

**BDM TECHNICAL RESOURCE LIST**

Last Update: April 2022

[Link to Bridge Section Specialty List](#)

<b>BDM Section</b>	<b>Section Title</b>	<b>Technical Resource</b>	<b>Technical Resource Backup</b>
<b>1.1</b>			
1.1	Introduction	Rebecca Burrow	Alex Lim
<b>1.2 Bridge Design, General</b>			
1.2.1	Bridge Design Standards	Rebecca Burrow	All
1.2.1.1	Standard Specifications and Standard Drawing Manuals	Rebecca Burrow	All
1.2.1.2	Use of Oregon Standard Drawing and Standard Details	Rebecca Burrow	Alex Lim/Tanarat Potisuk
1.2.2	Bridge Design Deviations (DD) and Roadway Design Exceptions (DE)	Rebecca Burrow	Alex Lim
1.2.3	Bridge Design Categories	Rebecca Burrow	Alex Lim/Zach Beget
1.2.4	Bridge Design Procedures	Rebecca Burrow	Alex Lim
<b>1.3 Loads and Distributions</b>			
1.3.1	Dead Loads	Rebecca Burrow	Tanarat Potisuk
1.3.2	Live Loads	Tanarat Potisuk	Jon Rooper
1.3.3	Sidewalk Loading	Alex Lim	Rebecca Burrow
1.3.4	Vehicular Collision Forces: CT	Rebecca Burrow	Alex Lim
1.3.5	Change in Foundations Due to Limit State for Scour	Susan Ortiz	Alvin Shoblom
1.3.6	Thermal Forces	Tanarat Potisuk	Alex Lim
1.3.7	Wind Load	Alex Lim	Rebecca Burrow/Scott Jollo
<b>1.4 Structural Analysis</b>			
1.4.1	Ductility, Redundancy and Operational Importance (LRFD 1.3.3, 1.3.4 & 1.3.5)	Alex Lim	Rebecca Burrow
1.4.2	Shear Correction Factor for Skewed Girders	Tanarat Potisuk	Alex Lim
<b>1.5 Concrete</b>			
1.5.1	Concrete, General	Rebecca Burrow	Tanarat Potisuk, All
1.5.2	Concrete Finish	Rebecca Burrow	Andrew Blower
1.5.3	Concrete Bonding Agents	Rebecca Burrow	Tanarat Potisuk
1.5.4	Curing Concrete	Rebecca Burrow	Dave Dobson
1.5.5	Reinforcement	Tanarat Potisuk	Rebecca Burrow
1.5.6	Precast Prestressed Concrete Elements	Tanarat Potisuk	Alex Lim
1.5.7	Cast-In-Place Superstructure	Tanarat Potisuk	Rebecca Burrow
1.5.8	Post-Tensioned Structures	Tanarat Potisuk	Alex Lim, Dave Dobson
1.5.9	Camber Diagrams	Tanarat Potisuk	Alex Lim
1.5.10	Pour Schedules	Tanarat Potisuk	Alex Lim
1.5.11	Concrete Anchors	Tanarat Potisuk	Rebecca Burrow
<b>1.6 Steel Structure Design and Detailing</b>			
1.6.1	Structural Steel, General	Alex Lim	Michael Jacobson
1.6.2	Structural Steel, Design	Alex Lim	Michael Jacobson/Tanarat Potisuk
1.6.3	Welding	Alex Lim	Steve Lovejoy
1.6.4	Galvanizing and Painting	Alex Lim	Corey Withroe/Andrew Blower
1.6.5	Bolts and Connections	Alex Lim	Dave Dobson/Steve Lovejoy
<b>1.7 (Reserved)</b>			
<b>1.8 Timber Bridge Design and Detailing</b>			
1.8.1	Timber Bridge Locations	Rebecca Burrow	Holly Winston
1.8.2	Timber Design and Details	Rebecca Burrow	Holly Winston
1.8.3	Timber Connections	Rebecca Burrow	Holly Winston
1.8.4	Timber Rails	Rebecca Burrow	Alex Lim
1.8.5	Preservative Treatments	Rebecca Burrow	Bjorn Miller/Orren Jennings
1.8.6	Field Installation	Rebecca Burrow	Holly Winston
<b>1.9 Decks</b>			
1.9.1	Design and Detailing	Rebecca Burrow	Alex Lim
1.9.1.1	Precast Concrete Deck Panels	Rebecca Burrow	Tanarat Potisuk
1.9.2	Deck Screeding	Rebecca Burrow	Alex Lim
1.9.3	Deck Construction Joints	Rebecca Burrow	Alex Lim
1.9.4	Deck Overlays	Rebecca Burrow	Dave Dobson/Bjorn Miller
1.9.4.4	Field Investigation	Rebecca Burrow	Bjorn Miller

1.9.4.5	Warrants for Overlays	Rebecca Burrow	Bjorn Miller
1.9.4.6	Corrosion Considerations	Rebecca Burrow	Bjorn Miller
1.9.4.7	Design and Construction Considerations	Rebecca Burrow	Dave Dobson/Tanarat Potisuk
1.9.4.9	TP&DT/Stage Construction	Rebecca Burrow	Alex Lim
1.9.4.10	Quantity Estimates	Rebecca Burrow	Dave Dobson/Bjorn Miller
1.9.4.11	Preparing Plans and Specifications	Rebecca Burrow	Sandy Gish
<b>1.10 Foundation Considerations</b>			
1.10.1	Foundations, General	Susan Ortiz	Tanarat Potisuk
1.10.2	Lateral Earth Restraint	Susan Ortiz	Albert Nako
1.10.3	Underwater Construction	Susan Ortiz	Alvin Shoblom
1.10.4	Foundation Modeling (Foundation Springs)	Tanarat Potisuk	Susan Ortiz
1.10.5	Foundation Design	Susan Ortiz	Tanarat Potisuk
<b>1.11 Substructures</b>			
1.11.1	Retaining Structures, General	Sophie Brown	Susan Ortiz
1.11.2	End Bents	Tanarat Potisuk	Susan Ortiz
1.11.3	Interior Bents	Tanarat Potisuk	Susan Ortiz
<b>1.12 Buried Structures</b>			
1.12.1	Culvert Design, General	Sophie Brown/Rebecca Burrow	George Bornstedt
1.12.2	Tunnels (structural elements)	Albert Nako	Susan Ortiz
<b>1.13 Rails, Impact Attenuators, and Protective Screening</b>			
1.13		Rebecca Burrow	Alex Lim
<b>1.14 Bearings and Expansion Joints</b>			
1.14.1	Bearings	Tanarat Potisuk	Albert Nako/Dave Dobson
1.14.2	Expansion Joints	Tanarat Potisuk	Dave Dobson/Albert Nako
<b>1.15 Soundwalls</b>			
1.15.1	Soundwalls, General	Susan Ortiz	Rebecca Burrow
1.15.2	Soundwalls Mounted on Bridges	Rebecca Burrow	Alex Lim
<b>1.16 ADA Compliance for Bridge Work</b>			
1.16.1	Americans with Disabilities Act Compliance for Bridge Projects	Rebecca Burrow	Alex Lim
1.16.2	General Guidance	Rebecca Burrow	Alex Lim
1.16.3	Work Activities Triggers	Rebecca Burrow	Alex Lim/Orren Jennings
1.16.4	Design Considerations	Rebecca Burrow	Alex Lim
<b>1.17 Sesimic Design</b>			
1.17.1	Design Philosophy	Albert Nako	Tanarat Potisuk/Susan Ortiz
1.17.2	Applications of AASHTO LRFD Bridge Design Specifications	Albert Nako	Tanarat Potisuk/Susan Ortiz
1.17.3	Applications of AASHTO Guide Specs for LRFD Seismic Bridge Design	Albert Nako	Tanarat Potisuk/Susan Ortiz
1.17.4	Liquefaction Evaluation and Mitigation Procedures	Susan Ortiz	Albert Nako
1.17.5	Costs	Albert Nako	Tanarat Potisuk
1.17.6	Instrumentation	Susan Ortiz	Albert Nako
1.17.7	Dynamic Isolators	Albert Nako	Tanarat Potisuk
1.17.8	Seismic Restrainer Design (New Design and Retorfits)	Albert Nako	Alex Lim
<b>1.18 FRP Composites</b>			
1.18.1	FRP Composites	Tanarat Potisuk	Matthew Stucker/Paul Strauser
<b>1.19 (Reserved)</b>			
<b>1.20 (Reserved)</b>			
<b>1.21 Structural Wire Rope (Cables) and Turnbuckles</b>			
1.21		Alex Lim	Albert Nako
<b>1.22 (Reserved)</b>			
<b>1.23 Bridge Approach Slabs (End Panels), and Slope Paving</b>			
1.23		Rebecca Burrow	Alex Lim
<b>1.24 Bridge Drainage</b>			
1.24		Alvin Shoblom	Alex Lim
<b>1.25 Utilities</b>			
1.25		Tanarat Potisuk	Alex Lim
<b>1.26 Corrosion Protection</b>			
1.26.1	Marine Environment	Rebecca Burrow	Corey Withroe
1.26.2	Marine Environment Protection	Rebecca Burrow	Corey Withroe
1.26.3	Deck and Approach Slab Reinforcement Protection	Rebecca Burrow	Bjorn Miller

1.26.4	Waterproofing Membranes	Rebecca Burrow	Dave Dobson/Bjorn Miller
1.26.5	Protection for Steel Piling	Susan Ortiz	Andrew Blower/Corey Withroe
<b>1.27 On-Bridge Sign &amp; Illumination Mounts</b>			
1.27		Rebecca Burrow	Scott Jollo/Alex Lim
<b>1.28 Truss and Monotube Cantilever Sign Bridges</b>			
1.28.1	Truss and Monotube Cantilever Sign Bridges, General	Scott Jollo	Susan Ortiz/Rebecca Burrow
<b>1.29 Bridge Raising</b>			
1.29.1	Bridge Raising, General	Tanarat Potisuk	Alex Lim/Bjorn Miller
1.29.2	Bridge Raising Using Falsework	Tanarat Potisuk	Alex Lim/Bjorn Miller
1.29.3	Bridge Raising Using Chip-in Method	Tanarat Potisuk	Alex Lim/Bjorn Miller
<b>1.30 Strengthening of Bridges</b>			
1.30.1	Strengthening of Bridges, General	Tanarat Potisuk	Orren Jennings/Mats Halvardson
1.30.2	Strengthening Methods and Details	Tanarat Potisuk	Orren Jennings/Mats Halvardson
1.30.3	Existing Rebar and Concrete Cover Investigation	Rebecca Burrow	Bjorn Miller
1.30.4	Epoxy Injection	Tanarat Potisuk	Mats Halvardson
<b>1.31 (Reserved)</b>			
<b>1.32 Preservation and Repair</b>			
1.32.1	Preservation and Repair	Rebecca Burrow	Mats Halvardson
<b>1.33 Bridge Paint</b>			
1.33.1	Bridge Paint	Alex Lim	Andrew Blower
<b>1.34 (Reserved)</b>			
<b>1.35 Covered Bridges</b>			
1.35.1	Covered Bridges	Rebecca Burrow	Holly Winston/Bjorn Miller
<b>1.36 Moveable Bridges</b>			
1.36.1	Moveable Bridges	Alex Lim	Johnson/Steve Lovejoy
<b>1.37 (Reserved)</b>			
<b>1.38 Bridge Temporary Works</b>			
1.38.1	Introduction	Alex Lim	Susan Ortiz
1.38.2	Temporary Detour Bridges	Alex Lim	Susan Ortiz
1.38.3	Agency Provided Temporary Detour Bridge	Alex Lim	Albert Nako
1.38.4	Falsework	Alex Lim	Rebecca Burrow/Susan Ortiz
1.38.5	Shoring	Susan Ortiz	George Bornstedt
1.38.6	Cofferdams	Susan Ortiz	Alvin Shoblom
<b>Appendix</b>			
	Glossary	Rebecca Burrow	All
<b>Appendix</b>			
	Abbreviations	Rebecca Burrow	All
<b>Appendix 1.2</b>			
A1.2	AASHTO/BDM Cross-Reference	Rebecca Burrow	All
<b>Appendix A1.11</b>			
A1.11	Substructures	Tanarat Potisuk	Susan Ortiz
A1.11.1.7	End Bent Details for Prestressed Slabs and Boxes	Tanarat Potisuk	Susan Ortiz
A1.11.2.2	Interior Bent Details for Prestressed Slabs and Boxes	Tanarat Potisuk	Susan Ortiz
<b>Appendix A1.20</b>			
A1.20.2.2	Resin Anchor Design	Tanarat Potisuk	Rebecca Burrow

<b>BDM Section</b>	<b>Section Title</b>	<b>Technical Resource</b>	<b>Technical Resource Backup</b>
<b>2 Design Guidance</b>			
<b>2.1 Introduction</b>			
<b>2.1</b>		Rebecca Burrow	Alex Lim
<b>2.2 Accelerated Bridge Construction (ABC) Guidelines</b>			
2.2.1	Introduction	Alex Lim	Albert Nako
2.2.2	ODOT encourages and supports ABC projects	Alex Lim	Albert Nako
2.2.3	Contracting Methods Allowed	Alex Lim	Albert Nako
2.2.4	Decision Making Framework	Alex Lim	Albert Nako
2.2.5	Analytic Hierarchy Process (AHP) Tool	Alex Lim	Albert Nako

2.2.6	Steel Structures	Alex Lim	Albert Nako
2.2.7	Concrete Structures	Tanarat Potisuk	Alex Lim
2.2.8	Full Depth Deck Panels, Approach Slabs or Approaches and Wingwalls	Alex Lim	Rebecca Burrow
2.2.9	Precast Connections in Seismic Regions	Tanarat Potisuk	Albert Nako
2.2.10	Use of Self-Propelled Modular Transporters (SPMT)	Alex Lim	Albert Nako
2.2.11	Geotechnical Considerations	Susan Ortiz	Alex Lim
2.2.12	Accelerated Embankment Construction	Susan Ortiz	Alex Lim
2.2.13	QA/QC, Quality Control for Prefabricated Concrete Elements	Alex Lim	Tanarat Potisuk
2.2.14	Cost Considerations	Alex Lim	Albert Nako/Tanarat Potisuk
2.2.15	Listing of bridges replaced using ABC techniques	Alex Lim	Albert Nako
<b>2.3 Structure Appearance and Aesthetics</b>			
2.3		Rebecca Burrow	Robert Grubbs
<b>2.4 Bridge Types &amp; Selection Guidance</b>			
2.4		Alex Lim	Tanarat Potisuk
<b>2.5 Bridge Layout</b>			
2.5.1	Site Constraints	Alex Lim	Rebecca Burrow
2.5.2	Spans and Proportions	Alex Lim	Tanarat Potisuk
2.5.3	Bridge Length	Alex Lim	Tanarat Potisuk
2.5.4	Substructure Guidance	Alex Lim	Susan Ortiz
<b>2.6 Safety and Accessibility Requirements</b>			
2.6.1	Uniform Accessibility Standards	Rebecca Burrow	Alex Lim
2.6.2	Inspection and Maintenance Accessibility	Rebecca Burrow	Michael Goff
<b>2.7 Bridge Security Design Considerations</b>			
2.7.1	Bridge Security Design Considerations	Albert Nako	Alex Lim
2.7.2	Placing Buildings Beneath ODOT Bridges	Rebecca Burrow	Orren Jennings
<b>2.8 Bridge Name Plates &amp; Markers</b>			
2.8.1	Existing Bridge Name Plates	Rebecca Burrow	Bjorn Miller
2.8.2	Bridge ID Markers	Rebecca Burrow	Alex Lim

<b>BDM Section</b>	<b>Section Title</b>	<b>Technical Resource</b>	<b>Technical Resource Backup</b>
<b>3.1</b>	<b>Introduction</b>	Zach Beget	Rebecca Burrow
<b>3.2</b>	<b>Bridge Design Software</b>	Zach Beget	Rebecca Burrow
<b>3.3</b>	<b>Bridge Design Process (Design-Bid-Build), Overview</b>	Zach Beget	Rebecca Burrow
<b>3.4</b>	<b>Bridge Design Deliverables</b>	Zach Beget	Rebecca Burrow
<b>3.5</b>	<b>Quality</b>	Zach Beget	Rebecca Burrow
<b>3.6</b>	<b>(Reserved)</b>	Zach Beget	Rebecca Burrow
<b>3.7</b>	<b>QPL/Research</b>	Zach Beget	Rebecca Burrow
<b>3.8</b>	<b>(Reserved)</b>	Zach Beget	Rebecca Burrow
<b>3.9</b>	<b>Project Development Phase</b>	Zach Beget	Rebecca Burrow
<b>3.10.</b>	<b>Project Design/PS&amp;E</b>	Zach Beget	Rebecca Burrow
3.10.1	Introduction	Zach Beget	Rebecca Burrow
3.10.2	Sealing & Signing Requirements	Zach Beget	Rebecca Burrow
3.10.3	Contract Plans	Zach Beget	Rebecca Burrow
3.10.4	Specifications & Special Provisions	Zach Beget	Rebecca Burrow
3.10.5	Engineer's Estimate	Zach Beget	Rebecca Burrow
3.10.6	Engineer's Estimate of Probable Construction Schedule	Zach Beget	Rebecca Burrow
3.10.7	Calculations & Calculation Books	Zach Beget	Rebecca Burrow
3.10.8	Bridge Load Rating	Jon Rooper	Rebecca Burrow
3.10.9	Operations and Maintenance Manuals	Orren Jennings	Rebecca Burrow
<b>3.11</b>	<b>PS&amp;E to Award</b>	Zach Beget	Rebecca Burrow
<b>3.12 Construction Support</b>			
3.12.1	Introduction	Zach Beget	Rebecca Burrow
3.12.2	Communications during Construction	Zach Beget	Rebecca Burrow
3.12.3	Shop Drawing Review	Zach Beget	Rebecca Burrow
3.12.4	Temporary Works Review	Zach Beget	Rebecca Burrow/Bjorn Miller
3.12.5	Construction Support Close-Out	Zach Beget	Rebecca Burrow

3.13 3.14	(Reserved) Coordination with Other Project Team Members	Zach Beget Rebecca Burrow	Rebecca Burrow Zach Beget
3.14.1	General	Rebecca Burrow	Zach Beget
3.14.2	Project Management	Rebecca Burrow	Zach Beget
3.14.3	Survey and Mapping, & Right-of-Way	Rebecca Burrow	Zach Beget
3.14.4	Roadway	Rebecca Burrow	Zach Beget
3.14.5	Traffic and Mobility	Rebecca Burrow	Zach Beget
3.14.6	Foundations and Geotechnical	Susan Ortiz	Rebecca Burrow
3.14.7	Hydraulics and Scour	Rebecca Burrow	Alvin Shoblom
3.14.8	Environmental	Rebecca Burrow	Zach Beget
3.14.9	Storm Water	Rebecca Burrow	Zach Beget
3.14.10	Utilities – Roles and Responsibilities	Rebecca Burrow	Zach Beget
3.14.11	Railroad	Rebecca Burrow	Zach Beget
3.14.12	Public Involvement	Rebecca Burrow	Zach Beget

[Link to Bridge Section Specialty List](#)