	A. Permitting		B. Mitigation
	A.1	A.2	B.1
COST DRIVER	Multiplicity of Permits (local, state, federal, tribal)	State and Federal Environmental Review	Local preferences/ agreements
Definition	Cost and time required to secure permits to move forward with a project	State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA) are processes to identify possible environmental impacts from new projects	Local agreements are designed to streamline process, but can lead to other elements such as additional costs such as temporary transit, highway lids, noise walls
Problem Statement	Can add to project costs through: delays and appeals process; costs include permit agency staff time; consecutive vs. concurrent processing; multiple entities involved	Designing beyond the minimum standards; Public opposition can cause delays and increase costs	WSDOT may agree to stakeholder demands to prevent delays; Creates tensions around cost and schedule
Objectives	To ensure that all local, state, federal and tribal standards to protect resources and ensure proper planning are complied with	To provide information to decision-makers, applicants and the public on how a proposal will affect the environment (natural and built)	Work with affected agencies during planning/permitting to streamline process and limit appeals
Project Phase	Planning Permitting	Planning Permitting	Planning Permitting Design Construction
Potential Cost Impacts	Low to Medium	Low to Medium	Medium to High
Questions & Key Issues	What does permitting cost? What is required? By who? Is WSDOT paying more than other agencies? Which permits are most problematic?	Both reviews may be done to leave the door open for federal funding	Is WSDOT paying more than other agencies? Are these costs really necessary? Appropriate incentives for cost containment?

	B. Mitigation		C. Design Elements
	B.2	B.3	C.1
COST DRIVER	Environmental - Natural Resources	Environmental - Built Environment	Non-highway features
Definition	Cost to mitigate impacts associated with the natural environment (wetlands, fisheries, air quality, water quality, etc.)	Cost to mitigate impacts associated with the built environment (traffic, noise, right-of-way acquisition and displacements, environmental justice, etc.)	Projects include non-highway features: components to accommodate transit, bikes, pedestrians; wildlife crossings; stormwater runoff facilities
Problem Statement	Concerns that WSDOT is mitigating to a standard beyond what is necessary and using scarce transportation funding for non-transportation purposes	Concerns that WSDOT is mitigating to a standard beyond what is necessary and using scarce transportation funding for non-transportation purposes	Features often added to gain local support, adds to project costs but goes beyond basic highway needs
Objectives	Ensure that the negative impacts associated with a new project are appropriately mitigated and that the natural environment is not unreasonably degraded	Ensure that the negative impacts associated with a new project are appropriately mitigated and that the built environment is not unreasonably degraded	Contribute to broader policy goals associated with mobility and environmental stewardship
Project Phase	Planning Permitting	Planning Permitting	Permitting Design Construction
Potential Cost Impacts	Medium to High	Medium to High	Medium to High
Questions & Key Issues	Are mitigation commitments meeting or exceeding requirements? Are there alternatives that can meet the mitigation goal but at a lower overall cost?	Are mitigation commitments meeting or exceeding requirements? Are there alternatives that can meet the mitigation goal but at a lower overall cost?	What is the appropriate role for state funding with respect to non-highway features of highway projects?

	C. Design Elements		
	C.2	C.3	C.4
COST DRIVER	Demand forecasts	Engineering standards	Noise walls
Definition	Estimates of future traffic volumes for a given transportation project.	Standards employed in the design of WSDOT projects	Concrete walls near public areas (such as parks) and residential homes. The walls range in height from 6 to 20 feet, but normally they are 12 to 15 feet tall
Problem Statement	May be overestimating demand leading to more projects or more added capacity projects than necessary; May shift the emphasis away from demand management	Perception that "over-designing" produces larger, more expensive projects, with greater impacts to mitigate	Noise walls increasingly becoming a "standard feature" of highway projects increasing costs
Objectives	Ensure that new facilities are adequate to meet current and future needs	Ensure that new facilities meet appropriate design standards for safety and mobility	Ensure that new projects reasonably protect adjacent properties from noise impacts
Project Phase	Planning Design Construction Finance	Planning Permitting Design	Planning Permitting Design
Potential Cost Impacts	Medium to High	Low to Medium	Low to Medium
Questions & Key Issues	How should demand forecasts and demand management strategies factor into project design?	Practical design or "right sizing" of projects.	Should new projects include features that improve noise mitigation over current conditions?

	D. Estimating/Budgeting		
	D.1	D.2	D.3
COST DRIVER	Contingencies	Treatment of risk/uncertainty during planning and design	Stop and start projects or proceeding without secure funding
Definition	Percentage set-asides to handle unforeseen changes in a project, such as additional work or quantity over-runs	Appropriate allocation of risk- assigning risk to the entity that can best control it	Projects that stop and start due to available funding or other reasons
Problem Statement	Do large contingency budgets reduce incentives to keep costs down?	WSDOT bears too much risk for unforeseen construction issues and does not adequately mitigate these risks	Start-up costs each time a project is resumed add to overall costs and may necessitate duplication of efforts if permits expire
Objectives	Adequately budget for unforeseen but likely changes or circumstances	Balance risks associated with project unknowns with upfront costs during planning and design to reduce risk	Balance the long lead time associated with projects and the uncertainty of funding
Project Phase	Planning Design Construction	Planning Design Construction	Planning Permitting Design
Potential Cost Impacts	Low to Medium	Low to Medium	Low to Medium
Questions & Key Issues	How best to budget for uncertainty while also maintaining reasonable cost containment goals?	How to balance upfront investments in investigation of risks, setting aside project contingencies and overall cost containment goals?	Given uncertainty of project funding (especially large projects) how best to move projects forward with a minimum of risk for non-productive spending?

	E. Contracting		
	E.1	E.2	E.3
COST DRIVER	Prevailing wage	OMWBE requirements	Contracting to Manage Risk
Definition	Federal requirement that publicly funded projects pay an hourly wage in-line with the majority of workers within a particular area	Small businesses certified as disadvantaged business enterprises (DBE)s count toward participation goals set on federally funded projects	Selection of a contracting method to assign risk to the entity that can most control risk
Problem Statement	Increases costs of labor; State wage is higher than federal; Questions about rate survey methods; Onsite work is subject to Davis Bacon, offsite is not	Inability to meet requirements can lead to bids being challenged or requests for re-bids; Can produce project delays; insufficient supply of qualified contractors	Risk assignment should be favorable to WSDOT in the event of cost overruns or schedule delays
Objectives	Ensure that public work does not bring down local wage rates	Designed to improve the contributions of minority, women-owned and small businesses to the Washington State economy	WSDOT to align contracting methods with project type to best manage risks, contain costs and limit unforeseen budget impacts
Project Phase	Construction	Construction	Design Construction
Potential Cost Impacts	Medium to High	Low to Medium	Low to Medium
Questions & Key Issues	Why is the state rate higher? Should there be a state rate? Should the federal rate be used on federal projects? Should L&I set the rate differently? How reliable is the survey?	Are there enough OMWBE/DBE businesses to comply? Irregularities (fraud) in the certification process solved?	How is risk assigned and why? Would shifting more risk to private sector increase or reduce costs? When is Design/Build appropriate, when not?

	E. Contracting		F. Construction
	E.4	E.5	F.1
COST DRIVER	Use of private contractors	Apprenticeship	Materials cost
Definition	Shifting design, maintenance and operations work to the private sector	Use of a worker who is employed to learn an apprenticeable occupation and is registered with a sponsor in an approved apprenticeship program	Price of project materials- steel, asphalt etc.
Problem Statement	Contractors may be more expensive, but allow flexibility in scaling size of state labor force	Given prevailing wages, this is the only way to bring down the overall labor costs of the crew, though it comes at the expense of added training costs	Materials that are cheaper in the short-run may be more expensive in the long-run
Objectives	Use private contractors to add expertise, balance ongoing vs. short-term needs, and effectively distribute risks and manage program costs	Invest in the development and continuous upgrade of the skills of the workforce	Build in appropriate cost containment and risk management measures within construction contracts to ensure materials are as specified and costs are managed
Project Phase	Design Construction Operations	Construction	Construction
Potential Cost Impacts	Low to Medium	Low to Medium	Medium to High
Questions & Key Issues	Does WSDOT make appropriate use of private contractors throughout the various project phases? How well does WSDOT manage its contractors?	Need to balance apprenticeship costs w/ aging workforce. Difficult to comply with apprenticeship requirements on projects with small crews.	How much cost variability can be attributed to materials costs? Are there buy local or other factors that can influence these costs?

	F. Construction		
	F.2	F.3	F.4
COST DRIVER	Short closure windows	Change orders	Project/program management
Definition	Short road closures that are inadequate for project completion requiring two or more windows	A written document between the owner and the contractor signed by both authorizing a change in the work or an adjustment in the contract sum or the contract time	WSDOT project management and oversight during construction phase
Problem Statement	Short closure windows add to project costs by extending the schedule and increasing mobilization costs	Perception that poor design and/or contracting practices can lead to unreasonably high levels of change orders increasing costs beyond what is budgeted	Perception that poor project management and oversight has led to higher project costs
Objectives	To minimize disruption to the traveling public	Minimize change orders which have a cost impact to WSDOT through appropriate due diligence, quality control and contracting methods	Ensure appropriate controls are in place to hold contractors accountable for results and that projects meet design requirements
Project Phase	Construction	Construction	Construction
Potential Cost Impacts	Medium to High	Medium to High	Low to Medium
Questions & Key Issues	What is the right tradeoff between efficient construction and impacts to the traveling public?	How well does WSDOT manage change order risk? Are there alternative contracting methods that would offer better cost containment opportunities?	How do WSDOT project and program management practices compare to other agencies?

	F. Construction	G. Funding
	F.5	G.1
COST DRIVER	Sales tax on construction	Extensive use of bond funding
Definition	Construction services on WSDOT highways are charged sales tax	Use of bonds to "front load" projects by pledging future tax revenues for bond repayment
Problem Statement	WSDOT projects should not be subject to the sales tax on construction -- should not pay one tax (sales) with the proceeds of another (gas)	The perception is that by using a high degree of bond funding, WSDOT is adding to costs (interest) and "paying off" projects beyond their useful lives
Objectives	Washington State charges sales tax on construction services (both public and private projects) which is a significant source of General Fund revenue	Use bonding authority to get more projects done and get the mobility benefits sooner
Project Phase	Construction Finance	Finance
Potential Cost Impacts	Medium to High	Medium to High
Questions & Key Issues	Should work on WSDOT highways be covered under the public road construction exemption? Should transportation funds be "diverted" to the general fund?	Is WSDOT's construction program over-leveraged? What is the most appropriate use of bond financing for a highway program?