Montana Department of Transportation
Helena, Montana 59601-1001
Research Bureau
July 2002

Great Falls Experimental Whitetopping Annual Evaluation

Great Falls, Montana, 3rd Street Northwest

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Location:	Great Falls, Montana; Intersection of N. W. Bypass & 3rd St. N. W. (U5206 & U5203). Three southbound lanes of 3rd St. N. W.
P. O. Number:	305626 (Original Project - Maintenance)
Report Date:	July 24, 2002
Report Origin:	Research Bureau Craig Abernathy

History

This Whitetopping project was initially constructed in fall of 1999 to alleviate the continued heavy rutting and shoving of the asphalt concrete at this intersection. During late summer of 2000, a small portion of the right-turn lane developed severe cracking. This was initially documented in the fall of 2000 evaluation report on this project. This failure of the pavement occurred at a rapid rate, estimated at 3-6 weeks. The failed section comprised five panels longitudinally and three panels transversely, approximately 10' x 15' located in the right-hand turn lane. This section went through the entire 2000-2001 winters in this condition, withstanding freeze-thaw cycles, traffic and maintenance snow removal. The failed area was removed and repaired in the spring of 2001 (see construction/repair documentation report dated April, 30 2001- Research website). At the date of this report, no stress related faulting between the whitetop and full-depth was observed and no additional cracking around the repair (figure 1).

Figure 1

Evaluation


Figure 2

Since the 2001 evaluation, additional panel cracking was observed in the right-hand turn lane adjacent to the repaired area (south in the direction of travel - figure 2). This panel cracking may be an extension of the underlying AC stripping which was determined as the main factor of failure and consequential replacement of the 10' x 15' panels replaced in March 2001. The moisture stripping the bottom AC layer may be attributed to the close proximity of the storm sewer line directly under the lane. Since the last evaluation, cracking has increased and approaching to severe in nature. However, no debonding of the individual panels was noticed during this inspection.

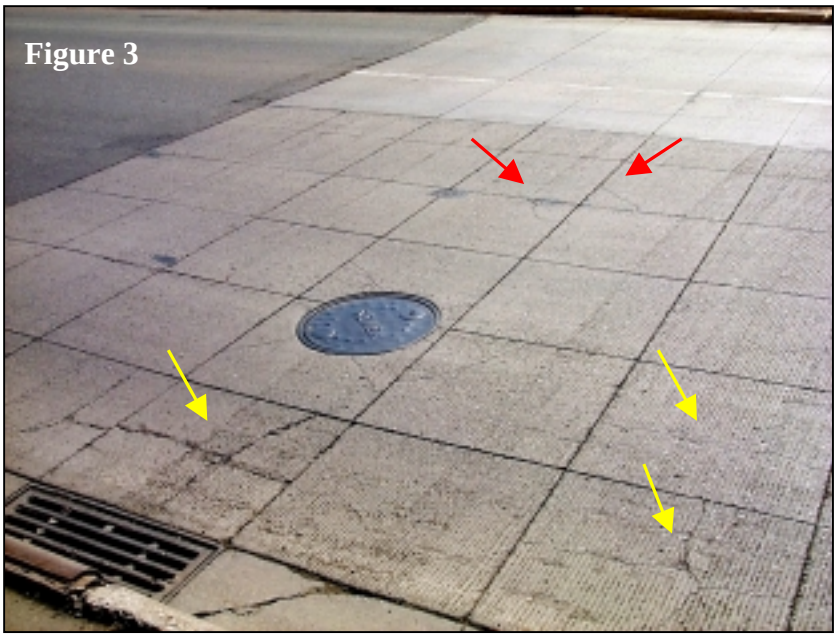
Figure 3

Additional cracking was observed in the same lane just before the repaired area (several feet north of the area). As in other sections of the right-lane, this may be an indication of AC stripping due to abnormal water infiltration or normal corner-cracking indicative of this type of pavement treatment. The red arrows (figure 3) point to new cracking, the yellow arrows show existing cracking that has increased in severity since the last evaluation.

The (left-hand) through lane, at this evaluation, is showing no signs of cracking or any other visual deterioration. There are no apparent signs of panel delaminations on any of the panels in any area of this lane.

This project has been rated as performing well. The next evaluation will be in the summer of 2003.

Overall view of project looking North