

## ATTACHMENT A PROPOSAL COVER SHEET

**RFP# 25134; Oregon Department of Transportation**

**This Proposal is for:** PE/Design Services , (OR) Both PE/Design and CA/CEI Services

**Legal Name of Firm as provided to IRS:** HNTB Corporation ; a/an Delaware (enter State) Corporation; **DBA Name (if different than legal name):** \_\_\_\_\_

Corporation  Professional Corporation  Ltd. Liability Company  Partnership or Joint Venture  
 Limited Partnership  Ltd. Liability Partnership  Sole Proprietorship  Other \_\_\_\_\_

Mailing Address 111 S.W. Columbia, Suite 940

Portland, OR 97201

Type name of primary Contact for this Proposal Terance Song, PE

Email address tsong@HNTB.com

Telephone (503) 205-4146 Fax (503) 205-4141

Type name of person(s) authorized to sign Contract/Price Agreement: James E. Thomson

### “PASS/FAIL” - PROPOSAL SUBMISSION CHECKLIST (for Proposer use)

- Submission Deadline Date and Time met
- Proposal Does Not Include Conditional Language about Terms and Conditions

#### “REQUIRED” ITEMS –

### PROPOSAL SUBMISSION CHECKLIST (for Proposer use)

- Proposal Cover Sheet Included and authorized original signature obtained
- Minimum Qualifications met and indicated on Proposal Cover Sheet
- Proposal Format and Page Length Requirements met
- Correct number of Proposals included along with CD for electronic submittals
- Reference Questionnaire forms
- Subcontractor/Supplier Solicitation and Utilization Form, completed and signed
- Checked off appropriate Conflict of Interest Disclosure certification on Proposal Coversheet (and included COI Disclosure Form(s) if there are required disclosures).

### RESPONSES TO MINIMUM QUALIFICATIONS (See RFP Section 1.5.2)

#### ➤ Registered Professional Engineer

Proposers must provide information below for at least one Registered Civil Engineer intending to perform civil engineering services under the Contract/Price Agreement.

Name	Registration Number	Jurisdiction of Registration
Terance Song, PE	15704	Oregon
Steve Litchfield, PE	19725	Oregon
David McCurry, PE	58402	Oregon
John Maloney, PE	77802	Oregon
Chris Bahner, PE (WEST Consultants, Inc.)	67050PE	Oregon
Jason Ruth, PE, SE, PMP	62651PE	Oregon
Risheng “Park” Piao, PE, GE (Shannon & Wilson)	58419PE	Oregon

➤ **Registered Professional Land Surveyor (PLS)**

Proposers must provide information below for at least one PLS intending to perform surveying services under the Contract/Price Agreement.

Name	Registration Number	Jurisdiction of Registration
Robert Lennox, PLS (BlueDot Group, LLC)	02886PLS	Oregon

**CERTIFICATIONS.** By signature below, the undersigned Authorized Representative on behalf of Proposer certifies that:

1. Agency shall not be liable for: a) any claims or be subject to any defenses asserted by Proposer based upon, resulting from, or related to, Proposer's failure to comprehend all requirements of the RFP; or b) any expenses incurred by Proposer in either preparing and submitting its Proposal, or in participating in the proposal evaluation/selection or Contract/Price Agreement negotiation process, if any.
2. Neither the Proposer, a major partner or a major shareholder, (defined as a partner or shareholder owning 10% or more of your firm), a major subcontractor (defined as receiving 10% or more of the total Contract/Price Agreement amount), nor any principal officer of a Proposer, major partner, a major shareholder or major subcontractor:
  - a) is presently debarred, suspended, disqualified, proposed for debarment or declared ineligible for the award of contracts by any federal agency or agency of the State of Oregon, and is not listed on GSA's Excluded Parties List System which is available at <http://epls.gov>.
  - b) has, within the last 3-year period, been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of federal or state antitrust statutes relating to the submission of bids or Proposals; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property? {A "principal officer of a Proposer, major partner or major subcontractor," means an officer, director, owner, or partner and any person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions)}.
3. Proposer has made all required **Conflict of Interest (COI) disclosures**, if any.  
The ODOT COI Guidelines and COI Disclosure Form are available at the following link:  
<http://www.oregon.gov/ODOT/CS/OPO/AE.shtml#Forms> (under "Misc. Procurement Related Forms")

**(Check one of the following two certifications as applicable)**

Proposer understands and has provided to all Associates (which includes subcontractors) the COI Guidelines and COI Disclosure Form. Proposer and, to the best of the undersigned's information, knowledge and belief, Proposer's Associates (as defined in the COI Guidelines) are in conformance with the COI Guidelines, have no employees that were employed by ODOT within the last one-year period, and have no conflicts of interest or other disclosures required per the COI Guidelines. The response to each question on the COI Disclosure Form was "no".

Proposer understands and has provided to all Associates (which includes subcontractors) the COI Guidelines and COI Disclosure Form. Proposer and, to the best of the undersigned's information, knowledge and belief, all Associates (as defined in the COI Guidelines) have provided on the COI Disclosure Form(s) submitted with this Proposal all disclosures required per the ODOT COI Guidelines.

4. Proposer has available (and can furnish to Agency upon request) the appropriate financial, material, equipment, facility and personnel resources and expertise, or ability to obtain the resources and expertise, necessary to indicate the capability of the Proposer to meet all contractual responsibilities.

5. Proposer recognizes this is a public document open to public inspection. Any portion(s) of the Proposal that Proposer considers exempt from disclosure under Oregon Public Records Law is/are clearly designated in the Proposal and listed on a separate sheet attached to this Proposal Cover Sheet with justification and citation to the authority relied upon.
6. Proposer does not discriminate in its employment practices with regard to race, creed, age, religious affiliation, sex, disability, sexual orientation or national origin. Nor has Proposer or will Proposer discriminate against a subcontractor in the awarding of a subcontract because the subcontractor is:
  - o a minority, women or emerging small business enterprise certified under ORS 200.055, or
  - o a business enterprise that is owned or controlled by or that employs a disabled veteran, as defined in ORS 408.225.
7. Proposer has an operating policy supporting equal employment opportunity. If proposing firm has 50 or more people, Proposer also has a formal equal opportunity program.
  - o Does Proposing firm have 50 or more employees?  Yes,  No.
  - o Does Proposing firm have a formal equal employment opportunity program?  Yes,  No

Agency is an equal-employment-opportunity employer and values diversity in its work force. Agency requires its Contractors to have an operating policy as an equal employment opportunity employer. Firms of 50 people or less do not need to have a formal equal employment opportunity program, but shall have an operating policy supporting equal employment opportunity. Firms of 50 people or more shall also have a formal equal employment opportunity program.

8. The Proposal submitted is in response to the specific language contained in the RFP, and Proposer has made no assumptions based upon either (a) verbal or written statements not contained in the RFP, or (b) any previously-issued RFP, if any.
9. Proposer, acting through its authorized representative, has read and understands the RFP instructions, specifications, and terms and conditions contained within the RFP (including the sample contract) and all Addenda, if any. Failure to provide information required by the RFP may ultimately result in rejection of the Proposal.
10. Proposer agrees to and shall comply with, all requirements, specifications and terms and conditions contained within the RFP (including the sample contract) and all Addenda, if any.
11. Proposer and Proposer's employees and agents are not included on the list entitled "Specially Designated Nationals and Blocked Persons" maintained by the Office of Foreign Assets Control of the United States Department of the Treasury and currently found at <http://www.treas.gov/offices/enforcement/ofac/sdn/t11sdn.pdf>.
12. All contents of the Proposal (including any other forms or documentation, if required under this RFP) and this Proposal Cover Sheet, are truthful and accurate and have been prepared independently from all other Proposers, and without collusion, fraud, or other dishonesty. **False Claims.** Proposer understands that any statement or representation it makes, in response to this solicitation, if determined to be false or fraudulent, a misrepresentation, or inaccurate because of the omission of material information could result in a "claim" {as defined by the Oregon False Claims Act, ORS 180.750(1)}, made under the resulting PA/WOC being a "false claim" {ORS 180.750(2)} subject to the Oregon False Claims Act, ORS 180.750 to 180.785, and to any liabilities or penalties associated with the making of a false claim under that Act.
13. The signatory of this Proposal Cover Sheet is a duly authorized representative of the Proposer, has been authorized by Proposer to make all representations, attestations, and certifications contained in the Proposal document and to execute this Proposal document on behalf of Proposer.

[Note: Any alterations or erasures to the proposal shall be initialed in ink by the undersigned authorized representative.]

A handwritten signature in blue ink that reads "James E. Thomson". The signature is written in a cursive style and is positioned above a horizontal line.

Date November 29, 2012

Authorized Signature

James E. Thomson Vice President and Northwest District Office Leader

(Print Name and Title)

## 2.2.1 PROPOSER'S PROJECT MANAGEMENT FOR PE-DESIGN SERVICES

*The HNTB Team is committed to a partnership with ODOT and Local Public Agencies (LPAs) to deliver high-quality PE-Design services. We pledge to support successful transportation project delivery within a changing environment of performance-based programs and right-sizing, as evidenced by MAP-21 and funding opportunities. Your success is our success.*

Our approach to PE-Design services offers the following key benefits:

### EXPERIENCE

- Proven Project Managers (PMs) with **multidisciplinary project experience** with a variety of funding mechanisms for ODOT and LPAs
- **Experienced team** with a track record of delivering PE-Design services through the ODOT process

### RESPONSIVE, COST-EFFECTIVE SERVICE

- Extensive, flexible PE-Design resources and technical experts available to allow for **responsive, cost-effective service**
- HNTB's proven **client-focused** work planning and project management procedures

### INNOVATIVE, PRACTICAL SOLUTIONS

- Innovative engineering and practical design solutions to **maximize value**

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*In ROADS & BRIDGES' Go-To List of 2012 Top Design Firms, DOT clients nationwide ranked HNTB No.1 – Top Road and Highway Design Firms; No.1 – Top Bridge Design Firms; and No.1 – Top Design-Build Firms.*

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In Oregon, we have demonstrated significant value to our clients by delivering projects such as ODOT's **I-84: Exit 64 Improvements (Bundle 224)** in Hood River and **Alsea Bay Bridge Replacement** in Waldport; the City of Portland's **Pedestrian Improvements for the Steel Bridge**; the Port of Portland's **Airport Way Realignment**; and the Port of Hood River's **Lower Chord Rehabilitation**.

## A. MANAGEMENT AND ORGANIZATIONAL STRUCTURE

To best support ODOT and the statewide LPAs that will procure services under this Price Agreement (PA), HNTB has assembled a robust, flexible team of experienced PE-Design resources bringing demonstrated abilities to provide innovative yet practical solutions to meet ODOT's needs and goals. HNTB's team is organized to bring significant value to ODOT by:

- Establishing a **single point-of-contact** in Terry Song, PE, to provide clear and consistent communication to ODOT, design and construction teams, and other stakeholders
- Assigning **experienced PMs** to ensure deliverables meet ODOT standards and expectations
- **Partnering with ODOT** to build relationships, share technical knowledge, and deliver practical solutions to save time and money
- Creating a **structure similar to ODOT's internal design teams** to facilitate peer communication and responsiveness
- Delivering the most qualified teams for WOCs using **flexible, cost-effective staffing** approaches
- Integrating experienced construction staff into the design process to evaluate constructability and verify cost estimates

HNTB's management and organizational structure for this PA is clear and straightforward (Figure 1 on page 3). **Terry Song, PE**, will be the contract manager. Terry is experienced in ODOT's contracting and project delivery process and will be the primary point-of-contact for ODOT for this PA and ultimately responsible for successfully delivering individual Work Order Contracts (WOCs).

Our team's experienced and well-qualified PMs include Terry and **Steve Litchfield, PE**. Both Terry and Steve bring experience that will ensure high quality deliverables through:

- Understanding of ODOT's project delivery process
- Applying lessons learned from management of interdisciplinary teams
- Managing projects with a variety of funding mechanisms for ODOT and LPAs statewide

These PMs (and others as identified in Figure 1) will manage individual WOCs awarded under the PA and work directly with the ODOT or LPA project manager. The PMs report to the contract manager and are responsible for budgeting, scheduling, staffing, quality, and subconsultant performance.

Principal-in-charge **Jim Thomson** is HNTB's Northwest District Leader responsible for authorizing contracts and ensuring resource commitments are met. Project Administrator **Lois Felker** will assist the contract manager and PMs with accounting, contract issues and administrative support. Lois has a proven record of responsiveness and finding solutions with ODOT procurement staff on HNTB's current contracts.

### Flexibility and Cost-Effectiveness for WOCs

Our team includes professionals to perform all services included in the RFP Scope of Work and sufficient resources to deliver services statewide with the ability to cover multiple concurrent WOCs. During Tier 2 procurement, we will assemble a WOC project team with a WOC PM, professionals, and production staff to perform the requested project scope, organized similarly to ODOT's internal project delivery teams with task leaders for major work elements. We will select team members based on skills matched to the project scope, available commitment for the project duration, and providing best value to ODOT.

### Subconsultant Selection

HNTB will select subconsultants for specific WOC assignments based on project needs, proximity to the site, client experience, specific project understanding, and to help meet ODOT's DBE goals and MWESB aspirational targets. **All subconsultant team members have experience working with ODOT and/or LPAs, and many are certified DMWESBs.** Each firm has proven working relationships with HNTB and provided value to ODOT through past performance, expertise, and competitive pricing.

We understand ODOT's DBE Policy and are fully committed to helping ODOT meet or exceed its goals. **HNTB has partnered with 14 DMWESB Oregon firms in the past two years, subcontracting nearly \$2.4 million.**



*Successful team building efforts on the I-84: Exit 64 Improvements project resulted in selecting and using highly qualified DMWESB firms (Bluedot Group, Heritage Research Associates, Lois D. Cohen Associates) that helped the team meet the 15% DMWESB goal and deliver the project ahead of schedule and under budget.*

### Subconsultant Utilization and Management

HNTB intends to self-perform the majority of work assigned under this PA. We will use subconsultants to complement our in-house capabilities with specialized technical services; provide services in a cost-effective manner; and present the best team to ODOT and LPAs. The HNTB WOC PM will oversee all subconsultant team members as a unified single source of services to ODOT. Subconsultants will be required to meet the same contract requirements and quality procedures as HNTB.

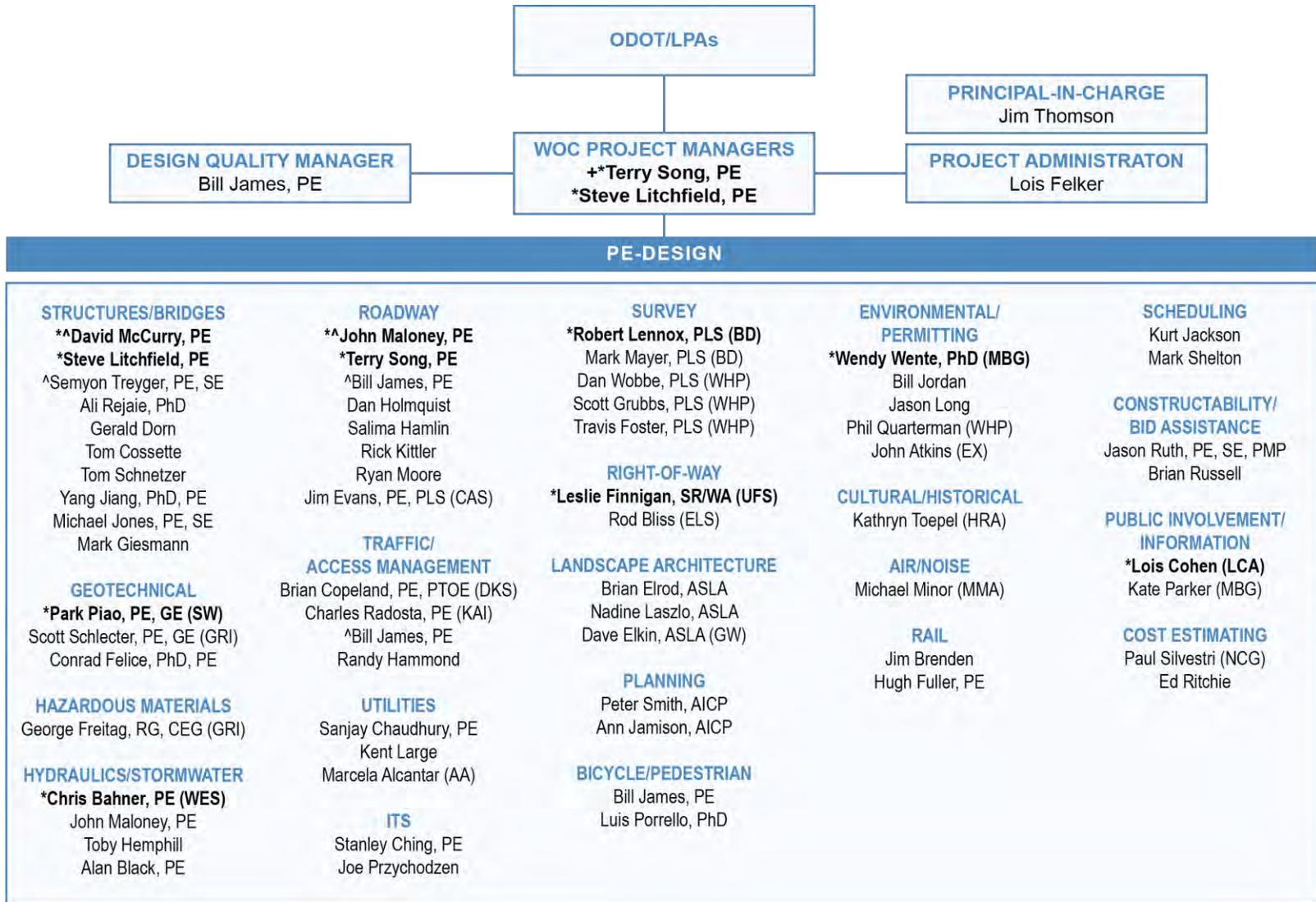
*Many of our subconsultant team members have nearly two decades of successful project delivery experience working directly with HNTB PMs and other key staff.*

## B. MEETING DELIVERY SCHEDULES

HNTB expedites project elements on every project using the methods described in Figure 2 on page 4.

*"The {HNTB} team completed the design on an aggressive schedule, created a project design that was significantly under the original budget estimate, addressed client and stakeholders needs, and provided a project that has received compliments from numerous interested parties throughout the community." ~ Rich Watanabe, ODOT Metro East Area Manager, I-84: Exit 64 Improvements*

Figure 1. HNTB Team PE-Design Organization Chart.



**LEGEND**

- \* denotes key staff
- + denotes contract manager
- ^ denotes additional WOC PMs

PE/SE/PLS noted are licensed in Oregon

**SUBCONSULTANTS**

- AA** Alcantar & Associates LLC (DBE/MBE/WBE/ESB)
- BD** Bluedot Group, LLC (ESB)
- CAS** Casso Consulting, Inc. (DBE/MBE/WBE/ESB)
- DKS** DKS Associates

- ELS** Epic Land Solutions, Inc. (DBE/WBE)
- EX** Exeltech Consulting, Inc. (DBE/MBE)
- GW** GreenWorks PC
- GRI** Geotechnical Resources, Inc.
- HRA** Heritage Research Associates, Inc. (DBE/WBE)

- KAI** Kittleson & Associates, Inc.
- LCA** Lois D. Cohen Associates (DBE/WBE/ESB)
- MBG** Mason, Bruce & Girard, Inc.
- MMA** Michael Minor & Associates (DBE/MBE/ESB)

- NCG** National Constructors' Group
- SW** Shannon & Wilson, Inc.
- UFS** Universal Field Services, Inc.
- WES** WEST Consultants, Inc.
- WHP** WHPacific

Figure 2. HNTB Methods of Coordinating and Expediting Elements to Meet Schedules without Sacrificing Quality.

Methods	Benefit
<b>HNTB Work Plan</b> <ul style="list-style-type: none"> <li><b>Work plan:</b> detailed plan with scope, schedule, organization, workflow diagram, roles and responsibilities, design criteria, quality plan, and budget</li> <li><b>Workflow diagram:</b> all project tasks organized into a delivery map controlled by durations, task relationships, and resources</li> <li><b>Schedule:</b> quality tasks and ODOT processes integrated into the project delivery schedule</li> </ul>	<ul style="list-style-type: none"> <li>All team members understand the work plan including their interrelationships and coordination responsibilities with others</li> <li>Maps task sequences and dependencies to form a “road map” of how the project will be done; identifies opportunities where tasks can be expedited</li> <li>Reduces schedule risk by identifying critical path elements such as permitting, ROW acquisition, and utility coordination to optimize ability to advance related design elements</li> <li>Time and resources for quality reviews are built into the schedule enabling proper execution of the Design Quality Plan</li> </ul>
<b>Risk Tracking Register</b> <ul style="list-style-type: none"> <li>Active list of project risks (scope, schedule, budget) and opportunities with responsibilities and actions to be tracked throughout a project</li> </ul>	<ul style="list-style-type: none"> <li>Supports the systematic elimination or mitigation of project risks</li> <li>Identifies opportunities to reduce costs or accelerate tasks</li> </ul>
<b>Effective Coordination</b> <ul style="list-style-type: none"> <li>PM/Agency coordination</li> <li>Project team meetings that provide the foundation for multidisciplinary coordination to evaluate and prioritize tasks</li> <li>Management meetings to plan resources and strategize to remove/prevent obstacles</li> <li>Clear action tracking of all meetings</li> </ul>	<ul style="list-style-type: none"> <li>Regular touch points with Agency PM to discuss progress/changes</li> <li>Communicates protocol and decision-making structure for expediting project elements</li> <li>Encourage innovation and interdisciplinary coordination through project team meetings</li> <li>Facilitates timely decisions to attain quality delivery, on time, within budget, and to ODOT’s satisfaction</li> </ul>
<b>Quality Process Record</b> <ul style="list-style-type: none"> <li>Deliverables list for each milestone with quality review dates and responsibilities</li> <li>PM signs the quality process record prior to each milestone submittal</li> </ul>	<ul style="list-style-type: none"> <li>Verifies all quality checks are completed before submittal to ensure quality is not sacrificed</li> <li>HNTB used the Quality Process Record to successfully deliver the I-84: Exit 64 Improvements (Bundle 224)</li> </ul>

### Flexibility and Approach to Changes

*“HNTB was very supportive in compressing the {design} schedule to accommodate new requirements. Even with an accelerated schedule, submittals were made on time. The quality of the final deliverables also brought high praise from ODOT’s Bridge Delivery Unit.” ~ John Lowe, OBDP Design Coordinator, I-5 Eagle Mill Road, Bear and Neil Creek (Bundle 301)*

### Schedule Flexibility

When project schedules are accelerated or delayed HNTB will:

- Evaluate the critical path to understand all task implications and communicate to ODOT or LPA
- Develop a response plan to minimize impacts with resources and coordination needs

- Meet with ODOT or LPA to achieve consensus on revised staffing plan
- Adjust staffing and deliver to the expected completeness and quality under the original schedule

### Staffing Adjustments

With 160 employees in the Pacific Northwest, specializing in delivering transportation projects to public agencies, and a nationwide bench of more than 3,600 technical and professional resources, HNTB is capable of delivering large work order tasks and multiple work orders concurrently.

HNTB staff is dedicated to this PA and we will maintain staff consistency for cost-effectiveness and project knowledge. HNTB administers the following approaches to adjust staffing levels:

- Define the experience and expertise of staff required to complete the work
  - Confirm new staff commitments through PIC
  - Use ODOT experienced production staff and quality reviewers
  - Use the work plan to effectively orient new staff in quality procedures and responsibilities
- These approaches allow a seamless transition of resources to and from the project.

### C. QUALITY CONTROL PROCEDURES AND POLICIES FOR PE-DESIGN

HNTB has a history of delivering quality work with an established quality manual that details roles and responsibilities, documents development standards, quality review types and procedures, audits, and document control. Design Quality Manager **Bill James, PE** brings 27 years of experience in delivering quality PS&E packages and is HNTB’s Northwest District Quality Manager. Our team brings the following key benefits regarding quality:

- A quality plan based on the ODOT template that **emulates ODOT’s internal processes**
- A proven system of documenting quality plan conformance for **positive audit results**
- Thoroughly reviewed submittals that will **minimize the agency review effort**

*On the I-84: Exit 64 Improvements project, OBDP recognized HNTB’s quality performance during project delivery as having **no observations and no findings** when audited.*

Upon award of a WOC, HNTB will prepare and submit a project-specific quality plan tailored to the tasks and disciplines required. The plan will identify staff and their responsibilities. Procedures and benefits in typical HNTB plans include:

Procedure	Benefit
Kickoff meeting is required for all projects	Comprehensive team understanding of project, including interrelation of multiple disciplines; defines QA/QC roles and responsibilities of all team members
Dedicated budget for QA/QC tasks	Establishes QA/QC as an integral project task, not an afterthought
Quality manager	Individual responsible for oversight and documentation of QA/QC

Procedure	Benefit
Quality procedure training	Consistent understanding and application of QC procedures, including by subconsultants
Design criteria memos	Defines design criteria at outset, a key issue for federal-aid projects
Comment logs	Documentation of all comments, resolution and closure
Design checklists	Similar to ODOT’s internal lists, ensures checking of fundamental design elements
Project reviews	Monthly reporting of quality issues to principal-in-charge

### QC Execution

The quality manager performs QC training at the beginning of all projects. The reviews required in the QC plan will be executed first by the project manager, then the engineer of record, independent senior staff, and peer review at each stage of the project, including the design acceptance package (DAP), preliminary plans, advance PS&E, final PS&E, and bid ready as indicated in the quality plan. All project deliverables must be reviewed and the quality process closed prior to ODOT submittal.

### Design Reviews

Review Type	Reviewer(s)	Schedule
Peer and Discipline	Design staff	At each submittal
Engineer of Record	Responsible engineer	At DAP; Progress; Advance; Final PS&E plans
PM	PM	Monthly and at each submittal
Independent Bridge Design Check	Qualified staff not working on the project	At completion of design calculations
Constructability	Construction Project Manager and field staff	At DAP; Advance plans

### D. DETERMINATION OF CONSTRUCTION BUDGETS TO MEET OBJECTIVES

HNTB considers project cost estimating a critical factor to the success of a project and our team has experience evaluating construction costs throughout the life of a project. HNTB’s standard practice determines if the construction budget is sufficient to meet the project’s objectives during the scoping

phase and takes urgent action when impacts to construction budgets are recognized at any time during the project. Figure 3 describes how and when HNTB estimates project construction costs.

*HNTB delivered cost estimating accuracy on TriMet's signature Willamette River Transit Bridge with the average of the three bids being \$129 million, 4% under HNTB/NCG's contractor-style estimate of \$134 million.*

Figure 3. Methods for Determining Construction Costs.

Methods	Description of Actions by HNTB Team	Project Phase(s)
Conceptual estimate	<ul style="list-style-type: none"> <li>Carefully validates the project prospectus and project objectives</li> <li>Reviews construction work components and determines a risk profile</li> <li>Recommends CEVP or contractor-style estimates when warranted</li> </ul>	WOC scoping
Change management list	<ul style="list-style-type: none"> <li>Tracks, estimates, and communicates opportunities and risks affecting construction budgets</li> <li>Immediately notifies ODOT/LPA when an opportunity or risk is realized</li> </ul>	Continuous
Practical design workshop	<ul style="list-style-type: none"> <li>Provides national expertise to develop project innovations for complex projects to minimize costs and meet objectives</li> </ul>	Start-up
Engineer's estimate	<ul style="list-style-type: none"> <li>Uses ODOT standards and data: average bid item costs, cost trends, inflation forecasts, escalation factors, and contingencies</li> <li>Establishes a fair and reasonable baseline estimate (at start-up)</li> <li>Performs check of bid item quantities</li> <li>Uses detailed plans and specifications</li> </ul>	<ul style="list-style-type: none"> <li>Start-up</li> <li>DAP</li> <li>Progress</li> <li>Advanced</li> <li>Final</li> </ul>
Constructability review	<ul style="list-style-type: none"> <li>Reviews plans, specifications, and engineer's estimate to ensure all work is accounted for, especially work associated with contractor staging and MOT</li> </ul>	<ul style="list-style-type: none"> <li>Progress</li> <li>Advanced</li> <li>Final</li> </ul>
CEVP	<ul style="list-style-type: none"> <li>Develops estimate with multiple data points from probability evaluation of bid item costs and economic factors</li> </ul>	As requested
Contractor-style estimate	<ul style="list-style-type: none"> <li>Generates ground-up estimates by using the best available material costs and production rates</li> </ul>	As requested



**Case Study: I-84:  
Exit 64  
Improvements  
(Bundle 224)**

On this project, the initial estimated construction costs exceeded the funding

available from OTIA and the STIP. Immediately following notice to proceed, HNTB met with ODOT Region 1 and Bridge Delivery Unit staff and proposed a collaborative, three-week alternatives assessment to determine whether the project could be completed within the \$11 million construction budget and meet project objectives.

During this period, the project team used a practical design approach to determine the minimum improvements needed to fix the traffic congestion and to identify creative strategies for reducing both temporary and permanent construction costs. With the proposed temporary split diamond, a haunched steel box girder bridge alternative, a design exception to maintain the existing vertical clearance, and the use of asphalt overlays instead of full-depth pavement, HNTB estimated the project construction cost at \$9.8 million.

*As a result of this expedited analysis, ODOT proceeded and HNTB completed the PS&E within the original 12-month schedule. The completed construction cost was \$8.44 million, or 14% under HNTB's initial estimate.*

## 2.2.2 PROPOSER’S COST EFFECTIVENESS FOR PE-DESIGN

### A. SPECIFIC EFFORTS TO ENSURE COST-EFFECTIVENESS

HNTB understands that FHWA and ODOT funding levels are constrained and the new MAP-21 legislation places a focus on improving efficiency.

#### Team Structure

HNTB’s team structure supports cost-effective project delivery by:

- Matching project responsibilities with appropriately experienced staff
- Staffing projects with teams experienced in ODOT and LPA(s) project delivery
- Providing technical expertise to innovate and expedite project elements to maintain schedule and quality
- Offering an experienced environmental team that can take advantage of MAP-21 environmental streamlining

#### Work Plan Management

HNTB creates a work plan that prescribes the path to meet project objectives. Management of the work plan through the design phase using the methods shown in the table below results in cost-effective project delivery.

Management Practices	Benefit
S-Curve evaluation	Tracks changes versus cost-to-complete and allows identification of trends and early corrective action if costs do not align with progress
Project review meetings	Instituting monthly oversight ensures project performance issues are resolved promptly
Job progress inputs	Detailed reporting of the estimated labor remaining to complete each assigned task on a monthly basis provides the PM with an additional snapshot of cost-effective delivery performance
Effective meetings	HNTB requires a well-planned agendas, appropriate staff attendance, and proper documentation

#### Ensuring Low Cost Travel, Lodging and Per Diem Expenses

HNTB minimizes project travel costs by:

- Staffing projects locally through HNTB team offices in ODOT Regions 1, 2, 3, 4 and near Region 5
- Reducing non-essential travel by using phone and HNTB’s proprietary Bridgit™ web-based conferencing software to collaborate remotely at multiple locations
- Accounting for anticipated travel and lodging based on the project schedule; overnight stays are minimized and scheduled trips are planned in advance to reduce airfare costs; the least cost travel mode will be selected based on project location
- Identifying opportunities to combine trips for multiple purposes when traveling to different regions of the state

HNTB has detailed travel policies that limit allowable travel expenses as highlighted below:

- HNTB establishes a fixed per diem when travel is expected on a regular basis; for this PA, rates will conform to ODOT per diem rates
- HNTB negotiates corporate rates with hotels, car rental agencies, and airlines on a nationwide basis; employees are directed to use preferred providers whenever possible
- HNTB travel policies do not allow travel costs related to comfort or upgrades to be job chargeable to the client

Management Practices	Benefit
Provide a detailed scope of work	Provides a right-sized PE-design team based on project complexity, schedule and size with a balanced mix of staff and billing rates
Develop HNTB workflow diagram	Identifies critical path tasks and assigns resources based on an integrated task schedule to complete projects in the least amount of time
Active resource management	Resource levels are monitored and adjusted to match work order needs
Change management	Continually tracks project risks to eliminate surprises and provide predictable project results
Budget management	Establishes budgets at the task level allowing detailed tracking of project charges to avoid cost overruns

## B. METHODS, TOOLS AND PROCESSES TO DEVELOP ESTIMATE FOR SERVICES

HNTB uses sophisticated methods, tools, and processes to develop estimates for services that:

- Reflect a **clear understanding of expectations** (project scope and ODOT)
- Use an appropriate blend of job classifications
- Demonstrate that all **PM tasks have defined scope** directly related to project performance, quality, and client satisfaction
- **Manage schedule risk** from potential additional services by including contingency items requiring separate notice to proceed
- Represent a **fair and reasonable profit** based on project size, risk, and complexity factors

### Methods Used to Develop Estimate for Services

The PM and the task leaders are responsible for developing the estimate and using the following methods and approach:

- Obtain and review available project data and perform a site visit to verify existing conditions
- Meet with ODOT and/or LPA to discuss expectations, alternatives, design approaches, and project assumptions
- Develop assumptions, deliverables, and scope language; confirm assumptions, deliverables, and scope with ODOT and/or LPA
- Estimate the level of effort of each detailed scope item by labor classification; calculate estimated fee and direct expenses using the ODOT Breakdown of Costs worksheet
- Verify that wage rates and overhead rates are in conformance with the PA
- Draft and review ODOT's profit-fee worksheet for ODOT and/or LPA consideration
- Confirm that DBE participation goals are met
- Meet and resolve any scope, schedule, budget, and assumptions with ODOT and/or LPA for incorporation to the WOC

### Methods to Ensure Fair and Reasonable Estimates

HNTB ensures that our estimates for services are fair and reasonable to both ODOT and LPAs and to our team by:

- Working with both ODOT, LPAs, and the HNTB Team to obtain buy in of the project work plan
- Using independent industry-specific salary surveys to ensure wage rates are appropriate
- Verifying each task is being performed by staff in the most cost-effective job classification with the required level of experience
- Planning and executing our business operations to maintain overhead rates in the lower 50<sup>th</sup> percentile of the industry
- Completing ODOT's profit/fee worksheet to develop profit in line with client expectations and market standards, and commensurate with project factors, including complexity, schedule, size, and risk
- Reviewing the scope and hours estimate for consistency with actual effort expended on recent projects (PM and contract manager)
- Checking typical metrics such as hours per sheet and percentage of construction costs for reasonableness

## 2.2.3 PROJECT TEAM AND QUALIFICATIONS FOR PE-DESIGN

### A. PM's EXPERIENCE WITH SIMILAR INTERDISCIPLINARY TEAMS

Our PMs bring the following key benefits:

- A **successful history in delivering a wide range of interdisciplinary projects** with both ODOT and LPAs
- Experience managing projects with a **variety of funding mechanisms** for ODOT and LPAs statewide
- Skillsets derived from relevant experience to **accurately scope** the project, **proactively manage** the work, maintain **open communication** with ODOT, and **minimize risk** of schedule delays

#### Terry Song, PE – Project Management Experience with Similar Interdisciplinary Teams

Terry's professional experience includes 27 years as a civil engineer with expertise in the management and design of transportation projects, including highways, urban and rural roadways, transit, ports, and related infrastructure. Today's projects require teams comprised of experts in multiple fields to solve complex design issues, reduce environmental impact, meet public expectations, and deliver value for taxpayers. Keeping a project team on track requires a project manager who understands how the pieces work together. Terry has demonstrated his ability by leading full-service teams and also by being a task leader integrated into ODOT project development teams. As a project manager, Terry has led ODOT highway and bridge projects, projects through the Local Agency Program, and consultant tasks under discipline-specific contracts as shown in Figure 4 on page 10.

*"Terry provided excellent service as the design team project manager for the Leadbetter Overcrossing project. The complicated project required extensive coordination with various disciplines and utilities and Terry was very proactive in helping us develop effective design solutions."*

~ Dan Layden, City of Portland Capital Program Manager

#### Experience Highlights

- Project Manager for more than 20 ODOT and local agency projects in the last 10 years
- Led projects statewide for highway bridge replacement, transportation enhancement,

congestion mitigation air quality, interstate maintenance, and OTIA-funded projects

- Proven ability to build consensus on contentious projects

#### ODOT and LPA Project Examples

**City of Portland/Port of Portland, North Leadbetter Road Extension Overcrossing, Rivergate Industrial District. Role:** PM, final design and construction assistance. **Relevancy:** The project included replacing an at-grade crossing of the BNSF Railway line with a seven-span 676-foot-long bridge over the railroad. Terry managed the bridge, roadway, and drainage design as well as complex utility relocations. The Port of Portland was a key stakeholder and maintaining access to the port's Terminal 6 during construction was an important design goal.

**OBDP/ODOT, I-84: Stanton Blvd. – Snake River Bridges. Role:** PM overseeing bridge, highway, traffic, and environmental design team. **Relevancy:** Project elements included four approach span replacements on the multispan I-84 crossing of the Snake River; a replacement structure on I-84 at Doman Road; and structural repairs at the Stanton Blvd. Interchange. Roadway elements included highway reconstruction at bridge approaches, median crossover design, and design exceptions for shoulder width. Plans and supporting documents were prepared and submitted at design acceptance (30%), advance (95%), and final PS&E (100%) milestones. The CS3 goals of the project were met by creating informational notices and conducting an open house.

**OBDP/ODOT, I-5: North Ashland – 12<sup>th</sup> Street, Ashland. Role:** PM, design. **Relevancy:** The project included a six-inch asphalt concrete pavement overlay over existing continuously reinforced concrete pavement; associated concrete pavement repairs; highway reconstruction to improve bridge vertical clearance; replacement of substandard bridge rails and guardrail; and shoulder widening to current standards where practical. Design exceptions were obtained for substandard bridge widths. The project scope included bridge rail design, highway, surveying, environmental studies, traffic engineering, and construction management.

PROJECT	RELEVANT PE-DESIGN SERVICES									
	Funding	Contracting	Structural	Roadway	Survey	Geotechnical	Hydraulics	Environmental	Right of Way	Public Inv.
Washington Co., Banks-Vernonia Linear Trail	TE	ODOT LA				X		X		
City of Portland, N. Going St. Br. Seismic Strengthening	HBR	ODOT LA	X	X		X		X		X
ODOT Reg. 1, I-84 Multnomah Falls to Cascade Locks	IM	ODOT DS*	X							
ODOT Reg. 1, I-84 East Portland Fwy/NE 181 <sup>st</sup> Ave.	IM	ODOT DS*	X	X						
ODOT/City of Portland, N. Leadbetter Ext. Overcross.	OTIA	ODOT LA	X	X	X	X		X		
ODOT, I-5 North Ashland, 12 <sup>th</sup> Street	IM	ODOT FS	X	X	X	X				
OBDP, I-84 Stanton Blvd., Snake River (Bundle 202)	OTIA	ODOT LA	X	X	X	X	X	X		X
City of Medford, Bear Creek Bridge, McAndrews Road	OTIA	ODOT LA	X	X	X	X	X	X	X	X
ODOT/Jackson County, Bear Creek Bridge, Pine St.	OTIA	ODOT LA	X	X	X	X	X	X	X	X
Jackson County, Mid-County Bridges	OTIA	County	X	X	X	X	X	X	X	X
ODOT/City of Medford, Medford Street Paving	CMAQ	ODOT LA	X	X	X			X		
City of Eagle Point, Little Butte Creek, Loto St. Bridge	OTIA	ODOT FS	X	X	X	X	X	X	X	
ODOT/Clatsop County, Davis Creek Br. Replacement	HBR	ODOT LA	X	X	X	X	X	X	X	

LA – Local Agency; DS – Discipline-Specific (\*only consultant disciplines shown); FS – Full Service

### Steve Litchfield, PE – Project Management Experience with Similar Interdisciplinary Teams

Steve has 19 years of transportation design and construction experience focused on managing multidisciplinary projects for ODOT and local agencies. Having managed both bridge and roadway projects, Steve is adept at managing coordination between disciplines. Steve has a unique ability to facilitate discussions with project stakeholders, regulatory agencies, and engineering staff to get to the heart of any issue and determine a path forward. Steve’s PM experience spans a wide range of project sizes and types from small rural trails and bridge rehabilitations to complex urban freeway, bridge, and rail. His understanding of ODOT and LPA project delivery has been built through the delivery of the representative projects shown in Figure 5 on page 11.

*“Mr. Steve Litchfield has been involved with TriMet in developing the Portland – Milwaukie Light Rail Transit Bridge across the Willamette River for several years now. As HNTB’s Project Manager, he has provided solid and timely guidance to TriMet at every step of the way. I appreciate his attention to detail and his positive team attitude.” ~ Dave Tertadian, TriMet Design Manager and Resident Engineer*

### Experience Highlights

- 19 years of relevant experience with interdisciplinary teams for roadway and bridge projects for ODOT and local agencies
- PM for the ODOT Statewide Bridge Baseline Assessment Program that provided scoping estimates and baseline engineering reports for 178 highway bridges (\$400 million construction)
- Proactive management has resulted in a track record of on time and on budget delivery for a diverse range of projects
- Knows ODOT design and contracting procedures
- Demonstrated ability to connect a wide range of stakeholders, regulatory agencies, and community members to achieve project consensus and keep projects on schedule

### ODOT and Local Agency Project Examples

**OBDP/ODOT Region 1, I-84: Exit 64 Improvements (Bundle 224).** **Role:** Design PM. **Relevancy:** \$14 million interchange project to replace the freeway bridge with an aesthetic design, improve all four ramps, and widen the underlying roadway. Steve managed the multidisciplinary team from scoping through completion of bid documents. The unique haunched steel box girder design provided a contemporary urban structure in keeping with the historic theme of the Columbia River Gorge while

minimizing the structure depth and associated roadway improvements to I-84. Unique project components included developing a modified split diamond to minimize temporary construction to maintain traffic and developing a cost-effective foundation to withstand seismic liquefaction and lateral spreading hazards. The project also included replacing the stormwater lift station and developing water quality and landscape restoration improvements which complement the scenic corridor.

**OBDP/ODOT Region 3, Eagle Mill Road, Bear and Neil Creek (Bundle 301).** *Role:* PM. *Relevancy:* \$22 million project replaced five I-5 bridges near Ashland. Steve led the multidisciplinary team’s design of a three-span concrete bridge over Eagle Mill Road, a single-span curved steel girder bridge over Bear Creek, and a single-span concrete bridge over Neil Creek Road. Regional traffic mobility and context-sensitive solutions were primary considerations. The project also included roadway improvements, bridge hydraulic analysis, and programmatic permitting.

PROJECT	RELEVANT PE-DESIGN SERVICES									
	Funding	Contracting	Structural	Roadway	Survey	Geotechnical	Hydraulics	Environmental	Right of Way	Public Inv.
Figure 5. Steve Litchfield’s Relevant PM Experience Delivering PE-Design Services with Similar Interdisciplinary Teams.										
OBDP/ODOT, I-84: Exit 64 Imp. (Bundle 224)	OTIA/JTA	OBDP	x	x	x	x	x	x	x	x
OBDP/ODOT, I-5 Eagle Mill Road, Bear and Neil Creek (Bundle 301)	OTIA	OBDP	x	x	x	x	x	x		x
Jackson Co., Applegate River Bridges (2)	OTIA	County	x	x	x	x	x	x	x	x
Jackson Co., Star Gulch / Beaver Creek Bridges	OTIA	County	x	x	x	x	x	x		x
Polk Co., Luckiamute River Bridges	OTIA	County	x	x	x	x	x	x	x	x
Polk Co., Willamette River (Wigrich Rd.) Br.	OTIA	County	x	x	x	x	x	x		x
Wasco Co., Sufert Viad./Gate Creek Dr. Rehab.	OTIA	County	x	x	x					
ODOT, U.S. 199: Rogue River Bridge	IM/HBR	ODOT FS	x	x	x	x		x		x
ODOT/Clatsop Co., Ferris Creek Bridge	HBR	ODOT LA	x	x	x	x	x	x	x	
Clackamas Co., Sunnybrook Road Ext.	TEA-21	County	x	x	x	x	x	x	x	x
City of Tualatin, Boones Ferry Road/Grahams Ferry Road at Ibach St.	Local	LA		x	x	x	x	x	x	x

LA – Local Agency; FS – Full Service

**B. HNTB QUALIFICATIONS AND EXPERIENCE TO SELF-PERFORM**

HNTB’s qualifications are built on nearly 100 years of experience in infrastructure development. As a leader with a top-ranked reputation in the transportation industry, including serving as the **No. 1 Consultant to state DOTs** (as ranked by *Roads & Bridges* 2012 survey of DOTs), HNTB brings nationally known innovative engineering solutions and best practices to solve complex challenges at the local level. **HNTB has full-service capabilities under one roof** — from planning, environmental, preliminary engineering, final design, and PS&E, to

construction services and project closeout, we have the **experience, and are qualified to provide the following services requested in this PA’s Scope of Work:**

**Primary Services**

- **Project Management** – schedules, budgets, quality management, subconsultant coordination, and scoping
- **Roadway Design** – highway, interchange, intersections, signing and striping, pavement markings, and pavement maintenance
- **Traffic** – ITS, signalization, temporary traffic control, and illumination

- **Bicycle and Pedestrian Design**
- **Structural and Bridge Design** – bridge TS&L, rehabilitation, moveable, seismic retrofits, electrical and mechanical systems, painting, maintenance evaluations, inspection, load rating, and walls
- **Stormwater** – pavement drainage, water quality
- **Hydraulic Engineering** – river, bridge, scour, levees, and pump stations
- **Utility Coordination and Engineering**
- **Landscape Architecture** – roadside development, urban design, environmental mitigation, trails and parks, and sustainability
- **Transportation Planning**
- **Environmental Documentation**
- **3-D Modeling and Photo Simulations**
- **Contract PS&E**
- **Special Provisions**
- **Bidding Assistance**
- **Construction Administration, Engineering, Inspection, and Management**

**Other Services**

- **Transit** – railroad, light rail, and street car
- **Aviation**
- **Rail and Transit** – freight, heavy, light rail engineering, intermodal transit facilities, and agency coordination
- **Tolling**
- **Tunneling**
- **Mechanical and Electrical Design**
- **Water Resources**
- **Architecture**

**PE-Design Self Performance Project Examples**

Figure 6 provides examples of multidisciplinary transportation projects HNTB has worked on — as required by the RFP, three examples demonstrating our full-service capabilities in delivering more than 51% of the work with start dates within the last five years.

*Figure 6. HNTB's Recent Project Examples with Ability to Self-Perform Multidisciplinary PE-Design Services.*

Project	Year Started/ Total Contract Amount	HNTB Tasks	HNTB's % Contract Dollars
 <b>I-84: Exit 64 Improvements (Bundle 224), Hood River, OR</b>	2008/ \$2.0 million	Highway Design, Interchange Design, Intersection Design, Traffic Engineering, Temporary Traffic Control Design, Bridge Design, Stormwater Design, Pump Station Design, Landscape Architectural Design, Signing and Striping Design, Utility Coordination, Contract Plans, Specifications, and Cost Estimating	<b>76</b>
 <b>South Park Bridge, Seattle, WA</b>	2008/ \$15.2 million	Roadway Design, Intersection Design, Traffic Engineering, Bike and Pedestrian Design, Temporary Traffic Control Design, Signing and Striping Design, Structural Design – Bascule Bridge Design, Electrical and Mechanical Systems, Stormwater Design, Illumination, Landscape Architectural Design, Environmental Documentation, Utility Coordination, PS&E	<b>78</b>
 <b>Airport Way South, Seattle, WA</b>	2008/ \$4.9 million	Roadway Design, Intersection Design, Traffic Engineering, Temporary Traffic Control Design, Structural Design, Stormwater Design, Landscape Design, Signing and Striping Design, Seismic Retrofit, Bicycle and Pedestrian Facilities, Utility Coordination, Fire Protection, Lighting, Environmental Documentation, Contract Plans, Cost Estimate, and Specifications	<b>84</b>

## 2.2.6 PROPOSER'S PROJECT MANAGEMENT FOR CA/CEI SERVICES

*The HNTB Team commits to:*

- Provide cost-effective CA/CEI services to ODOT and Local Public Agencies (LPAs)
- Ensure project compliance with the contract documents
- Partner with the contractor, ODOT, and LPAs to proactively resolve issues

HNTB has successfully performed CA/CEI services on complex transportation projects for DOTs and local agencies, including Seattle DOT's **Mercer Corridor Improvement** and the Port of Hood River's **Lower Chord Rehabilitation** projects. Our approach to CA/CEI services offers the following key benefits:

### EXPERIENCE

- Proven Project Managers (PMs) who have led similar projects for ODOT and LPAs
- Construction staff that **know ODOT's Construction Manual**
- A **project-first** attitude partnering with the contractor, ODOT, and LPAs

### FLEXIBLE, COST-EFFECTIVE STAFFING

- Flexible staff located throughout Oregon for **responsive, cost-effective service**

### PROACTIVE CHANGE MANAGEMENT

- **Early involvement** of the CA/CEI team during design to minimize changes during construction
- Detailed construction planning prior to kick-off to **avoid surprises**
- Independent estimators and schedulers with a contractor perspective for **fair pricing**
- **Collaborative approach** leading to the fastest, least expensive solution

## A. MANAGEMENT AND ORGANIZATIONAL STRUCTURE

As shown in HNTB's management and organizational structure (Figure 1 on page 3), individual Work Order Contract (WOC) PMs will oversee projects from design through construction. Our seasoned CA/CEI PMs, **Jason Ruth, PE, SE, PMP**, and **Al Girard** report to the WOC PM and direct the work of the CA/CEI team. Jason and Al have extensive experience managing a broad range of transportation projects for ODOT and local agencies. Jason also offers specialized change

management expertise and is the Oregon-registered Professional Engineer (PE) in charge of the HNTB team's CA/CEI services.

Principal-in-charge **Jim Thomson** leads HNTB's Northwest District and is responsible for authorizing contracts and resource commitments. **Brian Russell**, construction quality manager, reports to the WOC PM and has 30 years of experience managing complex construction projects. Brian is responsible for quality assurance oversight of CA/CEI services in accordance with HNTB's Quality Plan and the ODOT Construction Manual.

HNTB will assemble a CA/CEI team for the construction phase of each WOC with a CA/CEI PM and construction administrator located in Portland or Salem and ODOT-certified inspectors and quality control compliance specialist (QCCS) staff located geographically near the project. To provide the most cost-effective team, the number of inspectors is dependent on the type and risk of construction activities, location, and project size.

### ORGANIZATIONAL ADVANTAGES

Our team management and organizational structure offers several benefits to CA/CEI delivery:

- WOC PM **continuity** provides consistent project leadership and client relationships throughout project lifecycle
- HNTB's CA/CEI PM, a registered Oregon PE, **oversees** all CA/CEI work
- CA/CEI team involvement during design **ensures constructability** and **minimizes changes**
- To provide the best value, the size of the field team is **flexible** to suit the project size and complexity; on a small project, a qualified inspector may also serve as the CA/CEI PM

### SUBCONSULTANT SELECTION

HNTB will select subconsultants for specific WOC assignments based on project needs, proximity to the site, client experience, specific project understanding, and to meet the ODOT's DBE goals and MWESB aspirational targets. Key subconsultant, **WHPacific**, has successfully provided CA/CEI services to ODOT and LPAs for more than 30 years, and has offices located in Portland, Salem, Bend, and Klamath Falls for cost-effective access to statewide projects.

All of our subconsultant team members have experience working with ODOT and/or LPAs, and several are certified DBE and MWESB firms. Our specialty subconsultants include:

Firm	Benefit
Bluedot Group, LLC	Tigard, Oregon-based land surveyor since 2002
Geotechnical Resources, Inc.	Employs 26 engineers, geologists, and testing specialists in Oregon
Heberly Engineering	Civil engineering and inspection firm based in Roseburg, Oregon
KE & Associates, Inc.	Tigard, Oregon-based QCCS and material testing firm serving Oregon transportation projects since 2006
Lois D. Cohen Associates	Public relations expert during construction familiar with ODOT/ LPAs
Mason, Bruce & Girard, Inc.	Portland, Oregon-based natural resource firm for permitting and environmental compliance
National Constructors' Group	Experienced former contractors providing construction estimates and dispute resolution to transportation projects nationwide
Northwest Geotechnical Consultants, Inc.	Providing material testing, special inspection, QCCS, and geotechnical engineering since 1983
Shannon & Wilson, Inc.	Providing geotechnical engineering services in the northwest since 1954

We are committed to ODOT’s DBE policy and our CA/CEI team includes qualified DBE and MWESB firms who we will integrate into our project teams to meet and/or exceed ODOT’s aspirational targets. The table below shows our certified DBE and MWESB subconsultants:

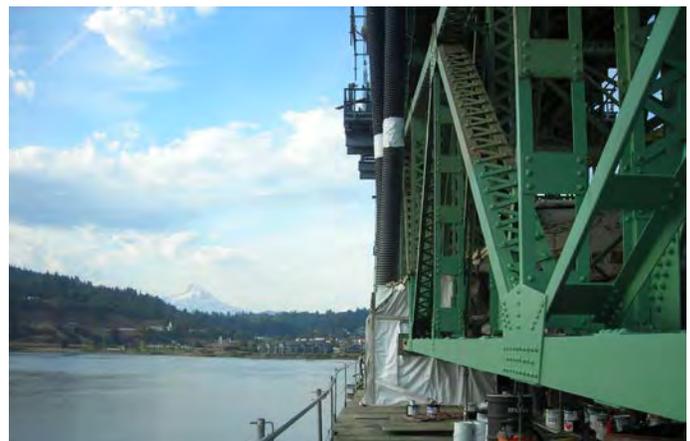
Firm	DMWESB Status
Bluedot Group, LLC	ESB
Heberly Engineering	ESB
KE & Associates, Inc.	DBE/WBE/ESB
Lois D. Cohen Associates	DBE/WBE/ESB
Northwest Geotechnical Consultants, Inc.	DBE/MBE/ESB



*On east-side demolition phase of the Mercer Corridor Improvement project, HNTB managed the CA/CEI team and collaborated with DMWESB firms to perform 35% of the work. For the Mercer West phase, WHPacific is HNTB’s major partner and we plan to subcontract 40% to DBE and MWESB firms.*

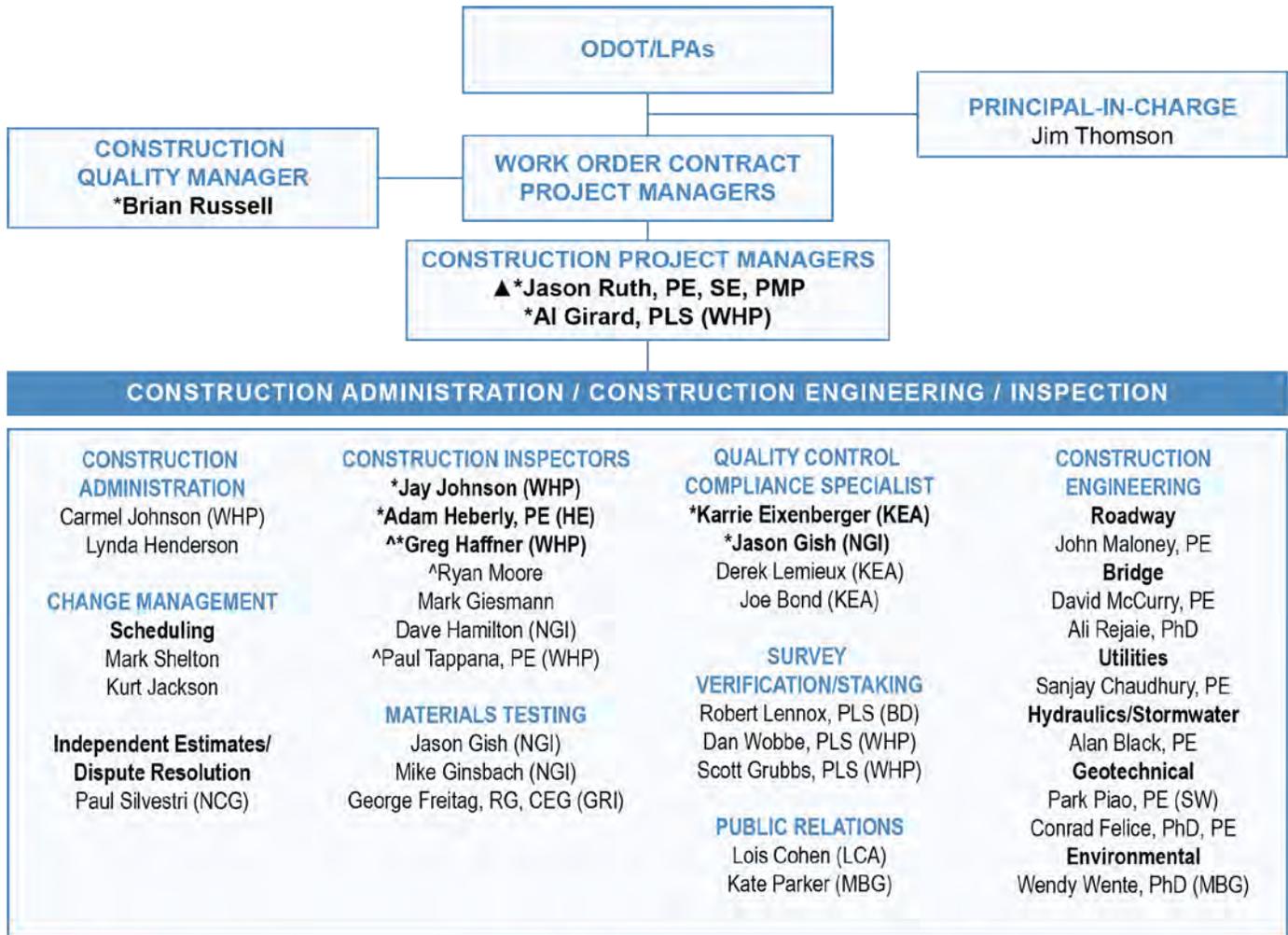
### SUBCONSULTANT UTILIZATION AND MANAGEMENT

HNTB intends to use geographically diverse subconsultants to augment our in-house CA/CEI services capabilities, meet DBE goals and MWESB aspirational targets, and allow us to present the best value and experience to ODOT and local agencies. The construction PM will oversee all subconsultant team members as a unified single source of services to ODOT. Subconsultants will be required to meet the same contract requirements and quality procedures as HNTB.



The Port of Hood River’s **Lower Chord Rehabilitation Project** is an example of how HNTB uses specialty subconsultants to provide best-value construction expertise for CA/CEI services *(continued on page 4).*

Figure 1: HNTB Team CA/CEI Organization Chart.



**LEGEND**

- \* denotes key CA/CEI staff
  - ▲ denotes Oregon registered PE responsible charge of CA/CEI Services
  - ^ may perform PM duties on select projects
- PE/SE/PLS noted are licensed in Oregon

**SUBCONSULTANTS**

- BD** Bluedot Group, LLC (ESB)
- HE** Heberly Engineering (ESB)
- GRI** Geotechnical Resources, Inc.
- KEA** KE & Associates, Inc. (DBE/WBE/ESB)
- LCA** Lois D. Cohen Associates (DBE/WBE/ESB)
- MBG** Mason, Bruce & Girard, Inc.
- NCG** National Constructors' Group
- NGI** Northwest Geotechnical Consultants, Inc. (DBE/MBE/ESB)
- WHP** WHPacific

(continued from page 2) For this task order under HNTB’s on-call contract to the Port of Hood River, HNTB serves as the engineer of record and leads the construction management, administration, and construction engineering disciplines. To address specialty paint inspection needs, we sought out the expertise of Bear Inspection, a local, specialized NACE-certified paint inspection firm.

**B. MEETING DELIVERY SCHEDULES**

HNTB delivers construction projects on schedule to fulfill Agency funding and stakeholder commitments.

**Effective Coordination of Work**

HNTB follows a proactive approach for effective construction coordination as described in the following table:

Coordination Methods	
<b>Encourage Partnering Workshop</b>	<ul style="list-style-type: none"> <li>Establish a positive working relationship with contractor and all project staff by understanding contractor’s and agency’s construction risks and critical path work items</li> </ul>
<b>Effective Meetings</b>	<ul style="list-style-type: none"> <li>Hold contractor responsible for required submittals prior to preconstruction meetings</li> <li>Efficiently run construction meetings with ODOT prescribed agenda to address project needs</li> </ul>
<b>Early Progress Payment Development and Review</b>	<ul style="list-style-type: none"> <li>Expedite progress payments by consistently maintaining the quantity records and documentation</li> <li>Discuss quality and payment expectations with the contractor as work is being accomplished</li> </ul>
<b>Agency Coordination</b>	<ul style="list-style-type: none"> <li>ODOT PM and Local Agency Liaison (LAL) are kept up to date on construction progress and key issues</li> <li>Meet with regional assurance specialist during bidding to develop quality documentation list</li> <li>Coordinate progress estimates with LAL/ODOT PM for Contract Payment System (CPS) entry and submittal</li> <li>Make certain freight mobility, traffic, safety, and OCR Field Coordinator are given sufficient notice</li> </ul>
<b>Utility, Environmental, and Railroad Approach</b>	<ul style="list-style-type: none"> <li>Avoid issues by understanding and enforcing contract requirements, then actively monitoring and reporting construction activities to affected third parties</li> <li>Use HNTB staff with established relationships with BNSF and UPRR to coordinate issues and expedite agreements</li> </ul>

**Coordination Methods**

Engineering Design Team Utilization
<ul style="list-style-type: none"> <li>Clear contract documents that avoid overly complex construction techniques by performing constructability reviews during design</li> <li>Facilitate knowledge transfer between PE-Design and the CA/CEI team during hand-off meeting</li> </ul>

**Expediting Project Elements**

Although construction success is highly dependent on the contractor, HNTB has the experience to be a positive influence on the contractor’s performance using methods described in the following table:

**Methods for Expediting Project Elements**

PreConstruction
<ul style="list-style-type: none"> <li>The HNTB Work Plan compiles all project tasks controlled by durations, task relationships, and resources; quality tasks and contractor tasks are integrated into the project schedule</li> <li>Establish third-party coordination and incorporate hold points in the contractor’s master schedule</li> <li>Conduct a detailed assessment of contractor’s schedule for logic and accuracy to clearly present opportunities to expedite construction activities</li> <li>Review the CPS cost reports to ensure all bid items and anticipated work are accounted for</li> </ul>
Construction
<ul style="list-style-type: none"> <li>Provide a thorough review of cost reduction ideas to allow time for incorporation without impacting schedule</li> <li>Identify construction issues early and align field staff with contractor’s weekly work schedule</li> <li>Expedite change orders by providing clear documents and properly negotiated terms</li> <li>Complete construction according to project specifications by using experienced staff with an understanding of the contract</li> <li>Manage claims for resolution at the lowest possible level by diligently working with the contractor to understand their position, fostering a <i>project-first</i> mentality to minimize cost and schedule impacts</li> <li>Expedite and document construction of unforeseen work by Force Account</li> </ul>
Close-Out
<ul style="list-style-type: none"> <li>Use punch list with input from ODOT PM/LAL, maintenance and traffic staff to manage and ensure resolution</li> <li>Keep project documentation current to avoid delays during project closeout; begin planning for close-out at notice-to-proceed</li> </ul>

### Maintaining Quality while Meeting Schedules

The HNTB PM performs the following actions to ensure quality is maintained regardless of contractor's construction progress:

- Use the work plan to coordinate quality tasks related to HNTB deliverables and field testing
- Verify field staff is meeting documentation requirements for inspections, quantities and compliance
- Consistently use ODOT Project Manager's Checklist to ensure responsibilities are completed
- Review all deliverables to ODOT prior to submittal
- Conduct project quality reviews with HNTB's CA/CEI quality manager, **Brian Russell**

### Flexibility and Approach to Making Adjustments in Schedules or Staffing

HNTB manages schedules and resources to deliver projects efficiently in an ever-changing construction environment.



*HNTB worked with BNSF on the Vancouver Bypass when the agency needed to adjust CEI staffing levels based on changes to construction schedules due to variable train operation schedules. To remain flexible in this changing environment, HNTB assigned CEI staff also trained as design engineers. HNTB kept the CEI staff engaged with office activities during construction so that they could seamlessly transition back to the office during periods where work was not permitted.*

### Schedule Flexibility

The HNTB team works with the contractor to meet schedule needs for construction and reviews schedule changes to protect project interests by:

- Verifying contractor schedule revisions include testing, survey confidence shots, and other quality procedures
- Confirming closures and work, allowing for minimum ODOT notification requirements
- Verifying utility, environmental, and railroad notifications meet minimum requirements

### Staffing Adjustments

The HNTB Team has sufficient qualified staff to oversee multiple concurrent construction projects. HNTB follows the steps below to prepare and adjust staffing to accommodate the contractor's schedule:

- Set baseline staffing plan according to preconstruction schedule and identify critical construction periods that require additional staffing
- Use look-ahead schedules to identify and plan for resource fluctuations
- Use ODOT experienced and certified field staff
- Adjust staffing to meet contractor schedules (four-10 or five-eight hour days, or overtime)
- Provide field staff for subcontractor work schedules as needed
- Use the work plan and contract documents to effectively orient staff in safety, communication, and quality procedures as well as responsibilities

## C. QUALITY CONTROL PROCEDURES AND POLICIES FOR CA/CEI SERVICES

HNTB's experienced CA/CEI team understands construction quality and documentation is a key performance measure and will define project success. **Brian Russell**, our quality manager, oversees the quality control (QC) process and will deliver the following key actions:

- **Review each WOC work plan** to confirm all facets of CA/CEI QC execution are covered
- Ensure **experienced construction staff perform constructability and completeness reviews** of PS&E submittals
- Verify HNTB document control procedures are applied and documentation is well-organized

- Verify strict adherence to the ODOT Construction Manual
- Conduct internal **quality audits** of HNTB’s deliverables

### QC Procedures Summary

Beginning in the design phase, HNTB uses several procedures to ensure quality deliverables in the construction phase. Examples are shown in the following table:

Procedure	Benefit
Early involvement of CA/CEI staff in design	Confirms constructability and completeness of PS&E and develops field staff familiarity with project
Independent check of bid items and quantities	Verifies all elements of the work have corresponding pay items
Design-to-construction hand-off meeting	Provides comprehensive CA/CEI team understanding of project, identifies areas requiring special attention, and establishes contacts for design support
Document control training	Makes certain all CA/CEI staff understand and use proper record keeping and filing procedures
Guidelines for completing pay notes for each bid item	Defines when a pay note is required
Review breakdown of lump sum pay items with contractor	Determines partial progress payments
Work with QCCS to develop list of bid item quality documentation requirements for field and non-field-tested items	Allows CA/CEI team and contractor to readily identify, anticipate, and track required submittals
Generate pay notes that clearly define the extent of completed work	Avoids overlapping payment for prior work
Confirm that approved pay notes have backup documentation	Allows efficient verification by HNTB quality manager and ODOT Region Assurance Specialist (RAS)

Procedure	Benefit
Complete ODOT’s Project Management checklist	Verifies compliance with ODOT requirements
Collaborate on regular oversight by ODOT RAS	Facilitates ODOT oversight and understanding of RAS expectations
Complete review and timely submittal of semi-final project documentation to ODOT	Facilitates final review by the ODOT Contract Administration Unit
Review the Consultant Performance Evaluation with ODOT PM	Encourages the application of lessons learned to future projects

### QC Policies Summary

Typical QC policies to ensure the quality of HNTB’s work products include the following:

Policy	Benefit
Prepare a project-specific Construction Quality Plan	Ensures CA/CEI staff understand roles, responsibilities, and QA/QC procedures
Assign a QCCS to maintain quality documentation on each WOC	Ensures proper oversight and documentation to meet ODOT and FHWA requirements
Conduct internal reviews for change orders and payment verifications	Reduces ODOT review and response time
Provide engineer of record and design team support to CA/CEI team	Provides continuity of design related reviews, RFI responses, and design support

## 2.2.7 PROPOSER’S COST EFFECTIVENESS FOR CA/CEI SERVICES

### A. SPECIFIC EFFORTS TO ENSURE COST-EFFECTIVENESS

The HNTB Team structure supports cost-effective CA/CEI services by:

- Assigning the right staff for the job, emphasizing qualifications and geographic location
- Adjusting CA/CEI staffing to match actual construction activities based on review of and coordination with the construction schedule
- Effectively using qualified staff to cover multiple roles (e.g., PM, inspection) on smaller projects
- Applying proven HNTB project management practices to monitor performance

#### Work Plan Management

HNTB creates a work plan that prescribes the track to meet project objectives. Work plan execution using the methods shown in the table below results in cost-effective project delivery.

Management Practice	Benefit
Prepare a detailed scope of work	Provides a right-sized CA/CEI team based on project complexity, schedule, and size with a balanced mix of staff and billing rates
Active resource management	Maintains appropriate levels of oversight and minimizes charges to project during periods of low construction activity
Continuous change management	Continually tracks project risks, eliminating surprises and providing predictable project results
Budget management	Establishes budgets at the task level allowing detailed tracking of CA/CEI charges to avoid cost overruns
S-Curve evaluation	Tracks charges versus cost-to-complete and allows identification of trends and early corrective action if costs do not align with progress
Project review meetings	Instituting monthly oversight ensures project performance issues are resolved promptly

Management Practice	Benefit
Job progress inputs	Detailed reporting of the estimated labor remaining to complete each assigned task on a monthly basis provides the PM with an additional snapshot of cost-effective delivery performance

#### Ensuring Low Cost Travel, Lodging and Per Diem Expenses

HNTB minimizes project travel costs by performing the following:

- Staffing projects locally through HNTB Team offices in ODOT Regions 1, 2, 3, 4, and near to Region 5
- Reducing non-essential travel by using phone and video conferencing technology; HNTB staff routinely use Bridgit™ web-based conferencing software to collaborate via computers at multiple locations
- Accounting for anticipated travel and lodging based on the project schedule; overnight stays are minimized and scheduled trips are planned in advance to reduce airfare costs; the least cost travel mode will be selected based on project location
- Identifying opportunities to combine trips for multiple purposes when traveling to different regions of the state
- Evaluating the cost-effectiveness of temporary relocation of staff versus continued travel status on longer duration projects
- Relocating staff the project vicinity using recreational vehicles in lieu of long-term travel

HNTB has detailed travel policies that limit allowable travel expenses as highlighted below:

- HNTB establishes a fixed per diem when travel is expected on a regular basis; for this PA, rates will conform to ODOT per diem rates
- HNTB negotiates corporate rates with hotels, car rental agencies, and airlines on a nationwide basis; employees are directed to use preferred providers whenever possible
- HNTB travel policies do not allow travel costs related to comfort or upgrades to be job chargeable to the client

## B. METHODS, TOOLS AND PROCESSES TO DEVELOP ESTIMATE FOR SERVICES

HNTB uses sophisticated methods, tools, and processes to develop estimates for services that:

- **Reflect a clear understanding of the project**, the plans and specifications, construction schedule, and client expectations
- Deliver sufficient on-site staff to help ensure that each project is **constructed in accordance with the plans and specifications**
- Include CA/CEI staff with the **proper experience and skill sets**, using an appropriate blend of job classifications
- Adjust staffing according to construction tasks, risk, and schedule to minimize costs
- Demonstrate that **all project management tasks have a defined scope** directly related to project performance, quality, and client satisfaction
- Represent a **fair and reasonable profit** based on project size, risk, and complexity factors

### Methods Used to Develop Estimate for Services

The WOC PM and CA/CEI PM develop the estimate using the following approach:

- Incorporate understanding from constructability and completeness reviews during design to appropriately staff CA/CEI phase
- Perform a site visit to verify existing conditions
- Meet with agency(ies) to discuss expectations, anticipated coordination, and oversight
- Review the construction schedule and estimate the level of effort of each detailed scope item by labor classification
- Calculate estimated fee and direct expenses using the ODOT Breakdown of Costs worksheet
- Verify that wage rates and overhead rates are in conformance with the PA
- Draft and review ODOT's profit-fee worksheet for agency(ies) consideration
- Confirm that ODOT DBE participation goals are being met
- Meet and resolve any scope, schedule, budget, and assumptions with agency(ies) for incorporation to the work order contract

One of the tools HNTB uses to develop the estimate and control costs of services during construction is the production of planned CEI expenditure curves at the start of construction and tracking the actual expenditures during construction. This allows us to

identify trends indicating potential CEI cost overruns.



*As construction coordinator for the Oregon Bridge Delivery Program, Jason Ruth developed planned versus actual CEI expenditure curves for each of the bundles in the Columbia Gorge and shared with the ODOT on a monthly basis. Jason was able to identify potential CEI overruns early and work with the Agency to reduce future CEI costs.*

### Methods to Ensure Fair and Reasonable Estimates

HNTB ensures that our estimates for services are fair and reasonable to both the ODOT/LPAs and to our team by:

- Working with both ODOT and/or LPA and the HNTB Team to obtain buy-in of the project work plan
- Using independent industry-specific salary surveys to ensure wage rates are appropriate
- Verifying each task is being performed by staff in the most cost-effective job classification and possess the required level of experience
- Planning and executing our business operations to maintain overhead rates in the lower 50<sup>th</sup> percentile of the industry
- Completing ODOT's profit-fee worksheet to develop profit aligned with client expectations and market standards, and commensurate with project factors including complexity, schedule, size, and risk
- Reviewing the scope and hours estimate for consistency with actual effort expended on recent and similar projects
- Checking typical metrics, including percentage of construction costs for reasonableness

## 2.2.8 PROJECT TEAM AND QUALIFICATIONS FOR CA/CEI SERVICES

### A. PROJECT MANAGER(S) EXPERIENCE WITH CA/CEI SERVICES FOR PROJECTS SIMILAR IN NATURE AND COMPLEXITY

Our PMs bring the following benefits to ODOT and LPAs:

- A solid **understanding of the ODOT Construction Manual** from experience delivering projects with ODOT and LPAs
- Maintain **open communication** and partner with the design team, contractor and agency(ies) for the best project outcome
- Proactive managers of cost, schedule, and change to **minimize risk** and avoid delay or increase in construction costs

#### Jason Ruth, PE, SE, PMP

Jason has more than 17 years of extensive experience in delivering design and CA/CEI services for state and local agencies. Jason is a hands-on construction services leader who brings demonstrated ability to manage projects using proactive, clear communication with owners, project teams, and contractors to ensure projects are delivered on time on within budget. Having both a design and construction background, Jason understands the importance of constructability reviews during design in identifying and managing risk early and avoiding pitfalls during construction. In managing the I-84 bridge bundles in the Columbia River Gorge, Jason developed a comprehensive understanding of the ODOT delivery process and a track record of coordinating projects with contractors, local stakeholders, and ODOT. Jason's experience managing CA/CEI services is shown in Figure 2 on page 10.

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*"It has been a pleasure to witness your expertise in leading our structures through some very challenging issues. Your input and knowledge will be greatly missed."*  
~ Del Walker, CDOT, Director of Construction, T-REX

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### Experience Highlights

- Construction PM for more than \$350 million in project construction value for ODOT and other transportation agencies
- Proactive and open communication in resolving construction problems
- Demonstrated ability to avoid future construction issues through constructability reviews during the design phase
- Extensive experience proactively managing change and negotiating change orders

### ODOT and LPA Project Examples

**ODOT/I-84 Columbia River Bridges (Bundles 208, 209, 220, and 225), OR. Role:** Construction manager of CA/CEI team. **Relevancy:** Jason successfully managed a 16-person CA/CEI team and coordinated the delivery of \$180 million in design-bid-build construction on time and within budget. Jason provided extensive constructability reviews during the design and was instrumental in the decision to re-evaluate structure type ultimately saving the project \$30 million. He coordinated the projects with ODOT regions and districts, and proactively managed contractor schedules, bid item quantities, and construction change orders. The construction management and inspection work included bridge repair, bridge replacement, retaining walls, earthwork, and paving. Since the I-84 projects are located in a National Scenic Area, the work required extensive coordination with project stakeholders.

**Yakima River Bridge Replacements, Benton County, WA. Role:** Resident engineer in charge of CA/CEI. **Relevancy:** This \$3 million local agency project was funded with federal dollars administered through WSDOT and consisted of replacing two bridges over the Yakima River, relocating an irrigation canal, constructing a new structure over the canal, and various street improvements. Jason seamlessly coordinated and facilitated resolution of issues with WSDOT, Benton County, and the contractor to ensure project milestones were met and the project was completed on time on within budget. Jason worked with the contractor and local irrigation district to plan canal construction during the low-demand period.

**BNSF, Vancouver Bypass, Vancouver, WA.**

**Role:** Construction manager and on-site resident engineer. **Relevancy:** This federal- and state-funded \$150 million rail yard expansion impacts and relocates city streets, bridges, and utilities. Jason managed the CA/CEI team in performing

construction oversight, construction inspection, cost control, schedule control, program reporting, permitting, and third-party coordination. Jason worked closely with BNSF Railway and the City of Vancouver to coordinate the permitting of sewer and waterlines within the city’s right-of-way.

RELEVANT CA/CEI SERVICES

Figure 2: Jason Ruth’s Relevant CA/CEI PM Experience.

PROJECT	Funding	Contracting	Preconstruction /Constructability	Bidding	Contract Startup	Inspection	Quality Mgmt.	Cost/Schedule Management	Change Mgmt.	Project Closeout
I-84: Cascade Locks, 2 <sup>nd</sup> Street (Bundle 208)	OTIA	ODOT	X	X	X	X	X	X	X	X
I-84: Hood River, Mosier Creek (Bundle 225)	OTIA	ODOT	X	X	X	X	X	X	X	X
I-84: Dodson-Tanner Creek (Bundle 209)	OTIA	ODOT	X	X	X	X	X	X	X	X
Yakima River Bridge Replacements	State/Fed	Benton Co.	X	X	X	X	X	X	X	X
Skamania Co. Road Improvements	County	Skamania Co.	X	X	X	X	X	X	X	X
BNSF Vancouver Bypass	State/Fed	BNSF	X	X	X	X	X	X	X	X
T-REX	State/Fed	CDOT/RTD		X	X	X	X	X	X	X
BNSF Longview Bypass	BNSF	BNSF	X	X	X	X	X	X	X	X

CDOT = Colorado DOT; RTD = Denver Regional Transportation District

**Al Girard, PLS (WHPacific)**

Al Girard brings significant experience managing local, state, and federally funded transportation projects for WHPacific and Washington County. He has an in-depth knowledge of ODOT construction specifications and the ODOT Construction Manual. Through his career managing CA/CEI services for a variety of roadway, bridges, paths, and highway projects, Al has developed numerous strong relationships with ODOT, local agency, and construction contractor partners. Al has been successful in avoiding claims by working with construction contractors to negotiate a fair settlement. In his 25 years of construction work, he has had only one claim requiring legal action, which is evidence of his ability to resolve construction issues. Al’s experience managing CA/CEI services is shown in Figure 3 on page 11.

*“Al’s knowledge of major street and road construction has helped us avoid delay, lost time and expenses because he is thinking ahead of the contractor. Overall I give the WHPacific team an excellent score on construction management and am happy to provide a positive reference based on this project.” ~ Kim McMillan, PE, City of Tigard Engineering Manager, Burnham Street Reconstruction*

**Experience Highlights**

- 25 years of construction management experience for ODOT and Oregon local agencies
- Proactive, solution-oriented approach to resolving construction problems
- Skilled at negotiating a fair and reasonable settlement for both the owner and the contractor

ODOT and LPA Project Examples

**City of Tigard/Burnham Street Reconstruction, Tigard, OR. Role:** Construction PM. **Relevancy:** Al led the CA/CEI team for this City of Tigard \$4.5 million green street reconstruction project. The project includes Low-Impact Development Applications (LIDA) in the streetscape to treat stormwater runoff, replacement of a 16-inch water main, LED street lights, and relocation of all overhead utilities to underground and roadway reconstruction. Al brought potential solutions to the contractor to avoid delay and lost time expenses. As a result of Al’s diligence in documenting the work, proactive management, and expertise, the WHPacific team received high accolades from the client and the project received APWA’s Project of the Year (projects under \$5 million) Award in 2011.

**ODOT/OR Highway 22 Bridge Vertical Clearance, Salem, OR. Role:** Construction PM. **Relevancy:** Al led the CA/CEI team for this \$9.4 million dollar project to upgrade the corridor to meet standard vertical clearances. This project included raising two bridges, lowering OR 22 for vertical clearance under Lancaster and Cordon bridges, storm improvements at Deer Park, and approximately five miles of preservation paving. Al provided constructability reviews during final design and construction planning, and facilitated timely reviews of requests for information and submittals. He proactively worked with the contractor to develop, negotiate, and execute project change orders to allow the contractor to maintain his schedule.

RELEVANT CA/CEI SERVICES

Figure 3: Al Girard's Relevant CA/CEI PM Experience.

PROJECT	Funding	Contracting	Preconstruction /Constructability	Bidding	Contract Startup	Inspection	Quality Management	Cost/Schedule Management	Change Management	Project Closeout
Wash. Co., Beef Bend Elsner Scholls-Sherwood Rd. (Roy Rogers Rd.)	Local	Wash. Co.	x	x			x		x	
Wash. Co., Cornell Rd.: Evergreen-Hwy 26	Local	Wash. Co.	x	x	x	x	x	x	x	x
City of Hillsboro, 10 <sup>th</sup> St.: East Main-Baseline	State/TE	Hillsboro	x	x	x	x	x	x	x	x
Wash. Co., Sunset Dr.-University Ave.-Hwy 47	Local	Wash. Co.	x	x	x	x	x	x	x	x
ODOT/Wash. Co., ARRA Projects (Urban)	Fed	ODOT	x	x	x	x	x	x	x	x
ODOT/Wash. Co., ARRA Projects (Rural)	Fed	ODOT	x	x	x	x	x	x	x	x
City of Tigard, SW Burnham Street	Local	Tigard	x	x	x	x	x	x	x	x
Washington Co., Murray Blvd/Cornell Rd.	Local	Wash. Co.	x	x	x	x	x	x	x	x
ODOT C14485 OR22 Bridge Vertical Clearance	Fed	ODOT	x	x	x		x	x	x	
ODOT Blackwell Rd. Realignment: MP 2.0-3.0	Fed	ODOT	x	x	x		x			