

A Rational Approach for Planning Bridge Repainting Projects



Jeff Pouliotte
FDOT State Structures Maintenance Engineer
Chair of SEBPP Coatings Group



NATIONAL BRIDGE PRESERVATION PARTNERSHIP CONFERENCE 2014

PRESERVATION: THE BRIDGE TO SUSTAINABLE TRANSPORTATION

Presentation Breakdown

- A Rational Approach for Planning Bridge Repainting Projects Report – Jeff Pouliotte (FDOT, State Structures Maintenance Engineer)
- Report Calculator – Paul Vinik (FDOT, State Structural Material Systems Engineer)
- SEBPP Survey of Best Practices for Coating Structural Steel – Ed Welch (TSP2)



Purpose

- At the 2012 SEBPP Annual Meeting Jeff was asked to provide guidance to help other Southeastern States plan for and execute bridge repainting projects
- To achieve this objective a Team of Bridge Practitioners and Paint Experts were assembled
- It was decided that a Report was needed to:
 - Develop a rational cost effective approach to evaluate paint options
 - Provide general guidance on what to do to achieve maximum service life for the option selected
- The Report was revised this year to include User Costs



SEBPP Coatings Group Team

- Jeff Pouliotte, Florida DOT (SEBPP Member)
- Paul Vinik, Florida DOT (NTPEP Member)
- Wayne Fleming, Virginia DOT (NTPEP Member)
- Jeff Milton, Virginia DOT (SEBPP Member)
- Graham Bettis, Texas DOT
- Aaron Dacey, North Carolina DOT (SEBPP Member)
- Dan Muller, North Carolina DOT
- Brian Hunter, North Carolina DOT
- Thomas A Stephens, Baton Rouge Department of Public Works (SEBPP Member)
- Ed Welch, TSP-2 (SEBPP Member)
- Anwar Ahmad, FHWA (SEBPP Member)
- Kevin Irving, AZZ Galvanizing Services (SEBPP Member)
- Regis Doucette, CHLOR RID (SEBPP Member)
- Wayne Senick, Termarust Technologies (SEBPP Member)
- Ronald Mondor, Termarust Technologies (SEBPP Member)
- Bruce Johnson, Oregon DOT (SEBPP Member)



Approach

- Paint Options:
 - Remove and Replace existing coating system
 - Overcoat existing coating system
 - Spot paint areas on the structure where the existing coating system needs restoration
- As part of the Report, create Flowchart that rationally depicts how to evaluate Paint Options
- Create Spreadsheet Calculator to perform life cycle cost analyses to evenly evaluate and aid in the selection of the appropriate Paint Option



Variables in Economic Analysis

- Cost of Painting per square foot
- Expected service life
- Duration of Maintenance of Traffic (MOT)
- Cost of MOT per day
- Surface area of the steel to be painted
- Presence of Heavy Metals
- Percent of Corrosion
- Current Interest Rate



Variables in Economic Analysis, continued...

- User Costs
- Average Motorist Delay
- Average Annual Daily Traffic (AADT)
- Average Hourly Wage
- Passenger Vehicle Pay Factor

Please note: The user cost proposed in the Report and calculated by the Spread Sheet is an approximate method to an analysis that can be very complex.

If the user has site specific data or a preferred method for estimating user costs, the user is free to alter this methodology and the spread sheet accordingly.

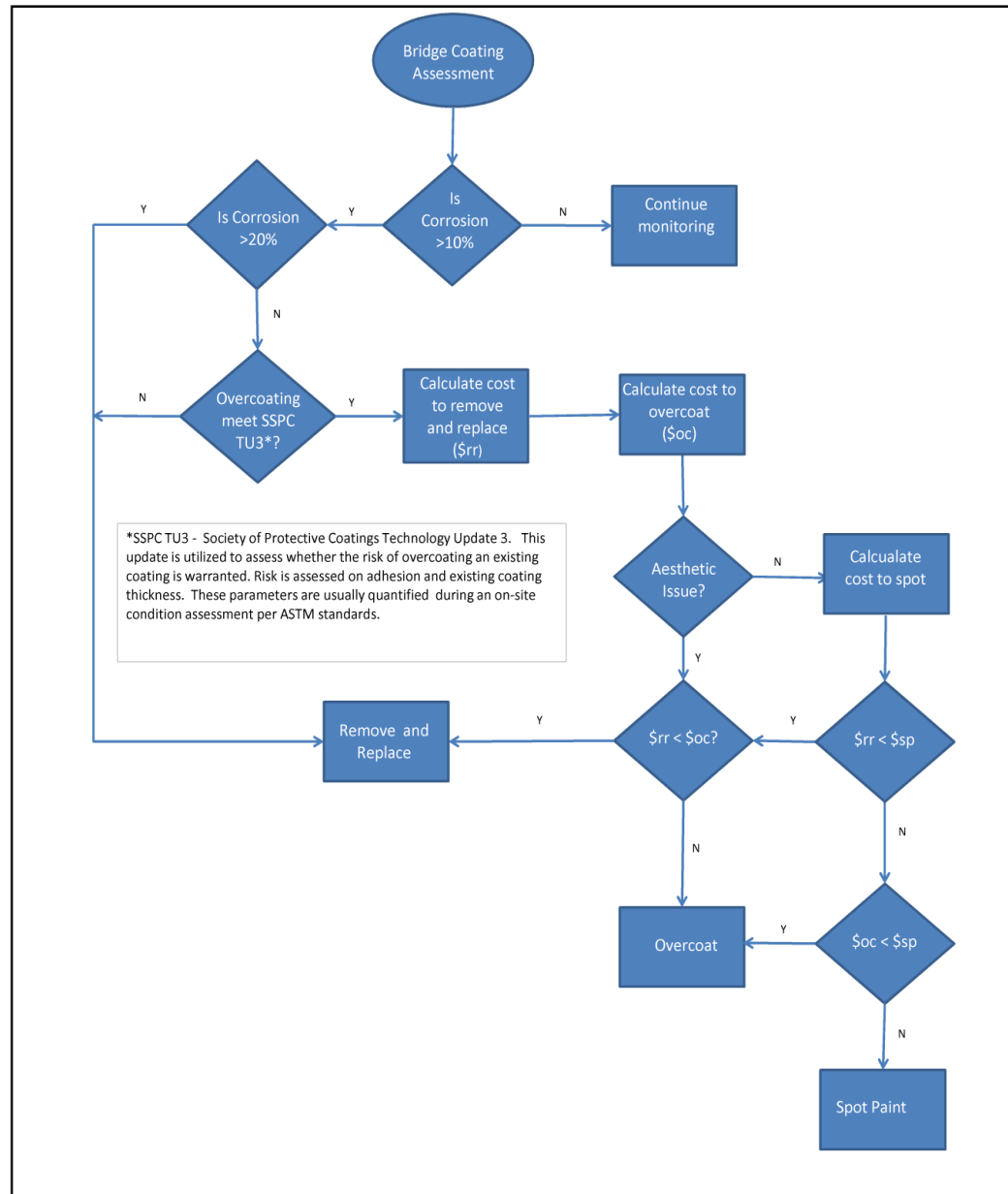


Best Practices

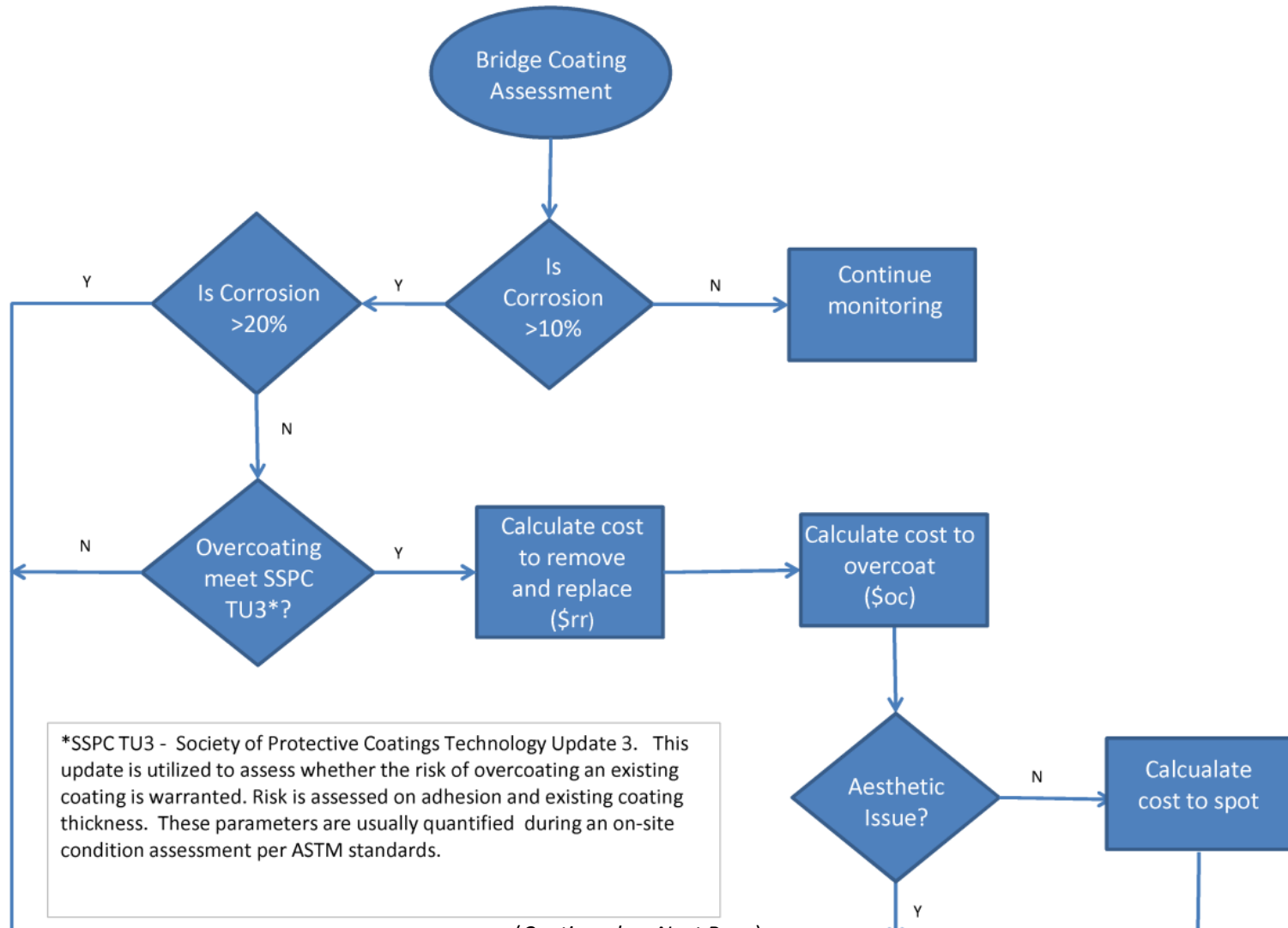
- Field Evaluations
- Surface Preparation
- Coatings Application
- Quality Control
- Personnel Qualifications
- Contractor Qualifications
- Quality Assurance
- Inspection and Compliance Evaluations



Flowchart to select Paint Option



Flowchart to Select Paint Option

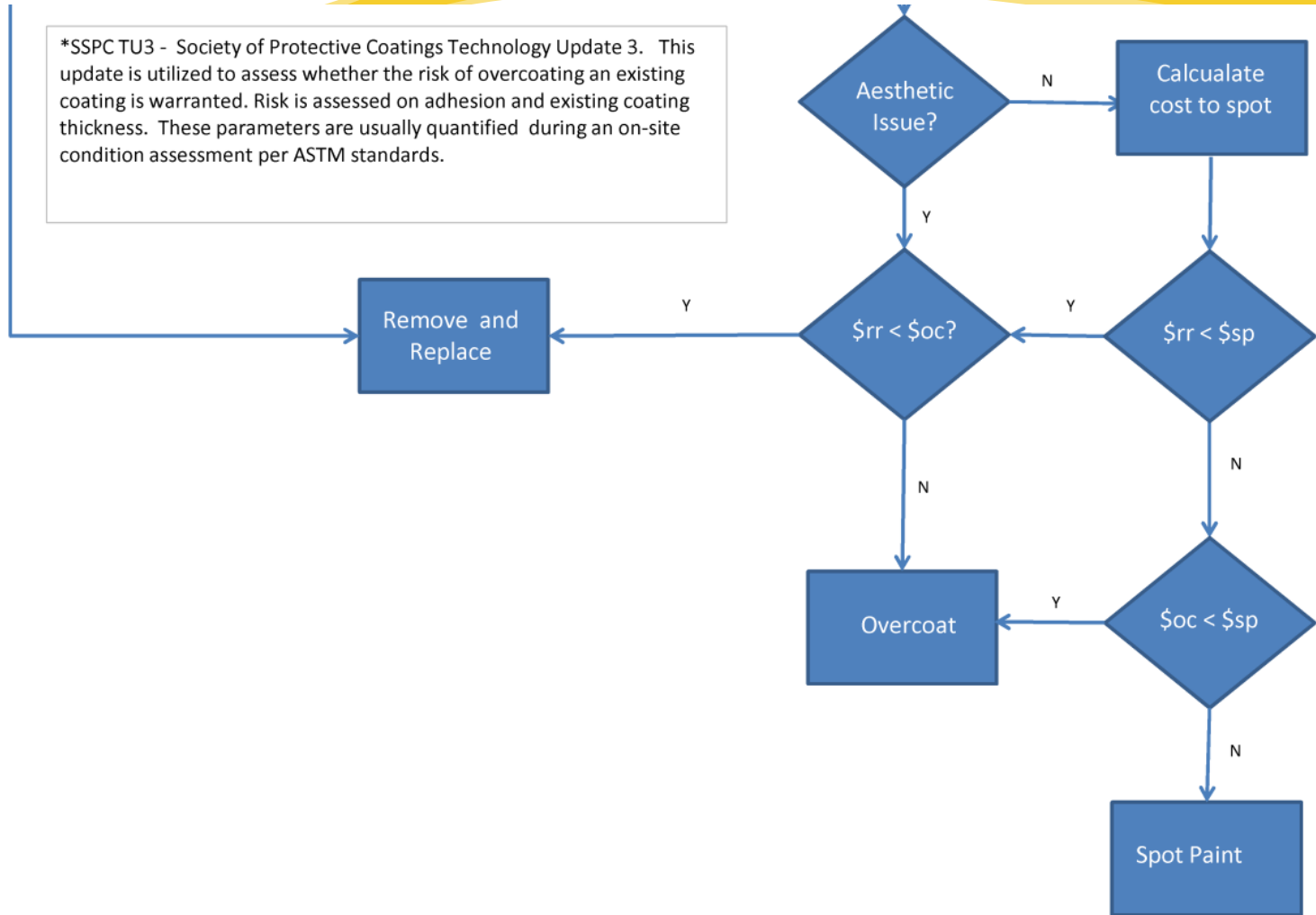


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Flowchart to Select Paint Option

*SSPC TU3 - Society of Protective Coatings Technology Update 3. This update is utilized to assess whether the risk of overcoating an existing coating is warranted. Risk is assessed on adhesion and existing coating thickness. These parameters are usually quantified during an on-site condition assessment per ASTM standards.



A Rational Approach for Planning Steel Bridge Repainting Projects



March 10, 2013

Paul Vinik, P.E.
State Structural Materials Systems Engineer
Florida Department of Transportation

Jeff Pouliotte, P.E.
State Structure Maintenance Engineer
Florida Department of Transportation

C. Wayne Fleming
Central Office Materials, Sr. Technician
Virginia Department of Transportation



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New Florida Bridge



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Questions?

Jeff Pouliotte

Florida Department of Transportation

850-410-5691

Jeffrey.pouliotte@dot.state.fl.us



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