



IMPR
CONSTRUCTION
AND
MAINTENANCE
TECHNOLOGIES
new strategies to enhance the quality
performance of highway systems

Accelerated Reconstruction: Weekend Intersection Replacement

The Washington State Department of Transportation (WSDOT) is taking an alternative approach to reconstructing busy intersections that saves time and money and causes minimal inconvenience to drivers. The program began when officials found that intersections originally built with asphalt concrete (AC) had substantial ruts in some locations. Continued stress caused by warm temperatures and slow-moving trucks required that some intersections be rehabilitated. In 2000, WSDOT South Central Region began a process of accelerated reconstruction that involves closing a damaged intersection completely at 7 p.m. Thursday and reopening it fully rebuilt at 6 a.m. on Monday morning. For the intervening days, traffic is rerouted to adjacent roads.

This approach is in contrast to the traditional method, where traffic is “snaked” through the intersection while parts of it are being rebuilt in a piecemeal fashion. Often this method becomes protracted, causing greater expense and hassle for motorists. But the three-day total closures used by WSDOT at several intersections in Kennewick received generally favorable comments from the public while enabling crews to finish the work quickly and efficiently.

Part of the State’s success with this approach is due to good public relations. During the design and planning phase of the project, open meetings were held for public input and agreement that the full closure option was acceptable. Special attention was paid to the concerns of affected businesses. During construction, weekly meetings were held to update the local media. Mitigation measures included a fully signed detour route, traffic staff onsite during the closure to make any necessary adjustments, variable message signs, flyers, and media notices. Aggressive scheduling ensured a minimum timeline for closure.

WSDOT also worked with local contractors to refine construction staging details to ensure the successful completion of this project within the given timeframe.

CHOOSING RECONSTRUCTION MATERIALS

Because the initial cost of using AC is relatively low, the surfacing material was considered budget-friendly. But to diminish the need for further rehabilitation and to save money in the long-term, WSDOT is now replacing selected damaged asphalt in intersections with full-depth Portland cement concrete pavement



Fast-curing materials

High early-strength Portland cement concrete mix allowed the roads to be opened to traffic within about 12 hours.



Round-the-clock construction

To ensure that the project stayed on schedule, the contractor used a critical path timeline based on hours, not days.

(PCCP), which is more expensive but has a 40-year design life and requires minimal rehabilitation. WSDOT's life-cycle cost analysis demonstrated that PCCP reconstruction provides the lowest 40-year annualized cost.

KEEPING THE PUBLIC INFORMED

Apart from concerns about the high initial cost of PCCP, another misconception Washington State has cleared up is that the public won't tolerate the closing of intersections. As noted in the 1999 Customer Focus Highway Construction Workshop in Seattle, the traveling public is more forgiving of construction when motorists are kept informed and can find suitable alternative routes.

Most of the people surveyed about the intersection reconstruction in Kennewick were in favor of the weekend closure and said they were aware of the work through television, radio, and newspaper reports. Although some out-of-towners got lost in the detour and several restaurants near the closed-off intersection reported a loss of business over the weekend, public opinion about future three-day closures of other intersections is, according to WSDOT, "surprisingly positive."

To learn more about Washington State's weekend intersection reconstruction efforts, contact:

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