

# Working with the 3R's of Historic Bridges- Restore, Rehab, Replace

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# Three "Rs"

- General Maintenance may not be enough
- Restoration
  - Repairs
  - Reconstruction (limited)
- Rehabilitation
  - Repairs
  - Reconstruction
- Replacement

# Historic Significance

- Engineering
- Architecture
- Associations
  - Broad Trends in American History
  - Significant person(s)



# Stakeholders

- FHWA
- MDOT
- SHPO
- MHPN
- Host Community
- ACHP



# Replacement – M-32BS

- Main Rte into Hillman
- Functionally Obsolete
- Structurally Deficient
- Long Detour
- Historic





# Hillman – temporary bridge



# Replacement – M-32BS

- 2 12' lanes
- 2 8' sidewalks
- Shoulders
- Addresses sight-line problems
- Aesthetics selected by community





# Hillman Bridge - new





# Replacement – Tienken Rd Bridge



- Blt 1940
- 2 lanes
- Rural area
- Stoney Creek Village

# Tienken Road Bridge

- Railing replaced
- Functionally obsolete
- Structurally Deficient





# Replacement – Tienken Rd

- Heavy traffic
- Suburban  
– not rural



# Issues:



- Historic District
- Controversy
  - Site specific
  - Corridor



# Replacement – Tienken Rd.

- Community outreach
- Work w/ MDOT and SHPO
- CSS principles



# Rehabilitation – Cut River Bridge

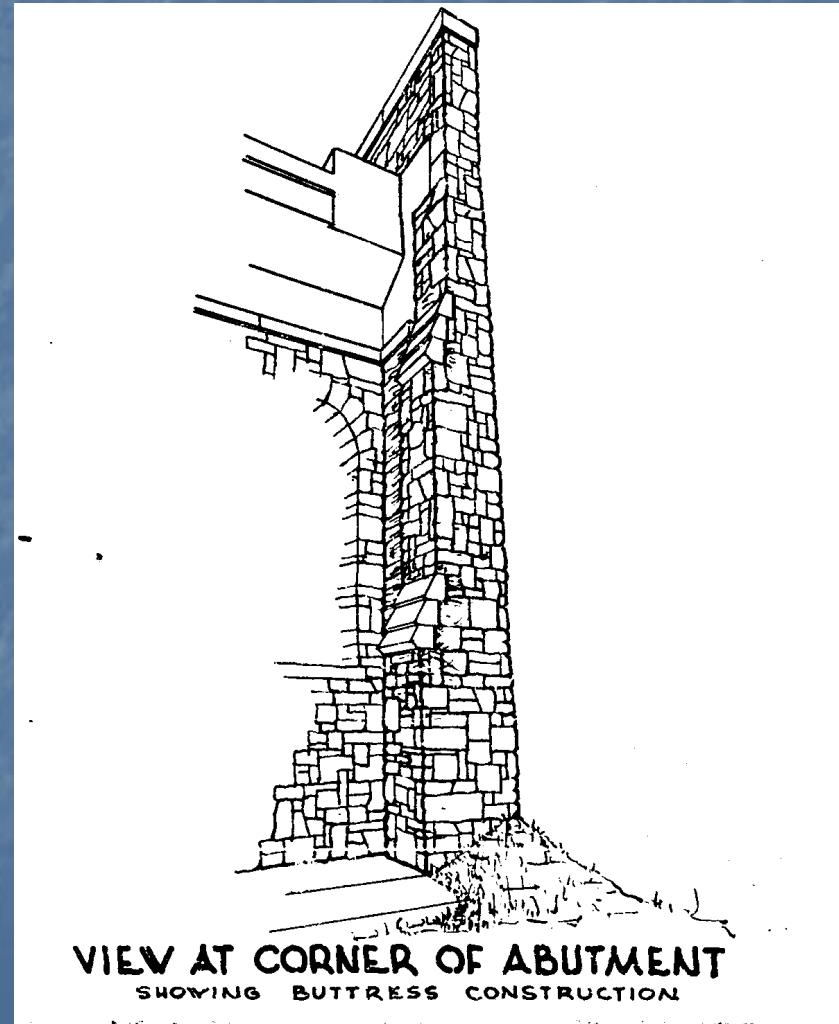
- Deck Replacement
- Limited Steel Repairs
- Traffic Barrier Upgrade
- ESS





# Restoration – Cut River Bridge

- Mortar Deterioration/loss
- Stone Deterioration
- Graffiti
- Environmental Staining
- Possible subsurface issues















# Restoration – Cut River Bridge

- SHPO Consultation
- FHWA Consultation
- Secretary of the Interior Standards
- Proprietary Products
- Proprietary Process



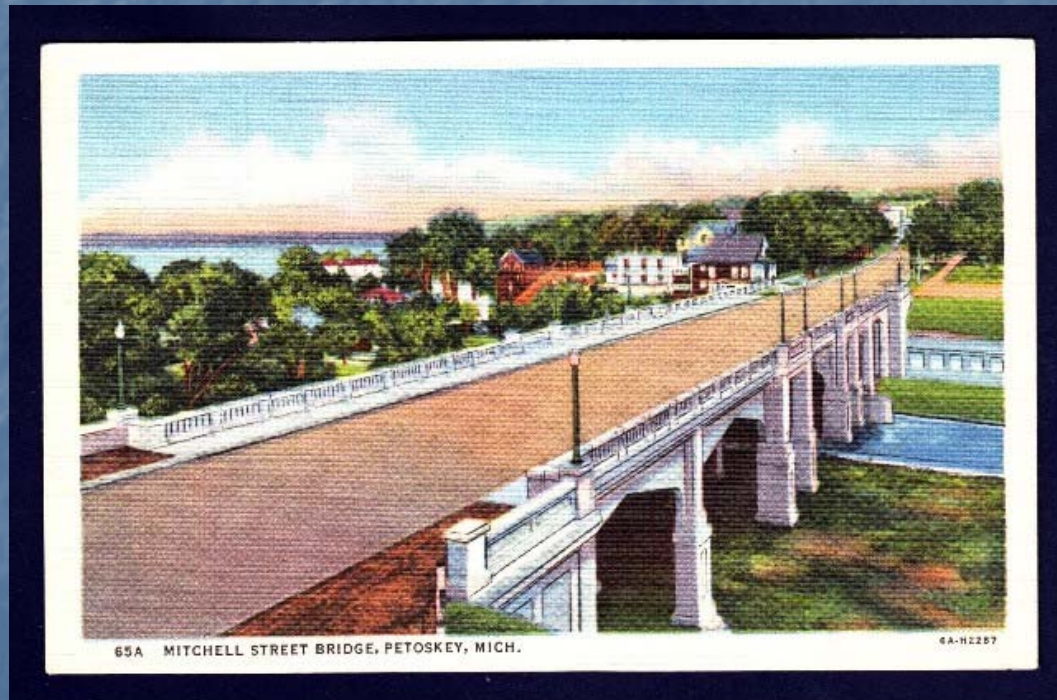
# Restore/Rehab – US-31 Mitchell Street over Bear Creek





# Restore/Rehab – US-31 Mitchell Street over Bear Creek

- Historic Bridge
- High-traffic route
- Park below
- Waterway below
- Detour challenges



conditions





conditions



conditions





# Restore/Rehab – US-31 Mitchell Street over Bear Creek

- Replace railing
- Replace Deck and sidewalks
- Replace or repair fascia
- Remove Seal Coat
- Patch & Repair



# Restore/Rehab – US-31 Mitchell Street over Bear Creek

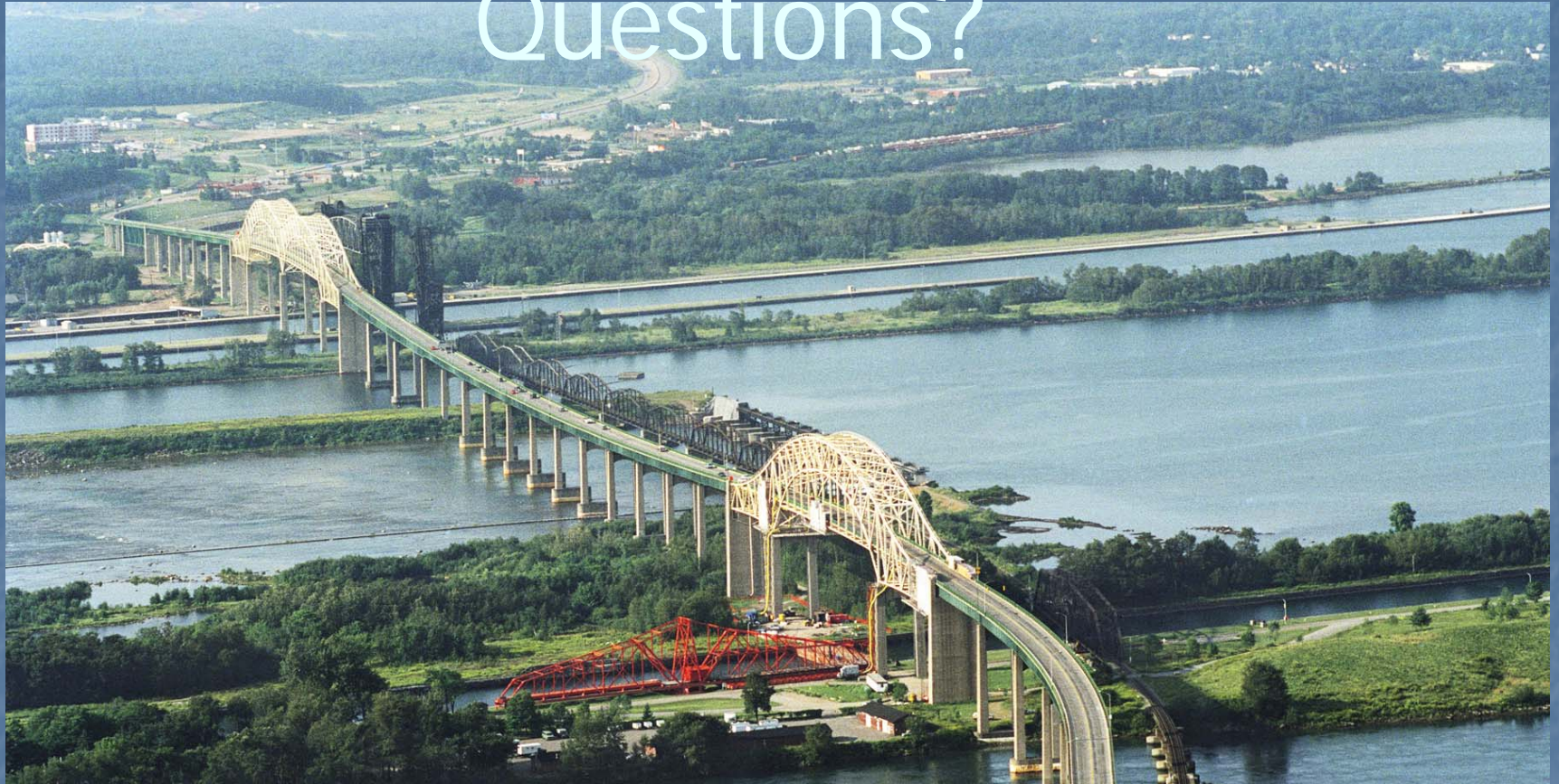
- AASHTO Standards
- FHWA approval
- SHPO approval
- Local buy-in
- Local involvement



# TE Program – MAP 21

- TE Program combined with Safe Routes to School, Recreational Trails programs
- Rolled into CMAQ Program (with Wetland Mitigation, and HOV programs)
- Funding for the 3 programs limited @ \$833 million (\$313 M less than 2010)
- States may opt out of TE, use funds for other transportation projects.

# Questions?



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