MONTANA
Department of Transportation

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Memorandum

To: E-Distribution

From: Tyler Steffan, P.E.
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Approved: Andy Cullison, P.E. A.C.
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Date: 8/28/2023

Subject: Rescind the use of Polymer Overlay's on Bridge Decks

Definitions

- **Thin Polymer Overlay (TPO).** TPO's are constructed by building up thin layers of polymer resins and aggregate. TPO's typically require two to three layers to achieve a desired thickness of ¼" to ⅜".
- **High Friction Surface Treatment (HFST).** HFST's are constructed the same as TPO's except that the aggregate used is more durable and abrasion resistant. The aggregate most frequently used is Calcined Bauxite. The main goal of HFST's is to provide high levels of skid resistance.

Background

TPO's and HFST's applied to concrete bridge decks have been documented as an overlay solution that does not hold up well to high ADT, snow chains, and studded tires. Aggregate pop-out within the first year of service and the subsequent polishing of the polymer can significantly reduce the skid resistance of these types of overlays.
MDT has partnered with WJE on a research project titled "Evaluation of Thin Polymer Overlays for Bridge Decks" with the objective of assessing the factors that influence the long-term performance of polymer based HFST systems in Montana. Skid testing of existing TPO's and HFST's is currently under way across the state.

Guidance

- Thin Polymer Overlays and High Friction Surface Treatments will not be used on bridge decks in Montana as of the Aug-10-23 letting for new contracts. Existing contracts will continue as planned. This guidance will remain in place until the recommendations from the research project can be incorporated into future contracts.
- Until new guidance is provided, bridge deck crack sealing will be used to protect bridge decks from chlorides and transverse deck grooving will be used to provide skid resistance.
- Projects that use HSIP funding for HFST's will need to be coordinated between Traffic and Safety and Bridge.

The long-term preservation needs of the bridges across the state and the funding obligations needed to maintain these overlays will all need to be taken into consideration.

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