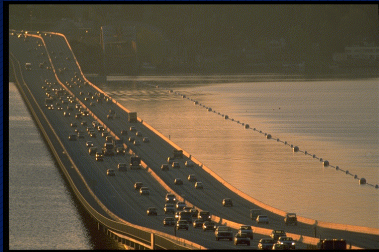


Bridge Inspection



1

1

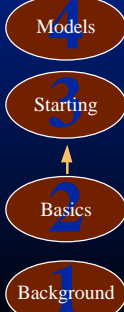
What We'll Cover

Getting Started

Building a

Day 1

Day 2



Why element-level?
NBI requirements
Overview of elements
Other data
Example inspection with Pontis
Improving inspections

2

2

Why Element-Level Inspections?

- What kinds of problems exist
- How severe they are
- How extensive they are
- How likely is future deterioration



3

3

NBI Requirements

- Inventory
- General indication of condition
- ✓ Intended for use by the Congress to set funding levels



4

4

Overview of Elements

- Decks and slabs
- Superstructure
- Substructure
- Other
- Smart Flags



Breakdown

5

5

Other Data



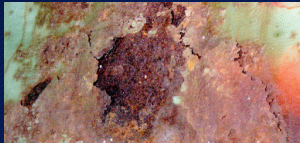
- Element Quantities
- Environments

6

6

Example Inspection with Pontis

Two-Span Steel Multi-Beam Bridge



7

7



8

8



9

9



Total Quantity Explanation

■ Deck - 150' x 24' = 3,600 SF	= <u>1 EA</u>
■ Strip Seal - 2 x 24' / cos 30°	= <u>56 LF</u>
■ Bridge Railing - 2 x 144'	= <u>288 LF</u>
■ Beams - 2 spans @ 72' x 6 beams	= <u>864 LF</u>
■ Movable Bearings	= <u>12 EA</u>
■ Fixed Bearings	= <u>12 EA</u>
■ Pier - 24' / cos 30°	= <u>28 LF</u>
■ Abutments - 2 x 30'	= <u>60 LF</u>

National Highway Institute Bridge Management Training Course (1995-2000)
Course materials developed by Paul D. Thompson and Ray Hartle

13

Element-Level Condition Report					
Bridge No. 3-1 (Usually the Structure I.D. number)					
Bridge Name: Steel Beam Condition Report Example					
Element Number	Element Description - (Unit)				
Total Qty.	1	2	3	4	5
Decks/Slabs					
12 Bare Concrete Deck (EA)					
1	0	0	0	1	0
559 Slop Under Surface of Deck (EA)					
1	0	0	0	1	0
300 Strip Seal Expansion Joint (LF)					
56	56	0	0	NA	NA
333 Bridge Railing Other (LF)					
288	288	0	0	0	NA
Superstructure					
107 Steel Open Girder / Beam (LF)					
864	0	0	0	864	NA
356 Steel - Fatigue (EA)					
1	0	1	0	NA	NA
311 Movable Bearings (EA)					
12	0	12	0	NA	NA
313 Fixed Bearings (EA)					
12	0	12	0	NA	NA
Substructure					
210 Reinforced Concrete Pier Wall (LF)					
28	28	0	0	0	NA
215 Reinforced Concrete Abutment (LF)					
60	59	1	0	0	NA
361 Scour (EA)					
1	0	1	0	NA	NA



15

Pontis for Windows

File Edit View Tools Window Help

Bridge Ins

Bridge: 111008500299 Find... Inspection: 02/01/94 Met

1 Condition 2 Notes 3 Appraisal 4 Descrip. 5 Custom 6 Schedule

Create Element NBI Rating Deck (58): 7 Good Culvert (61): 7 Good
Remove Element Superstructure (59): 7 Good Waterway (62): 7 Good
Element Detail Substructure (60): 6 Satisfactory Unrepaired Spacing (63): 6 Satisfactory
Quantity Percent Channel (61): 7 Minor Damage Review Required

State: 2 Distress <= 2% Repaired areas and/or potholes or impending potholes exist. Their combined area 2% or less of the deck area.

Translate

Elem / Env	Qty1	Qty2	Qty3
Structural unit: 0 - Main Span - 1 Concrete - 04 Tee Beam			
13 / 4 Unp Conc Deck/AC Ovl (ea)	191	0	0
301 / 3 Pourable Joint Seal	17	0	0
331 / 3 Conc Bridge Railing	66	0	0

Improving Inspections

- Better condition data at the element level
- Training and certification
- Combining data collection activities



16

16

**...Next:
Network-Level**



17