

Wyoming Valley Levee Project Update

July 2014



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Harvey Johnson, P.E.

U.S. Army Corps of Engineers Baltimore District

Chief of the Civil Works Branch

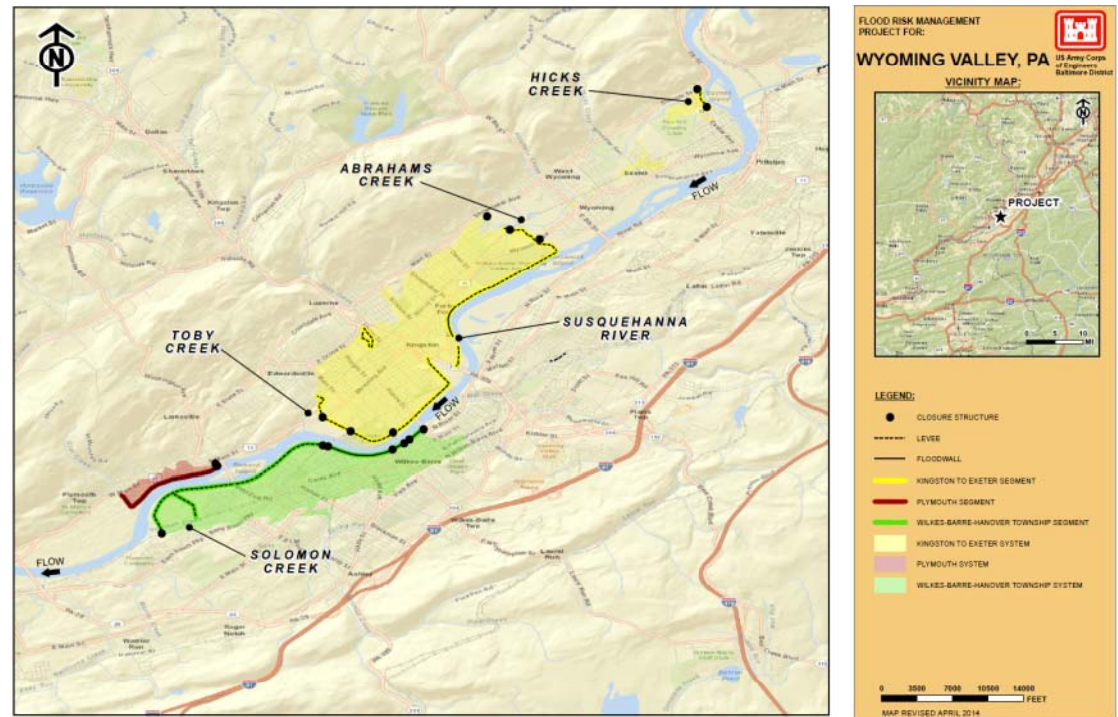


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Overview

- Authorized to provide flood protection to the area protected by the existing projects from flood conditions, which would occur as a result of the recurrence of tropical storms such as Agnes of 1972.
- Three levee systems comprised of:
 - 16 miles of levee and floodwalls
 - 13 storm water pumping stations
 - 20 closure structures.
- \$1.6 million dollars worth of rehabilitation work has been completed at 100% Federal expense as a result of Tropical Storm Lee (September 2011).



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Levee Benefits and Performance



Prevented over \$7.5 billion in flood damages, since 1968.



Performed well during Tropical Storm Lee.



Contains the flow from the 1 percent annual chance flood.



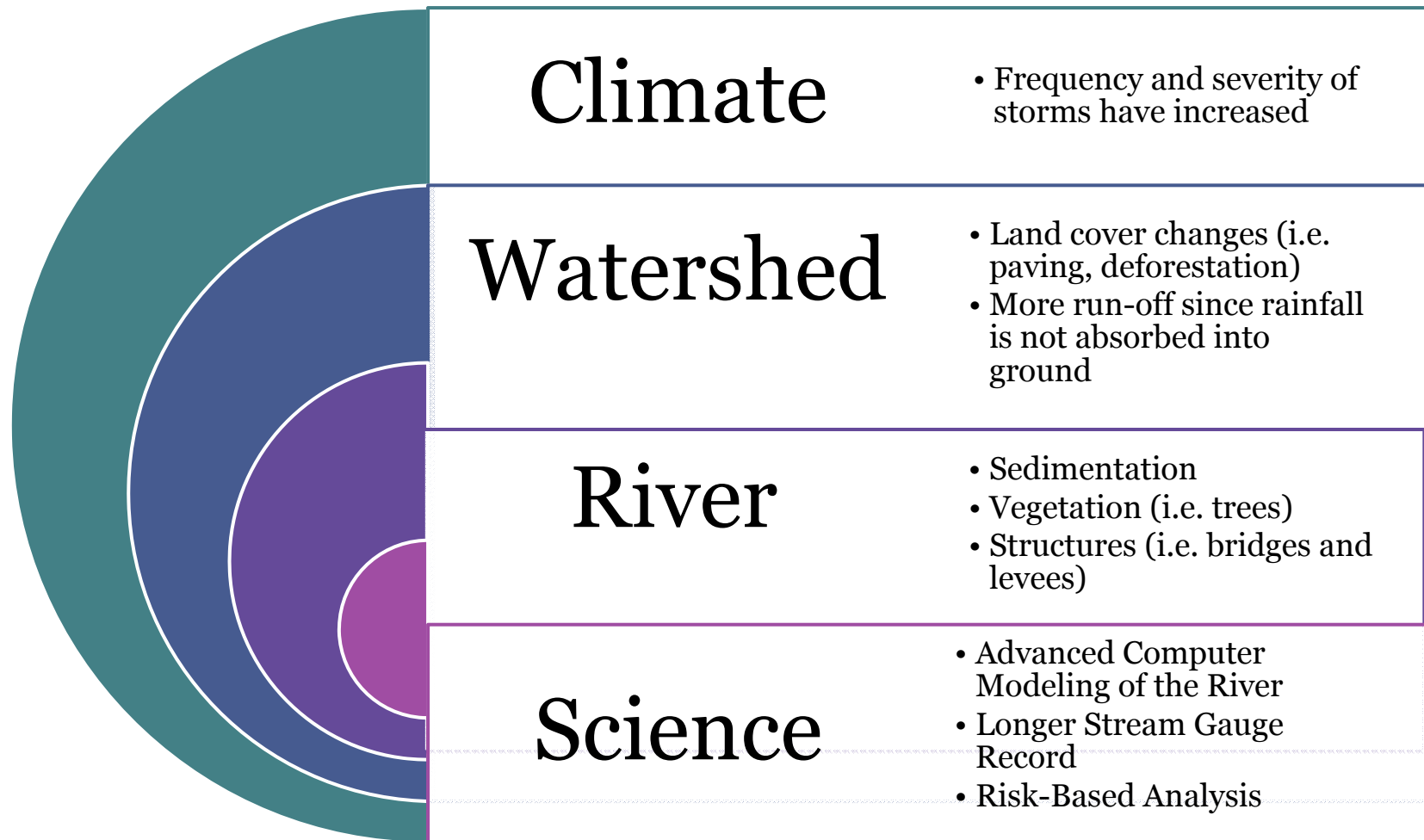
Continues to significantly reduce the risk of flood damages.



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What's Changed?

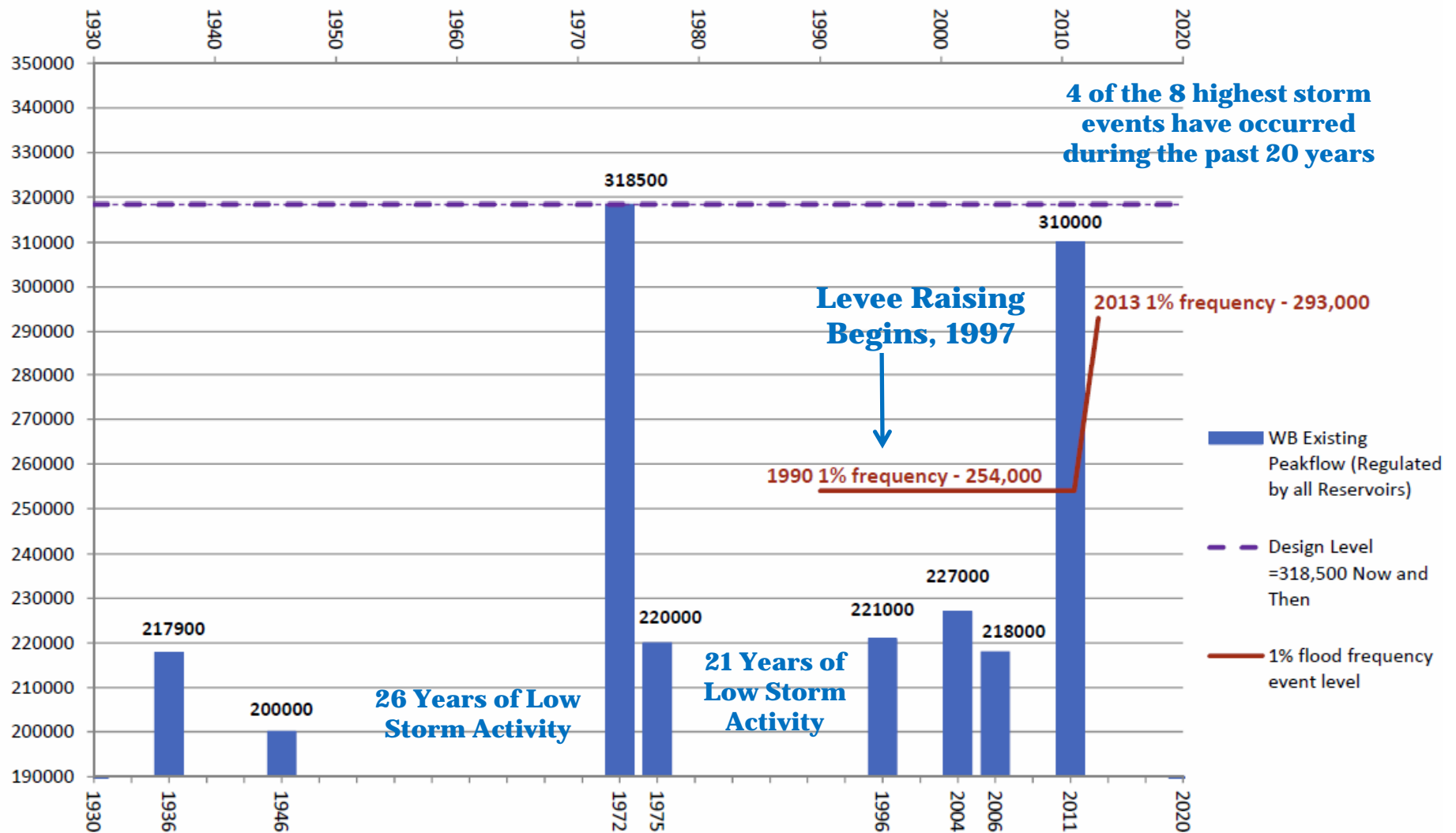


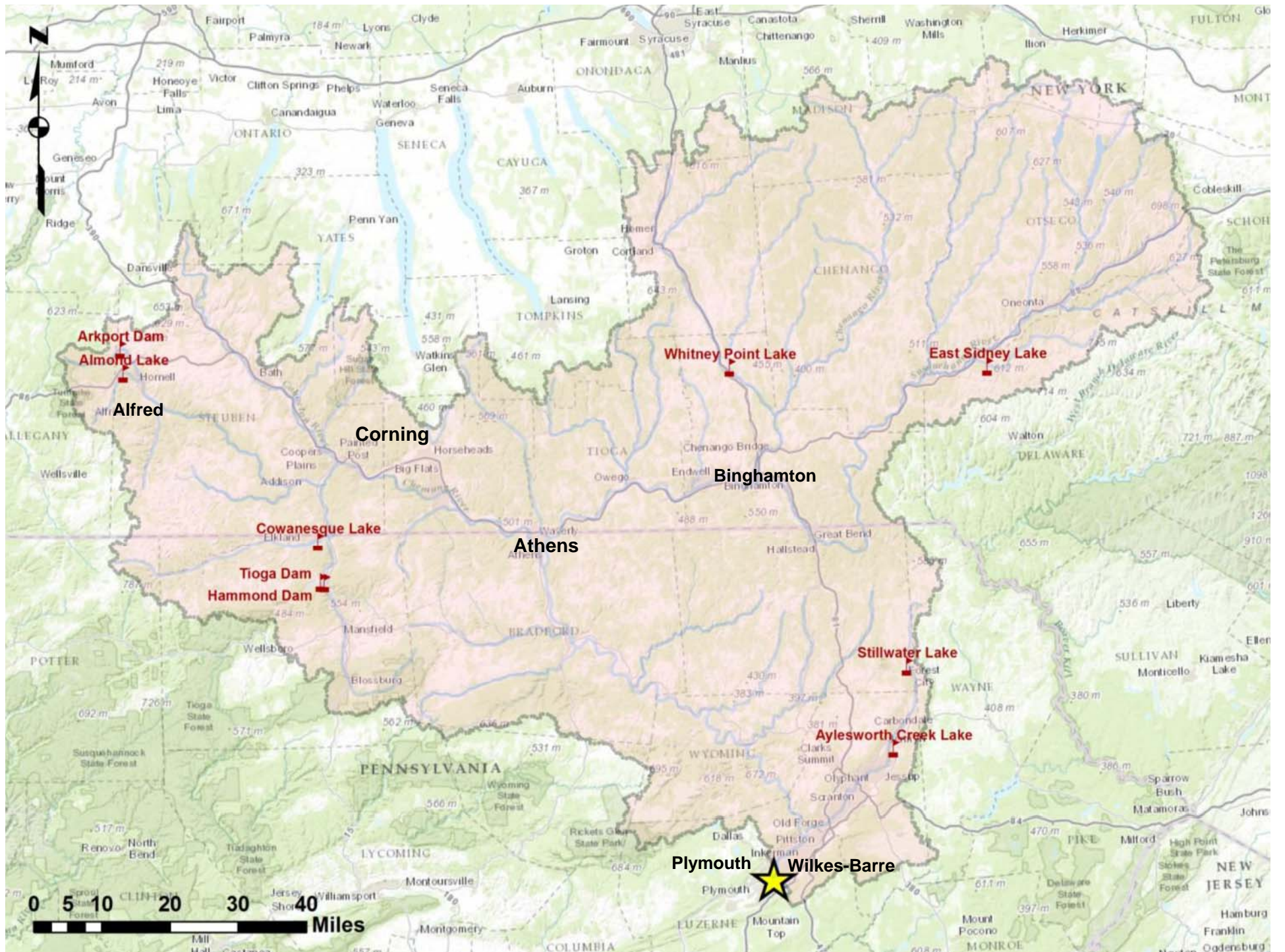
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How has the risk of flooding changed?

Wilkes-Barre 1% Peak Flow Frequency - Regulated Conditions





What are the impacts?

Because of these changes the Plymouth Borough and Wilkes-Barre/Hanover Township levee systems lack the required amount of freeboard, which is additional height added to a levee to provide a required safety factor.

This prevents the Corps of Engineers from evaluating that the two levee systems meet FEMA and Corps of Engineers levee accreditation requirements.

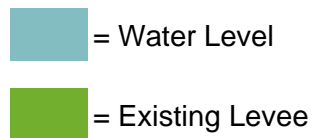
This means a potential change to the area's zone designation on the flood insurance rate maps (FIRMs).



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Levee Performance: Public Safety & Freeboard



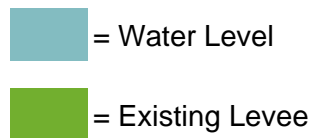
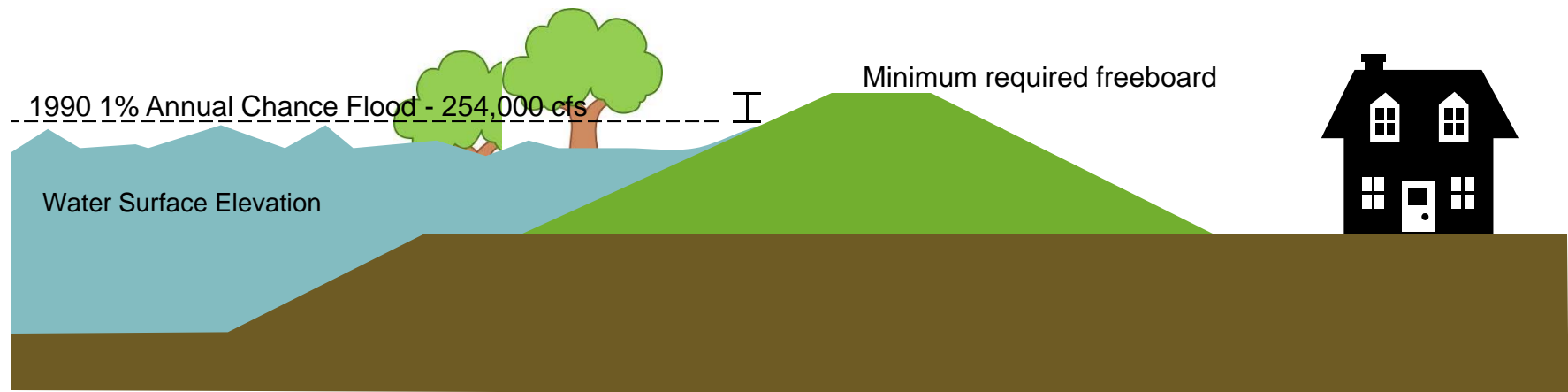
** Simulation Not To Scale **



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Levee Performance: Public Safety & Freeboard



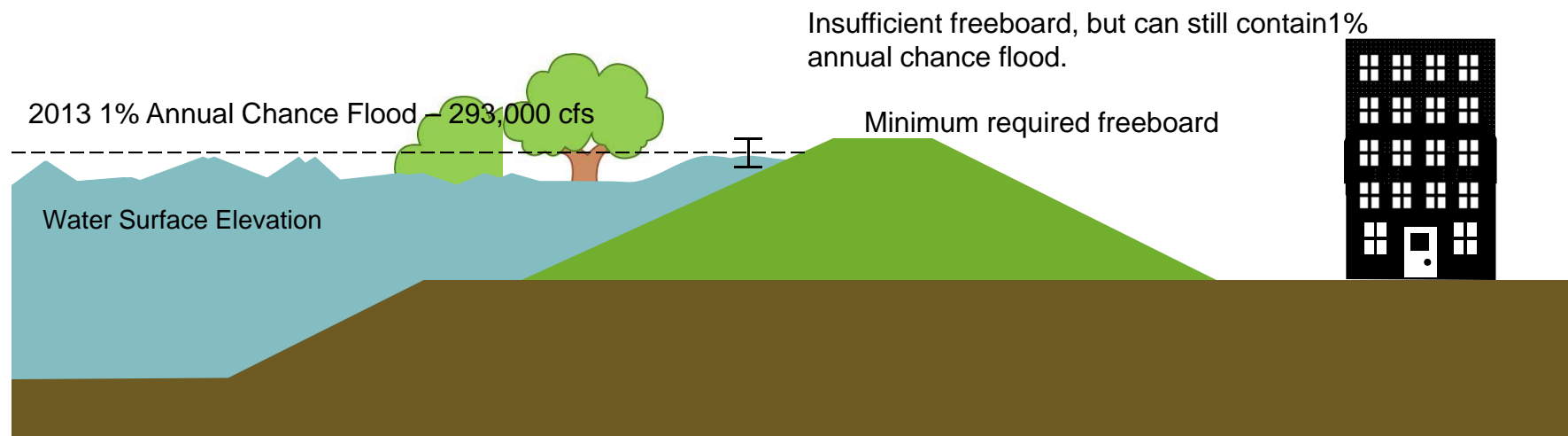
** Simulation Not To Scale **





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Levee Performance: Public Safety & Freeboard



-  = Water Level
-  = Existing Levee

** Simulation Not To Scale **

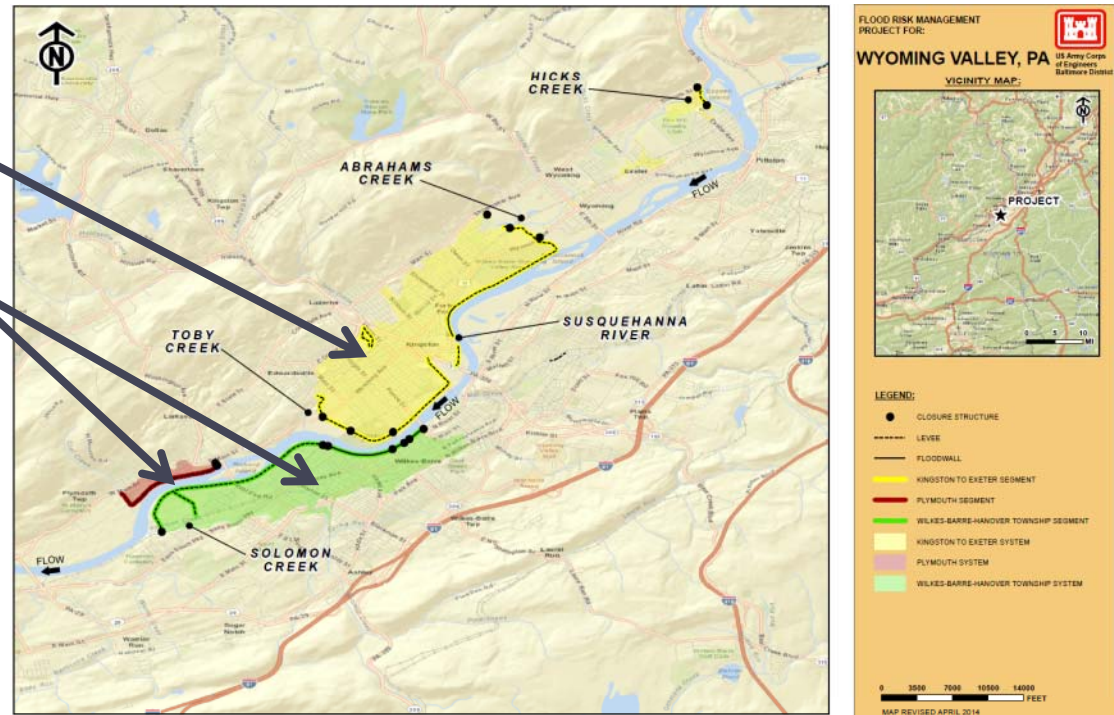


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Levee System Evaluation Report Results

- **Kingston to Exeter:** Meets requirements for levee accreditation.
- **Wilkes-Barre/Hanover Twp and Plymouth Borough:**
 - Meets all levee accreditation requirements, except for minimum freeboard (required safety factor).
 - All structural, mechanical, and electrical components of the system are well maintained and in good operational order.
 - Levee will continue to reduce damages from flooding.



Note: Of the 1,400 levee systems the Corps of Engineers oversees across the nation:

- 70 are accredited by FEMA
- 150 are provisionally accredited by FEMA
- 1,189 are not yet accredited by FEMA



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Gene Gruber, P.E.
FEMA, Region III
Mitigation Division Director



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Levee Status

- **Freeboard deficient**
 - The two levee systems cannot be accredited and displayed as protecting on the **next** flood map
 - Neither agencies safety factor was able to be met for the 2 of the 3 levee systems during the Corps evaluation of the Wyoming Valley Levee Project.
- **Does not affect the current flood map**
 - Current map shows the levee as protecting
- **Will affect the next flood map**
 - Can't be determined until the engineering studies are conducted
 - Unsure when the next flood map will be developed
 - Will take at least two years from the start of the project
 - Adoption of flood map is based on legally required timelines



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Current Flood Map Status

- Effective in November of 2012
- Not affected by recent findings, shows the levee as protecting
- Areas of Concern
 - **Wilkes-Barre/Hanover Township**
 - Protected to 1% Chance Flood
 - Insufficient Freeboard (safety factor)
 - **Plymouth Borough**
 - Protected to 1% Chance Flood
 - Insufficient Freeboard (safety factor)



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Levee Analysis and Mapping Procedure (LAMP)

- **What is it?**
 - It is the new process used by FEMA to analyze and map areas landward of non-accredited levee systems on Flood Insurance Rate Maps (FIRMs)
 - Previously levees were displayed as accredited and protecting, or non-accredited and providing no protection
 - FEMA recognizes that levee systems that can't be accredited may still provide flood risk reduction
- **This may impact future flood Mapping**
 - LAMP will need to be conducted in partnership with stakeholders
 - Stakeholder engagement is a key for review of mapping results
 - Timeline for LAMP - Begin in fiscal year 2015, Finish in fiscal year 2016
 - Timeline for new FIRMs – Preliminary in fiscal year 2017, Effective in fiscal year 2018



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The LAMP Process

- Form a Local Levee Partnership Team (LLPT) to interact with the community and stakeholders.
 - Team provides input to reflect the community's unique circumstances to better characterize local flood hazards
- FEMA implements analysis and mapping procedures
 - Based on Team input
 - Includes four separate types of analysis
- Funding for this effort will be budgeted for fiscal year 2015



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Potential LAMP Outcomes

- **Zone D**

- D zones show areas of possible, but undetermined, flooding
- Not yet analyzed to determine flooding risks
- Not considered a Special Flood Hazard Area (SFHA)
- No federal mandate to purchase flood insurance
- No federal minimum floodplain requirements

- **Special Flood Hazard Area (Zone A, AE)**

- High risk flood area with a mandatory flood insurance requirement
- Federal minimum floodplain requirements apply



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Flood Insurance Outcomes

- No change until a new flood map goes into effect
- Lenders can always require flood insurance, even if there's no federal mandate
- Unknown affect on individual properties until LAMP outcome is determined and/or a new map goes into effect
 - **Consult your flood insurance agent**



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Opportunities and Actions

- **Community can consider Community Rating System (CRS)**
 - Voluntary steps to better protect residents
 - Also reduces flood insurance premiums by percentages up to 45% discount
- **Hazard Mitigation Assistance (HMA) Programs**
 - Funded by FEMA, through the Pennsylvania Emergency Management Agency (PEMA).
 - Competitive
 - 75% Federal Funding Available with 25% non-federal match
 - Application made through local municipal government.
- **There may be other funding sources available as well**
 - Pennsylvania Silver Jackets focus on support to flood prone communities



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Future Activities

- **Engage in the LAMP process**
 - Calculate the potential level of protection provided by the levee through LAMP
- **Meet with** commonwealth and local officials and levee owners regarding levee and level of protection afforded
- **Issue New Flood Map**
 - Timeframe to be determined
 - Includes meeting with the community to rollout the maps and receive feedback and input
 - Includes legally required comment and appeals periods



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Levee Safety Tips

PREPARE YOUR FAMILY

- Get an Emergency Supply Kit
- Make a Family Plan
 - Contact Point
 - School, daycare, place of employment
- Purchase Flood Insurance
- Stay Informed
- Prepare your home
- Prepare your business

www.ready.gov/america/beinformed/floods.htm



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Chris Belleman
Luzerne County Flood Protection Authority
Executive Director



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Flood Authority's Responsibilities

Maintain three separate levee systems, consisting of:

- 16 miles of levee and floodwalls
- 13 stormwater pump stations
- 39 pumps (5k gpm to 75k gpm)
- 20 closure structures
- 130 relief wells



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Levee System Evaluation Report

“With the assumption of the O&M responsibility, the LCFPA has performed in an exemplary fashion and is diligent in the operation of the system, and proactive in its maintenance role. Repeated experiences with high water events, including the most recent major flooding event resulting from Tropical Storm Lee in September 2011, has demonstrated that the LCFPA staff are prepared to respond to a flood emergency, have the experience to effectively respond in a dynamic situation and have the resources to sustain a high tempo of flood fighting. The LCFPA maintenance staff continue to show an intimate knowledge of the Levee Systems with a detailed understanding of the workings of the functional components such as; pumping stations, closure structures, gates, valves, electrical distribution systems, SCADA systems and emergency protocols.”



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Questions



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