

# WSDOT Project Mitigation Costs



## Case Studies Volume 2



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## Highway Construction Project Mitigation Costs

Washington State Department of Transportation (WSDOT) highway projects primarily seek to improve the safety and capacity of roadways and extend their use. WSDOT's environmental policy guides project planning. The Department shall conduct all its affairs in accordance with the dictates of sound environmental protection practices, including pollution prevention wherever reasonably possible. The Department shall also avoid, minimize, and appropriately mitigate adverse environmental impacts. These undertakings extend to the construction, maintenance, and operation of its systems and facilities. Highway construction projects involve measures to address community and environmental goals, such as clean water requirements or protection of wetlands and endangered species. These other undertakings are the "mitigation" without which a highway project would not happen and its transportation aims would not be realized.

This is the second volume of case studies. The first volume presented the mitigation experience of fourteen actual highway projects and was published in 2003. This volume presents an additional seven projects.

The case studies illuminate two questions:

1. *What is the cost of mitigation for highway projects in Washington State?*
2. *Dose mitigation have an significant effect on the cost per lane mile?*

Some believe that environmental and other mitigation costs of WSDOT's highway projects are "too high." Generally, "too high" seems to imply that mitigation features, such as noise walls or stormwater detention ponds, are too expensive or too elaborate. The case studies describe the mitigation features provided for specific projects, their costs, and the reasons for their incorporation into the projects. [1]

When planning projects and obtaining their permits, WSDOT strives to *avoid* negative environmental impacts. Impacts that cannot be avoided will be *minimized*. Remaining negative impacts will be *mitigated*.

Documents such as the project EIS help describe for citizens and other agencies exactly how impacts will be *avoided, minimized, and/or mitigated*. For example, WSDOT adheres to wetland protection requirements under Section 404 of the Clean Water Act and numerous state and local environmental provisions. At the same time, WSDOT is working with others to improve the effectiveness of wetlands protection and replacement requirements through opportunities for "watershed-based mitigation."

[1] The costs of processing environmental assessments and permit applications may also be reflected in the studies, as the data collected includes the expense of preparing environmental documentation. The study does not address costs in times of project delays due to environmental requirements.



Construction projects affecting wetlands can avoid or minimize impacts by selecting a different alignment, widening bridge structures, or adding retaining walls that limit the need for fill. To compensate for unavoidable wetland impacts, WSDOT has developed 116 mitigation sites, totaling 675 acres since 1987.

Mitigation features and costs vary enormously from project to project. Plans for mitigation generally take shape as WSDOT works with other agencies at federal, tribal, state, and local levels to develop specific conditions to reconcile a project with requirements that grow from concerns about negative impacts on natural resource protection and other public values. Often these conditions are expressly written into the project's legally required permits; for example, under the Clean Water Act or the Shoreline Management Act. Permit conditions might include wetland restoration, stormwater runoff control facilities, conservation of historic properties, noise walls, and even special traffic management plans to minimize construction interruption for neighboring businesses. A few of the case studies also describe features and costs incurred on a project for the specific purpose of actually avoiding an impact, such as the placement of bridge abutments in a flood plain.

WSDOT shares the responsibility with regulatory agencies for seeing that project mitigation is reasonable and properly meets legal requirements specified in, for example, environmental protection statutes and regulations.

The mitigation feature costs represented in this report are total costs, each of the mitigation categories include:

- Construction cost (actual cost from bid document or engineer's estimate).
- Allocated share for state sales tax; generally estimated to be approximately 8% added to overall construction contract amount.
- Right of way (actual acquisition cost).
- Allocated share of contractor's mobilization; usually estimated to be approximately 10% of overall construction amount.
- Allocated share of WSDOT cost for construction engineering and administration adds an amount equal to 6–14% of construction contract amount.
- Allocated share of WSDOT Planning and Design adds an amount equal to 5–15% of the overall project costs.