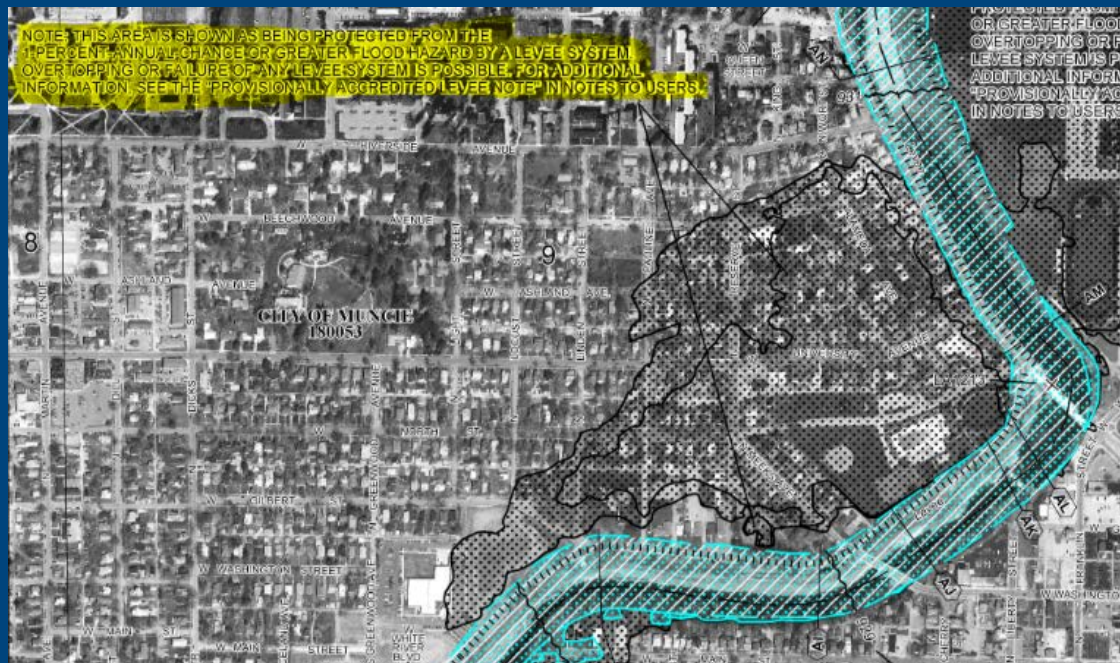


# **FEMA, Corps, and Interceptor! Oh My!**

Muncie, IN

# Provisionally Accredited Levee (2009)

- FEMA Notification
- Previously accredited
- 24-months to re-achieve accreditation



## Accredited Levee

Certification



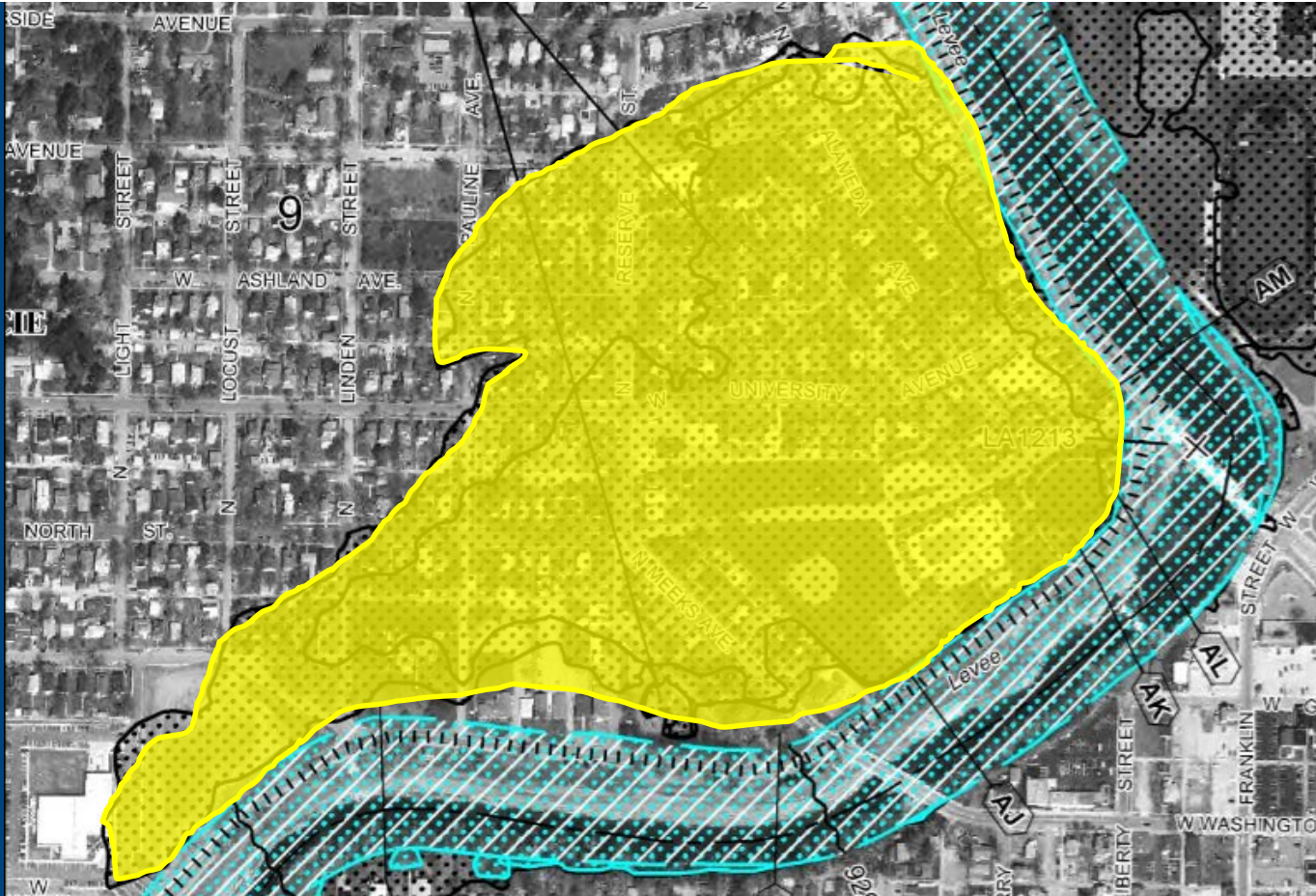
Accreditation



FEMA

DFIRM

# Accredited Levee



# Certified Levee



# White River Levee



# White River Levee



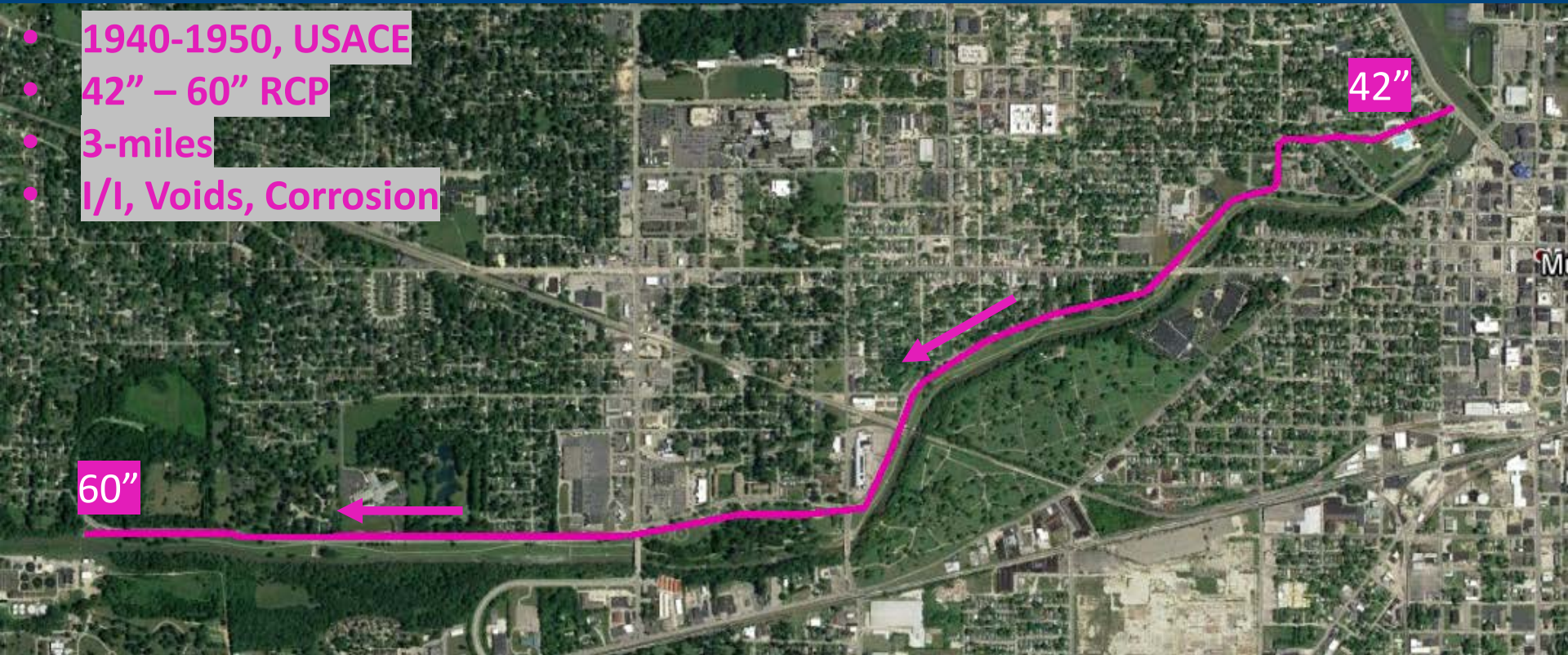
# White River Levee





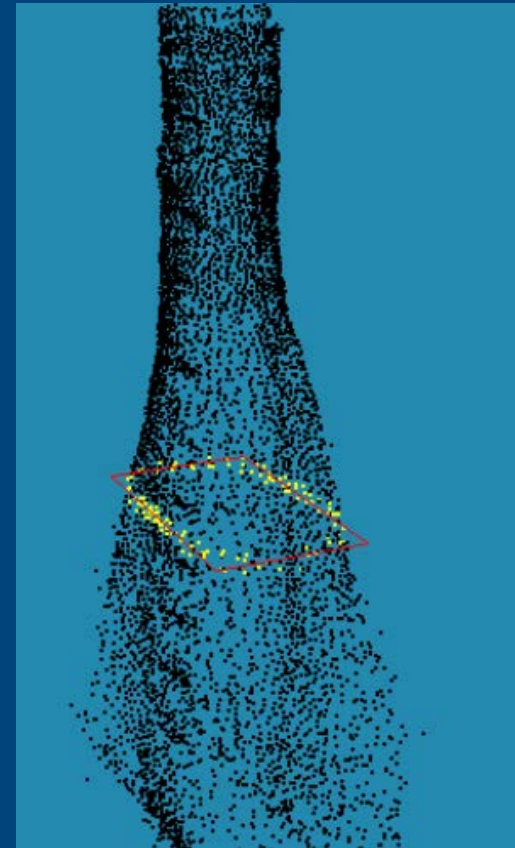
# White River Combined Sewer Interceptor

- 1940-1950, USACE
- 42" – 60" RCP
- 3-miles
- I/I, Voids, Corrosion



# White River Interceptor – Manhole Inspections

- 51 Manholes – 3D Scans



## White River Interceptor – Flow Data

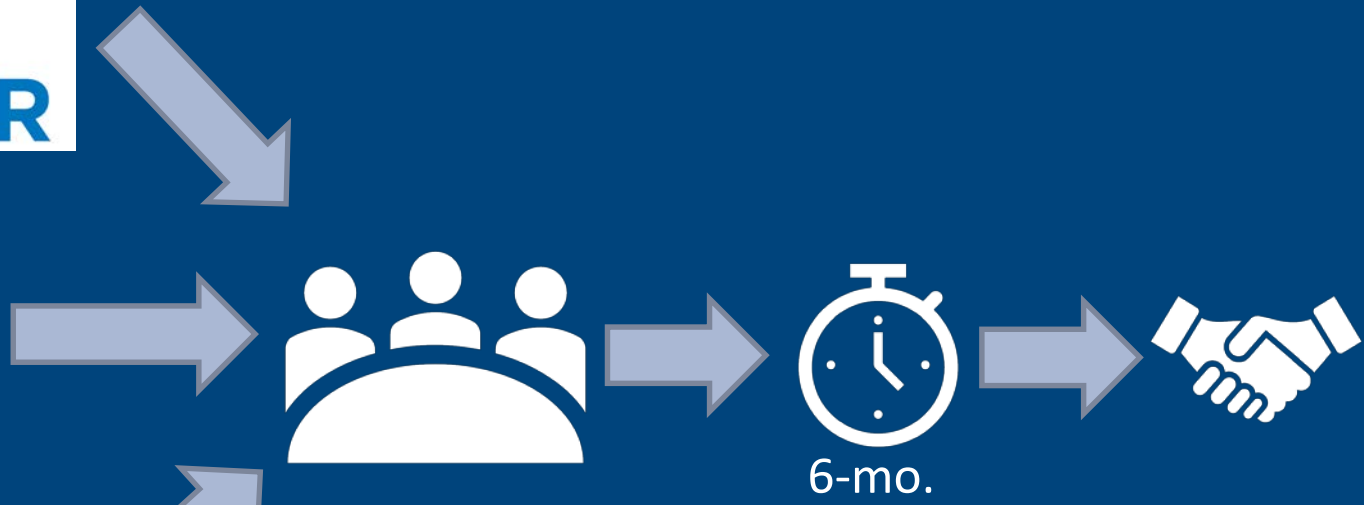
- Peak Flow = 45 MGD
- Average Flow = 9.4 MGD
- Dry Weather Flow = 4.4 MGD



# Rehab Alternatives

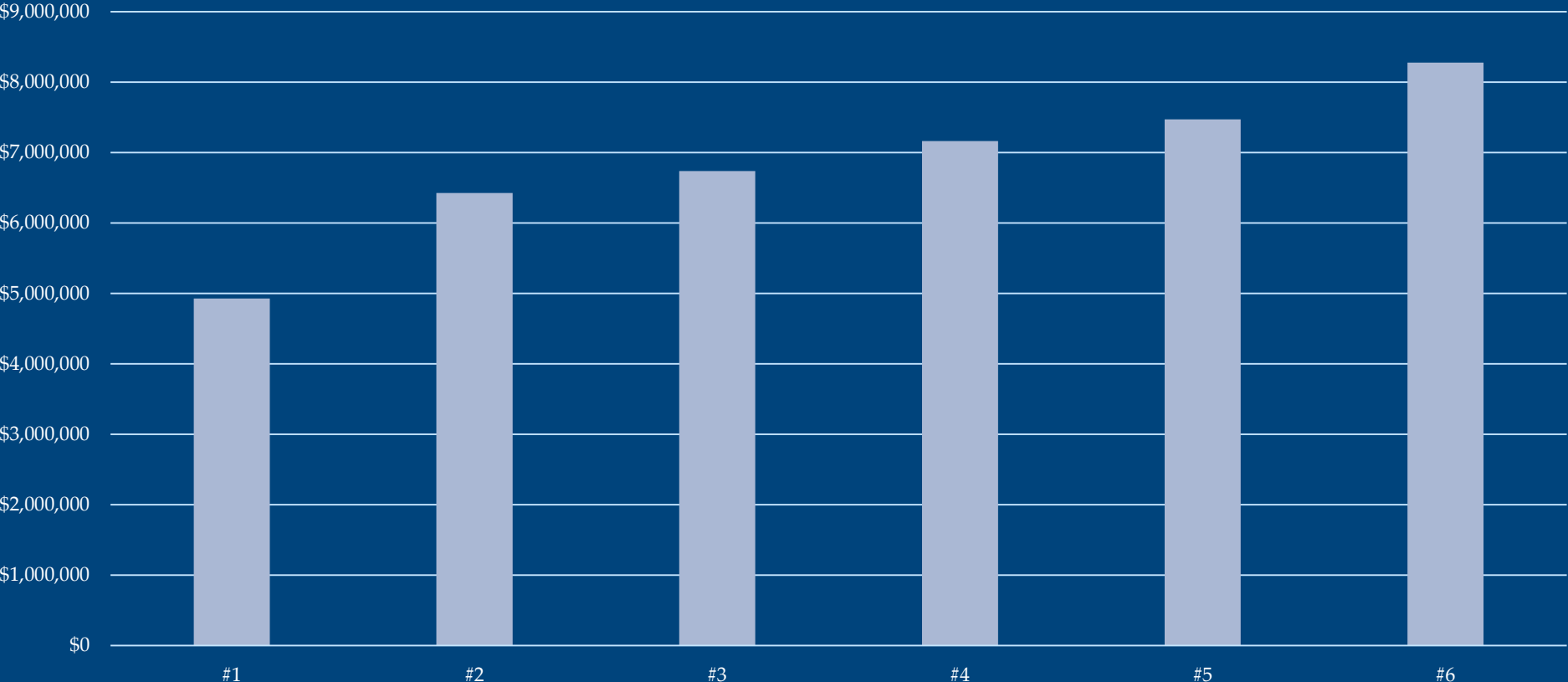
|       | CIPP                    | Slipline               | Shotcrete                 | Spiral Wound PVC                        |
|-------|-------------------------|------------------------|---------------------------|---|
| PRO'S | "Thin" Wall             | Smooth Surface         | Cost Effective            | Corrosion Resistant                     |
|       | Smooth Surface          | Corrosion Resistant    | Reduced Bypass (internal) | No Bypass (at lower flows)              |
|       | Quick Installation      | No Bypass (<60% Flow)  | Structural                | Grouted Annular Space                   |
|       | Corrosion Resistant     | Grouted Annular Space  | Proven Method             |   |
| CON'S | Requires Bypass Pumping | Straight runs Required | Corrosion Potential       | Limited Local Installers and Experience |
|       | Manhole Access          | Launch Pits Required   | Rougher Wall Profile      | Slower Installation                     |
|       | No Annular Grouting     |                        | Reduced Hyd. Capacity     | Difficult to Navigate Tight Bends       |
| \$    | \$\$                    | \$\$\$                 | \$                        | \$\$\$                                  |

# CIPP & USACE



# Bids

## White River Interceptor - Bids



# Construction

- NTP – June 3, 2013
- 24-48 Hours per liner
- Liners installed during dry weather
- Saturated liners trucked in from Indianapolis – no over the hole wet-out
- Substantial – June 27, 2014
- Final Cost \$4.75 MM



# Lessons Learned

- Communication
- Bypass Pumping
- Construction in Floodway
- Cold Weather Ops
- Sound Attenuation
- Pre-video Recordings





**Thank you!**

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