

ACCOMPLISHMENTS & EFFICIENCIES

– FULL INTERNAL DOCUMENT –



Utah Department of Transportation

Fiscal Year 2010

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virtually no-cost. DWS wins in having a worksite training partner to provide real world work experience. The DWS clients win by gaining skills, experience, and references that lead to full time employment.

Comparison of Hot Shot Crew vs. Previous Corrections Crews: \$49,122 (Prison Crew Cost) - \$16,400 (Current Annual DWS Cost) = \$32,722 Savings. The prison crew costs are actual costs from the last year we had those crews. The cost of the DWS crew is supervision, van and trailer costs.

Flexible-base Delineators

Strategic Goal: Improving safety while conserving valuable resources.

Savings: Saves time and materials required to repair or replace the rigid metal delineator posts, approx. \$75 annually per delineator

Efficiency: More durable delineator posts while promoting roadway safety

Standard delineator posts are made from rigid galvanized steel. When a delineator post is hit, it no longer provides visual delineation. UDOT crews either replace the damaged post or try to bend it back into shape using brute force. UDOT has used flexible shaft delineator posts, but none have proved satisfactory. SHUR-TITE Manufacturing produces a patented flexible base delineator that can sustain nearly ten times as many vehicle strikes as the other flexible shaft delineators that we have used. The entire post bends at the joint. Because of this different bending motion, the post itself does not fracture or shatter when struck at low temperatures.



replace damaged delineators substantially reduces the life cycle cost of the SHUR-TITE system.

A pilot installation was made in Salt Lake County. Early results showed that the delineator did not evidence fatigue failure as previous systems had done. The posts showed scuff marks from being hit, but continued to return to the vertical position. In high-hit areas the SHUR-TITE delineators do not have to be replaced after one hit (as do steel posts) or even three to five hits (as do Carsonite and Safe-Hit). Installation costs are the same as other systems we have used. The delineator post itself costs three times the cost of a steel post, but avoiding repeated service calls to

One entire MMQA section of SR-68 in Utah County will be fitted with the SHUR-TITE delineators. Delineator maintenance records for the test period will be compared with records from FY2009 and FY2010. This particular section was selected because it has a high incidence of wide loads using the road and frequent delineator hits during peak recreation weekends, because the road serves as a primary route from Salt Lake County to the ATV recreation areas at Little Sahara and vicinity. There are what appear to be deliberate delineator hits in some areas.



For areas where delineators are frequently damaged, the lower life cycle cost of the SHUR-TITE delineator amounts to an annual savings of \$75 per installation. Traffic services are improved because delineators remain serviceable, risk exposure of UDOT employees is reduced due to fewer service calls, and less scrap materials requiring disposal are created.

Grooved Waterborne Pavement Markings

Strategic Goal: Improving Safety

Savings: \$148,500 in total projected cost savings over 12 years on a 9-mile section of I-80 for grooved waterborne vs. normal waterborne paint striping.

Efficiency: Grooved waterborne paint and messages are lasting as long as more expensive markings and longer than normal waterborne paint application.

Dan Betts, Region Two Pavement Marking Manager, has pioneered the use of recessed paint striping and messages below the roadway surface to protect them from winter plowing and traffic. A 1/8" deep groove is ground into the pavement surface using a diamond head grinder, after which the stripe is applied using standard waterborne paint. The benefits of the ground surface are two-fold: 1) the clean, dry surface facilitates a better bond between the marking and the road, and 2) the marking is protected from the wearing action of traffic and winter plowing.

Subjective and quantitative analyses have shown the paint can last as long as more expensive, durable markings at 1/6 to 1/3 of the cost. For example, bid prices and projected 10-year costs and performance on a recent striping project in Utah indicated that the average cost per year would be \$0.12/foot for grooved waterborne paint, \$0.25/foot for ungrooved waterborne paint, \$0.39/foot for ungrooved epoxy paint, and \$0.65/foot for ungrooved durable tape.

Besides the lower initial cost, the ability to incorporate larger beads into the paint for improved retro-reflectivity at night for wet roads is another important advantage. The wet night beads are