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| **PRACTICAL DECISION MAKING** |
| Practical decision making is a philosophy that considers each situation, aligns with our financially constrained budget environment, and encourages incremental, flexible, and sustainable investments by focusing on identified performance needs and engaging stakeholders at the right time.There are six core principles that capture the essence of practical decision making:* Starts with a clear purpose and need
* Considers resource constraints and life cycle cost
* Engages stakeholder and looks for partnerships
* Considers overall system performance
* Considers incremental, phase solutions
* Applies innovation and creativity

Where the six core principles are incorporated into this form are noted along the right side of this form. Consider all of the core principles as you progress through completing this Basis of Design. |
| **NOTE TO DESIGNERS** *There are tips provided in red italics text. This text along with the BOD instructions are intended to help you fill out this document. Delete the red text [including this note] in the final version of the document.*There are examples and additional explanation provided in blue text. Edit to align with your project and change to black text, or delete for the final version of the document.The black text is standard template language and does not need to be edited. Coordinate with your ASDE if revisions are necessary for your project. |

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| **Related Documents and Technical Reports** |
| *Insert a list of documents and reports that were integral to the origination of this project. Include enough information so the document may be found at a later date. The following are typical for fish passage projects:** Preliminary Hydraulic Design Report
* Field Operation Assessment
* Scenic and Recreational Highway designations
* Local Agency Planning Studies
* Local Agency Comp. Plans
 |
| **Community Engagement** |
| **Community Engagement** | *Describe past and planned community engagement. Document coordination with community members such as adjacent property owners, local businesses, neighborhood associations, etc.* | Engage Stakeholders |

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| **General Project Information** |
| **Route Information** | **SR** | **NHS (Y/N)** | [**Functional Class**](https://www.wsdot.wa.gov/data/tools/geoportal/?config=FunctionalClass) | [**City**](https://www.wsdot.wa.gov/mapsdata/roadway/statehighwaylog.htm) | [**County**](http://wwwi.wsdot.wa.gov/planning/data/travel/roadway/tools/srviewWHATIS.htm) | Clear Purpose and Need |
|  |  |  |  |  |
| **Project Information** | **Begin SRMP** | **End** **SRMP** | **Budget** | **Funding** **Sub-Program** | **Posted Speed** | [**AADT**](https://www.wsdot.wa.gov/data/tools/geoportal/?config=traffic) | [**Truck %**](https://www.wsdot.wa.gov/data/tools/geoportal/?config=traffic) |
|  |  |  |  |  |  |  |
| **Brief Project Description** |  |
| **Important Project History or Background**  | * Permanent Injunction Regarding Culvert Correction No. C70-9213 sub proceeding 01-1 (culverts) issued by Ricardo Martinez on March 29, 2013 in the US District Court. The culvert is identified as WDFW Site ID 000000.
 |
| **Future and Related Projects** |  |
| **Major Environmental Considerations** | *If an Environmental Review Summary is available, summarize the highlights here. If not, conduct a GIS review of the project area to evaluate the following:* *▪ Chronic Environmental Deficiencies ▪ Flood plain impacts**▪ Historic bridges and structures ▪ Noise walls**▪ Stormwater retrofits ▪ Wetland mitigation sites* *▪ Other considerations: Are any streams, wetlands, water bodies, or other critical areas present that could be impacted?* *Note: The Preliminary Hydraulic Design Report may include discussion on some of these considerations, if so reference here.**IMPORTANT: Verify information with the Region Environmental Office. Seek ESO assistance if needed.* |

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| **Section 1) Project Needs** |
| **Baseline Need****(BN)** | **BN1 Statement:** Environmental Retrofit – Fish Barrier CorrectionMetric: Fish passable water crossingTarget: Allow fish to move freely at all flows when fish are expected to move | Clear Purpose and Need |
| Contributing Factors: The existing culvert has been identified as a barrier to fish. |
| **BN# Statement:** *Describe BN2, BN3, BN4, etc. Delete if not applicable.*Metric: Target:  |
| Contributing Factors: *What are the contributing factors to each Baseline Need?* |
| **Contextual Need****(CN)** | **CN# Statement:** *Describe the contextual need. The contextual needs listed below are examples from other fish passage projects. Each project should consider the context and include as appropriate. Reference other documents when possible.***Examples:*****CN1 - Maintenance Clearance-******CN2 - Wildlife Connectivity (In High Priority Locations determined ESO)******CN3 - Bike/Ped Accommodation******CN4 – City Complete Streets Plan******CN5 – Stormwater Retrofit***Metric: CN1 – Vertical ClearanceCN2 – Openness Factor CN3 – Shoulder WidthCN4 – Include/Accommodate/Do Not Preclude City’s PlanCN5 – See Stormwater Retrofit Assessment on Fish Barrier ProjectsTarget: CN1 – 6 feetCN2 – See Wildlife Connectivity Priority Location memoCN3 - 4 feet for shoulders <4’; 5 feet for shoulders between 4’-5’; Match existing >5’CN4 – Forward compatibility with City PlanCN5 – See Stormwater Retrofit Assessment on Fish Barrier Projects | Consider Resource ConstraintsEngage Stakeholders |
| Contributing Factors:CN1 - See Design Instructions-Vertical Clearance ConsiderationsCN2 – See Connectivity MemoCN3 – Route continuity; CMARCN4 – City has Complete Streets ordinance*What are the contributing factors to each Contextual Need? Reference memos and guidance where applicable.* |
| **CN# Statement:** *Describe additional contextual needs using CN2, CN3, CN4, etc. Delete if not applicable.*Metric: Target: |
| Contributing Factors: *What are the contributing factors to each Contextual Need?* |
| **Safety Analysis**  | [ ]  No [ ]  Yes *If YES, enter the title and date. If NO enter why it was not needed. See DM Chapter 321 and the Safety Analysis Guide for details. In general, a safety analysis is required if the project narrows lanes and/or shoulders, or replacing a culvert with a new bridge structure. See Design Manual chapter 720.01 for the definition of a bridge.**Contact ASDE for example* | Consider Overall System Performance |

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| **Section 2) Context****In consultation with Multidisciplinary Team Members** |
| **Roadway \_\_\_\_\_\_ MP \_\_\_\_\_ to MP \_\_\_\_\_***[Duplicate this section as necessary to reflect distinct segments with different context]* |
| **Multidisciplinary Team Members** | *List the different agencies, and divisions involved in determining the context for this project. Include key decisions from the field visits.*For transportation context:* WSDOT HQ Active Transportation, OR Traffic, OR Planning
* Peninsula Regional Transportation Planning Organization
* Mason County and Pierce County

For environmental context:* WDFW
* Squaxin Island Tribe
* Puyallup Tribe of Indians
* WSDOT HQ Hydraulics, OR Environmental and Hydraulic Services
 | Engage Stake-holders |
| **Land Use Context** | **Freeway** | [ ]  Rural[ ]  Urban | [ ]  Interstate[ ]  Non-Interstate | Consider Overall System Performance |
| **Non-Freeway** | [ ]  Rural [ ]  Rural Town Center [ ]  Suburban [ ]  Urban [ ]  Urban Core |
| **Transportation Context** | **Bicycles** | Usage | None | Rare  | Low  | Med  | High | Involve Multidisciplinary Team Members |
| Current | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Future | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Comments | *Coordinate with Multidisciplinary Team Members. Describe any special design considerations that apply. Utilize the* [*Context Modal Accommodation Report*](https://www.wsdot.wa.gov/publications/fulltext/design/ASDE/ContextandModalAccommodationReport.docx) *(CMAR) to fill in this information. If medium or high is selected use this section to describe how the project is addressing/considering/accommodating.*Example: This section of SR XX is designated as US Bike Route XXX.Local Agency Plan xxx includes a shared use trail through the project limits |
| User Type | Interested but Concerned | Somewhat Confidence | Highly Confidence | Involve Multidisciplinary Team Members |
| Current | [ ]  | [ ]  | [ ]  |
| Future | [ ]  | [ ]  | [ ]  |
| Comments | *Coordinate with Multidisciplinary Team Members. Describe any special design considerations that apply. Utilize the* [*Context Modal Accommodation Report*](https://www.wsdot.wa.gov/publications/fulltext/design/ASDE/ContextandModalAccommodationReport.docx) *(CMAR) to fill in this information. You may check more than one box. See DM 1520.03 for User Type definitions.**Explain the level of accommodation needed here and how that will influence your dimensions*  |
| **Pedestrians** | Usage | None | P1Rare  | P2Low | P3Med | P4High  | Involve Multidisciplinary Team Members |
| Current | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Future | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Comments | *Coordinate with Multidisciplinary Team Members. Describe any special design considerations that apply. Utilize the* [*Context Modal Accommodation Report*](https://www.wsdot.wa.gov/publications/fulltext/design/ASDE/ContextandModalAccommodationReport.docx) *(CMAR) to fill in this information.*Are pedestrians using the shoulder? Note, there may be embankment width outside the paved shoulder that is used by pedestrians so use caution when determining guardrail/barrier location. When pedestrian facilities exist (sidewalks, curb ramps, crosswalks) consult Design Manual chapter 1510. |
| **Freight** | Classification | T-1 | T-2 | T-3 | T-4 | T-5 | See [Truck Freight Classification](https://wsdot.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=4fe77ff9b40342cc997945b71035b1ae) |
| Current | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Future | [ ]  | [ ]  | [ ]  | [ ]  | [ ]  |
| Comments | *Coordinate with Multidisciplinary Team Members. Describe any special design considerations that apply.**Use this section to document coordination with WSDOT Commercial Vehicle Services for oversized/overweight loads, truck usage and accommodation for detours and closures.*  |
| **Transit** |  | None | Low | Medium | High | Transit Agencies |
| *Current* | [ ]  | [ ]  | [ ]  | [ ]  | *List all transit agencies that operate within the project limits.* |
| *Future* | [ ]  | [ ]  | [ ]  | [ ]  |
| *Comments* | *Coordinate with Multidisciplinary Team Members. Describe any special design considerations that apply.**Are there transit stops within a ¼ mile of the water crossing location? This may be an indication of active transportation accommodation.**Are there school bus routes within the project limits? Coordinate planned closures with school districts.* |
| **Complete Streets and Main Street Highways** | [ ]  No [ ]  Yes *Does the city have a Complete Street ordinance or plan? Is it a Main Street highway? Consult with the Region Planning Office and the City.**For projects within city limits verify with the City and Region Planning. Evaluate whether to include, accommodate, or ensure forward compatibility with local agency plans.* |
| **Existing Design Variance** | Are there existing Design Variance within the Project Limits? [ ]  No [ ]  Yes  |
| If YES, can this project correct any of the existing design variances? *N/A* |

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| **Section 3) Design Controls** **In consultation with Multidisciplinary Team Members** |
| **Roadway \_\_\_\_\_\_ MP \_\_\_\_\_ to MP \_\_\_\_\_***[Duplicate this section as necessary to align with the Context described in Section 2]* |
| **Design Year** | *Design year and selection rational*Year of Opening  | *Incremental Phased Solutions* |
| **Modal Accommodation Priorities***Priority 1,2,3 etc.**1 is highest* | Mode | Priority | Notes | Consider OverallSystem Performance |
| Current | Future |
| Automobiles | N/A | N/A | See modal accommodation in Section 2) Context |
| Transit | N/A | N/A | See modal accommodation in Section 2) Context |
| Freight | N/A | N/A | See modal accommodation in Section 2) Context |
| Pedestrians | N/A | N/A | See modal accommodation in Section 2) Context |
| Bicyclists | N/A | N/A | See modal accommodation in Section 2) Context |
| Other | N/A | N/A | See modal accommodation in Section 2) Context |
| **I/S Design Vehicle** | *Describe the design vehicles for all intersections that will be modified by the project, verification of turning roadway width, and detour design. State the Design Vehicle for each leg of the intersection.* |
| **Terrain** |  [ ]  **Level** [ ]  **Rolling**  [ ]  **Mountainous** |
| **Access Control**  | **Existing** | See Access Master Plan Database <https://wsdot.wa.gov/sites/default/files/2020/02/06/AccessMasterPlan.xls> |
| **Planned** | See Access Master Plan Database <https://wsdot.wa.gov/sites/default/files/2020/02/06/AccessMasterPlan.xls> |
| **Proposed** | Maintain Existing Access Control |
| **Target Speed** | *State the Target Speed and how you it was determined.* Posted speed for fish passage projects |

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|  **Section 4) Alternative Analysis** |
|  | **Alternative Name and Description** | Consider Resource Constraints and Life Cycle CostConsider Incremental Phased SolutionsApply Innovation and Creativity |
| **Alternatives Considered****(circle the preferred alternative(s)** | **BN1** | *The PHD documents the preferred alternative selected to address the Baseline Need (BN1). Summarize PHD Recommendation here. (See PHD)* |
| **CN1** | *Example: Wildlife connectivity optionESO has identified this area as a high priority area and recommended increasing the structure width to X’ to accommodate wildlife connectivity* |
| **CN2a** | *Example: Shoulder widening option – 4’ shoulders (Accommodate)Increase the existing 2’ shoulder to 4’ to accommodate bicycles and pedestrians* |
| **CN2b** | *Example*: *Shoulder widening option – 5’ shoulders (Design For)Increase the existing 2’ shoulder to 5’ meeting DM Criteria for bicycles and pedestrians* |
| **CN3** | *Example: Maintenance Clearance Option**Provide 6’ vertical Clearance in accordance with Design Instructions for Vertical Clearance Considerations (June 26, 2020)* |
| **Alternative(s) *\_\_BN1, CN1, and CN2b\_* included:** ***Alternative BN1*** *- 40’ x 20’ buried structure is the recommendation included in the PHD to address the Baseline Need.****Alternatives CN1*** *– Wildlife Connectivity – increases the structure width by X’ to provide wildlife connectivity at this high priority location. The additional costs ($$$) meets the ROI threshold.****CN2a- Shoulder Widening Option*** *- This area experiences some recreational bike use and is considered a medium priority bicycle accommodation area by our Active Transportation Division.* *CN3-Mainenance Clearance Option-5’ of vertical clearance will be for provided for maintenance access. This exceeds the minimum 4’ minimum needed per the PHD. Increasing the vertical clearance beyond 5’ would change the vertical alignment and add a significant costs to the project. Maintenance concurred with this decision.**Describe why you selected the preferred alternative. Attach copies or provide information (title, date, etc.) regarding alternatives analysis, trade-offs comparison, or similar exercises that have been completed for this project, such as an ALTERNATIVES COMPARISON TABLE. If the prime considerations for selecting an alternative were documented in another document, you do not need to go into detail here. Instead, provide a summary, reference the document, and include it in the Design Approval.*  |

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| **Section 5) Design Elements Changed** |
| *For each design element below, identify the design elements that will have dimensions changed in the* ***preferred alternative*** *for each alignment or location. You can group alignments into a single location if desired. You may need to add or delete columns.* |
| **Design Element** | Alignment #1 | Alignment #2 | Alignment #3 | Alignment #4 | Alignment #5 | Alignment #6 |
| 1. **Lane**
 |  |  |  |  |  |  |
| 1. **Median / Buffer**
 |  |  |  |  |  |  |
| 1. **Shoulder**
 |  |  |  |  |  |  |
| 1. **Streetside / Roadside Zone**
 |  |  |  |  |  |  |
| 1. **Pedestrian Facility**
 |  |  |  |  |  |  |
| 1. **Bicycle Facility**
 |  |  |  |  |  |  |
| 1. **Bridges and Buried Structures**
 |  |  |  |  |  |  |
| 1. **Horizontal Alignment**
 |  |  |  |  |  |  |
| 1. **Vertical Alignment**
 |  |  |  |  |  |  |
| 1. **Cross Slope**
 |  |  |  |  |  |  |
| 1. **Side Slope**
 |  |  |  |  |  |  |
| 1. **Clear Zone**
 |  |  |  |  |  |  |
| 1. **Barrier, Guardrail & Rumble Strips**
 |  |  |  |  |  |  |
| 1. **Signals, Illumination, and ITS**
 |  |  |  |  |  |  |
| 1. **Signing and Delineation**
 |  |  |  |  |  |  |
| 1. **On/Off Connections**
 |  |  |  |  |  |  |
| 1. **Intersection / Ramp Terminal**
 |  |  |  |  |  |  |
| 1. **Road Approaches**
 |  |  |  |  |  |  |
| 1. **Roundabout**
 |  |  |  |  |  |  |
| 1. **Access Control**
 |  |  |  |  |  |  |

***Note 1:*** *Put an "X" by those elements that have changed. Document only those design elements that have changed.*

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| **Prepared by** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***[Insert name of Project Engineer or person who oversaw the development of the BOD]* **Date***[Insert title]* *[Insert name of Region/Program]* |
| **Approval Signature** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***[Insert name of Region/Program designated signee]* **Date***[Insert title]* *[Insert name of Region/Program]* |
| **Concurrence Signature** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** *[Insert name of ASDE. If not applicable, delete this signature block.]* **Date** **Assistant State Design Engineer** **Headquarters** |