CA4PRS Peer Exchange Summary

The CA4PRS software is a tool used to help develop optimum construction staging plans and assist with development of Transportation Management Plans for highway construction and rehabilitation projects. A Peer Exchange Workshop was held in St. Louis on 9/22/2010 and 9/23/2010 and provided practitioners from various State DOTs with an opportunity to discuss challenges, issues, benefits, and lessons learned with their peers. The following sections highlight some of the key discussion points from the Peer Exchange.

Main Discussion Points

- Restoration, resurfacing, rehabilitation, and reconstruction (4-R) projects are increasing, while SHRP II and other research programs are looking to ways to reduce the impacts while maintaining infrastructure, with travel time reliability being one major focus area.
- The CA4PRS software has 3 modules (cost, schedule, and traffic) and is designed to develop optimum construction staging plans and assist with the development of a Transportation Management Plan
- The software evaluates pavement design alternatives for rigid and flexible pavement
- FHWA arranged a free group license for all 50 state DOTs, and also provided training and outreach on the software.
- There are two alternatives in the analysis – probabilistic and deterministic. The software developers recommend the deterministic analysis type for less experienced users
- The traffic portion of the software is based on the Highway Capacity Manual and can also provide results when analyzing traffic flow
- The work zone traffic alternatives analysis considers the construction timeline and determines the number of closures needed to complete the project and estimates impacts
- Considerations such as nighttime noise, use of strategies such as the Quick Change Moveable Barrier, and closure alternatives can be analyzed
- The results can be used to develop TMP strategies, lane closure timelines, and contracting strategies

User Skill Needs

- Training on the tool is necessary, along with enough use of the tool to stay current
- The consultant community also has a need for training, as analysis projects may be performed in-house or using an external source
- Users could benefit from guidance and experiences with capacity reductions based on single lane traffic control

- Users need guidance on the type of projects for use and a general guideline for the size of project (e.g. greater than a few million dollars in project cost) where the software is feasible

Challenges and Lessons Learned

- There is a reluctance on the part of practitioners to begin use of a new tool
- Management buy-in is an institutional barrier to greater use of tools such as CA4PRS
- Incentives are typically higher on larger projects where significant traffic impacts are expected, but there is often less flexibility in construction staging for these types of projects
- Contractor incentives could potentially reduce the quality of the project and this should be a consideration in the analysis
- There is a need for additional guidance on how to adequately estimate road user costs

Implementation Recommendations

- More benefits information is needed in the form of case study examples and before and after studies
- Guidelines are needed on the types of projects that are most appropriate for use of CA4PRS
- Marketing for the software should be tailored and target the top-down approach used by agencies to implement analysis tools and techniques
- A licensing structure for the software should be advertised (consultants, participating DOTs, etc.)
- The software could benefit from the future ability to analyze different facilities (e.g. signalized arterials) in addition to freeways