

RESEARCH PROGRAM ANNUAL EVALUATION REPORT

Thin-Whitetopping Overlay Composite

Location: Kalispell, Montana

Project No.: STPP 1-2 (93), 121 East Idaho St.

Description: Experimental construction project consisting of milling approximately 130mm of Asphalt Cement (AC) and placement of 130mm Portland Cement (PCCP) onto the milled surface to create a composite pavement. Project length-0.8 kilometer.

Date of Evaluation: October 2001, First Inspection

Report Origin: Craig Abernathy, Research Program

This was the first annual evaluation of this project since construction in fall of 2000. This inspection consisted of a visual review to document any surface distress or deterioration of the whitetop composite. In addition, this report will also document the Grade S resurfacing project that is adjacent to the whitetopping section. Although not considered the same



treatment, some comparisons can be applied. The AC evaluation encompassed visual determinations and rut measurements at selected intersections.

Figure 1 is an overview, looking west at the whitetopping section.

The overall appearance of the whitetopping is good. There seems to be some deterioration of the pavement markings. It was noticed that certain areas of the pavement had been scarified to promote better adhesion for the marking material to the pavement. At this time, it appears to be effective. Twelve panels were cracked throughout the entire project; all hairline in nature and no debonding of the composite panels were noticed as traffic drove over. At this



Figure 2



Figure 4

time, there is no indication of a pattern or reasons for the randomness of the cracked panels; therefore, it is premature to attempt to ascertain a cause. Due to the limited number of cracked panels, this report will not generate a crack map of the project; that product will be built for the fall, 2002 evaluation report.

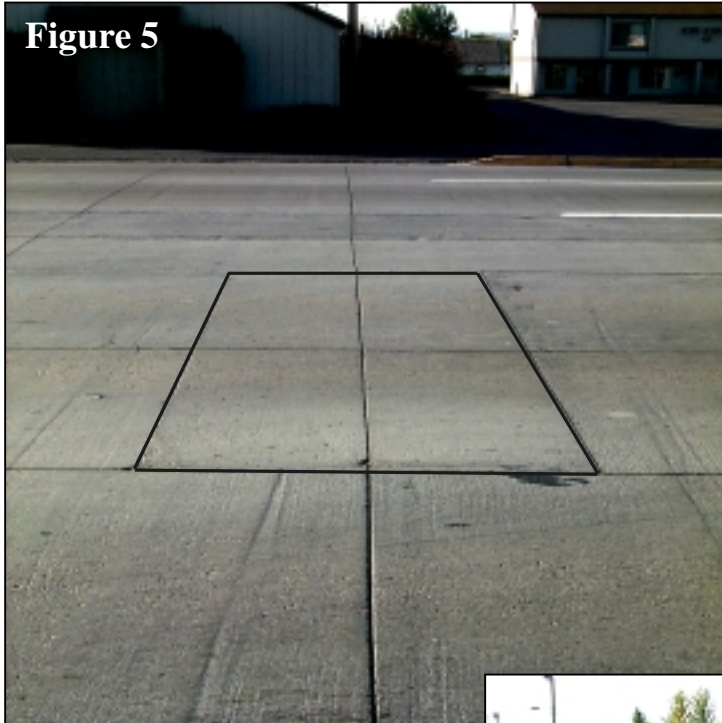
Figures 2 & 3 are examples of the in-lane cracking. A red line has been superimposed over the images to better see the lay of the crack; if this report is viewed



Figure 3

in black and white, they will appear as dark gray over the pavement.

Figure 4 shows an example of cracking that is stemming from a utility cap access. This is a common problem with this type of pavement in dealing with utilities at the surface. Cracking may have been avoided if the sawing plan had incorporated additional cuts around the utility to compensate for load related cracking (if



deemed cost effective to do so). Figure 5 shows the performance of the doveled PCC patch that was placed during construction due to un-consolidated concrete by lack of adequate vibration (documented in the 2001 fall construction report). The blue outline is the area of repair. Visual observation of traffic moving over this section display no faulting or movement of the slab. At this time, no visual surface distress was noticed. This repair is approximately located in the center section of the westbound lanes 2 meters past the intersection of Sixth Avenue EN and East Idaho St.

Figure 6 is showing the east-end transition area of the project. It is important to point this feature out due to the innovative way this approach was placed, please refer to the fall 2001 construction report for details. No evidence of spalling has been noticed during this evaluation.



Superpave - Grade S

In addition to the whitetop portion, AC Grade S was placed adjacent to this project. The AC treatment is labeled as pavement preservation. The whitetop project type initially was categorized as a work type 182 resurfacing and has since been modified as a minor rehabilitation. Although not an applicable comparison, this report will also publish rutting data at two selected sites involving intersections west of the whitetop project. Transverse cracking may be reported in later evaluations. The two intersections where rut was collected were at Meridian & West Idaho and 5th Ave. NW & West Idaho. Rut data was collected approximately 2.5 meters west of the intersections stop bar. Data

was collected on all four lanes, east and westbound. This was done to supply data with non-stop traffic versus traffic required to stop. The following table is the consolidate rut data. The information listed is in millimeters.

Meridian & West Idaho							
Westbound Lanes				Eastbound Lanes			
Right Lane*		Left Lane*		Left Lane*		Right Lane*	
OWP	IWP	IWP	OWP	OWP	IWP	IWP	OWP
4	5	4	2	5	7	5	8

5 th Ave NW & West Idaho							
Westbound Lanes				Eastbound Lanes			
Right Lane*		Left Lane*		Left Lane*		Right Lane*	
OWP	IWP	IWP	OWP	OWP	IWP	IWP	OWP
1	5	2	2	14	20	7	18

*Per Direction of Travel

Figure 7 is a sample image on eastbound West Idaho of the Meridian intersection. It is



apparent that flushing of the surface has occurred prevalent at the proximity of the intersection. This severity of flushing was not noticed on the through section of the route.

Figure 8 is a close-up of the string line of the inner wheel path (IWP) of the eastbound right lane at the intersection of 5th Ave. NE, where traffic is normally stopped. This particular site had a recorded rut of 20 mm.



The whitetopping project has been rated as performing well. The next evaluation will be held in October of 2002.