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WATERSHED APPROACHES TO COMPENSATORY MITIGATION: USING COMPREHENSIVE MITIGATION PLANNING TO ACHIEVE MORE EFFECTIVE MITIGATION FOR TRANSPORTATION PROJECTS

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Abstract

This research project deals with development of tools and approaches for implementing more effective environmental mitigation for transportation projects.

In this presentation we evaluate the availability of tools, methods, and data necessary for implementing comprehensive, watershed-based planning for mitigation for transportation projects, and we present lessons learned from innovative approaches being implemented in the Pacific Northwest. It has long been recognized that project-specific, on-site mitigation projects have high rates of failure, frequently do not achieve the desired environmental benefits, and are very expensive. The emphasis for on-site and in-kind compensatory wetland mitigation makes it difficult to design wetland mitigation projects that are not small, isolated, of limited functional value, and difficult and/or costly to maintain in the long-term. Designing and planning mitigation projects within a watershed or landscape context has long been recognized as necessary for ensuring sustainable, successful mitigation. Transportation projects epitomize these challenges, but also provide some of the best opportunities to create better mitigation alternatives through implementation of watershed approaches. In addition, regulatory agencies are recognizing the importance of watershed approaches. The proposed EPA/COE joint rules for compensatory mitigation explicitly incorporate the need for watershed approaches. How prepared are we, however, to implement watershed approaches in mitigation planning and design? States in the Pacific Northwest have been conducting watershed and basin planning for at least the past 10 years under a number of state and local mandates. This region arguably possesses some of the most complete watershed information available in the United States. To determine the availability of the data necessary for implementing a watershed approach we: (1) evaluated more than 50 watershed and/or basin plans to determine how many plans incorporate key elements of a watershed or landscape approach: spatially explicit, process and function based, both biotic and abiotic processes, multi-species focus; and (2) determined the overlap between locations of transportation projects and watershed data. The majority of watershed plans lack one or more of these key elements. We assess the feasibility of implementing watershed approaches for transportation projects using existing information. Using this analysis, we then discuss the development of innovative tools and databases that are being used for planning for watershed-based mitigation at regional restoration sites. For local, state and federal transportation planning purposes, this allows systematic evaluation of the type and amount of mitigation that is or will be needed in the future for the region or a particular watershed, the existing functional condition of the watershed, and where in the watershed restoration is most needed and will have the greatest benefit.