds starting at the headwaters
- ↳ When waters cross state lines, the Federal government becomes involved in protecting National interests

Act 167 guides stormwater management



*Susquehanna River
Market Street Bridge Wilkes-Barre
2011 Flood*

Local and county governments must work together to protect everyone from flooding and water quality impacts

Each one of us lives upstream and/or downstream of others, the Act helps to guide us to minimize impacts

Working with landowners in stormwater management helps to protect all from flood impacts, water course and water quality damages

Getting stormwater to the street is no longer acceptable, it must be managed and cleaned up

Every tributary drainage needs protections from heavy flows and pollutants or the entire watershed will be damaged or cause damage downstream

*How do we
protect
people from
waters and
waters from
people?*



Bowman Creek State Game Lands 57



Mill Creek



Harveys Creek Pinchot State Forest

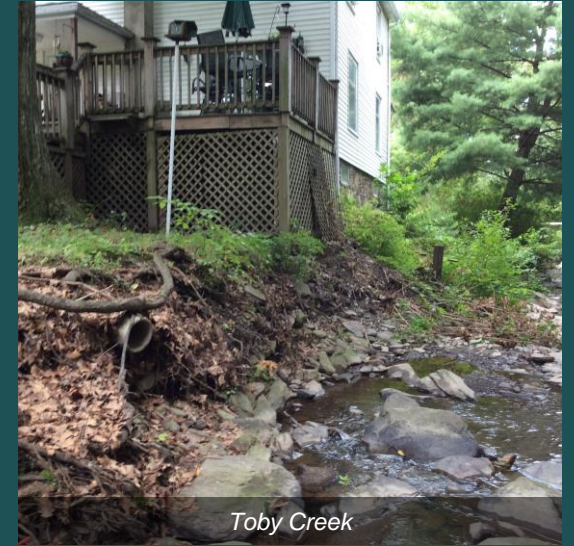


Shickshinny Creek

*Discourage
new
development
near
waterways
and lakes*



Little Nescopeck Creek



Toby Creek

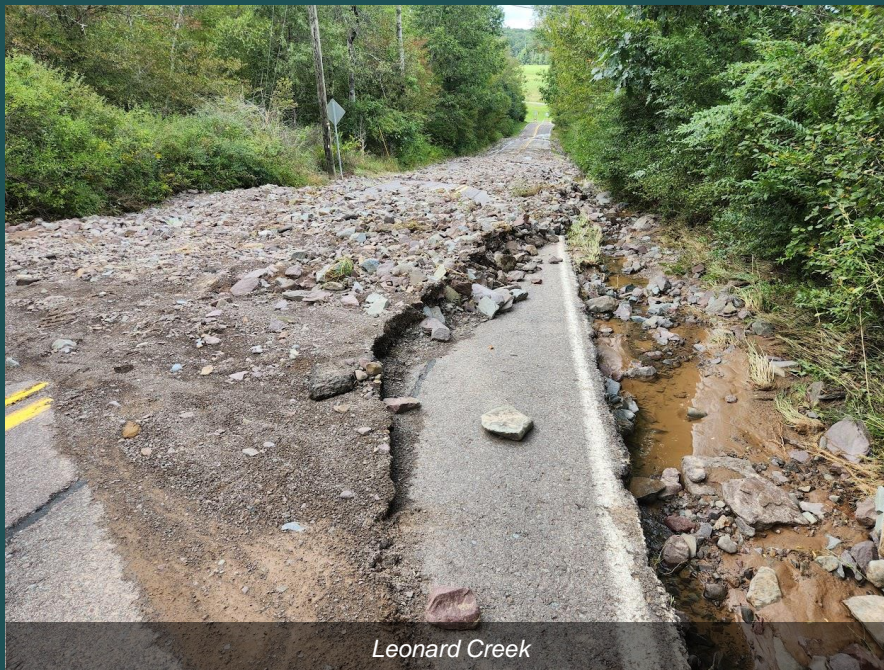
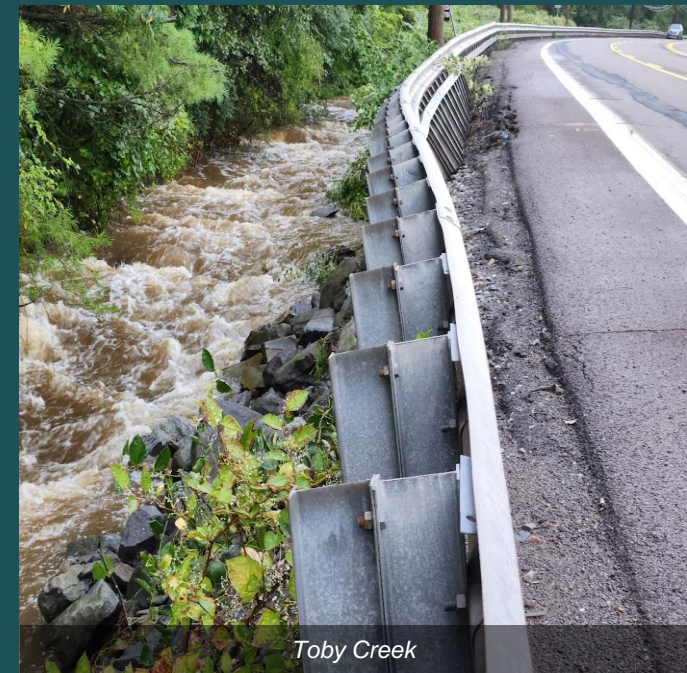
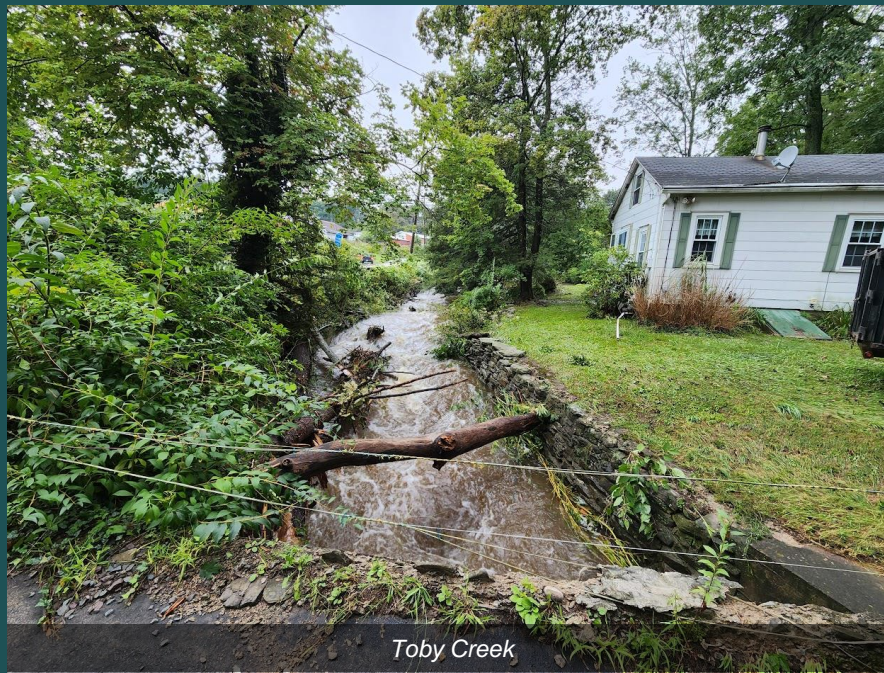


Mill Creek



Shickshinny Creek

*Reassess
Zoning and
Planning
after major
storms &
flood events*



*Evaluate
frequent flood
sites for
Hazard
Mitigation
Planning with
FEMA*



Toby Creek



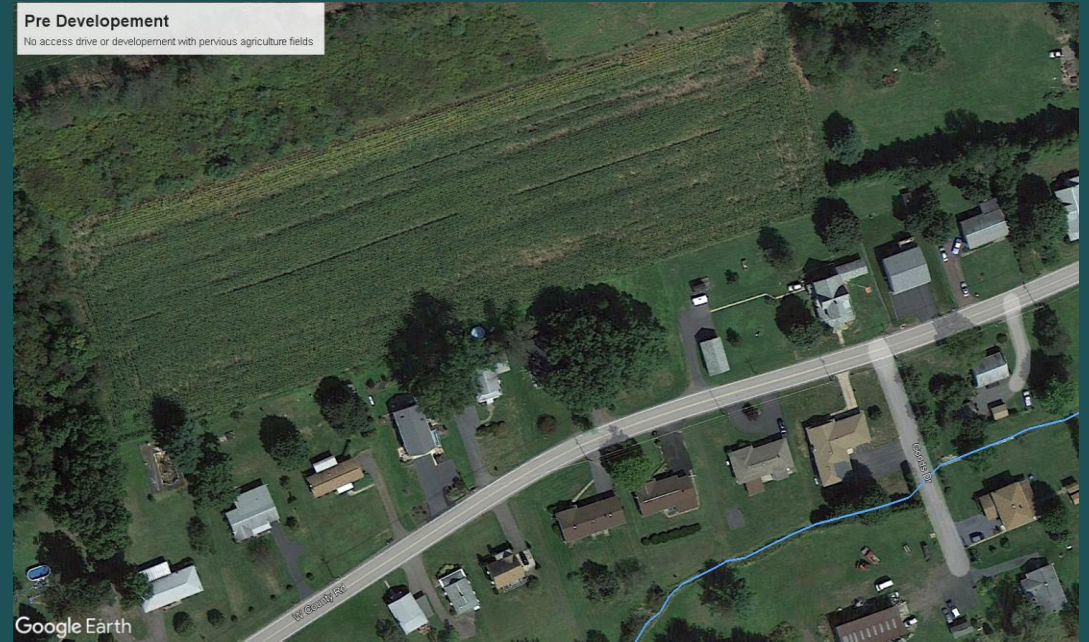
Little Nescopeck Creek

Encourage & Enforce Stormwater Management Regulations

Pre Development

No access drive or development with pervious agriculture fields

Google Earth



Post Development - No Stormwater Management

Residential development with impervious access and parking

Google Earth





Encourage &
Enforce
Stormwater
Management
Regulations it
benefits all
involved

How do we protect people from waters and waters from people?

- ▶ *Make sure stormwater management is a part of every development*
- ▶ *Implement stormwater systems to protect neighbors, Municipal infrastructure, water quality and the developer themselves*
- ▶ *Small or large projects are upstream or downstream of everyone*
- ▶ *Cumulative impacts are positive or negative, create positives*

Low Cost Simple Stormwater Enhancements

Grass Lined Swale - Rain Garden



Low-Cost Simple Stormwater Enhancements

Maintain, Restore and Upkeep Riparian Forests



Stormwater Management Act 167

QUESTIONS?

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