

Options For Bridge Maintenance Painting

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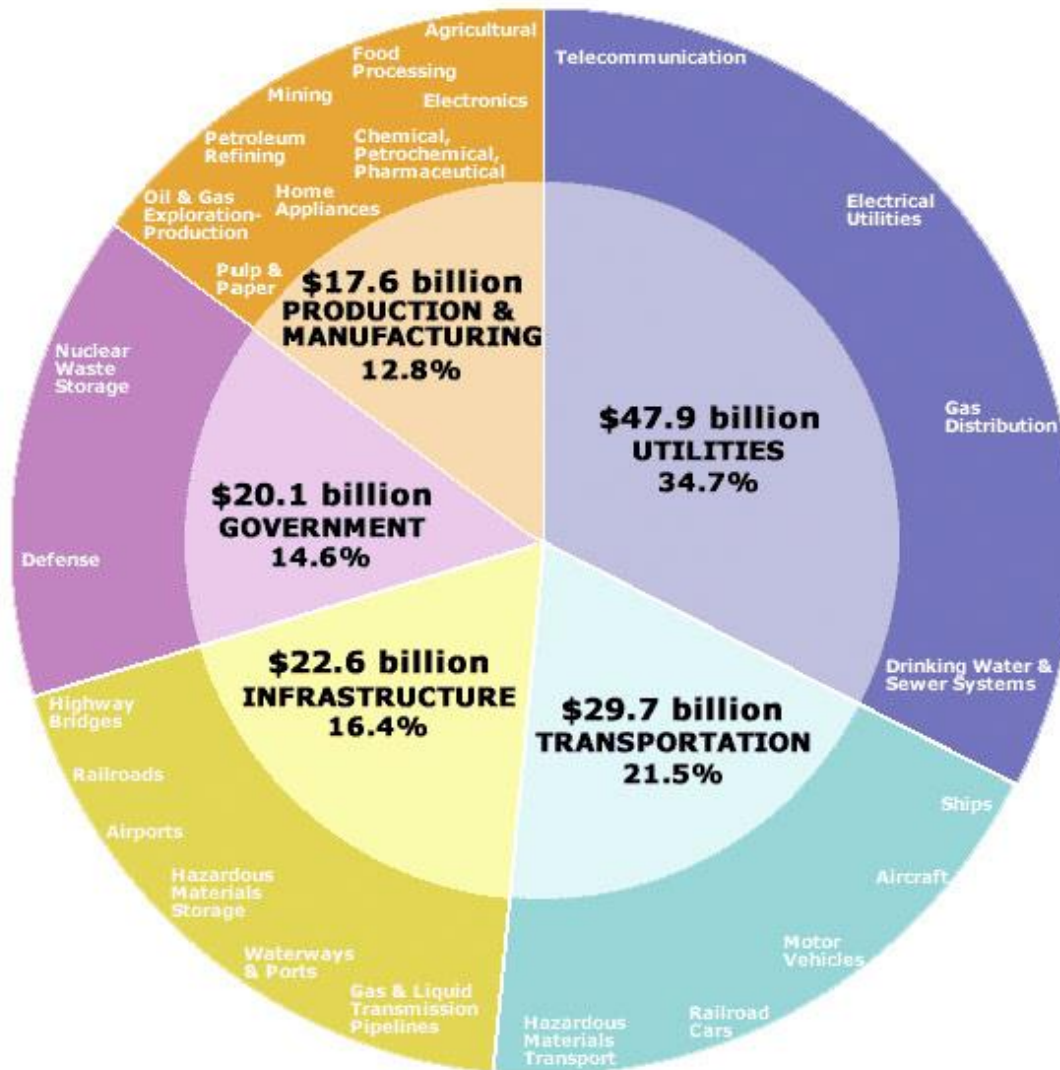
SEBPP April 3, 2013



Presentation Topics

- Cost of Corrosion
- Painting
- Painting Options for Steel Bridges
- Issues
- Protecting Structural Concrete

Cost Of Corrosion In the US



Painting

- Preservation Action
- Bridge Element
- Structural Steel and Concrete
- Materials Selection

Bridge Preservation

- actions or strategies that prevent, delay or reduce deterioration of bridges or bridge elements, restore the function of existing bridges, keep bridges in good condition and extend their life. Preservation actions may be preventive or condition-driven.

Painting

- In FHWA Bridge Preservation Guide listed as PM action along with debris cleaning, bridge washing, etc.
- Due to cost and repairability, paint rises to the level of bridge “element”

Materials

- Low-tech (alkyds, acrylics, dispersions)
 - Simple to apply
 - Used for a range of bridge painting options



Materials

- High-tech (epoxies, urethanes, fluoropolymers)
 - More durable-more problematic
 - Primarily used for complete bridge painting projects



Bridge Superstructure Painting Options

- Spot painting
- Zone painting
- Overcoating
- Total removal-replacement
- Use the most Cost Effective Option

Spot Painting



Spot Painting



Spot Painting



Spot Painting



Zone Painting



Zone Painting



Zone Painting



Overcoating



Overcoating



Overcoating



Overcoating



Overcoating



Overcoating



Overcoating



Overcoating



Total Removal

4/4/01 9:23am



Total Removal



Total Removal



Total Removal



Selecting Painting Option

Let the Bridge Talk to You!



Selecting Painting Option

Let the Bridge Talk to You!



Selecting Painting Option

Let the Bridge Talk to You!



Selecting Painting Option

Let the Bridge Talk to You!



Selecting Painting Option

Let the Bridge Talk to You!

7/30/01 11:21 am



Issues

- Environmental Impact
- Worker Safety
- Surface Preparation
- Waste Handling
- Recycling

Environmental Impact



6/1/05 10:03pm

Environmental Impact



RESTRICTED AREA



PEREGRINE FALCONS, A PROTECTED SPECIES
USE THIS STRUCTURE FOR NESTING.
ACCESS BEYOND THIS POINT IS PROHIBITED
BETWEEN FEB.1 AND JUNE 30.
FOR MORE INFORMATION CALL 1-800-858-1549



Environmental Impact



Worker Safety



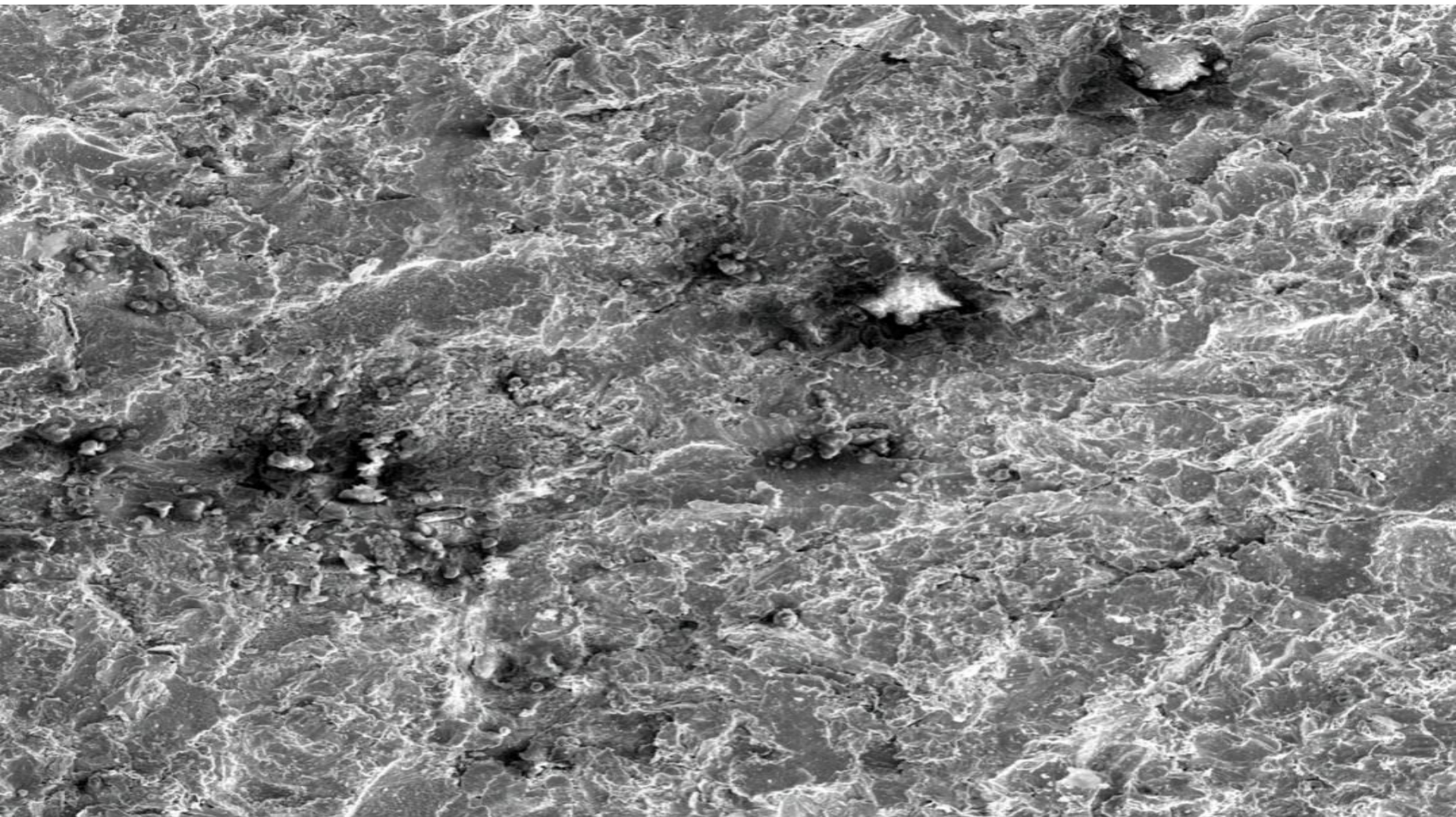
Worker Safety



Surface Preparation



Surface Preparation



12/19/2011	HV	mag	spot	Lens Mode	WD	mode	det	Live	frame	100 μ m
12:49:27 PM	20.00 kV	250 x	3.0	Field-Free	16.7 mm	SE	ETD	1	22.1 s	

Waste Handling

8/17/01 10:17am



Recycling



5/25/05 1:24am

Advanced Recycling Systems

ARIES VAC UNIT

Recycling



8/24/05 1:03pm

1A2/X256/8/04
GB2548

Ye

THIS TRAILER IS NOT EMPTY...
IF YOU NEED TO REPLY
AND ALL WARE HAVE BEEN
PULLED OUT OF THE
FLOOR!

Recycling

8/24/05 12:47pm



Structural Concrete

- 600,000 bridges ~ 1,650,000 concrete bridge elements
- Increased use of deicing chemicals
- Aging inventory + chlorides = ??

Structural Concrete



Structural Concrete



Structural Concrete



Structural Concrete



Conclusions

- We have material and method options for bridge painting.
- Let the bridge tell you what is needed. Use different tools for different problems.
- Most bridge elements are concrete. Painting can help preserve structural concrete.

A photograph of a blue metal building structure, possibly a bridge or a large shed, supported by concrete pillars. The building has a corrugated metal roof and vertical metal siding. The scene is outdoors with green trees and a dirt path visible in the background under a clear sky. The text is overlaid on the building's side.

The End
Thank You!!

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