

# FY 2009 RESEARCH PROBLEM STATEMENT

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### TITLE

CM-09-07 Use of Statistical Modeling to Provide Confidence in Early Estimating

### PROBLEM (Description of need)

The Agency needs good confidence in the construction cost of a project as early in its development life as possible. Historically, there have been issues with project budget accuracy. Often a project is nearing final PS&E before a rigorous estimate is completed providing a confidence of the bid costs. Projects enter the STIP cycle through scoping and the ACT process, but the estimates provided for these projects are often optimistic related to both schedule and budget. When project development estimates grow outside the financial plan of the region/program, then regions/programs are faced with delaying the project or cutting other projects, generally out year, to cover the cost growth.

### PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY

As part of the OTIA III State Bridge Program, specific statistical modeling has been done to mimic the unique composition for these projects. This has effectively built a Bridge specific model, which continues to be refined as projects both inside and outside the Program bid. Through the comparison of early development estimates (DAP) to the statistical model coupled with line item review, construction cost are known earlier at a high confidence. Later development milestone estimate reviews have been conducted as needed when scope or other changes/warrant.

This proposal is to share this technology and adapt it for other funding mixes (Pres, Mod, etc.) with the regions. This proposal will collect past project and estimate information from the regions at parallel milestones and make comparisons of to the model's ability to provide confidence related to early assessment of project construction costs.

Further, modeling of outputs for funding mixes (Pres, Mod, etc.) for jobs created/sustained may be warranted. As for the Program this has occurred and has differed out put than that for the overall STIP due to various factors related to the nature of the projects.

### BENEFITS

More confidence in the project estimates, at 30% (DAP).  
Better ability to manage the region/program financial plans and STIP commitments.  
Better interface with the ACTs through not having as high of likelihood of project delay or cancellation due to having to cover other projects.  
Application of consistent methodology to project estimating both for ODOT staff and consultants (this would require a PD notice as final implementation).

Corollary benefit may be available if further modeling of outputs linked to IMPLAN jobs created/sustained can be fostered for each of the funding mixes (Mod, Pres, etc.)

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