



Red Wing Bridge Project



City Council Meeting
August 26, 2013

Your Destination...Our Priority



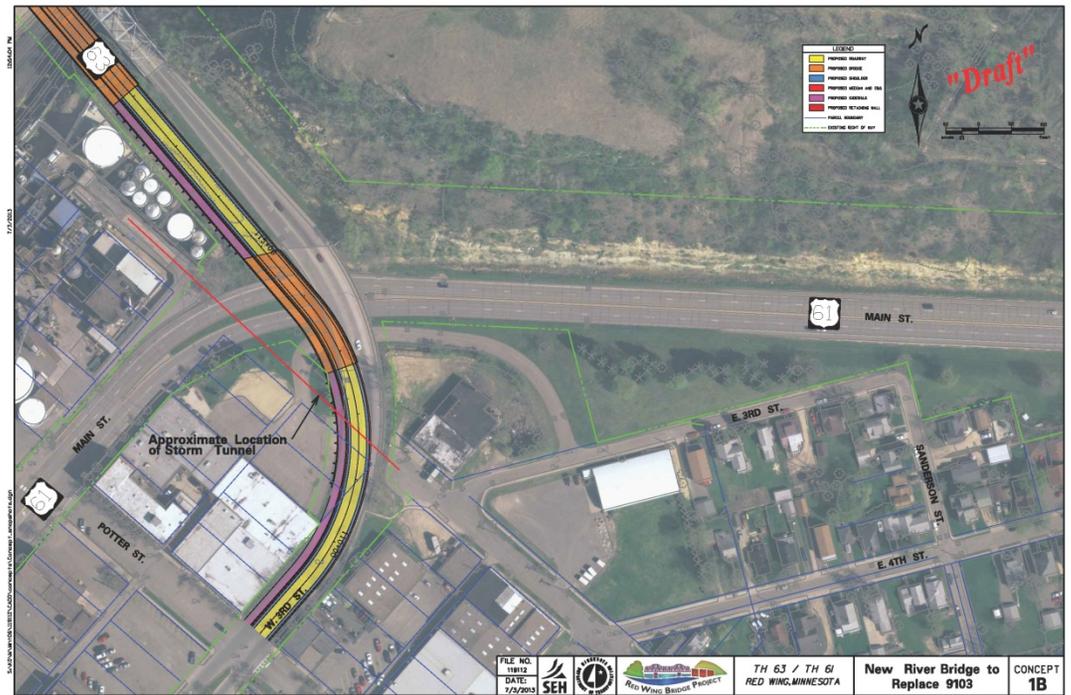
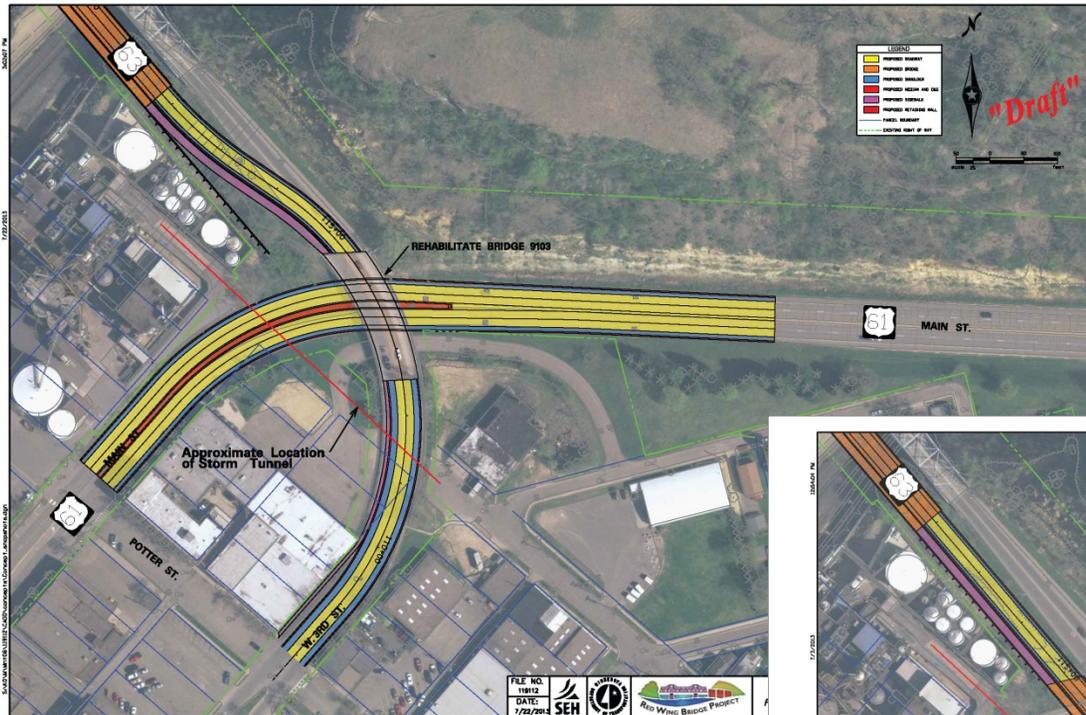


Overview of Past Progress

- Determined the river crossing will be kept at current location
- Screened the range of concepts for the Minnesota and Wisconsin approach roadways
- Identified four river crossing options and seven bridge types
- Decided to proceed with two-lane option
 - Provisions being made to ensure the ability to expand to 4 lanes



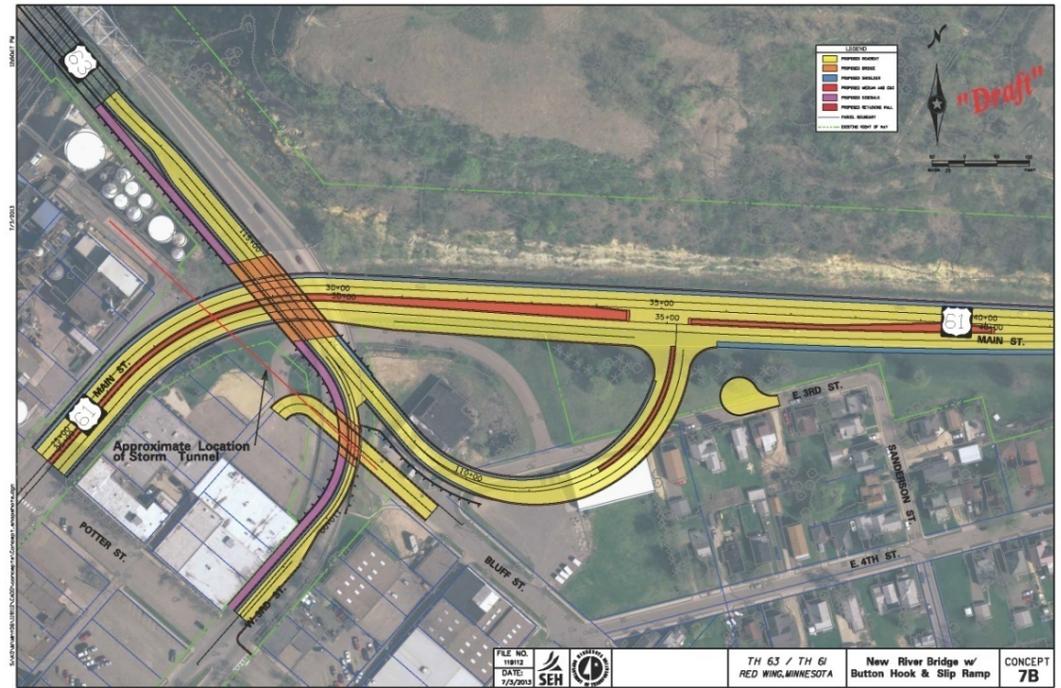
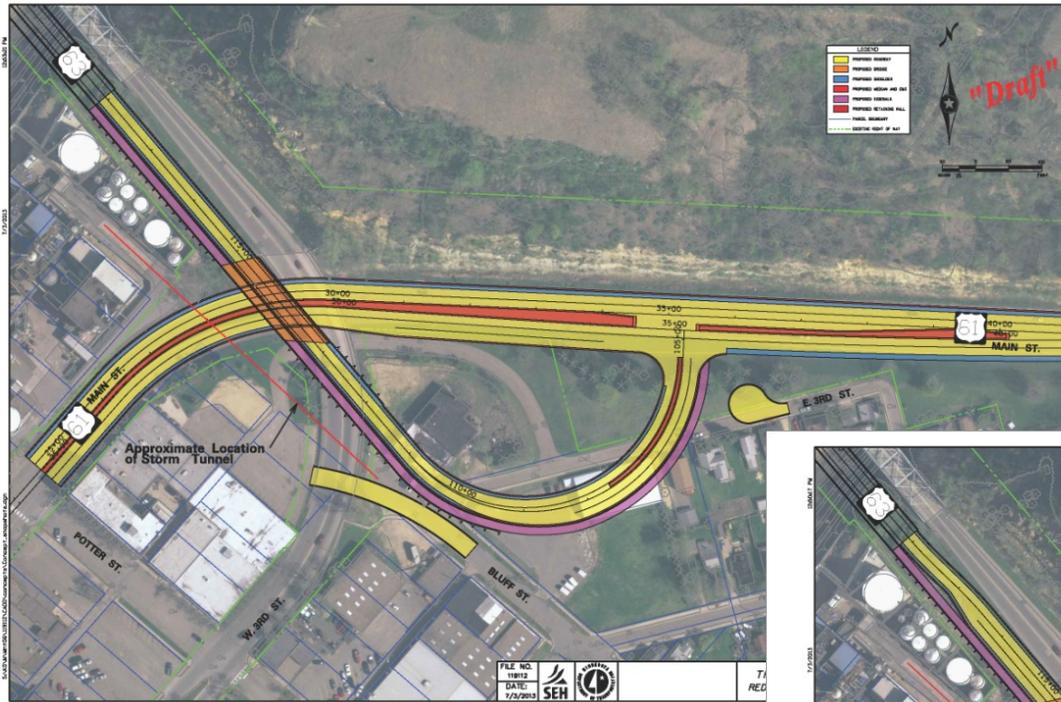
Rehab Bridge 9103



Replace Bridge 9103 In-Place



Buttonhook



Buttonhook with Slip-ramp





River Crossing – Rehab Alternative

- Option to add 6-foot cantilevered sidewalks on each side
- Retains a non-redundant, fracture critical structure
- Retains existing condition and visual setting
- Significant maintenance of traffic (MOT) considerations





River Crossing – Replacement Alternatives

- Assume new two-lane bridge immediately upstream from existing river bridge
- Involve minimal MOT issues
- Some options are structurally redundant
- Greater structure depth (approach considerations)
- Provide a separated pedestrian and bicyclist trail





River Crossing Decision: Proceed with Replacement Alternative

- Substantially less construction impacts, especially MOT & EMS;
- All bridge types can tie into rehab or replacement of Bridge 9103;
- Provides options that are structurally redundant;
- Provides a separated pedestrian and bicyclist trail;
- Allows treatment of water runoff prior to discharge into the river;
- Lower life-cycle costs than rehab alternative.





Bridge 9040 Replacement Types

Type 1 – Tied Arch



- Similar to new Hastings Bridge
- Shallow bridge deck limits increases in the approach roadway grades;
- Can be designed to not be fracture critical;

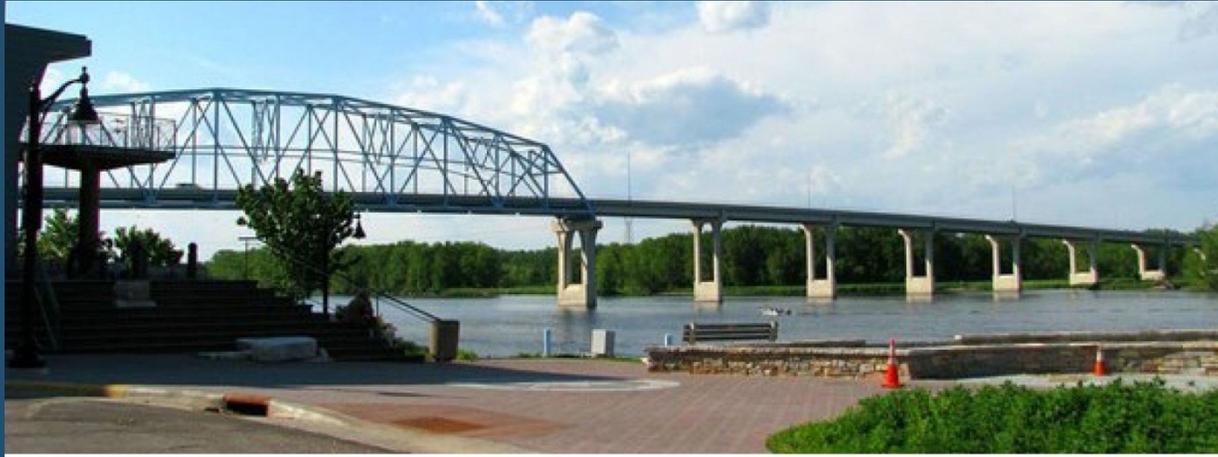
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Bridge 9040 Replacement Types

Type 2 – Simple Span Truss



- Grade raise would be minimal
- Similar to existing bridge but only one span
- Very difficult to make redundant
- High maintenance and inspection costs

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Bridge 9040 Replacement Types

Type 3 – Three-Span Continuous Truss



- Similar to existing bridge
- Grade raise would be minimal
- Fracture critical members would require unique special designs
- High maintenance and inspection costs

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Bridge 9040 Replacement Types

Type 4 – Extradosed Bridge



- Grade raise would be about 10'
- Similar to new St. Croix Bridge
- High costs and construction complexity

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Bridge 9040 Replacement Types

Type 5 – Cable-Stayed Bridge



- Grade raise would be minimal
- Tall towers would have large visual impact
- High costs and construction complexity

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Bridge 9040 Replacement Types

Type 6 – Concrete Segmental Box Girders



- Grade raise would be the greatest
- Lower construction cost
- Structurally redundant, not fracture critical
- Lowest future maintenance costs

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Bridge 9040 Replacement Types

Type 7 – Steel Box Girders



- Grade raise would be about 10'
- Structurally redundant, not fracture critical
- One of the lowest cost options

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Bridge 9103 Rehabilitation Study

- Bridge 9103 is eligible for the National Register of Historic Places
- Followed new MnDOT-FHWA historic bridge process
- Goal was to determine if there are feasible rehab alternatives that meet historic standards
- Two feasible alternatives were identified
- Study Report has been reviewed by SHPO and FHWA
- Next step includes evaluating the rehab alternatives along with the replacement alternatives considering all purpose and need factors





Bridge 9103 Rehab Alternative

- Remove & replace 10-15 foot center strip
- Patch deck. Replace joints
- Adds a railing on the inside of the sidewalk
- Also options to lower TH 61 & add Cathodic Protection





Next Steps

- Determine recommended approach roadway alternative(s)
- Conduct detailed analysis on the remaining alternatives
- Conduct third public open house late 2013 to present the alternatives analysis results and project alternative selection





Schedule

- Alternatives development and evaluation
 - Through Late 2013
- Preliminary design and environmental documentation
 - Through Late 2014
- Final design
 - 2014 to 2017
- Construction
 - Multi-year project beginning in Summer 2018 (proposed)





Questions / Comments



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