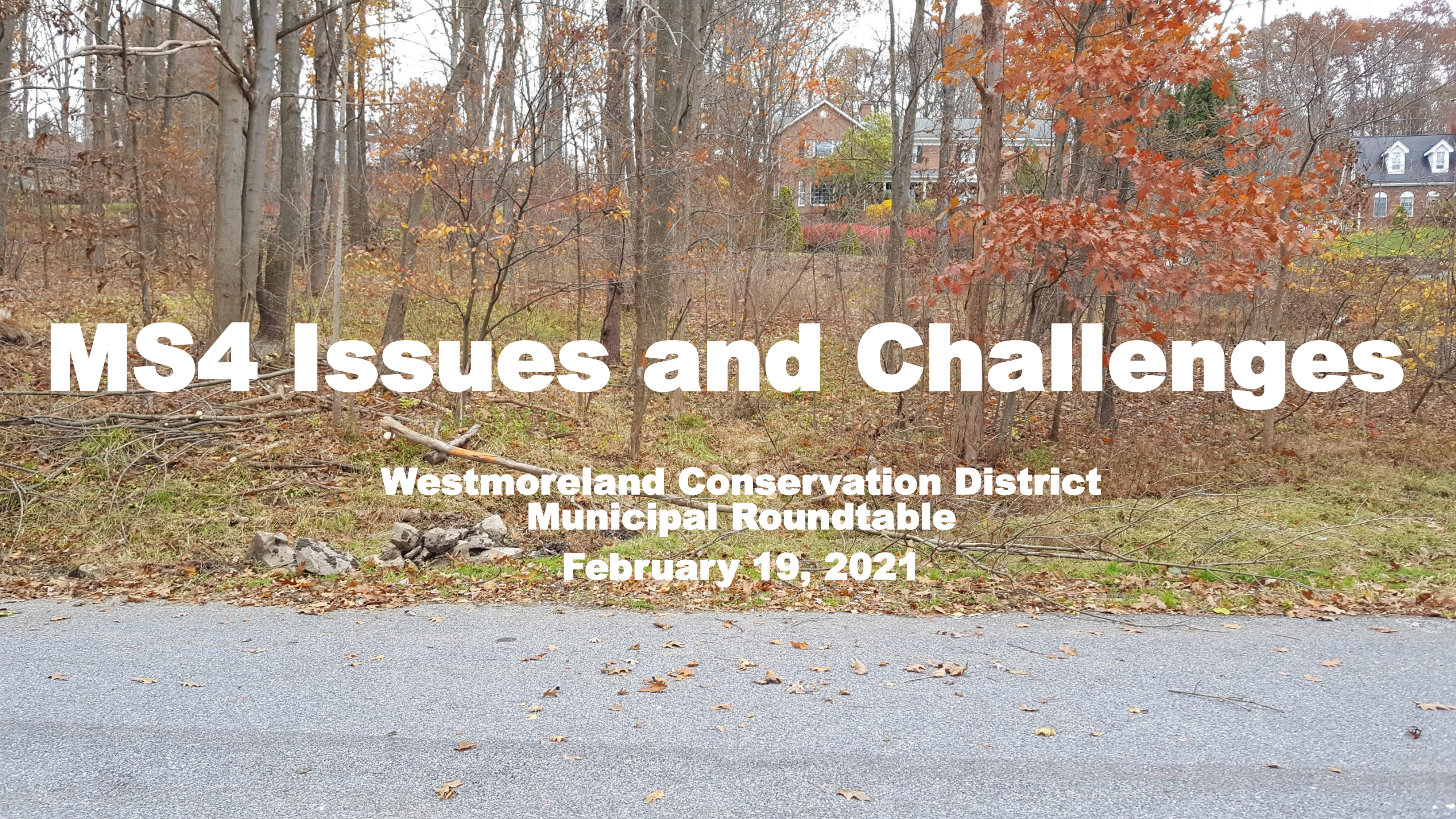


MS4 Issues and Challenges

Westmoreland Conservation District
Municipal Roundtable
February 19, 2021

6 MCMs – minimum control measures

- Public **Education** and Outreach (stormwater impacts)
- Public Involvement and **Participation**
- Illicit **Discharge** Detection and Elimination
- **Construction** Site Stormwater Runoff Control
- **Post-Construction** Stormwater Management
- Pollution **Prevention** and Good Housekeeping

Don’t forget!!!

- WCD can help you comply with the 6 MCM’s.

Westmoreland Conservation District

- E&S Inspections
- PCSM Plan Reviews
- WCD’s education program
- Technical assistance

PRP – pollutant reduction plan

- **Public Participation** for review and comment
- Map **Sewershed Boundary** and land uses for each MS4 outfall
- Identify **Pollutants of Concern** for each sewershed
- Determine existing **Loading for Pollutants** of Concern
- Select BMPs to achieve **Minimum Required Reductions** in pollutant loading
    - Provide 10% Sediment, 5% Phosphorus, 3% Nitrogen **pollutant reduction within 5 years**
- Identify **Funding Mechanism(s)**
- Identify Responsible Parties for **Operation and Maintenance** of BMPs

Reducing Pollutants of Concern

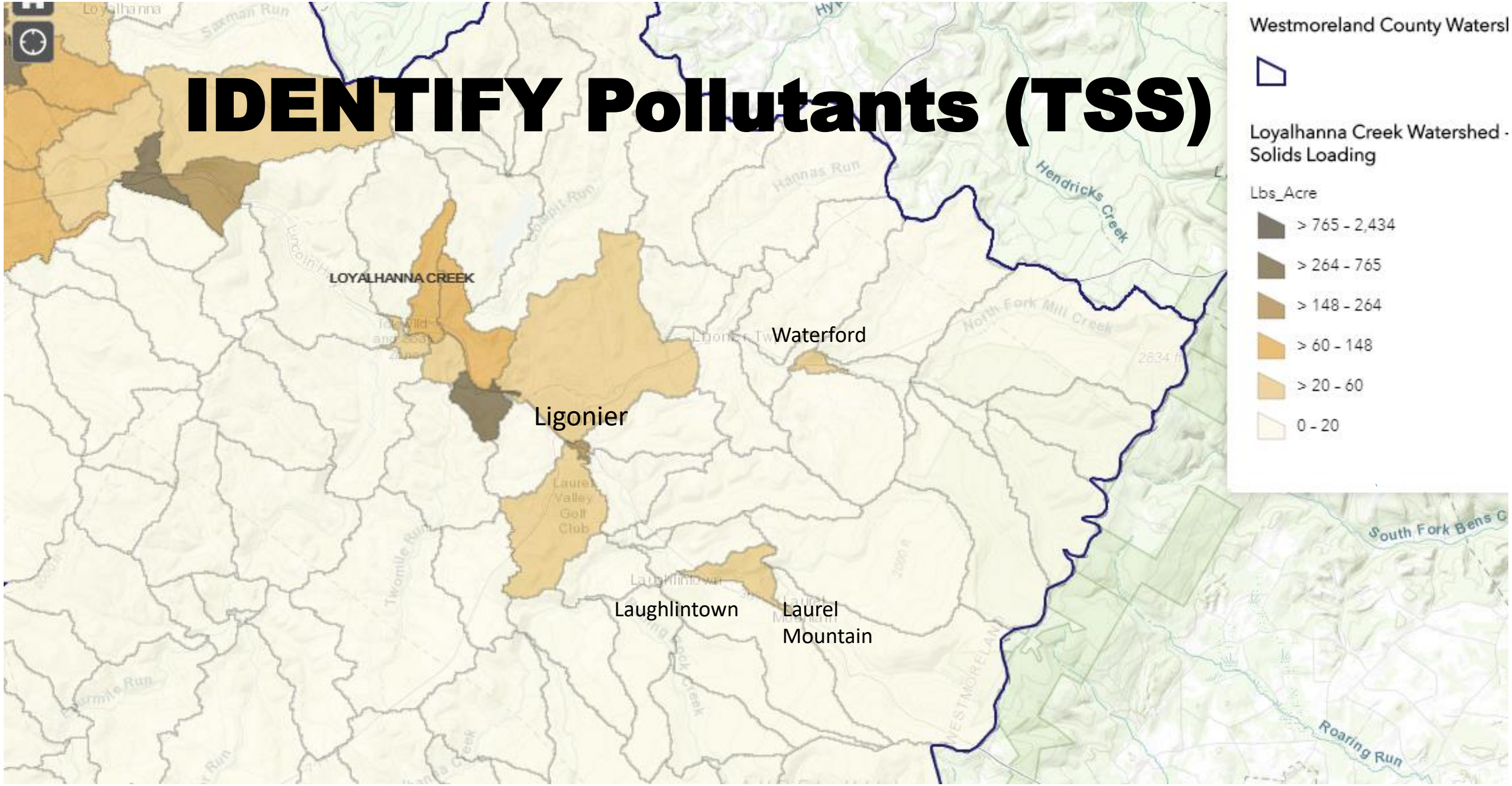
10%

reduction in sediment within 5 years

TOP 4 WAYS

- Utilize green space to capture runoff
- Street sweeping (25x per year)
- Sediment reduction from streambank restoration
- Water quality, sediment reduction from stormwater basin retrofits

IDENTIFY Pollutants (TSS)

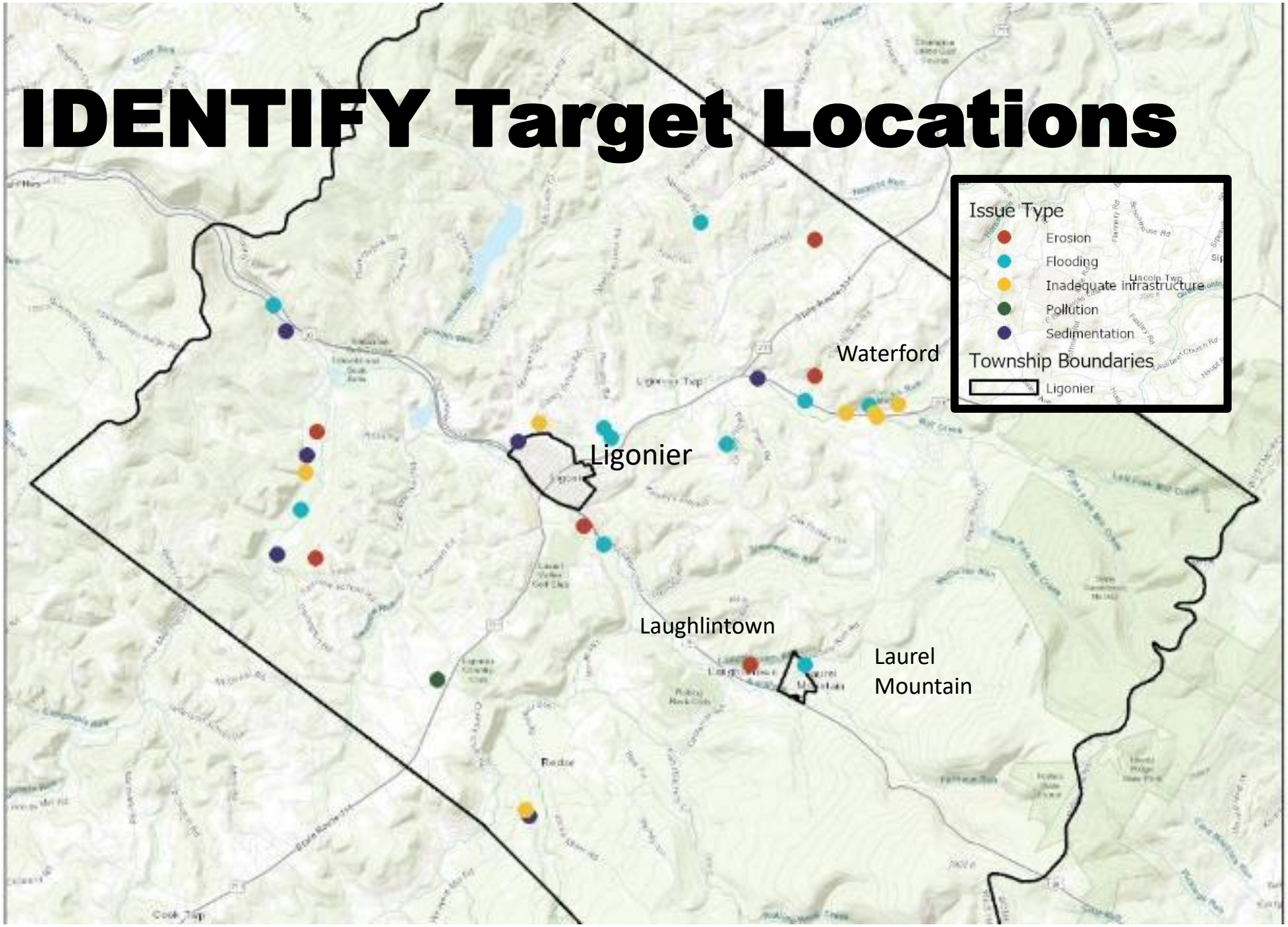


www.westmorelandstormwater.org

IDENTIFY Stormwater Issues

- Flooding
- Erosion
- Sedimentation
- Inadequate infrastructure
- Pollution
- Habitat loss

IDENTIFY Target Locations



IDENTIFY Sustainable Stormwater Techniques

DETENTION BASIN RETROFIT

INFILTRATION RAIN GARDEN

RIPARIAN BUFFER

Effectiveness of Best Management Practices

(From PA DEP BMP Effectiveness Values for MS4s)

- Detention Basin Retrofit

  BMP Effectiveness Values:

  TN 20%; TP 20%; Sediment 60%

- Rain Garden / Infiltration

  BMP Effectiveness Values:

  TN 70%; TP 75%; Sediment 80%

- Stream Restoration

  BMP Effectiveness Values:

  TN 0.075lbs/ft/yr; TP 0.068 lbs/ft/yr; Sediment 44.88 lbs/ft/yr

ISSUE(S)

- Poor maintenance, inadequate volume control, erosion, flooding

SOLUTION

- Water quality basin, volume reduction, channel stabilization

ISSUE(S)

- Flooding roadway, winter icing, excess runoff

SOLUTION

- Stabilized channel, naturalized riparian buffer, infiltration basin

ISSUE(S)

- Aging infrastructure, brownfield, urban heat island

SOLUTION

- Daylighted tunnel, riparian buffer

How to determine credit for BMPs?

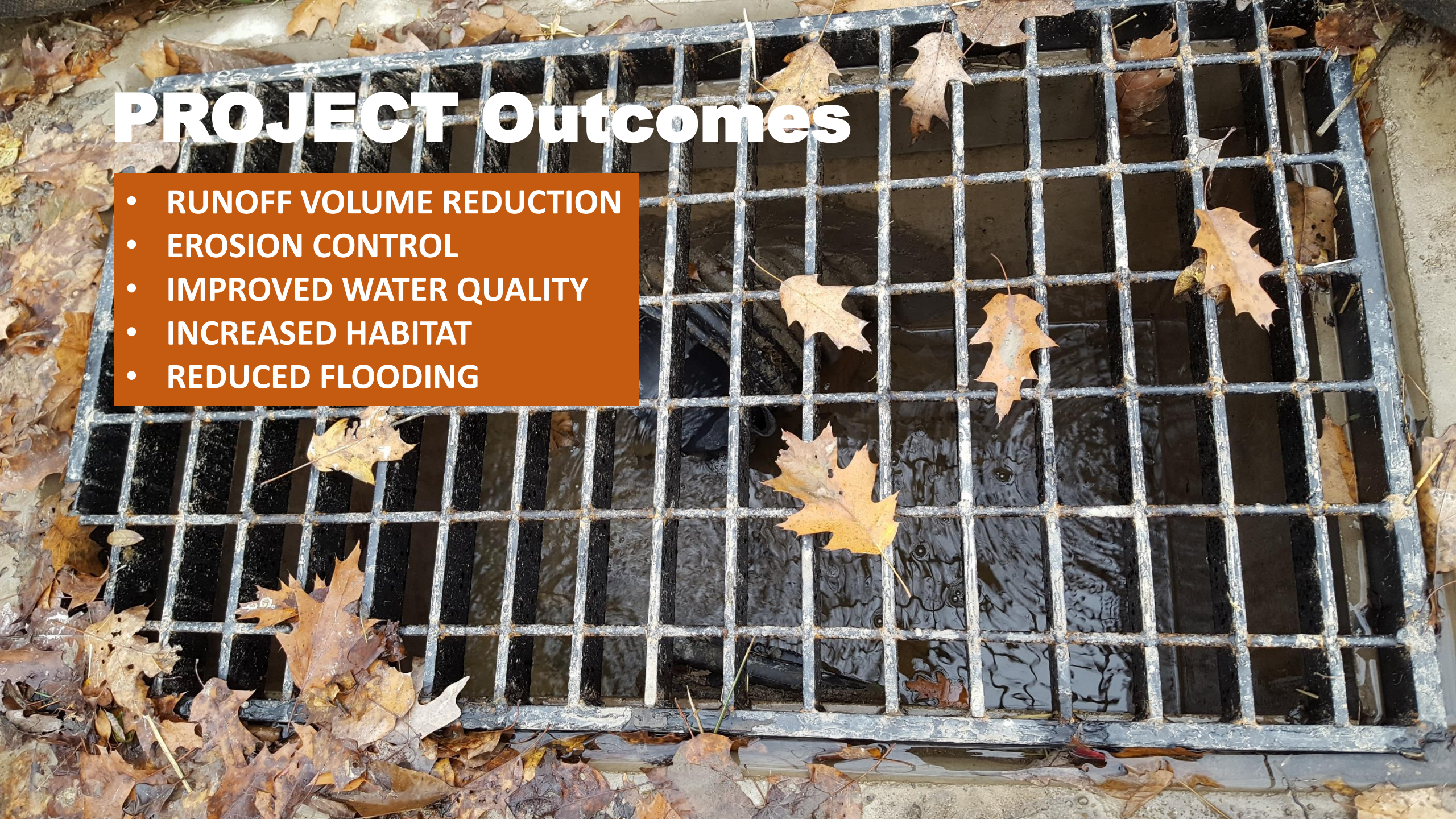
- Use BMP Effectiveness table
- Measure watershed captured/treated by the BMP
- Determine length, size of bmp, volume controlled
- Determine pollutant volume removed

- For stream restoration:
  - TN = 700 lf stream x 0.075 lbs/ft/yr = 52.5 lbs TN
  - TP = 700 lf stream x 0.068 lbs/ft/yr = 47.6 lbs TP
  - TSS = 700 lf stream x 44.88 lbs/ft/yr = 31,416 lbs TSS

Stream Restoration criteria*

- Existing degraded stream
- Smaller streams preferred
- At least 100 feet of stream addressed
- Must treat upstream impervious areas to control peak rates
- Address both sides of the channel
- Project should include stream bed, banks, and floodplain
- Establish a permanent 35 foot riparian buffer
- Lining a stream with rock riprap does not count!!

*from DEP's official document:
http://files.dep.state.pa.us/Water/BPNPSM/StormwaterManagement/MunicipalStormwater/PRP_TMDL_Plans/Stream%20Restoration%20Eligibility%20for%20MS4%205.11.2018.pdf



PROJECT Outcomes

- RUNOFF VOLUME REDUCTION
- EROSION CONTROL
- IMPROVED WATER QUALITY
- INCREASED HABITAT
- REDUCED FLOODING

MS4 PROCESS

Discussion: What can your municipality do to comply?

For further assistance, contact WCD's Stormwater Management staff!