



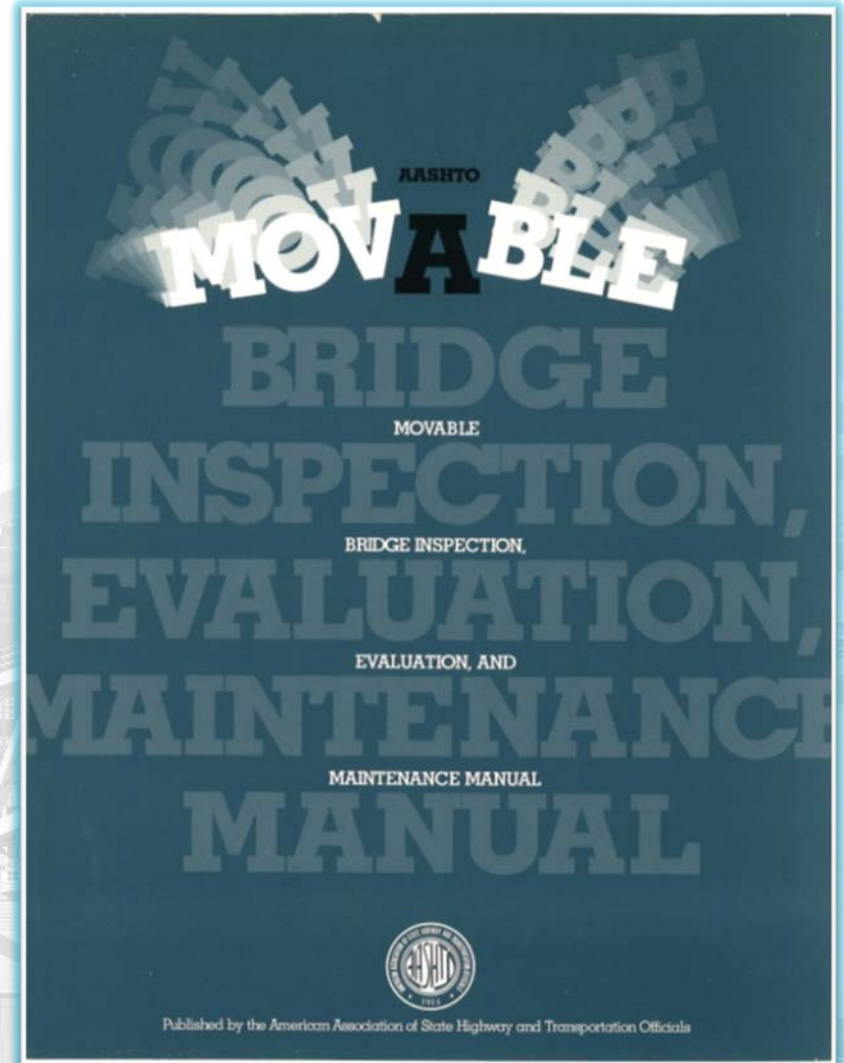
NCHRP 14-32
*Proposed Revisions to the AASHTO Movable Bridge
Inspection, Evaluation, and Maintenance Manual*

Southeast Bridge Preservation Partnership

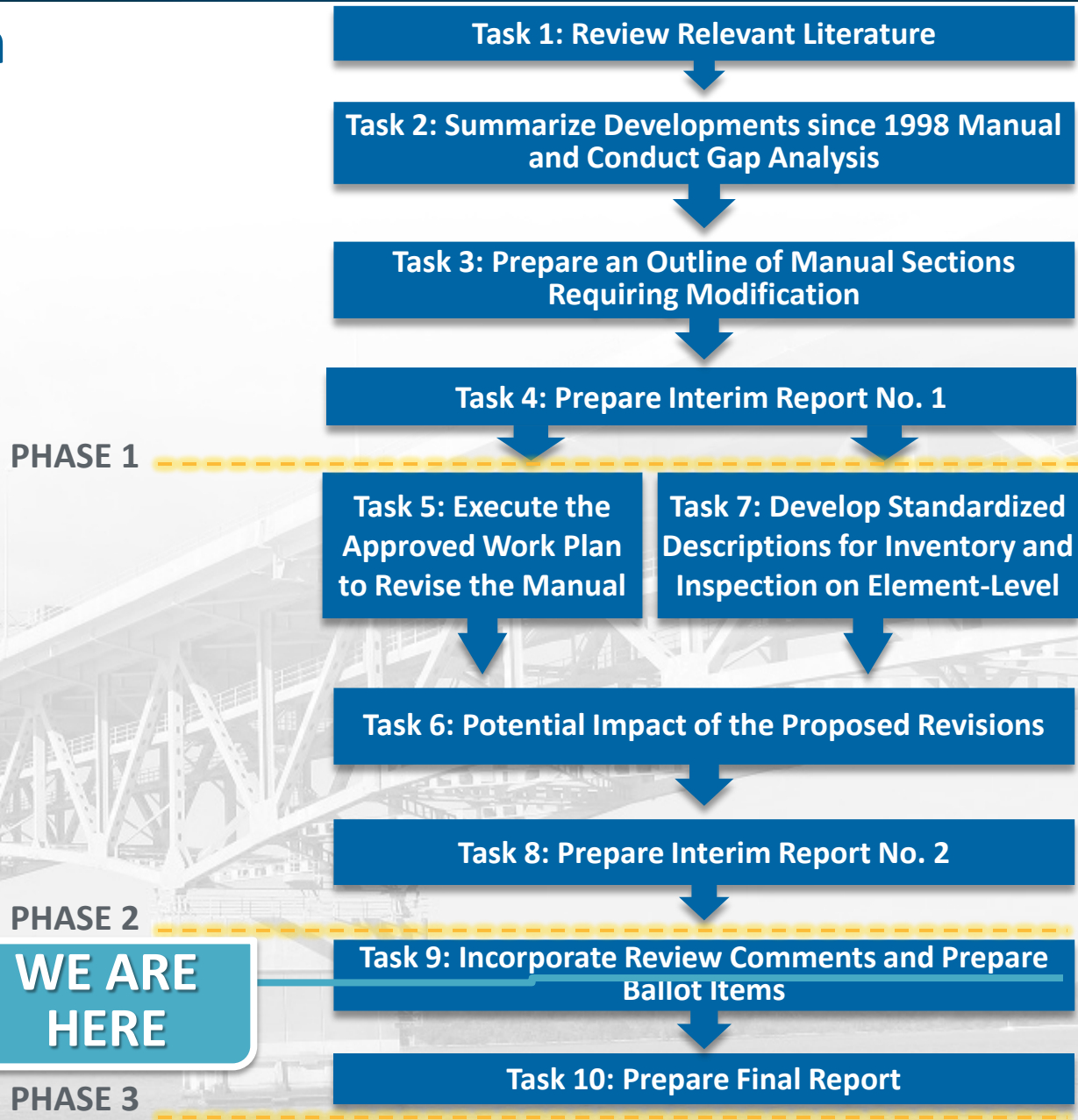
April 14, 2015
Montgomery, Alabama

Presentation Outline

- Research Objectives
- Research Team
- Research Approach
- Update of Current Status
- Discussion



Research Approach



Task 3 –

Outline of Manual Sections Requiring Modification

MANUAL FOR EXISTING MOVABLE BRIDGES

PART 1 – INTRODUCTION

PART 2 – INSPECTION

PART 3 – MOVABLE BRIDGE ELEMENT DESCRIPTIONS

PART 4 – EVALUATION

PART 5 – MAINTENANCE

APPENDIX

Note:

The proposed title and outline are based on the AASHTO Manual for Bridge Evaluation, 2011

Task 5 – Execute the Approved Work Plan to Revise the Manual

Photo Update
Examples

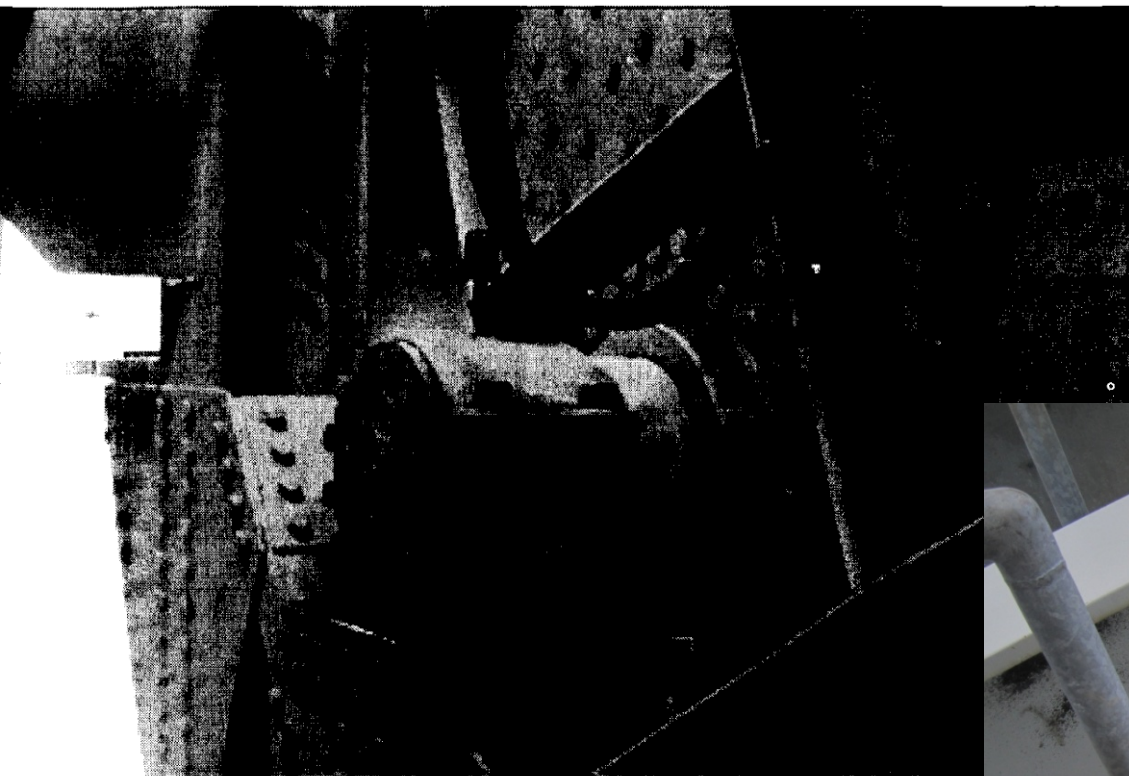
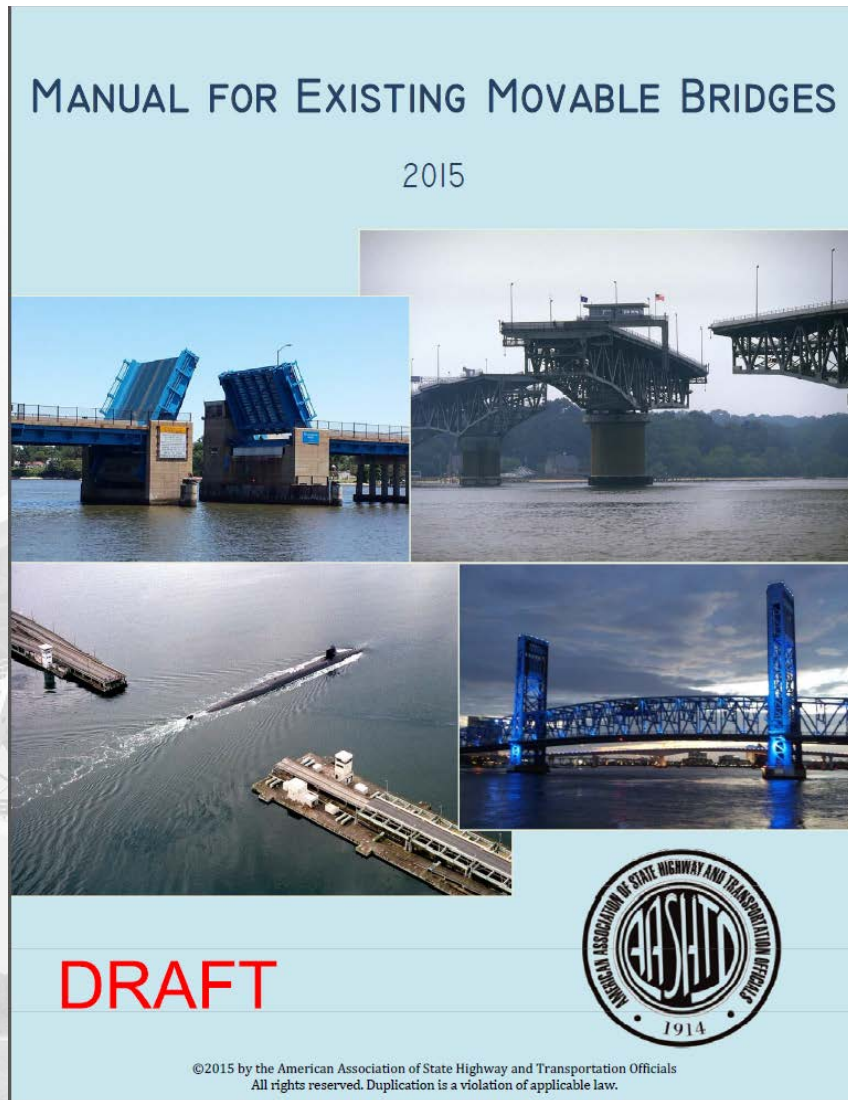


Figure 2.8.2.3.3-1 – A bascule bridge split sleeve type trunnion bearing



Task 5 – Execute the Approved Work Plan to Revise the Manual

New Cover,
New Title



Task 7 – Develop Standardized Descriptions for Inventory and Inspection on Element Level

- Agency Developed Elements (ADEs) for mechanical and electrical known to exist in:
 - Louisiana DOTD
 - Florida DOT
 - Washington State DOT
 - Maryland SHA

**EACH
COMPLETELY
DIFFERENT**

Proposed Bridge Management Element Definitions for Movables

- Element = Movable Bridge System with Discipline

Total of 16 element definitions proposed

The proposed approach to element definitions maximizes information and minimizes confusion.

Proposed Bridge Management Element Definitions for Movables

- Movable Bridge Support System – Structural
- Movable Bridge Support System – Mechanical
- Movable Bridge Balance System – Structural
- Movable Bridge Balance System – Mechanical
- Movable Bridge Drive System – Mechanical
- Movable Bridge Drive System – Electrical
- Movable Bridge Control System – Electrical
- Movable Bridge Control System – Mechanical

...continued

Proposed Bridge Management Element Definitions for Movables

Element 555 – Movable Bridge Drive System – Mechanical

Description: All mechanical elements of the main drive system

Classification: BME

Units of Measurement: each

Quantity Calculation: Number of main drive systems for the entire bridge

Defects	Condition States			
	1 – Good	2 – Fair	3 – Poor	4 – Severe
Operation	Movable span operates smoothly.	Movable span operation has minor flaws, such as light vibration or noise. No remedial action required.	Movable span operates with significant flaws, including vibration, noise, or undesirable heating. Short term replacement or adjustment or components may be required.	Movable span does not operate or operates in an erratic or uncontrolled manner. Immediate replacement of components may be required.
Lubrication	Lubricants are fresh, clean, and well distributed.	Lubricant exhibits minor contamination. Oil levels slightly low. Application of grease is excessive or barely adequate.	Lubricant exhibits moderate contamination. Oil levels low. Application of grease is spotty and inadequate in places.	Lubricant exhibits heavy contamination. Oil levels extremely low. Application of grease is inadequate in many places.
Wear	None.	Light wear present with less than 10% section loss. No remedial action.	Moderate wear present with 10% to 20% section loss.	Heavy wear present with greater than 20% section loss.

Task 6 – Potential Impacts of the Proposed Revisions

- Public Safety
 - Asset management approach
 - Clarified scopes and inspector qualifications
 - Appendix A – Suggested Inspection Forms
 - Improved clarity – photos, electronic native document
- Inspection Procedures
- Resources Needed for Implementation

Task 6 – Potential Impacts of the Proposed Revisions

- Public Safety
- Inspection Procedures
 - New sections: Sustainability, Security, Resiliency
 - Wire rope retirement criteria – CFR
 - Reference design manual for span balance criteria
 - Electrical inspection of medium voltage equipment
 - Normalizing electrical insulation (Megger) testing
- Resources Needed for Implementation

Task 6 – Potential Impacts of the Proposed Revisions

- Public Safety
- Inspection Procedures
- Resources Needed for Implementation
 - Pilot project recommended to field test new elements
 - National training class recommended to qualify movable bridge inspectors
 - Internal owner procedures for archiving and using the new element-level ratings

Comments

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MANUAL FOR EXISTING MOVABLE BRIDGES

2015



DRAFT



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