



**LUZERNE  
CONSERVATION DISTRICT**

**Disaster Response  
Coal Creek Restoration Project**

Plymouth, Luzerne County, Pennsylvania

Presented by Josh Longmore & Aaron Stredny

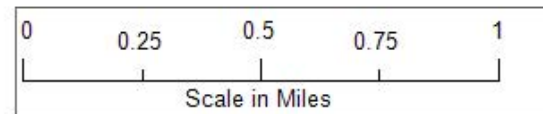
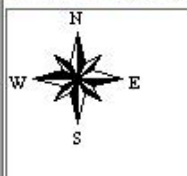
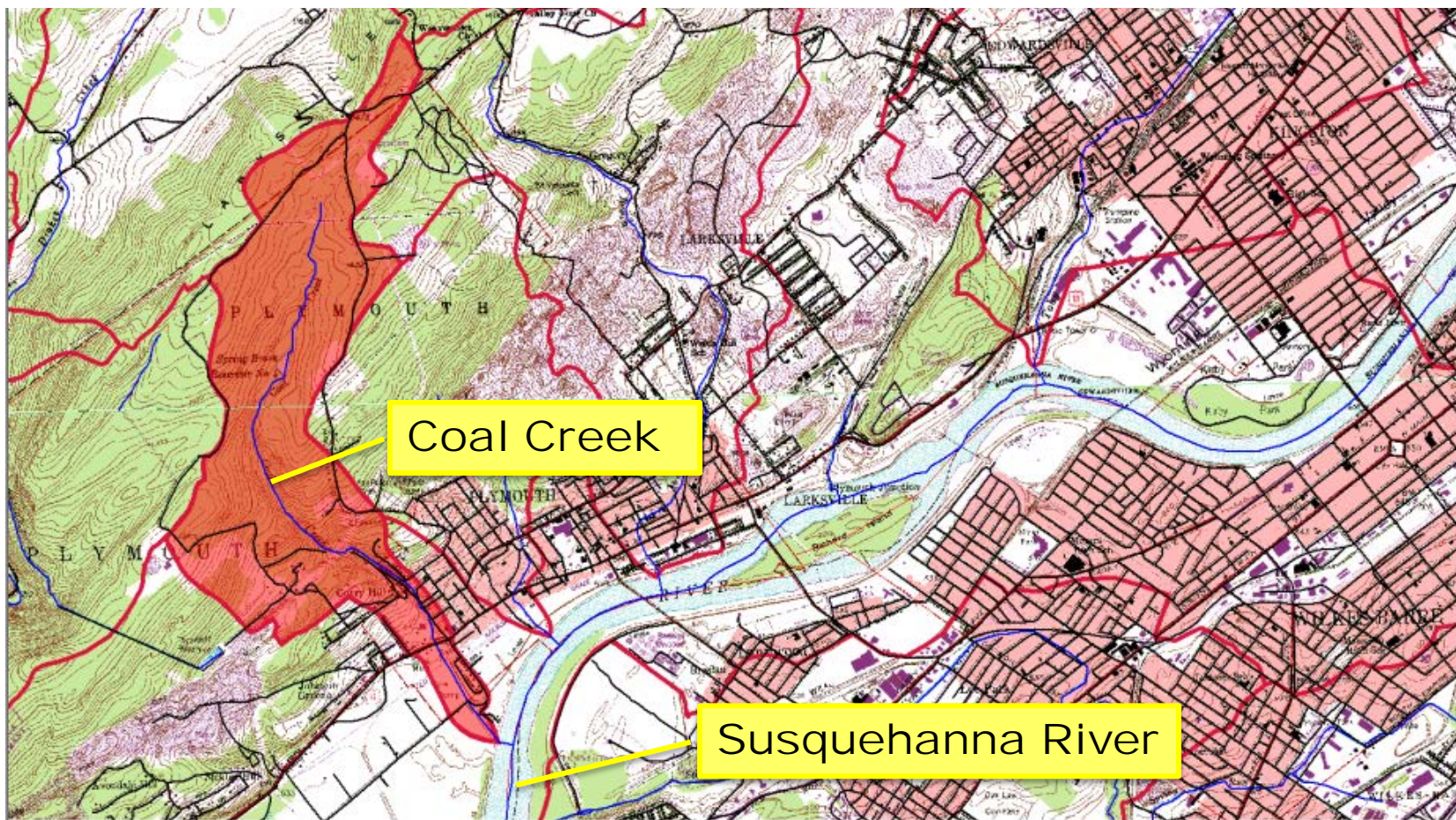
*Conserving Natural Resources for Our Future*

# Initial Response to Flooding

- Unlike past floods, the damage from recent events has mostly been to tributaries of the Susquehanna River
- In June of 2006, our response was to assess the conditions of the streams and adjacent property/infrastructure
  - Assessment assisted other agencies in identifying project sites
- After 2011 flooding, our role increased
  - Coal Creek Flood: 4<sup>th</sup> of July weekend, localized event, 5+ inches over 1.5 square mile watershed in 90 minutes
  - Tropical Storm Lee: September 6-8<sup>th</sup>, record river crest in Wilkes-Barre



# Coal Creek Watershed – Plymouth, PA





# Coal Creek Flood – 7/3/11

Courtesy Melissa Bickley



# Coal Creek Flood – 7/3/11





# Coal Creek Flood – 7/3/11



# Coal Creek Flood – 7/3/11





# Coal Creek Flood – 7/3/11





# Initial Response to Flooding

- Municipalities – Plymouth Township & Plymouth Borough responded by clearing initial debris and opening temporary access roads
- Emergency Management Agencies responded to assess damage to homes, infrastructure, etc.
- Federal & State Legislators visited
- District visited the site to assess the stream damage
- Initial hopes were that federal funds would be available to address the damage (FEMA & NRCS)
- Preliminary Damage Assessments didn't reach the cost threshold to be declared a disaster area by the President



# Piecing Together a Plan

- PA Department of Military & Veterans Affairs began repair work on their property
- County Flood Protection Authority work downstream
- Water utility work & road repair by PA American Water Company
- District Involvement:
  - Approached by state senator to sponsor a Growing Greener grant on behalf of the 2 municipalities (\$645,000)
  - Project design by municipal engineers
  - Project implementation by the District





# The Game Changer

- Tropical Storm Lee – 2 months after Coal Creek Flood
  - Record River Crest (42.66 feet)
  - Susquehanna River Levee System held & spared the Wyoming Valley from devastation
  - Unprotected communities flooded
  - Tributaries with significant streambank erosion & sedimentation
- District performed initial assessment & coordinated with NRCS to share assessment data to aid with Emergency Watershed Protection Program assessments after T.S. Lee
- Request from NRCS for the District to be the local sponsor for 9 EWP projects, including 4 along Coal Creek



# The New Plan

- NRCS & PA Department of Environmental Protection implement initial “exigency” EWP projects
- District becomes local sponsor for regular EWP projects
  - Designs by NRCS engineers
  - 4 EWP sites on Coal Creek
  - 6 additional EWP sites throughout the county
  - Responsible for project implementation
- District coordinates Growing Greener Projects
  - Designs by PA Association of Conservation District engineers
  - 6 additional sites on Coal Creek
  - 2 on Huntington Creek
  - 3 more in planning stage
- PA DEP provided Emergency Permits for the projects





# The Damage





# The Damage



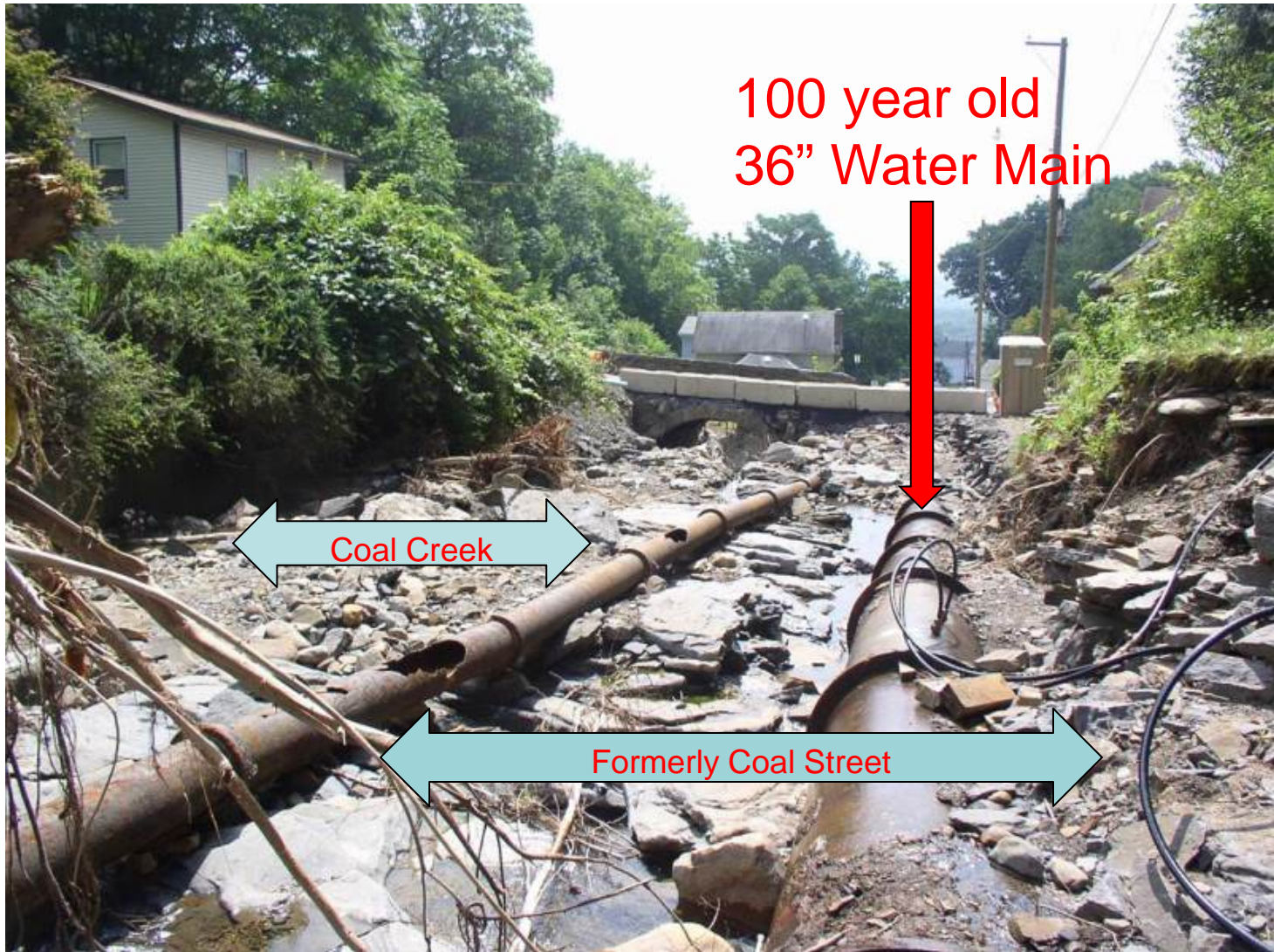


# The Damage





# The Damage





# The Damage



# On-Site Challenges





# Hurricane Imminent...



# Inte-gritty...

All trucks passed across this bridge









# Modified Construction On the Fly



# Under Construction per plan

## Water Diverted or Pumped Around





# EWP Site 1





# EWP Site 1



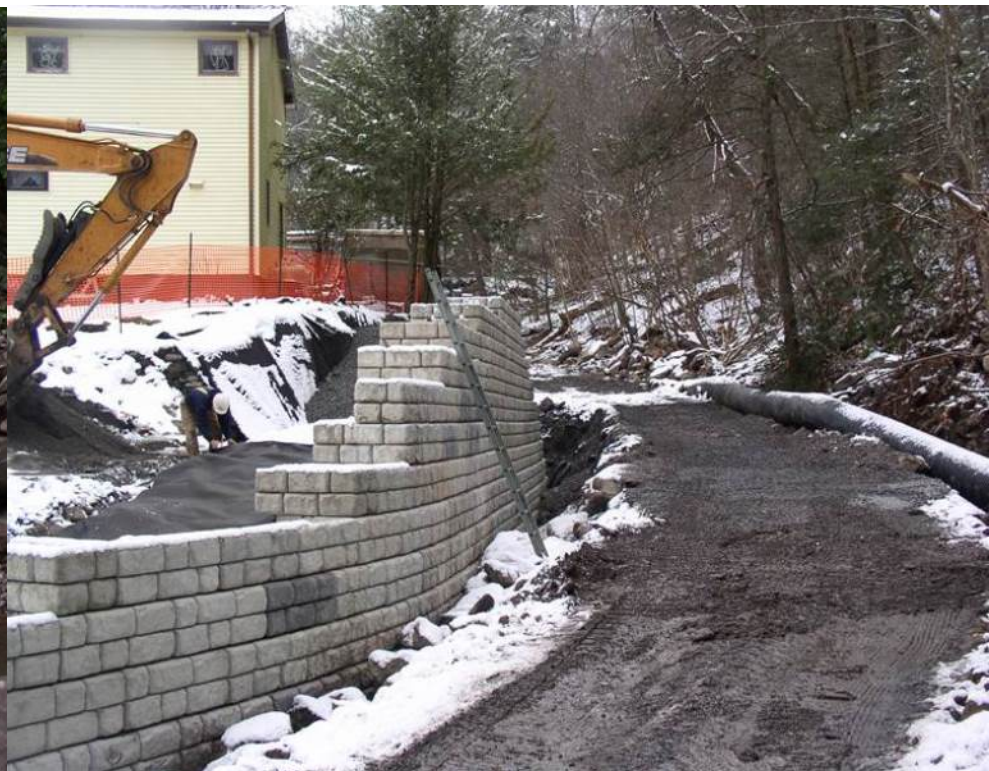


# EWP Site 2





# EWP Site 2





# EWP Site 2





# EWP Site 3





# Growing Greener Site





# Some of the Numbers

- Our Coal Creek Project = \$840,000 (EWP & GG funds)
  - Other EWP sites = \$313,000
  - Growing Greener sites = \$50,000
  - Future GG sites = \$150,000
- Other Partners' Projects on Coal Creek:
  - NRCS/PA DEP Exigency EWP Project = \$32,740
  - Plymouth Township (emergency repairs) = \$34,540
  - PA Dept. of Military & Veteran Affairs = \$95,490
  - PA American Water Co. (emergency repairs) = \$340,437
- Coal Creek Total Cost = **\$1,342,732**



# Contact Info:

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