

# Tookany Creek Feasibility Study

Public Meeting

May 21, 2015

Cheltenham Township



US Army Corps of Engineers  
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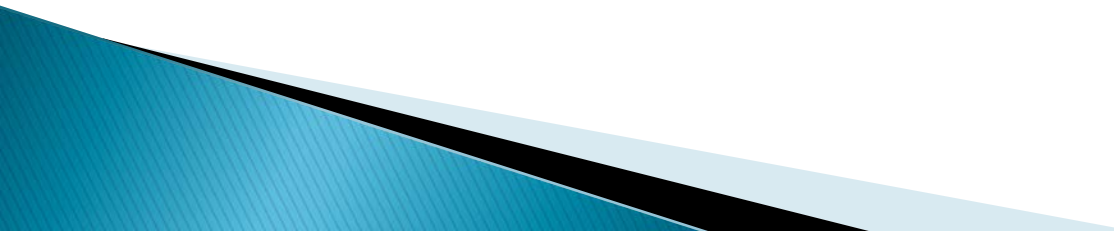




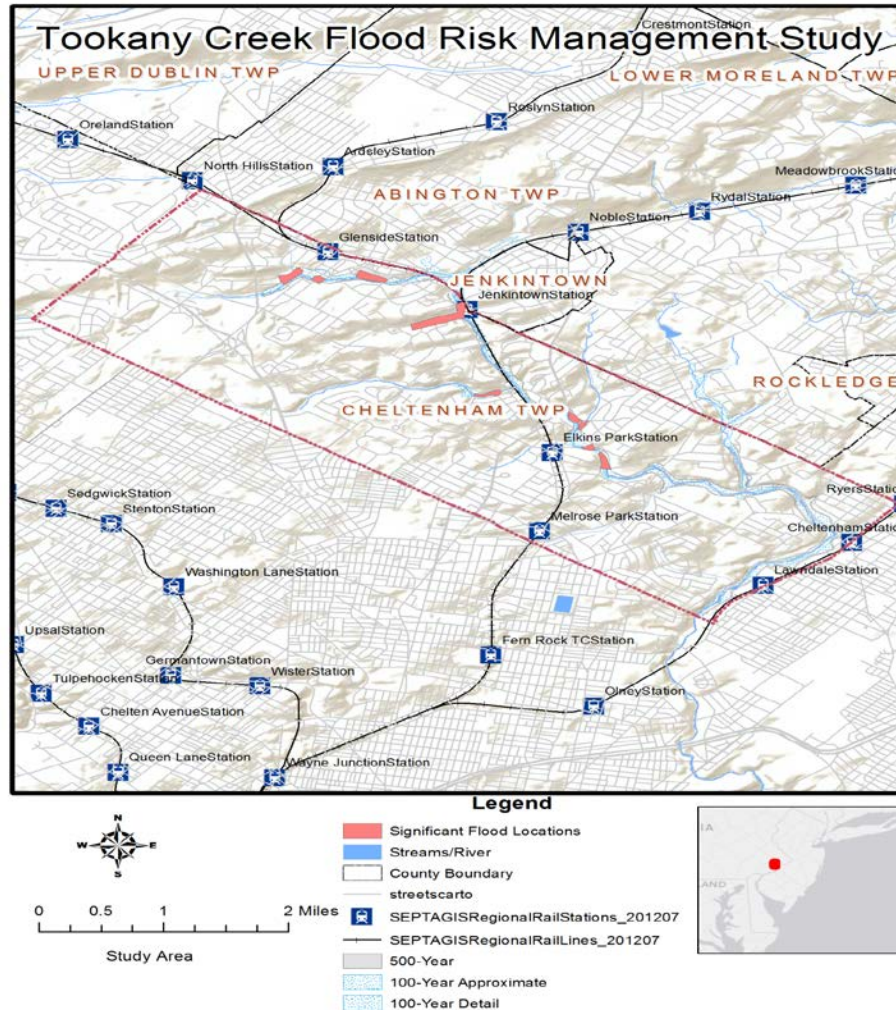
# FEASIBILITY STUDY PURPOSE

- Investigate Federal interest in providing flood risk management in Cheltenham Township, Montgomery County, PA related to flooding in the Tookany Creek Watershed
- Federal interest has been demonstrated via the feasibility study

# FEASIBILITY STUDY AUTHORITY

- Section 205 of the Flood Control Act of 1948, as amended
  - Authorizes USACE to plan, design and construct small flood control projects with and without specific Congressional authorization
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# FEASIBILITY STUDY AREA





# BASELINE CONDITIONS

- **Existing Conditions** – Major flooding in the study area may occur during any season
  - Summer and Fall – Flooding typically results from widespread heavy rainfall often associated with tropical storms moving up Atlantic coastline
  - Spring – Flooding generally the result of a combination of heavy rains on frozen ground augmented by melting snow


# BASELINE CONDITIONS

- **Future Without Project Conditions**
  - The magnitude and frequency of flood-related problems will likely increase in the future
  - Local FRM efforts, including the PADEP and SEPTA projects, do not preclude the need for a Federal project to mitigate future flood risks

# PROBLEM STATEMENT

- Urbanization has resulted in increased stormwater runoff and floodplain recession leading to reduced carrying capacity for Tookany Creek, increased height and destructive capability of floodwaters in Tookany Creek and a floodplain that cannot store large quantities of water in the Tookany Creek watershed

# PLANNING OBJECTIVE & CONSTRAINTS

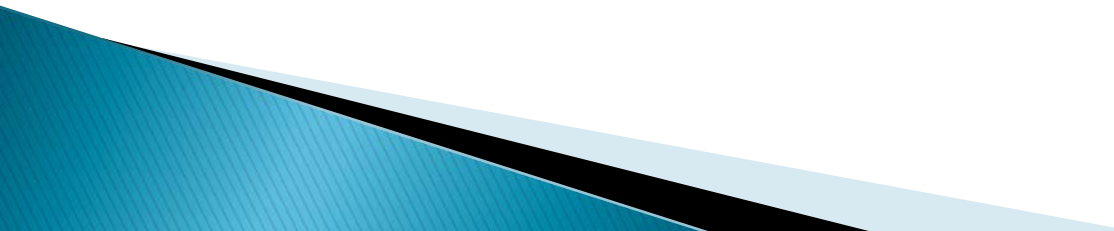
- Objective: Reduce flood hazards, including risks to life safety and damages to private and public infrastructure in the Tookany Creek watershed in Cheltenham Township, PA.
  - Constraints:
    - Avoid inducing flood damages
    - Avoid and minimize adverse impacts to in-stream or adjacent native habitat
    - Avoid degradation to water quality
    - Avoid impacting or exacerbating existing HTRW within the project footprint
    - Minimize effects on cultural resources and historic structures, sites and features
    - Limit extensive changes to local land use designations and zoning
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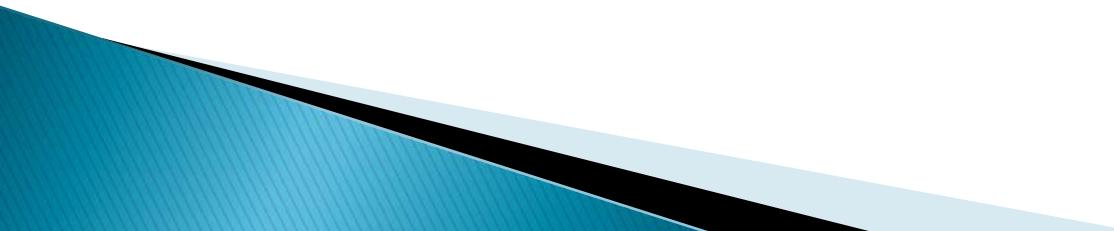
# PLAN FORMULATION

- Flood Risk Management Measures Evaluated:
  - Inlet Modifications
  - Bridge Modifications
  - Channel Modifications (Levees and Floodwalls)
  - Reconnection of floodplains and riparian buffer
  - Aboveground Storage
  - Underground Storage
  - Stormwater Control
  - Porous Pavement
  - Residential Rain Gardens
  - Rain Barrels
  - Bio-swales
  - Flood Proofing
  - Floodplain Evacuation
  - Floodplain Management

# PLAN FORMULATION

- Flood Risk Management Measure Screening
    - Completeness
    - Effectiveness
    - Efficiency
    - Acceptability
  - All measures screened out, except for Aboveground Storage Areas
  - “Dry” Detention Basins determined to be more effective and acceptable than retention basins containing a “permanent” pool of water
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# PLAN FORMULATION

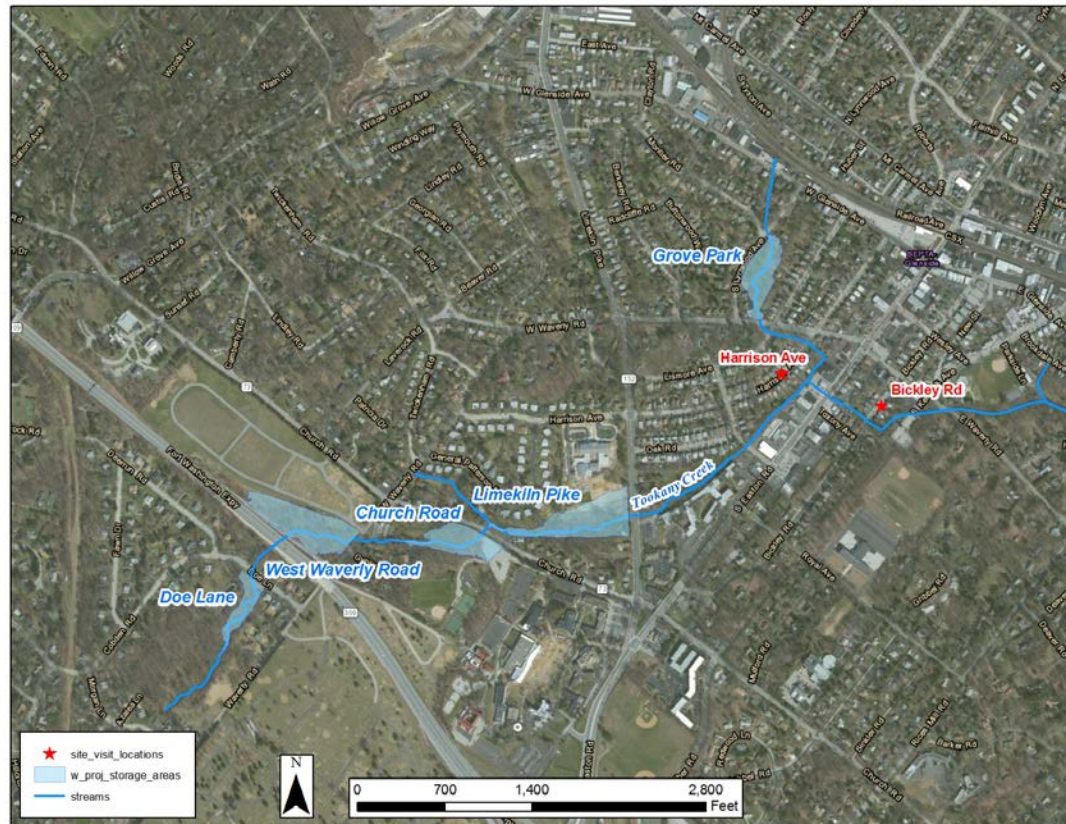
- Initially, 13 potential detention basin locations identified
  - 9 of the 13 basin locations carried forward for detail analysis
  - Multiple combinations of basins were analyzed to develop an array of alternatives
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# PLAN FORMULATION

- Final Array of Alternatives
  - Alternative 1: No Action Plan
  - Alternative 2: The Upper Tookany Creek Plan
  - Alternative 3: The Baederwood Creek Plan
  - Alternative 4: The Comprehensive Plan
  - Alternative 5: The Rock Creek Plan

# PLAN FORMULATION

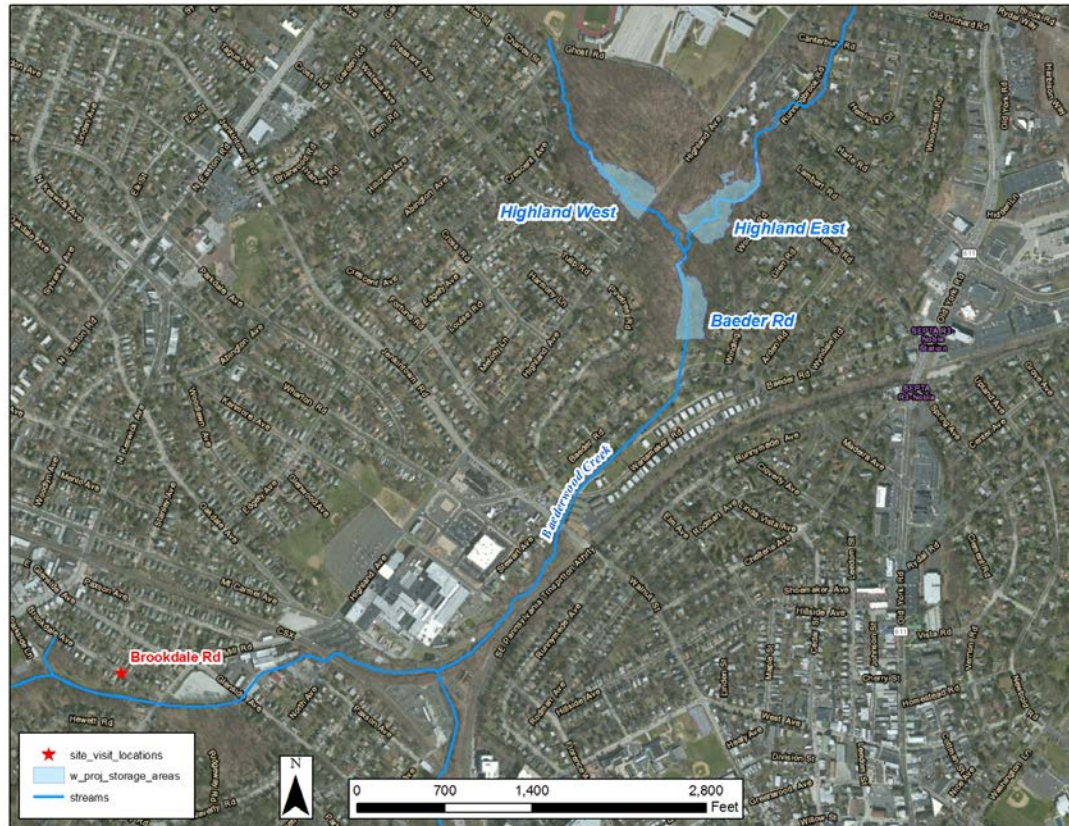
- Alternative 2 – The Upper Tookany Creek Plan





# PLAN FORMULATION

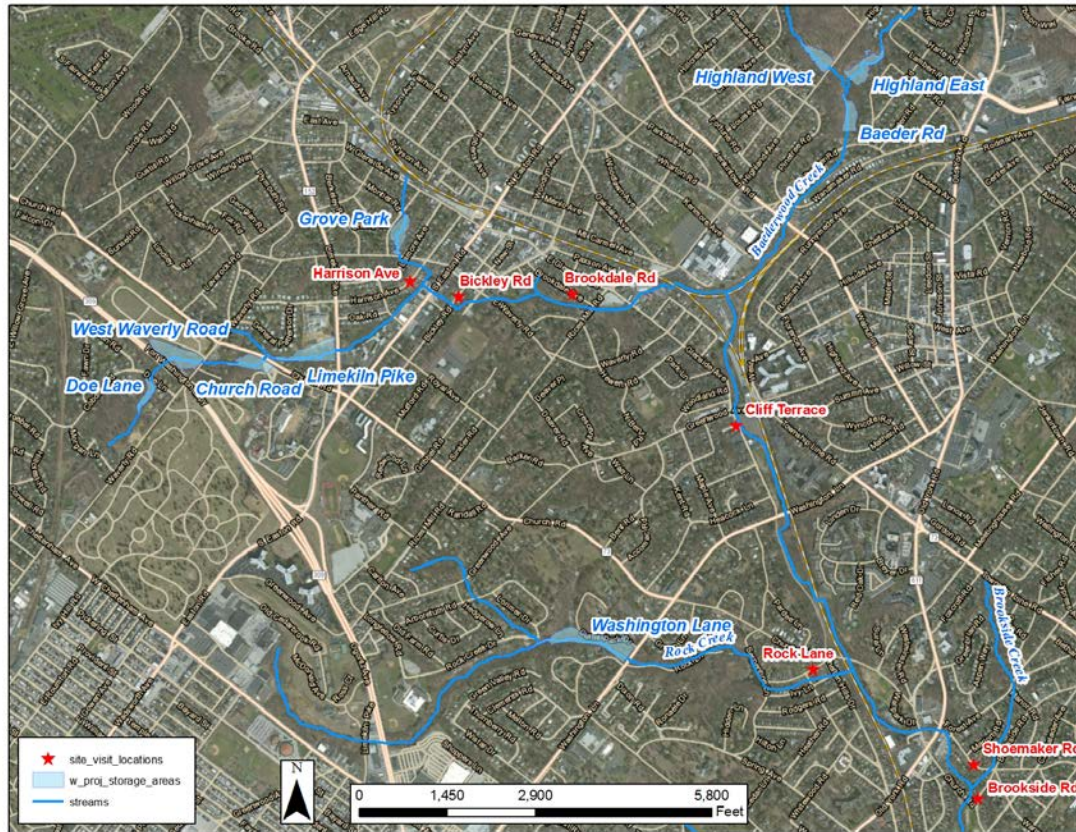
- Alternative 3: The Baederwood Creek Plan





# PLAN FORMULATION

- Alternative 4: The Comprehensive Plan



# PLAN FORMULATION

- Alternative 5: The Rock Creek Plan



# PLAN FORMULATION

- The Selected Plan is **Alternative 4: The Comprehensive Plan!**
  - All-encompassing plan with the largest watershed-wide FRM benefit
  - Includes 9 dry detention basins along Tookany Creek and 2 tributaries:
    - Tookany Creek Basins – Doe Lane, West Waverly Road, Church Road (Arcadia University), Limekiln Pike, Grove Park
    - Baederwood Creek Basins – Highland West, Highland East, Baeder Road
    - Rock Creek Basin – Washington Lane

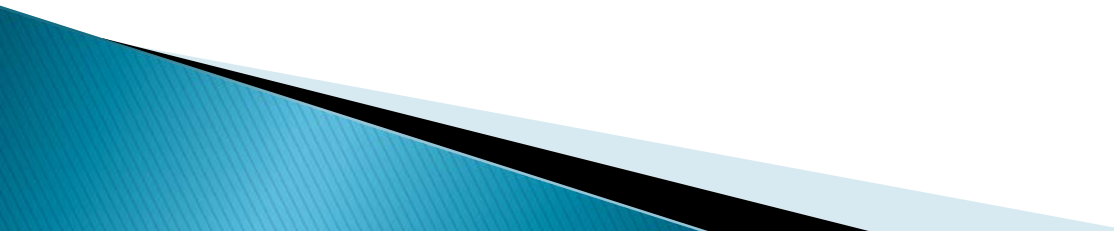


# SUMMARY OF ALTERNATIVE COSTS & BENEFITS

- ▶ **Total Cost of Recommended Plan – \$8.6M**
  - Construction Cost – \$6.3M

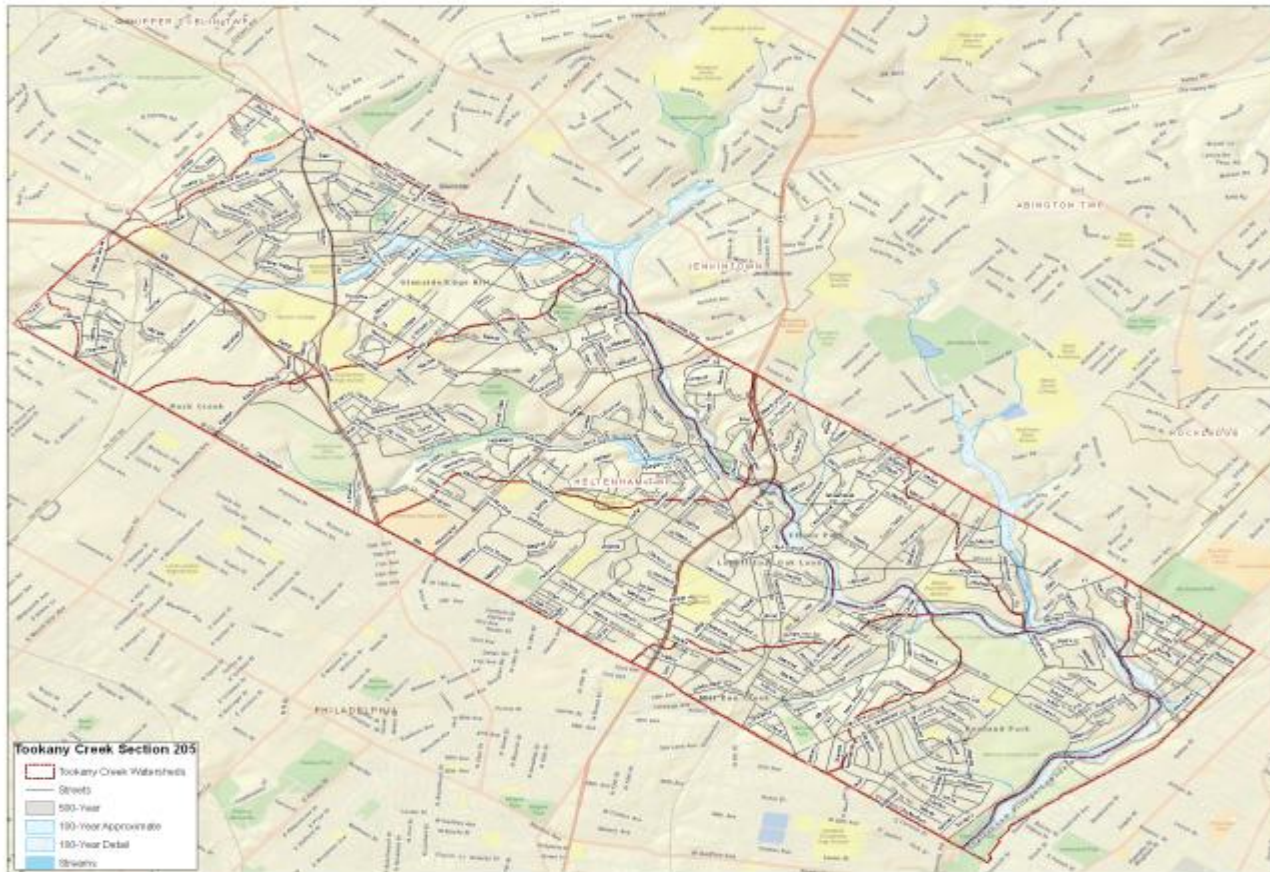
Alternative	Average Annual Costs	Average Annual Benefits	Annual Net Benefits	BCR
Alternative 1: No Action Plan				
Alternative 2: The Upper Tookany Creek Plan				
a. 5-basin plan	\$233,000	\$190,000	-\$43,000	0.82
b. 3-basin plan	\$74,000	\$43,000	-\$31,000	0.58
Alternative 3: The Baederwood Creek Plan				
a. 3-basin plan	\$77,000	\$42,000	-\$35,000	0.55
b. 1-basin plan (Highland West)	\$27,000	\$8,000	-\$19,000	0.30
Alternative 4: The Comprehensive Plan				
a. 9-basin plan	\$371,000	\$435,000	\$64,000	<b>1.17</b>
b. 5-basin plan	\$221,000	\$200,000	-\$21,000	0.90
Alternative 5: The Rock Creek Plan	\$91,000	\$136,000	\$45,000	<b>1.50</b>

# SCHEDULE & PATH FORWARD

- Public Release of Draft Report: July 2015
  - Feasibility Report Finalization: End of August 2015
  - Project Design: September 2015 to September 2016
  - Permit Acquisition: July 2016 to January 2017
  - Begin Construction: February/March 2017
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# QUESTIONS & ANSWERS

Tookany Creek  
Cheltenham Township, Montgomery County, Pennsylvania  
SECTION 205. FLOOD DAMAGE REDUCTION





# Contact

- ▶ <http://www.nap.usace.army.mil>