



Accelerated Construction Technology Transfer (ACTT)



March 2004, Seattle, Washington

IMPROVED CONSTRUCTION AND SYSTEM PRESERVATION TECHNOLOGIES performance of highway systems

new strategies to enhance the quality

Accelerated Construction Technology Transfer (ACTT) is a strategic process that uses various techniques and technologies to reduce construction time on major highway projects while enhancing safety and improving quality. The process is implemented by conducting 2-day workshops for State DOTs. The American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) jointly fund ACTT workshops.

In March 2004, the Washington Department of Transportation (WSDOT) hosted a workshop that brought together transportation experts from many states. The primary objective of the workshop was to draw on the expertise of participants to help WSDOT achieve its goal of minimizing construction time for its SR-520 project between I-5 and I-405 in Seattle. The cost of this project will be between \$1.5 and \$3.4 billion, depending on the selection of the number of lanes for the new facility, making this the largest ACTT project to date. The project presents many challenges such as the replacement of a 40-year old floating bridge across Lake Washington and moving as many as 120,000 vehicles per day across the lake while the floating bridge is under construction.

Opening the workshop on March 16 were three officials representing WSDOT: the FHWA Washington Division Administrator, WSDOT's Assistant Secretary Of Engineering, and the Project Director.

Following the opening remarks and a project tour, the participants spent a day and a half brainstorming, looking for methods and measures that would help achieve project goals. The workshop was unique in that three large multidisciplinary teams were formed to evaluate three separate stretches of the highway, rather than grouping participants based on their areas of expertise, as is the norm.

The Skill Sets that attended the WSDOT's workshop were: Environment; Geotechnical/Materials/Accelerated Testing; Structures; Right-of-Way/Utilities/Railroad; Innovative Financing/Contracting; Roadway/Geometrics; Traffic Engineering/Safety/ITS; Construction; and Long-Life Pavements/Maintenance. The teams presented numerous ideas and recommendations, many of which were deemed viable and will be pursued, according to WSDOT. Among these recommendations were:

- Use Self Consolidating Concrete (SCC), particularly for the construction of the pontoons. The great depths of the pontoons and the large quantity of concrete required would make use of conventional concrete very labor intensive. Contrary to conventional concrete, SCC flows easily and fills all cavities, thus eliminating the need for vibration, which could harm previously placed concrete.



Project Location

- Shorten overall project delivery time by overlapping design and construction contracts.
- Design the simple pontoons first so construction may begin while the more complex pontoons are still being designed.
- Look at segmenting contracts, such as for the replacement of the Evergreen Point Bridge, which could be completed in four segments.
- Issue a separate contract for anchor system fabrication, looking at other anchor types, such as suction piles.
- Consider installing the anchor system before the pontoons arrive.
- Maximize use of the graving dock for pontoon construction through double shifts or another facility.
- Consider a temporary roadway transition span on the south side of the road, using the old bridge as a working stage and then demolishing the old bridge as work progresses.
- Remove juvenile salmon from the work area by placing curtains between islands to keep the salmon away.
- Set up a regional traffic model and look at staging options to consider the impact of other projects in the area.
- Utilize design/build with performance specifications for lids and structures, keeping in mind that fewer lids will shorten construction.

With the workshop now completed, it remains for WSDOT to sift through the reports produced by the Skill Set groups and decide which ideas should be implemented in future planning, design, and construction phases of the project. At the close of the workshop, it was agreed that the suggestions presented could result in a 1- to 2-year savings in construction time

To find out more about the project and the implementation of recommendations, contact:

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