

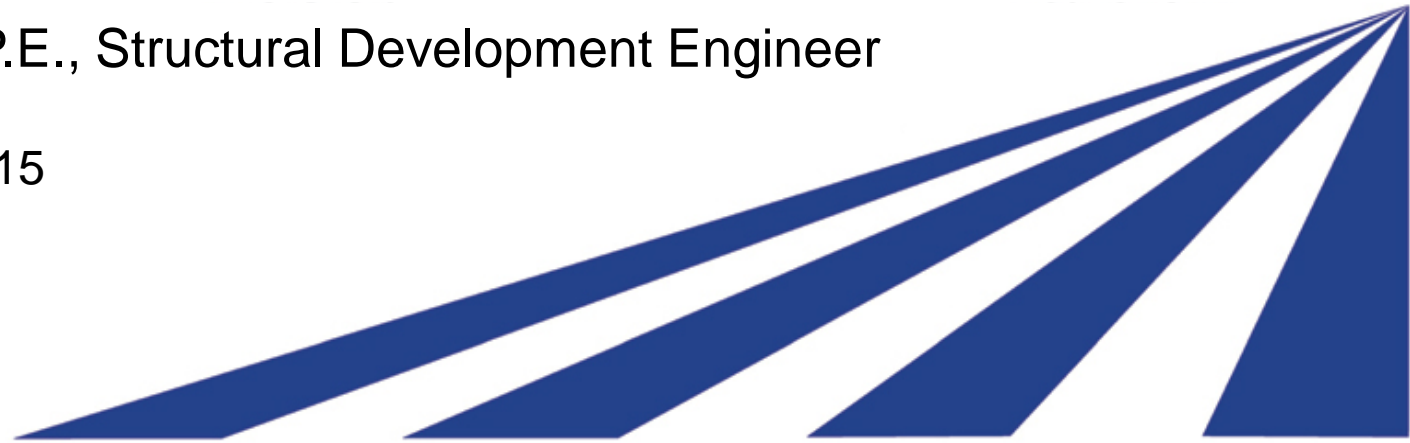


Wisconsin DOT – State Report

SHPR2 Solutions: Innovative Bridge Designs for Rapid Renewal

James Luebke P.E., Structural Development Engineer

September 16, 2015



U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

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WisDOT – State Report



James Luebke, PE
Structural Development Engineer
WisDOT – Bureau of Structures



WisDOT ABC - Program

- Support and Vision
- Past & Current Projects
- Future Projects
- IH-39 Optional Precast Piers



WisDOT ABC - Team

- The Team:
 - Guidance - State Trans. Innovation Council (STIC)
 - Department Experts (Bridge, Geotech, and Contract Admin.)
 - FHWA Resources and Support
 - Consultant, Contractor, and Fabricator Support
- The Objective:
 - Get out in front of projects and develop the Policy, Guidance, Standards, and Provisions to implement ABC tools and solutions
.....*To Meet Project Needs*

FHWA & EDC

- Highways for Life is aimed at improving Safety, Reducing Congestion, and Improving Quality



- Federal Highway Administration's (FHWA) Every Day Counts (EDC) initiative "aimed at shortening project delivery, enhancing the safety of our roadways, and protecting the environment."

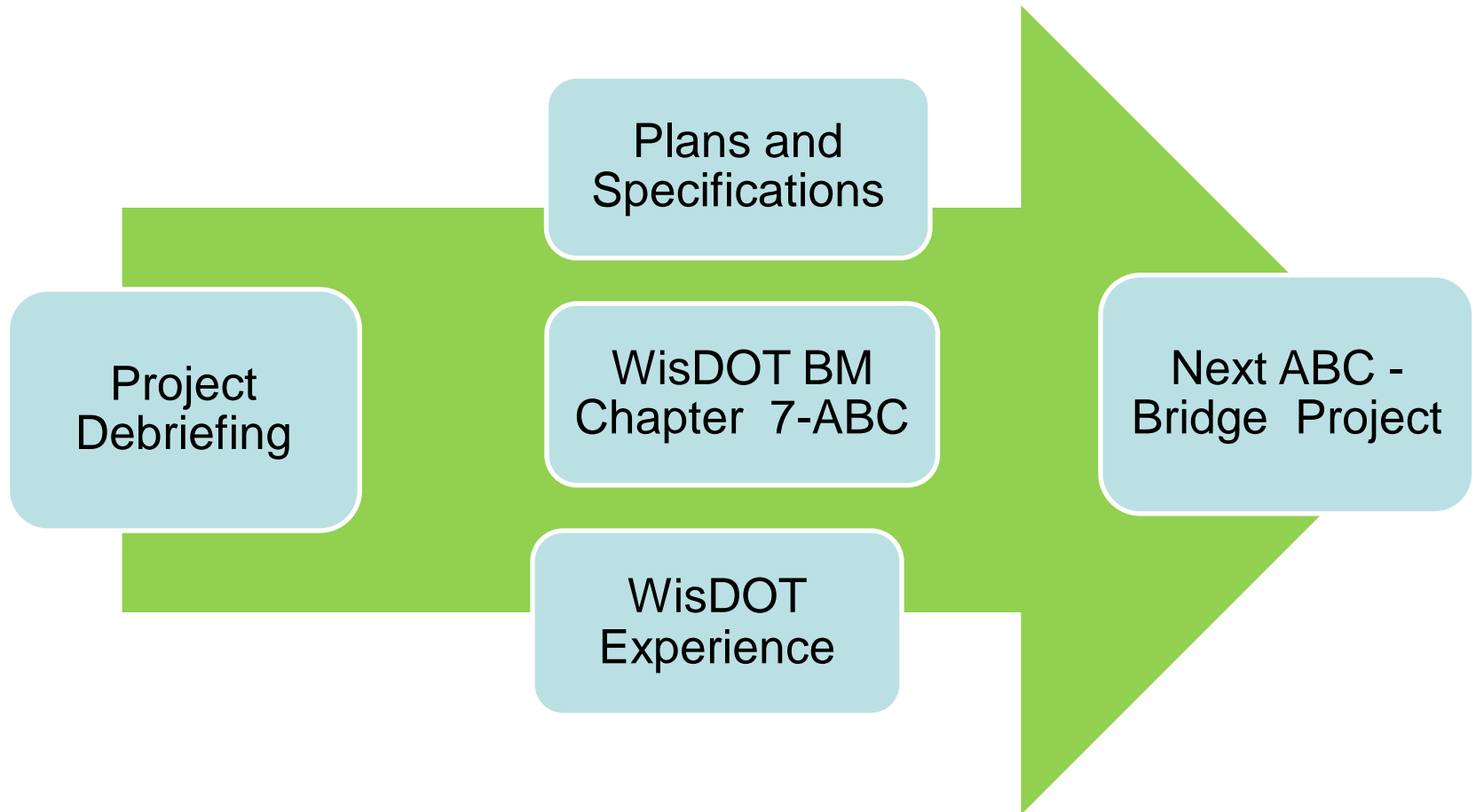


Process of Development

- **Research** - Development of Technologies
- **Custom** - Project/Site Specific Details and Specifications
- **Standardize** - Program & Corridor Approach
- **Institutionalize** - System-wide Policy & Applications
- Learn, Document, and Update as Needed

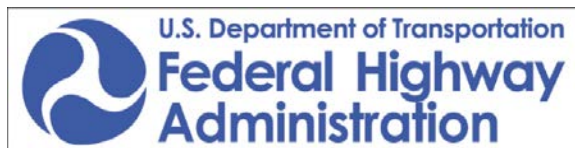
WisDOT Perspective

- Lessons Learned



Research Initiatives for ABC

- FHWA IBRC (Innovative Bridge Research and Construction)
- FHWA IBRD (Innovative Bridge Research and Deployment)
- WHRP (Wisconsin Highway Research Program)



WisDOT ABC - 2005

- Completed - Precast full-depth deck panels



IH-39/90 (B-13-161) FHWA - IBRC

WisDOT ABC - 2008

- Completed - Prefabricated abutments



USH 63 (B-55-217) FHWA - IBRC

WisDOT ABC - 2009

- Completed - Prefabricated pier caps and abutments



STH 25 (B-6-157/158) FHWA - IBRC

WisDOT ABC - 2011

- Completed - Superstructure lateral slide



STH 29 (B-5-648/649)

WisDOT ABC - 2012

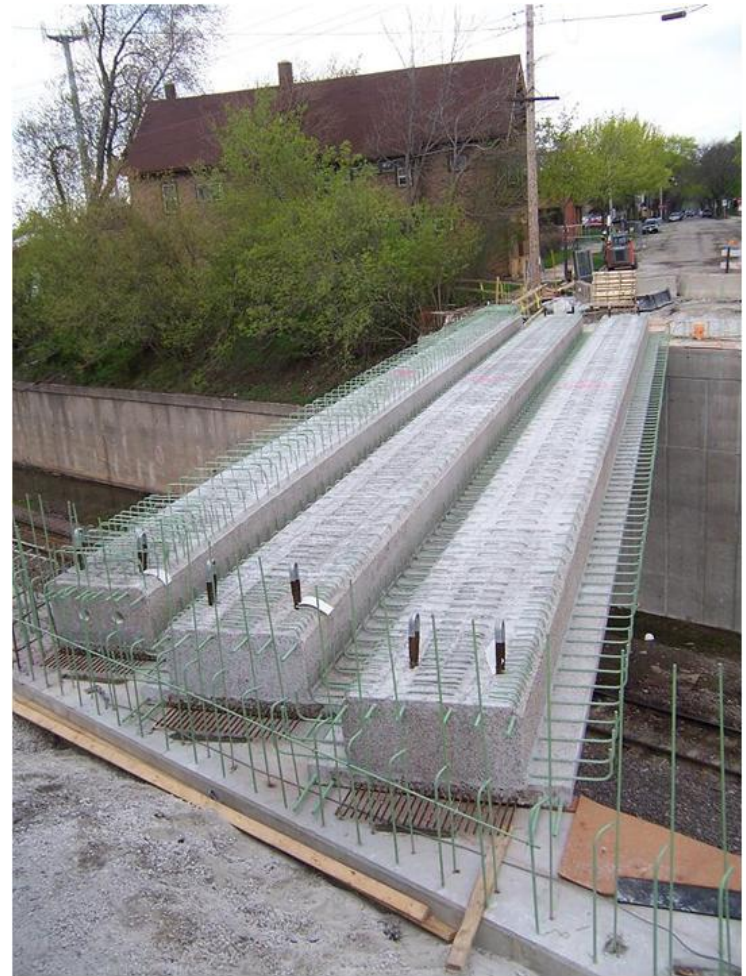
- Completed - GRS-IBS



STH 40 (B-9-380) FHWA - IBRD

WisDOT ABC - 2013

- Completed - Inverted Tee



WisDOT ABC - 2013

- Completed - Precast Piers and SPMT Move



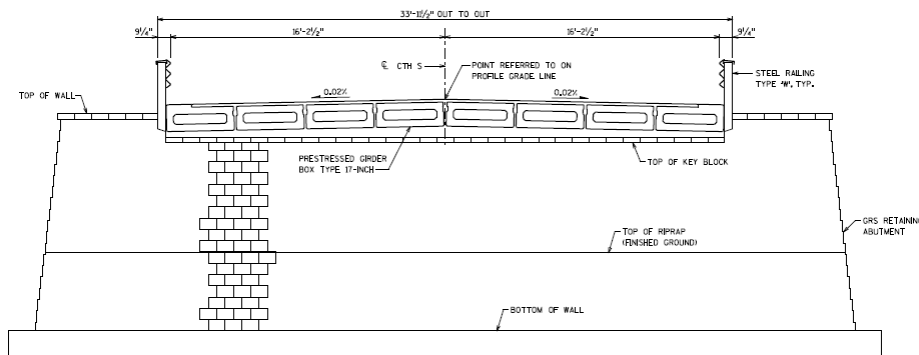
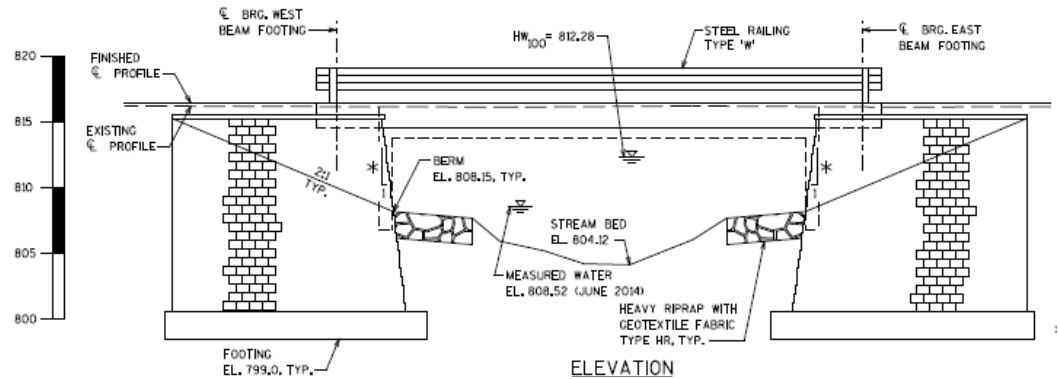
WisDOT ABC - Current/Future

- Precast Piers Projects (2014 - 2016)
 - (1) Siggelkow Road Bridge - 2014
 - (3) SHRP2 Project - 2015
 - (1) SHRP2 Project - 2016
- Optional Precast Piers (2014 - ?)
 - Implementation
- Statewide Implementation (under development)
 - Precast Piers
 - GRS-IBS
 - Prestressed Box Girders (next generation)
 - Alternative Superstructures



WisDOT ABC - 2016

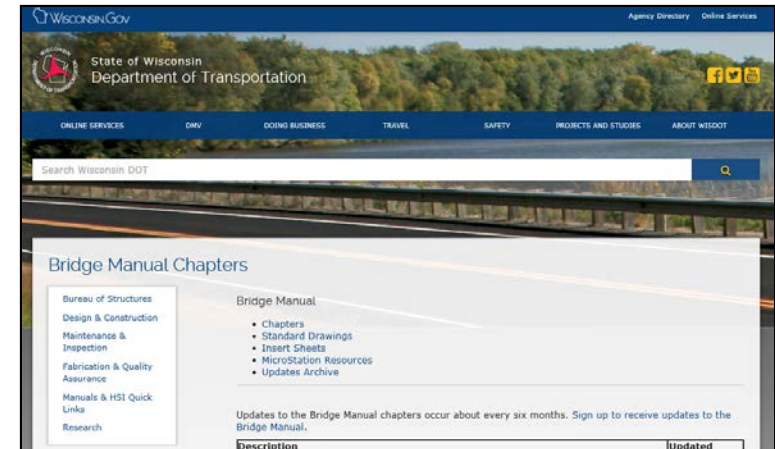
- Programmed - (2) GRS-IBS



CTH S/KW (B-14-216/217) FHWA – AID

WisDOT ABC - Resources

- Bridge Manual – Chapter 7 (ABC)
 - GRS-IBS, Precast Piers, SPMT
 - Decision Making Matrix
- Standard Details – Chapter 7 (ABC)
 - (2) GRS – IBS
 - (4) Precast Piers
- Special Provisions
 - GRS-IBS
 - SPMT
 - Grouted Couplers



WisDOT Bridge Manual		Chapter 7 – Accelerated Bridge Construction		Description	Updated	
% Weight	Category	Decision-Making Item	Possible Points	Points Allocated	Scoring Guidance	
17%	Obstacles (on/under bridge)	Railroad on Bridge?	8	<input type="text"/>	0 No railroad track on bridge 4 Minor railroad track on bridge 8 Major railroad track on bridge	07/14
		Railroad under Bridge?	3	<input type="text"/>	0 No railroad track under bridge 1 Minor railroad track under bridge 3 Major railroad track(s) under bridge	07/15
		Over Navigation Channel that needs to remain open?	6	<input type="text"/>	0 No navigation channel that needs to remain open 3 Minor navigation channel that needs to remain open 6 Major navigation channel that needs to remain open	07/15
8%	Urgency	Emergency Replacement?	8	<input type="text"/>	0 Not emergency replacement 4 Emergency replacement on minor roadway 8 Emergency replacement on major roadway	07/15
[Delays]	ADT and/or ADTT (Combined Construction Year ADT on and under bridge)		6	<input type="text"/>	0 No traffic impacts 1 ADT under 10,000 2 ADT 10,000 to 25,000 3 ADT 25,000 to 50,000 4 ADT 50,000 to 75,000 5 ADT 75,000 to 100,000 6 ADT 100,000+	07/15
		Required Lane Closures/Diversion? (Length of Delay to Traveling Public)	6	<input type="text"/>	0 Delay 0-5 minutes 1 Delay 5-15 minutes	07/15

<http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/strct/bridge-manual.aspx>

WisDOT ABC - State Report



Questions?

William.Oliva@dot.wi.gov

David.Kiekbusch@dot.wi.gov

James.Luebke@dot.wi.gov

