



*"Out of intense complexities
intense simplicities emerge."*
– Winston Churchill

SERVICES

Environmental Project
Delivery

Ecosystem Analysis,
Mitigation, & Restoration

Regulatory Strategy,
Compliance, & Permitting

Integrating Adaptive Management into NEPA Planning to Expedite Large Scale Ecosystem Restoration/Recovery Implementation

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Adaptive Management

Plan – develop project objectives

Risk – identify risks and uncertainties

Contingencies – include contingency actions for each risk

Monitor – collect new data during plan implementation and assess change from plan

Adapt – identify and deploy contingencies

Closure – identify an end point or end state and document that it has been achieved



Potential Issues

Tradeoff between cost, timing, and certainty

Level of detail needed at NEPA phase

Accountability

Funding – timing and availability



example: Washington State Route 520

\$4.9 billion transportation corridor program

Impacts and mitigation evaluated at watershed scale

At NEPA phase project impacts are known but mitigation remained flexible



Mitigation Planning

Mitigation needs were identified based on impact types and amounts

Mitigation opportunities were screened and “prequalified” in watershed context

At NEPA phase mitigation planning focused on showing sufficient opportunity



Evolution of Mitigation Details

Impact types, amounts identified at DEIS

Prequalified opportunities for mitigation identified at FEIS

Commitment to sites and concepts made with environmental permits

Designs finalized post-permitting



Tradeoffs

Schedule was accelerated by allowing detailed mitigation design to occur after NEPA and after environmental permits issued

Cost was reduced by schedule acceleration

Commitments were documented at ROD and embedded in permit conditions

Flexibility allowed better targeting of mitigation in line with watershed plan

