RISK BREAKDOWN STRUCTURE

Major Project Risks

Level 1	Environmental **ENV**	Structures & Geotechnical **STG**	Design / PS&E Roadway, Hydraulics, etc. **DES**	Right-of-Way Acquisition & Access **ROW**	Utilities **UTL**	Railroad **RR**	Partnerships & Stakeholders **PSP**	Management / Funding **MGT**	Contracting & Procurement **CTR**	Construction **CNS**
Level 2	ENV 10 NEPA/SEPA – documentation completion, Section 4f/6f, challenges	STG 10 Structure Design Change – bridge superstructure, retaining walls	DES 10 Roadway Design Change – vertical / horizontal alignment, earthwork, pavement	ROW 10 Plan Development Issues – easements: temporary construction/subterranean, FHWA approval	UTL 10 Plan Development Issues – design coordination, agreements	RR 10 Plan Development Issues – design coordination, agreements, right-of-entry	PSP 10 Tribal Issues	MGT 10 Project Management Issues – change in managers / other key leadership	CTR 10 Project Delivery Method – changes or issues	CNS 10 Traffic Control & Staging – MOT / WZTC, multimodal traffic management
	ENV 20 ESA Issues – consultation, Biologic Assessments / Biological Opinions, Fish Passage	STG 20 Geotechnical Design Change – foundations, ground improvements, unsuitable materials	DES 20 Roadway Design Criteria Change – Design Manual, design analysis approval, practical design considerations	ROW 20 Project ROW Cost Change – change in land use/zoning, urbanization, market conditions	UTL 20 Practical Issues (in the field) – relocation, conflicts, discoveries	RR 20 Construction Coordination Issues – flagging, work restrictions / windows, right-of-entry requirements	PSP 20 Public Involvement Issues	MGT 20 Delay – indecision, submittal review	CTR 20 Contract Language Issues – contract packaging, warranties, liquidated damages, DBE, insurance/bonding	CNS 20 Construction Permitting – work restrictions
	ENV 30 Environmental Permitting – delays, appeals, unanticipated conditions	STG 30 Structural Design Criteria Change – seismic, hydraulic, geometric, building codes	DES 30 Aesthetic Design Changes – Architectural, CSS, Landscaping	ROW 30 Limited Access Issues – Access Revision Report (ARR), access hearing, permanent construction easement		RR 30 Property Rights Issues – challenges in acquiring from RR, considerations for delivery method (DB vs DBB)	PSP 30 Scope / Design Changes – artwork, shared-use pathways, arterial/intersection improvements	MGT 30 Funding – availability, cash flow restrictions	CTR 30 Contract Procurement Process Issues – addenda / extensions, protests	CNS 30 Work Window Coordination – weather, in/over-water
	ENV 40 Discoveries – cultural resources (Section 106), historic property impacts & mitigation	STG 40 Geotechnical Design Criteria Change – soil stabilization, hydraulic, codes	DES 40 Hydraulic Design Changes – flow control, water quality, criteria changes	ROW 40 Managed Access Issues – appeal hearing			PSP 40 Interagency Issues (Sound Transit, USFS, cities, counties, etc.) – design coordination, agreements	MGT 40 Political / Policy Changes	CTR 40 Market Conditions – non-competitive bidding environment, lack of qualified bidders, bids exceed upset price or budget	CNS 40 Schedule Uncertainty (general)
	ENV 50 Hazardous Matls - soil/ groundwater contamination, building / structure abatement / lead paint		DES 50 Traffic Design Changes – ITS, Illumination, Signals, intersections	ROW 50 Acquisition Issues – appraisals, condemnation, relocations, demolitions			PSP 50 Multimodal Considerations – design coordination, agreements, bicycle, pedestrians, transit	MGT 50 State Workforce Limitations	CTR 50 Procurement Delays & Premiums – specialty materials / equipment, "Buy America"	CNS 50 Marine / Over-Water
	ENV 60 Habitat Mitigation Issues – wetlands / stream / floodplain		DES 60 WSDOT Initiated Changes – maintenance request, change to purpose and need					MGT 60 Project Phasing / Packaging Changes	CTR 60 Contractor Performance Issues – productivity, quality	CNS 60 Constructability (non-geotech or marine) – site access, staging / material handling, differing site conditions, etc.
	ENV 70 Environmental Justice (disadvantaged communities) – traffic mgmt, access, temp construction impacts		DES 70 Tolling Design Changes – infrastructure requirements, toll collection, back-office					MGT 70 Inadequate Quality Verification – VECP, ATC, review error	CTR 70 Labor Issues – availability of specialty labor, labor / productivity disruptions	CNS 70 Material Handling / Earthwork Issues – re-use, haul, disposal; hazardous mtls, lead paint
	ENV 80 Construction Impacts – water quality, TESC		DES 80 External Initiated Changes (contractor or other party) – innovation, ATC						CTR 80 Schedule Uncertainty – timing of award	CNS 80 Adjacent Projects – coordination among contractors, limited staging, sequencing
	ENV 90 Noise (permanent mitigation)		DES 90 ADA – curb ramp modifications require R/W, MEF approval							CNS 90 Site Security – vandalism, encampments, damage
										CNS 100 Construction Accidents
	ENV 900 Other ENV Issues	STG 900 Other STG Issues	DES 900 Other DES Issues	ROW 900 Other ROW Issues	UTL 900 Other UTL Issues	RR 900 Other RR Issues	PSP 900 Other PSP Issues	MGT 900 Other MGT Issues	CTR 900 Other CTR Issues	CNS 900 Other CNS Issues – change orders, disputes, claims

Using the Risk Breakdown Structure (RBS)

Each project is unique and has a specific project risk profile. Examples provided are an aid to identify risk types and are not to be considered complete or exclusive. Develop project risk registers by identifying and assessing risks for the project under review.

The RBS provides several functions and benefits, including:

1) Consistent risk organization, approach and taxonomy (wording).
2) Common standard categories.
3) Allows for identification of trends (risk event categories, types and characteristics).
4) Offers a basis for initiating risk identification and elicitation.
5) Eases the ability to conduct risk surveys for those unable to attend workshops

For more information regarding the RBS, see the Project Risk Management Guide.

Note: decision-makers may have other enterprise level considerations that are difficult to quantify, such as: trust, credibility, safety, and reputation of the organization.

ATC Alternative Technical Concept
CSS Context Sensitive Solution
DB Design - Build
DBB Design - Bid - Build
DBE Disadvantaged Business Enterprise
ESA Endangered Species Act
ITS Intelligent Transportation System
MEF Maximum Extent Feasible
MOT Maintenance of Traffic
NEPA National Environmental Policy Act
SEPA State Environmental Policy Act
TESC Temporary Erosion & Sediment Control
VECP Value Engineering Change Proposal
WZTC Work Zone Traffic Control