2.2.1 Understanding of Requested Services

ODOT's Local Agency Program provides support to local agencies to develop and construct state and federally-funded transportation projects. There are 267 ODOT Local Program projects contained in the 2008 – 2011 Statewide Transportation Improvement Program (STIP). These projects have a total value of $700 million, about 20% of total STIP funds.

Anticipated Projects and Services

Given the projects in the STIP, most of the work under the local agency on-call contract is expected to fall under the pavement preservation, transportation enhancement, bridge, and modernization project classifications. Tasks on such projects could include bridge repairs or replacements, sidewalk improvements and ADA upgrades, arterial upgrades and expansions, bike lanes, drainage improvements, safety enhancements, traffic signal upgrades, or emergency relief projects (rock slides and road washouts). More than ever, all projects will need to be delivered as cost-effectively as possible.

The work will require a broad range of preliminary engineering services, including survey, bridge design and load rating, roadway design, and rehabilitation, underground infrastructure, geotechnical studies, pavement evaluation, hydraulics studies and design, storm drainage, signals, temporary traffic control, erosion control, landscaping, and signing plans. Work orders also may include traffic studies, statement of work (SOW) writing, prospectus preparation, and right-of-way descriptions, appraisals, negotiations, and acquisitions. Construction engineering services could range from contract administration to materials testing and inspection all the way through survey control and monumentation. Exhibit 1 provides a more complete menu of the anticipated services.

> "To support and help complete high quality local projects that satisfy identified transportation needs of the public, local agencies, ODOT, and FHWA, delivered on time and within budget."
> — ODOT Local Program Vision

In addition to design services, projects may include environmental compliance and NEPA documentation, from single discipline reports to full environmental assessments, and public involvement and communications.

Public involvement could be as simple as meeting with property owners, or it could mean conducting an extensive public decision-making process. Communications tasks also include the necessary public outreach related to construction—traffic advisories of construction staging, upcoming closures, traffic modifications, and progress and safety considerations.

EXHIBIT 1
Anticipated Scope of Services

Preliminary Engineering
Project Management
Prospectus Preparation
Preliminary Field Surveys
Geotechnical Investigations, Reports, and Design
Hydraulic Studies and Reports
Preliminary Design
Hazardous Materials Assessments
Environmental Analysis, Documentation and Compliance
Public Involvement/Information
Permit Application Preparation
Landscape Architecture
Right of Way
Final Plans, Special Provisions, Cost Estimates
Bidding Assistance
Construction Engineering
Office Engineering
Construction Monitoring and Inspection
Project Management
Contract Administration
Quality and Quantity Assurance
Material Testing and Inspection
As-Constructed Plans Preparation
Public Relations
Construction Layout and Staking
Grades Establishment
Survey Control
Remeasures
Monumentation

The Local Agency Process

As stewards of the federal funds that are used to design and construct local agency projects, ODOT Local Agency program staff are responsible for assuring compliance with FHWA and other federal requirements – from procurement

procedures to environmental compliance. Given the complexity of these regulations, consultants who not only understand them, but can help streamline projects to meet them efficiently and cost-effectively bring value to the Local Agency Program. A key example from 2009 was the new American Recovery and Reinvestment Act funds and the associated reporting requirements.

Success for Local Agency Stakeholders

Project success will depend to a great extent on the consultant's ability to coordinate effectively with ODOT, local public agencies, and FHWA. Project activities will benefit from comprehensive knowledge of state and local issues, effective leadership, flexibility, and technical expertise. Project delivery efforts will be optimized through established working relationships with ODOT and local agencies and through common experience gained from related projects. In addition, full-service capabilities and a practical context-sensitive approach will be essential to fully respond to the range of project needs and issues. With project staff located throughout the state and familiarity with ODOT, regulatory agencies, and LPA personnel, the CH2M HILL team is positioned to respond quickly and work closely with ODOT and LPAs to ensure all needs are met. Project success can be based on these factors:

The CH2M HILL team is committed to delivering cost-effective, technically sound, practical solutions to Oregon local agencies.

- Effective communication with Local Agency stakeholders
- Rigorous consultant and project budget management
- Compliance with environmental regulations
- Quality project delivery

2.2.2 Proposer's Project Management

Management and Organizational Structure

At CH2M HILL, we have found that a relatively flat organizational structure empowers our project managers to be responsible and efficient, to focus on doing work, and to be cost-effective. This is especially true on smaller projects where a small, well-informed team can make most of the decisions needed. While we are a large organization, we regularly deliver small projects efficiently and effectively by designating a small focused team with a top-notch project manager. This "team within a firm" structure is particularly well suited to small– and medium–sized projects typical of the local agency program when being efficient and accurate are both essential. Our small teams are efficient and, through our large firm, they have access to expert resources outside of the team on an as-needed basis.

Project Managers are Key

While we have project managers at different levels in the organization, not all technical staff have the capability to become one. In addition to technical qualifications, a project manager at CH2M HILL must possess a wide range of communications and financial skills. Each of our project managers is trained in our trademarked Project Delivery System, which provides tools and processes to make each project successful. Our project managers thus provide strong leadership to achieve ODOT and the local agency's satisfaction and deliver sound financial performance.

A key part of our management approach to the local agency contract is to expand our pool of project managers to include select staff from our key subconsultant teaming partners. This allows us to better serve the local agency program both geographically (such as in Regions 4 and 5 where CH2M HILL does not have a full-service office) or for projects where our teaming partners have particular expertise (such as trails and other enhancements). In these cases, however, CH2M HILL still assumes responsibility for the project as a whole.

Contract Manager

Dave Simmons, PE, is our contract manager and will be ODOT's primary point of contact. His primary responsibilities to ODOT will be to lead, manage, and administer the contract. This is where the business aspects of the project will be established and contractual relationships defined. Dave's leadership role in the following activities will provide a stable environment within which individual work orders will be successfully executed:

- **Contract administration**—manage prime contract, subconsultant contracts, and invoicing
- **Progress monitoring**—scope, schedule, budget, and reporting
- **Project management**—leadership, communication, and staff management
- **Quality control**—QC program management and technical reviews

Dave will be supported by Principal-in-Charge (PIC) **Rick Kuehn, PE.** Rick will be a resource available to ODOT and local agencies to assist in customer service issues that may arise, whether to address performance concerns or to apply his wealth of experience as a senior project manager. Both Dave and Rick are authorized to sign the price agreement and subsequent work orders.

Chain of Command

The chain of command at the project level looks like this: the project manager has primary responsibility to deliver the project, typically relying on task leads for key disciplines or technical components. We are a team-based organization, with task leads and technical staff accustomed to delivering results for their project managers. In short, our staff are loyal to their teams and their projects, as these are key measures of their success and satisfaction.

From the project manager up, the next stop is the PIC who charges minimal time to a project, but has a key oversight and advisory role. The PIC monitors performance and conducts periodic check-ins. The project manager has the PIC as a resource for questions or advice as needed.

This core model of PIC-project manager-task lead provides a simple chain of command that places clear responsibility and accountability at each level, assuring cost-effective delivery of each project.

Moving up from the project level, our chain of command is similarly straight-forward and allows a few key staff to monitor our performance and quality.

Contract Manager **Dave Simmons** is also the operations manager for our Oregon transportation business, with responsibility to our organization and to our clients for performance on our contacts. Dave, in turn, reports to **John Willis, PE,** the geographic manager for the Northwest Region. Also based in Portland, John has regional responsibility for CH2M HILL's project performance. John, in turn, reports to **Jay McRae, PE,** who oversees CH2M HILL's transportation business for the entire western U.S. These individuals set the standards for and monitor our team's performance, and regularly solicit feedback from clients in order to improve performance. Our manager's experience with ODOT brings an extra level of understanding and accountability to our work on this contract.

Approach to Projects

CH2M HILL's approach to the performance of work order contracts will be focused, flexible, and responsive. The goal is to deliver projects that provide the greatest long-term value for Oregon and local agencies and use of public funds. We will focus efforts on achieving the outcomes listed for PE and CE services, using the needed skills and knowledge to proceed with minimal ODOT oversight while maintaining appropriate levels of stakeholder collaboration. We will address key issues such as location, scope, size, complexity, and stakeholder diversity and factor them into key decisions regarding approach and methods. We will achieve project success by:

- Understanding project needs and client preferences
- Developing a clear, complete project scope work plan with roles and responsibilities
- Proactively anticipating and managing change and emerging issues
- Following guiding principles shared by all team members
- Developing and implementing a clear management structure

This approach is shared by all our management staff, from project manager and contract manager on up.

Subcontractor Management

As shown in Exhibit 2, CH2M HILL maintains full-service offices in Portland and Corvallis, with a satellite office in Bend, allowing us to efficiently provide services in many disciplines to a large part of the state. But we recognize that we are not the answer to every project need and that there are other firms who can better deliver certain tasks or who can better serve certain geographies. We also recognize that because of the statewide nature of the current contract, some local firms who are successful at local agency projects can no longer effectively compete for the on-call contract.

It is our policy to work with subconsultants as our partners in project delivery. While CH2M HILL is a full-service engineering firm, we partner with other firms on the majority of our contracts, underscoring our commitment to delivering quality work and spreading work across multiple firms. On the Gibbs Street Bridge project, for example, which we delivered under the current local agency contract, we assembled a team with the best match to the project at hand, involving seven other firms: Alta Planning, Howell Consulting, Peterson Design, Mayer/Reed, i-TEN, Hardcore Drilling, and K&D Services.

EXHIBIT 2
Team Office Locations and Capabilities in Oregon

Firms	Primary Services
Portland Office Locations	
CH2M HILL	Full range of preliminary and construction engineering, planning, environmental services
Alcantar and Associates	Preliminary engineering and surveying services
Alta Planning + Design	Pedestrian and bicycle planning and design services
Cascade Design	Civil and structural engineering, planning, and construction services
Cooper Zietz	Construction project management and QA/QC services
DKS Associates	Traffic engineering, traffic signals, illumination, transportation planning services
Epic Land Solutions	Right of way services
Environmental Science & Assessment	Natural resource consulting (wetlands, fish and wildlife), environmental permitting services
Harper Houf Peterson Righellis, Inc.	Civil/structural engineering, planning, landscape architecture, survey, construction management services
Howell Consulting, LLC	Environmental documents, alternative development studies, project management services
JLA Public Involvement	Public involvement/information services
Kittelson & Associates	Transportation engineering, traffic signals, illumination, transportation planning services
Kleinfelder	Geotechnical engineering services
Lois D. Cohen Assoc.	Public involvement/information services
Mayer/Reed	Landscape architecture and visual communications services
Nevue Ngan Assoc.	Landscape architecture, urban design, and site planning services
Northwest Geotech	Geotechnical engineering, materials testing, and construction monitoring services
Pavement Solutions Inc	Pavement related engineering, testing, and geotechnical investigation services
Real Property Consult.	Right-of-way services
Right of Way Associates	Right-of-way services
WEST Consultants	Water resource engineering services
Salem Office Locations	
DKS Associates	Traffic engineering, traffic signals, illumination, transportation planning services
Universal Field Services	Right of way services
WEST Consultants	Water resource engineering services
Corvallis Office Location	
CH2M HILL	Project management, environmental, bridge/structural design, archaeology, geotechnical
Bend Office Locations	
CH2M HILL	Municipal water services (satellite office only)
Harper Houf Peterson Righellis, Inc.	Civil/structural engineering, planning, landscape architecture, survey, construction management
Kittelson & Associates	Transportation engineering, traffic signals, illumination and transportation planning services
Kleinfelder	Planning, engineering, scientific, technical, management solution services
La Grande Office Locations	
Anderson Perry Assoc.	Planning, survey, engineering, environmental, construction administration, engineering services

Thus, for this contract, we have carefully selected a diverse group of partner firms using the following criteria: firms that meet our **standards for quality** work; that have **trusted relationships** with us, ODOT, and cities and counties around the state; and that **augment CH2M HILL** to best deliver the types of projects in the current STIP. The subcontractors and their proposed roles and disciplines are shown in Exhibits 2 and 3.

The firms on our team generally fall into three categories:

(1) Full-service firms with complementary skills and geographic diversity. To assure our ability to address local agency needs efficiently around the state, we have partnered with Harper Hoff Peterson Reghellis (HHPR) and Anderson Perry & Associates (AP), both of whom we have worked with successfully in the past. AP adds key staff for projects in eastern Oregon who have experience and local agency familiarity and relationships and who deliver projects efficiently. HHPR has an office and project experience in Bend and central Oregon. They also provide an excellent complement to CH2M HILL in Region 1, where we both have full-service offices and strong relationships and where a large portion of the upcoming local agency projects are located. We will deliver exceptional value on local agency projects by combining the best of these full-service firms on appropriate projects. We expect to use project managers from both AP and HHPR as relevant to deliver projects in Regions 4 and 5 in particular, minimizing the role of CH2M HILL where appropriate.

(2) Specialty firms to enhance and broaden our technical capabilities. These specialties include right of way, hydraulics, traffic, bike/ped/trails, geotechnical, and construction services, including inspection and materials testing. For a trail project, we would likely look to the expertise of Mia Birk and her staff at Alta Planning + Design, including a project management role, if that made the most sense for delivery of that particular project.

(3) Small and emerging businesses who provide technical expertise to the team and also allow CH2M HILL, as a long-established business, to provide opportunities and, where relevant, mentoring. These firms range from single discipline specialists to growing multi-discipline firms. The eight DBE firms and three MBW/WBE/ESB firms on our team include the emerging design firms of Cascade Design Professionals and Alcantar Associates, as well as more established firms like Environmental Science and Assessment (ESA) and Nevue Ngan.

This joint experience provides ODOT and local agencies with smooth working relationships, strong skills, and proven value. Our team organization is shown in Exhibit 3.

Selecting, Utilizing, and Managing Subconsultants

Even before specific projects are identified to be contracted through the local agency program, we begin asking ourselves and local agencies what the critical issues are for the project's success, and what key characteristics are needed or wanted from a consultant team. Based on this information, we will collaborate with our teaming partners to create a technically capable, locally experienced, readily available, cost-effective, and responsive team.

Once a project is underway, we manage subconsultants as we manage our own staff: they are fully a part of the project team with the same opportunities to provide input on the project and the same responsibilities to perform according to the terms of our agreement with the client. Because our accounting system doesn't provide us weekly financial status on our subconsultants they way it does our own staff, our project managers conduct more frequent in-person check-ins on performance against scope, schedule, and budget. On projects where the project manager is a subconsultant, we still provide overall management of the project. And while we expect top performance from our subconsultants generally, CH2M HILL remains responsible for delivery.

Meeting Delivery Schedules

Coordinating and Expediting Project Delivery

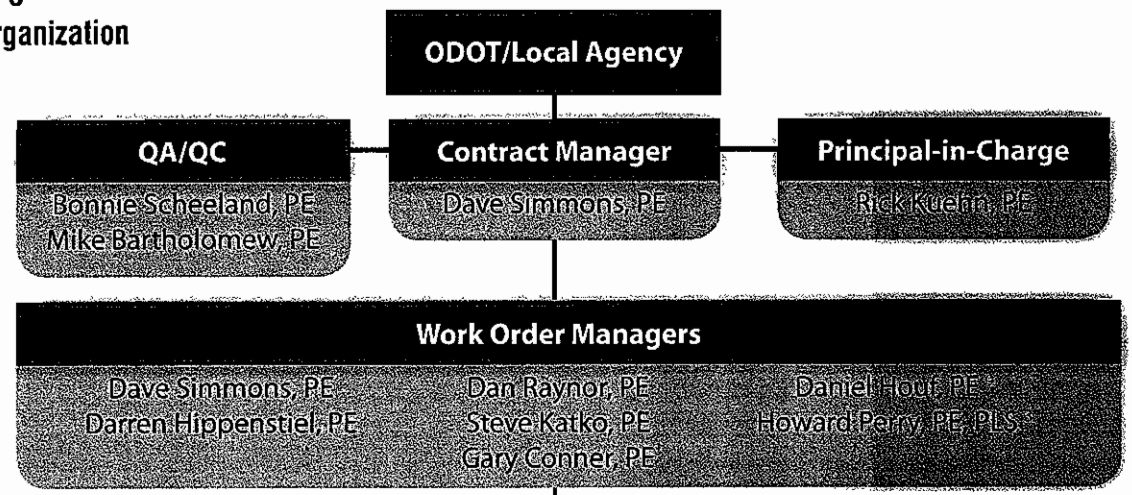
At CH2M HILL, the foundation for delivering projects successfully is a clear and detailed scope, budget, and schedule, mutually agreed to at the beginning of the project as a baseline for performance monitoring. More than just a series of due dates, our project schedules illustrate the sequencing and interdependencies of tasks and the overall consequences if one task is delayed. We also use this process to understand key schedule drivers, such as the bid-let date for construction.

Adjusting Schedules and Level of Effort

While any consultant can say they'll be available on a moment's notice, delivering on that promise is another thing. Our approach to adjusting schedules is:

1. Prepare baseline schedule: Using Microsoft Project, we prepare a detailed project schedule that clearly shows key milestones and dependencies among tasks.

EXHIBIT 3
Team Organization



Preliminary Engineering

Roadway Design
Steve Katko, PE (lead)
John Bland, PE
Andy Kutansky, PE
Billy Adams
Ryan Brown
Jim Stowe, PE[1]
Herb Fricke, PE[4]
Daniel Houf, PE[9]
Bud Furber, PE[18]
Howard Perry, PE, PLS[3]

Railroad Coordination
John Trumbull

Survey/ROW
Tony Brooks, PLS
Joe Hurliman, PLS
John Thatcher, PLS
Ken Kong
Beau McLendon, PLS[3]
Mike McNeill[7]
John Campbell, PLS[9]
George Donnerberg, MAI[19]
David Feinauer[20]
Leslie Finnigan[21]

Bridge/Structure Design
Don Wagner, PE (lead)
Gary Conner, PE
Burak Koru, PE
Mike Bartholomew, PE
Dan Raynor, PE
Bernd Mauelshagen
Preston Baxter, PE
Allen Rieke, PE, PLS[3]

Hydraulics
Rick Attanasio, PE
Mark Anderson, PE
Hans Hadley, PE, PG, CFM[22]

Landscape Architecture
Rick Abelson, LA
Ben Ngan, LA[16]
Carol Mayer-Reed, FASLA[15]

Geotechnical
Deanne Takasumi, PE
Dave Dailer, PE
Paul Davis, PE
Mark Herbert, PE[13]

Bike/Ped/Trail
Mia Birk[2]

Environmental/ Permitting**
Steve Mader, PWS
Mark Bastasch, AE
Don Caniparoli
Michael Hoffmann
Peggy O'Neill, PWS
Greg White
Jessica Feldman
Pat Heins
Jean Ochsner[8]
Leslie Howell, AICP[10]

Traffic Engineering/ Signals
Haregu Nemariam, PE
Celena Stone, PE
Tegan Houghton
Charles Radosta, PE[12]
Brian Copeland, PE[6]

Public Involvement/ Information
Kristin Hull
June Carlson
Tim Burkhardt, AICP
Alex Cousins[11]
Lois Cohen[14]

Construction Engineering

Construction Services/ Bidding Assistance
Bob Thatcher (lead)
Dan Raynor, PE
Dale Wilson, CBI
Jodie Dubose, CBI
Art Bowcock, CBI
Gerry Ochs, CBI
Gary Olson, CBI[5]
Richard McNichols[5]
Mark Mutch, CBI[9]

Materials Testing
Travis Carter[13]
Bridgett Adame[17]

* DBE and/or MWESB certified
**The CH2M HILL team has expertise in all areas of environmental disciplines

Teaming Partners

[1] Alcantar Associates*
[2] Alta Planning + Design
[3] Anderson Perry & Associates
[4] Cascade Design*
[5] Cooper Zietz*
[6] DKS Associates
[7] Epic Land Solutions*
[8] Environmental Science and Assessment*
[9] Harper Houf Peterson Righellis, Inc.
[10] Howell Consulting* (WBE/ESB)
[11] JLA Public Involvement*
[12] Kittelson and Associates, Inc.
[13] Kleinfelder
[14] Lois D. Cohen Associates*
[15] Mayer/Reed* (WBE)
[16] Nevue Ngan Assoc.* (MBE)
[17] Northwest Geotech*
[18] Pavement Services, Inc. (ESB)
[19] Real Property Consultants
[20] Right of Way Associates, Inc.
[21] Universal Field Services, Inc.
[22] WEST Consultants, Inc.

2. Update regularly: By updating the schedule regularly, we can identify early on if a schedule milestone is at risk from a given change. Without this, it is easy to think everything is okay only to discover later that there is no way to meet the next milestone.

3. Steer project based on new schedule: The actions needed vary with the project. Ideally, there are choices in which the client can participate in. Must the original schedule be met, period? Is there flexibility that would allow a different use of resources?

4. Meet schedule: A schedule that has changed, or where the scope of work has changed but the schedule has not, has consequences. Our staff are accustomed to juggling multiple assignments at once and thrive on working in a busy environment. But we know that working harder is not always the answer to getting the work done. Our workload management and forecasting tools—combined with our large staff pool and culture of flexibility and responsiveness—allow us to successfully respond to changing conditions.

Contract manager Dave Simmons is also our Portland staff manager. He ensures staff availability through weekly workload checks and a Primavera-based forecasting tool that evaluates staff needs among multiple projects and offices. We are thus able to quickly shift resources to accommodate the evolving needs of multiple projects and schedules. When we are awarded a new project, it is immediately added to the workload tool to keep it within our focus. With our flexible culture and plentiful staff resources—both at CH2M HILL and our teaming partners for this contract—we have the staff ready for new projects.

Once a project is underway, the depth of our team also allows us to add staff on short notice to meet changing needs. Because CH2M HILL offices operate together as a single unified company—and not as competing profit centers as some companies— sharing work across offices is never an issue.

Quality Control Procedures and Policies

Our quality policy and procedures are based on the concept that the control and delivery of quality is a team obligation built into every aspect of a project from the beginning. All team members are responsible for ensuring quality work.

The CH2M HILL Quality Management Plan (QMP) is a living document that has evolved in conjunction with ODOT's quality plan guidelines. It defines quality control requirements and roles and responsibilities of key team members and serves as a basis for QA/QC in our work. Bonnie Scheeland (roadway) or Mike Bartholomew (bridge) will work with our project manager to develop a QMP for each project and make sure it is implemented. The QMP, which we distribute to our own team and to our clients, is always scaled to the size and complexity of a given project, to maintain efficiency.

In our experience, one of the greatest risks to quality comes from various disciplines not fully understanding each others' design details and requirements. For this reason, our QMPs emphasize **cross-discipline review and communication**. For relevant projects, we use a signed **Certificate of Compliance with QA/QC Procedures** as a final check and documentation with each submittal, verifying that we have followed our own procedures. Our reputation for consistent high-quality design and contract documents is the proof of our ability to implement the QMP.

Quality in Preliminary and Final Design

Exhibits 4 and 5 identify key QA/QC actions to be conducted during preliminary and final design and construction engineering as well as PS&E submittals and who is responsible for completing them. Of the key actions listed, the second—independent document checking and review—warrants additional explanation. It is at this point that documents are independently checked and reviewed for content, clarity, completeness, accuracy, and reasonableness and adherence to these criteria: 1) required submittal information is provided; 2) design criteria are met; 3) drawings and documents are consistent; 4) materials, equipment, and elements of the work have been designed satisfactorily for the purpose intended; 5) constructability requirements are met; 6) applicable health, safety, environmental, and regulatory requirements are satisfied; 7) documents are legible, well organized and technically and grammatically accurate; and 8) calculations are accurate and the results are reasonable. Discipline-specific quality checklists are used during the checking process to facilitate conformance with standards and agency/industry practice.

Checkers and reviewers follow established procedures for color coding marks of the checked document. Corrections are back-checked by the designer/originator and the corrections made will be verified by the checker/reviewer to ensure that the corrections are accurate.

EXHIBIT 4
QA/QC Procedures for Preliminary Engineering

	QA/QC Design	Responsible Party	Timing
1	Review deliverables for contract, standards, and regulatory compliance	Discipline task leads	Prior to submittals
2	a. Independent check of design drawings, specifications, estimates, and reports	Discipline engineers (not involved in preparation of document)	Prior to submittals
	b. Independent senior technical and inter-discipline review	Senior engineer (not involved in preparation of document)	Prior to submittals (Following independent check)
	c. Document QC activity completed	Designer, checker, back-checker, corrector, and verifier	Prior to submittals (Following senior/ inter-discipline reviews)
3	a. Certificate of Compliance with QA/ QC Procedures submittal to project QA/ QC manager	Designer and checker/reviewer	Prior to submittals (Following QC documentation)
	b. Quality assurance audit – sign and submit Certificate of Compliances	Project QA/QC manager	After the submittals, at a time selected by the QA/QC manager

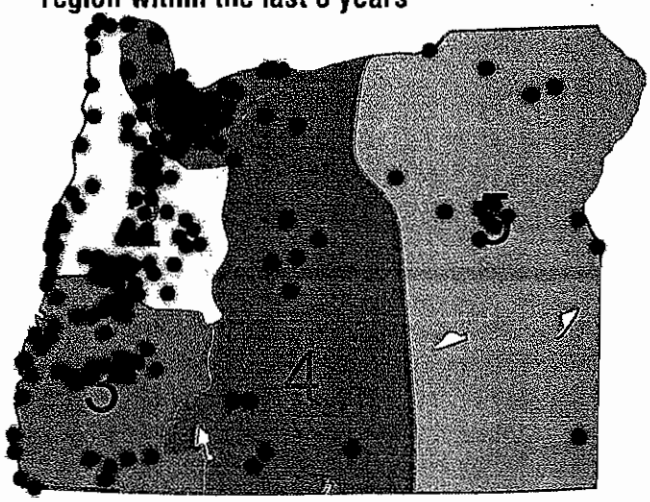
EXHIBIT 5
QA/QC Procedures for Construction Engineering

	QA/QC Design	Responsible Party	Timing
C1	Submittal, shop drawing, RFI reviews	Designer assigned by task lead	As requested
C2	Check CH2M HILL reviewed documents	Independent checker	Prior to submitting documents to ODOT/local agency and/or construction contractor
C3	Prepare pay quantities and estimates and independently check	Construction inspector/ manager	Prior to submittals (Following QC documentation)

2.2.3 General Qualifications

We offer ODOT a full-service team with experience delivering projects in all five ODOT regions, as shown in Exhibit 6. With our subconsultant teaming partners, CH2M HILL brings relevant experience in transportation project development through all phases, including planning, surveying, permitting, and preliminary and construction engineering. A number of our subconsultants have also managed projects as prime consultants and bring management experience in specialty areas (Alta Planning + Design: bike/pedestrian design) or full-service design in ODOT Regions 4 and 5 (AP and HHPR). By fully leveraging our team's capabilities and geographic proximity to potential projects, we have crafted a team that can deliver the technical expertise that ODOT requires in a cost-efficient way that will be responsive to community needs. Our project experience shown in the exhibits that follow provides proof of past performance.

EXHIBIT 6
Our team has delivered over 170 projects in every region within the last 3 years



Project Experience

Exhibit 7 provides a summary view of our team's track record with delivering services similar to the proposed scope on projects for Oregon local agencies. We will build on that success to ensure long-term value and on time and within

EXHIBIT 7
Our Team's Select Local Agency Projects Within the Past 3 Years

Project/Firm	Local Agency/ Location	Roadway	Bridge/Structures	Public Involvement	Environmental/Permitting	Survey/ROW	Landscape Architecture	Construction Engineering	Type	Schedule/Budget Performance
Region 1										
E. Columbia to Lombard *CH2M HILL*	PBOT/ Portland	✓	✓	✓	✓	✓	✓	✓	PS&E and Const.	Completed on time/within budget
Martin-Cornelius-Schefflin Rd *CH2M HILL*	Wash.Co/ Tualatin	✓	✓	✓	✓	✓		✓	PS&E	Completed on time/ under budget
SW 124th Ave *CH2M HILL*	City of Tualatin	✓		✓	✓	✓	✓	✓	PS&E	Completed on time/within budget
Airport Way Rehab. *CH2M HILL*	Port of Portland	✓			✓	✓	✓	✓	PS&E and Const.	Saved approx. $6M/ delivered 1.5 years ahead of schedule
Gibbs St. Ped. Bridge *CH2M HILL*	PBOT/ Portland	✓	✓	✓	✓	✓	✓		PS&E and Const.	Completed on time/within budget
Oleson Rd Improvements *CH2M HILL*	Wash. Co./ Garden Home	✓	✓	✓	✓	✓	✓	✓	PS&E and Const.	Completed on time/within budget
Region 2										
Gateway/Beltline Intersection *CH2M HILL*	City of Springfield	✓		✓	✓	✓	✓		PS&E	Completed on time/within budget
On-Call Materials Testing Services *NW Geotech*	City of Woodburn	✓	✓		✓			✓	Pavement Design	Completed on time/within budget
Salem River Crossing *CH2M HILL*	City of Salem	✓	✓	✓	✓	✓			EIS/Concept Design	Completed on time/within budget
Region 3										
I-5 Sutherlin-Roseburg Section Bridge Replacement *Cooper Zietz*	ODOT/ Sutherlin	✓	✓					✓	QA and Inspection	On time/within budget
Bundle 405 *Kleinfelder*	Coos County/ Myrtle Point	✓	✓						Site invest.	Completed 11 bridges in 1 yr./ under budget
Scour Evaluation of Tidally Influenced Bridges *WEST Consultants*	ODOT/ Regions 2&3	✓	✓		✓				Site invest.	Completed on time/within budget
ODOT Seven Oaks Interchange *DKS*	ODOT/Seven Oaks Community	✓						✓	PS&E	Completed on time/within budget

budget delivery of work orders under the proposed contract.

EXHIBIT 7
Our Team's Select Local Agency Projects Within the Past 3 Years

McAndrews Road Improvements *DKS*	City of Medford	✓						✓	PS&E	Completed on time/within budget
Weaver Road Improvements *DKS*	ODOT/Douglas County	✓		✓					PS&E	Completed on time/within budget
Region 4										
5th and 6th St. Reconstruction *Kleinfelder*	City of Redmond	✓	✓						Geotech. services	Completed $3M project in 12 months (on time/within budget)
OR 361 Improvements *DKS*	City of Culver	✓						✓	Roadway improv.	Completed on time/within budget
Murphy Road Corridor *CH2M HILL*	City of Bend	✓	✓	✓	✓	✓			Preliminary design	Completed on time/within budget
Madras Airport Hangar Project *HHPR*	City of Madras	✓				✓	✓	✓	PS&E and constr.	Design completed on/within budget; construction delayed due to funding
Region 5										
Airport Road *Anderson Perry Assoc.*	City of Pendleton	✓		✓	✓	✓		✓	New roadway	Completed on time/ under budget
N. Oregon Street: Idaho Ave, NW 1st *Anderson Perry Assoc.*	City of Ontario				✓	✓		✓	Roadway Reconstruct	Completed on time/within budget
South Market Road Reconstruction Project *Cascade Design*	Confed. Tribes of the Umatilla Indian Reserv./ Pendleton	✓							Roadway widening	Completed on time/within budget)
North Fork Owyhee River (Fenwick Ranch Road) *Anderson Perry Assoc.*	Malheur County	✓	✓		✓	✓		✓	Bridge replace./ new road	Completed on time/ within budget

Performance on Three Most Recent Projects

East Lombard to Columbia Connector, PBOT Portland, Oregon

Type/Size: Roadway/0.5 miles

Objective: Improve Freight Mobility into and out of the Columbia Corridor Industrial Sanctuary

For this complex urban rail undercrossing, CH2M HILL led project development from conception through final design and construction. This included preliminary and final design, public involvement, alternatives assessment, permitting, UPRR coordination, and environmental cleanup. This $26 million

(including right of way) roadway connection improves freight mobility and safety between the Columbia Corridor and I-205 and involved construction of two new UPRR undercrossing structures.

Because of the constrained urban setting, this crossing was built without a shoofly. A series of track siding closures were closely coordinated with UPRR to facilitate construction of roadways, utilities, retaining walls, and the two main bridges. A series of drilled shafts were installed as the bridge foundation and the retaining walls with only minimal excavation and temporary shoring. Following construction, the site was excavated to the final grade, and aesthetic finishes were applied to the walls and columns. This "top down" approach saved time and money by minimizing throwaway temporary shoring and reducing UPRR clearance requirements without invoking the need to close down the track.

The public involvement process included directly affected stakeholders along the corridor, neighborhood and business associations, and a technical advisory committee consisting of PDOT, ODOT, UPRR, and City of Portland bureaus. The public involvement process resolved access concerns with adjacent property owners and led to the development of traffic control and access management strategies.

Despite the addition of elements (including new roadway maintenance and intersection improvements) and several UPRR permitting delays, the CH2M HILL team maintained the project schedule and delivered the 100–percent design **on the original schedule**. Through proactive value engineering, collaborative problem-solving, and recognizing the need to design to a budget, CH2M HILL delivered this project for virtually the same cost as the 25-percent budget estimate. This outcome was despite a substantial expansion in the scope of work and industry-wide cost escalations.

East Lombard to Columbia Connector Facts

Duration	Timeline	Actual Budget	Budget Schedule Performance
9/03 – 12/07	09/03 Design 03/06 Constr. 12/07	Actual PE/CE Budget: $3,382,337.00 Construction Cost Estimate: $13,967,000 Actual Construction Cost: $14,602,376	Services were accomplished within original estimated budget and schedule

Martin-Cornelius-Schefflin Road, Segments A, E, and F, Washington County, Cornelius, Oregon

Type/Size: Modernization project (grading, paving, drainage, structural)/5 miles

Objective: Improve safety of narrow shoulders and severe dips in road

CH2M HILL provided preliminary engineering and construction engineering services for Segments A, E, and F (Phase 3) of this two-lane, rural arterial. The road corridor is located in unincorporated western Washington County, and serves travel needs between Forest Grove, Glencoe Road, Highway 26, and connecting collector roadways. Land use in the project area is primarily farmland and rural residences. CH2M HILL first began work on this corridor in 1998 with a prioritization effort that divided the approximately 5-mile project area in to six segments. Design and construction of these segments has been completed as cash flow allowed over the past 11 years. Segments B, C and D were completed in 2003. Although work on Segments A, E, and F was started in 2005, the project was placed on hold for nearly 2 years, due to delays initiated by the County because of funding and limited County staff resources. Dave Simmons has served as the Project Manager for the design of all segments of this project.

Segments A, E, and F are characterized by narrow shoulders and severe dips that result in poor horizontal and vertical sight distances. The road is heavily used and serves the needs of local traffic (including farmers) and commuters traveling

between the surrounding areas (to the south) and Highway 26 (to the north). The project purpose is to improve safety by straightening horizontal and vertical alignments and widening shoulders along the roadway in accordance with County standards. This project involves the reconstruction, realignment, and widening of Segments A, E, and F. Segment E work elements included replacing an existing corrugated metal culvert with a fish passable concrete box culvert. Segment F work included the design of a two span prestressed girder bridge over Council Creek.

The CH2M HILL team provided project management, roadway design, bridge design, drainage and pavement design, typographic and boundary survey, legal descriptions, hydraulics analysis, utility coordination, geotechnical investigations, reports and design, Article 7 land use application, delineation of floodplain and drainage hazard areas, wetland delineation and permit applications, public involvement, and construction services, including bidding and award support. Separate construction documents were prepared for each segment. Segment A work was bid and constructed in 2008 and Segments E and F were bid in 2009 and are near completion.

Martin-Cornelius-Schefflin Road Facts

Duration	Timeline	Actual Budget	Budget Schedule Performance
02/2005 to Present	02/05 PE → 01/08 Continue PE → 05/09 A CE → F CE 01/06 Delay 06/08 08/09 E CE	Actual PE & CE budget: $2.7 million Construction Cost Estimate: $14.6 million Actual Construction Cost: $10.3 million	Services were accomplished within original estimated budget and schedule (as modified by client)

North Oregon Street Improvements, Ontario, Oregon

Type/Size: Design, Survey, Construction Administration, Environmental/.7 miles

Objective: Reconstruct street and add bike lanes and sidewalks to roadway

Anderson Perry Associates (AP) provided design and construction engineering, surveying, construction administration, and construction inspection for this $2 million ODOT project. Work included grinding out existing pavements and removing existing sidewalks, repaving, and replacing sidewalks. Utility work (sewer, stormwater, utility poles, etc.) associated with the project included relocating a water mainline out to North Oregon Street from 2nd Avenue to NW 3rd Avenue. The project also included realignment of the intersection at North Ontario Street and 8th Avenue. Streetlights and storm sewer improvements were also included as part of the project.

The project received 120-day ARRA stimulus funding, which compressed a normal design schedule into approximately 2 months. Traffic control and construction staging were key to maintaining access to adjacent businesses. Work for this project included grading, drainage, paving, signing, illumination, signal, and roadside development to reconstruct North Oregon Street from West Idaho Avenue to NW 1st Street. AP also prepared a categorical exclusion in accordance with Federal Highway Administration and ODOT requirements.

The project had both federal and state oversight. The total construction budget $2.5 million. The services were accomplished within the original estimated budgets. Howard Perry served as Project Manager for this effort, overseeing a team of 12 staff.

North Oregon Street Improvements Facts			
Duration	**Timeline**	**Actual Budget**	**Budget Schedule Performance**
1/2009 to Present	01/09 Design 07/09 Constr. 12/09 Ribbon Cutting; 06/09 Bid Let	Actual PE/CE Budget: $150,000 Construction Cost Estimate: $2,565,000 Actual Construction Cost: N/A (Ongoing)	Services were accomplished within original estimated budget and schedule.

2.2.4 Proposer's Capabilities

Accommodating Varying Levels of Work

With our subcontracting teaming partners, we have a depth of resources located around the state. Our team has a transportation staff of 50 roadway engineers, 36 geotechnical engineers, 27 surveyors, 45 environmental scientists, and 15 bridge engineers. Exhibit 8 shows our team's staff capabilities by discipline throughout Oregon. The bridge engineering staff is fully qualified to provide the complete range of structural services. Environmental staff includes ODOT-certified biologists and our construction managers include ODOT-certified inspectors.

With this large pool of talent, we can quickly assemble the right staff for the job while maintaining the contracted schedule. CH2M HILL has had considerable success over the last 15 years providing teams under various on-call contracts with federal, state, and county governments throughout the Northwest. Much of our on-call work has been through ODOT contracts. In the last 3 years, we have provided on-call services to ODOT under 8 master contracts and approximately 79 work orders. **We have accepted all assignments, regardless of size or complexity, and have fulfilled our obligations successfully on all of these on-call contracts.**

EXHIBIT 8
CH2M HILL Team's Interdisciplinary Team and Capacity

DISCIPLINE	STAFF
Administration	36
Surveying	27
Environmental	45
Traffic/Transportation Engineer	24
Civil/Roadway Engineer	50
Geotechnical	36
Hydraulic Engineer/Hydrologist	32
CADD Tech	52
Bridge Engineer	15
Structural engineer	41
Specification Specialist	26
Construction Management/Inspection	41
Graphic Design	10
Public Involvement Specialist	37
Landscape Architect	17
Right of Way	53

CH2M HILL is exceptionally well situated to accommodate the varying demands and workloads that will result from the Price Agreement. We offer a diverse group of experienced professionals with the capability to perform all the work tasks and provide all the products listed in the menu of services.

Accommodating Various Project Locations

CH2M HILL team provides local agencies in all five ODOT regions with accessibility to immediate service. Our team of subconsultants includes firms located around the state, with access to each of the five regions, capable of providing a wide range of services (see Exhibit 2 Team Office Locations and Capabilities in Oregon). With this geographic diversity and as the state's largest transportation engineering firm, the CH2M HILL team has the unmatched ability to deliver the right resources at the right time.

2.2.5 Project Team and Qualifications

Principal Involvement

Rick Kuehn will serve as principal-in-charge. His role will be to monitor performance on ODOT/Local Agency projects and, as a principal of CH2M HILL, can sign contracts when needed. Rick's role will be dedicated to specific, value-based involvement as would be appropriate to leverage his many years of experience with ODOT. As explained in Section 2.2.2, each individual work order contract will also have a principal in charge who will perform a similar function.

Project Manager Experience

The following seven project managers from CH2M HILL, Harper Houf Peterson and Righellis, Inc., and Anderson Perry & Associates all have experience managing similar multidisciplinary projects for local agencies across a range of project size, type, and geography. Their experience is further described in the resume forms at the end of the proposal.

Dave Simmons, PE, has 21 years of experience managing preliminary and construction engineering projects, and transportation planning projects. The majority of his project work has been repeat work for the same clients, based on strong project delivery success. Dave most recently managed 3 miles of rural arterial road reconstruction, which included the design of a two-span precast prestressed concrete girder replacement bridge over Council Creek for the Martin-Cornelius-Schefflin Corridor Phase 3 Road Improvement. This is the last phase of a larger corridor of projects that Dave has been managing since 1998.

For the City of Bend, Dave managed the Murphy Road Corridor Study in Bend. This study evaluated several options to improve the existing Murphy Road, a City east-west collector street, and extend the facility on new alignments both east and west. CH2M HILL completed preliminary design documents for the corridor. The City has subsequently selected CH2M HILL to lead the preliminary engineering and environmental documentation for the extension of Murphy Road over US 97, working together with a jointly led City and ODOT managed project. Dave has managed interdisciplinary teams on these roadway and bridge projects for Oregon local agencies for the last 13 years:

- Salem Willamette River Crossing, Oregon Department of Transportation
- Murphy Road Corridor Study, City of Bend
- Martin-Cornelius-Schefflin Corridor Road Improvements Phases 2 and 3, Washington County
- Oleson Road Improvements, Washington County
- Boones Ferry Road Preservation, City of Tualatin
- Nyberg Road I-5 Overpass Improvements, ODOT
- Cornelius Pass Road Reconstruction, Washington County
- North Lombard Overcrossing, City of Portland
- 99W at 124th Avenue (Tualatin Road), City of Tualatin
- Tualatin Road Improvement Project, City of Tualatin
- North Marine Drive Extension Project, City of Portland

Darren Hippenstiel, PE, is an award-winning roadway designer, experienced in urban roadway enhancement projects, pavement design (including pervious pavements), grading, modeling, parking lot design, agency and stakeholder coordination, and services during construction. He is familiar with UPRR's design and coordination requirements through his design work on the East Columbia to Lombard Connector and Portland and Western Railroad design and coordination requirements through his work on many projects for the City of Tualatin. Darren's experience providing management of interdisciplinary teams includes:

- Application of Alternative Drainage Materials and Pervious Pavement Guide, Western Federal Lands Highway Division
- Deputy Project Manager, Leveton Road Extension, City of Tualatin
- Project Manager, Anderson Road Design for City of Damascus
- Deputy Project Manager for Herman Road Final Design, City of Tualatin
- Roadway Task Manager, North Ontario Interchange for ODOT

Dan Raynor, PE, is a structural engineer with 20 years of experience managing structural and construction projects. His experience includes 11 years of structural design and design management of marine, bridge, building, and industrial facilities as well as 9 years of construction and construction management. Dan's experience managing interdisciplinary teams includes:

- P-359 Pier 3 Improvements for Puget Sound Naval Shipyard in Bremerton, Washington
- San Francisco Oakland Bay Bridge Self Anchored Suspension Span Bridge
- Design Manager for Everett HOV Interstate 5 Expansion (Design Build), Everett, Washington
- Bridge Engineer for Portland to Milwaukie SW Harbor Drive Bridge
- Bridge Engineer for Sellwood Bridge EIS

Steve Katko, PE, has 12 years of experience specializing in urban and rural roadway design. As project manager of the Port of Portland Airport Way Rehabilitation and Widening project, Steve led a multi-discipline team of drainage, traffic, electrical, structural, mechanical, and telecommunication engineers to provide rehabilitation of the existing pavement and addition of a lane and shoulders in each direction along a 1.5-mile stretch of Airport Way. Under Steve's leadership, the project team met the client's compressed schedule,

delivering full contract plans and specifications for $9 million worth of construction within 6 months. Steve has led multidiscipline teams for the past 6 years for Oregon local agencies:

- Airport Way Rehabilitation and Widening, Port of Portland
- SW 124th Avenue/SW Myslony Street to SW Tualatin-Sherwood Road, City of Tualatin
- SW Boones Ferry Road Downtown Enhancement Project, City of Tualatin
- Design Manager for East Columbia to Lombard Connector, City of Portland

Gary Conner, PE, is a bridge engineer and senior technologist with 19 years of experience in the design, inspection, seismic retrofit, and construction of various bridge and earth retention structures. As project manager of the ODOT State Bridge Load Rating project, Gary oversaw more than 130 projects over the past 2 years. Gary has managed interdisciplinary teams on bridge projects for 6 years:

- ODOT Load Rating
- Eastbound Nalley Valley Preliminary Design, WSDOT
- Gateway/Beltline, City of Springfield
- I-5 Clarks Branch to Tunnel Mill Race Design-Build
- Union Street Crossing, City of The Dalles

Dan Houf, PE, has 21 years of experience engineering and managing public works projects—from the initial field investigations all the way through construction, and has the broad technical experience necessary to guide the project through the entire development process. Dan has managed over $100 million of transportation improvement projects located in the Portland Metropolitan Area over the last 8 years, and has served as the principal in charge for the last 9 years on the current ODOT on-call contract for local agencies. He has extensive experience leading federal, state, and locally funded multi-discipline complex transportation projects, such as:

- SE 172nd Avenue Design – Hwy 212 to Sunnyside, Clackamas County
- Sunnyside Phase 3B Supplemental Environmental Assessment and Final Design, SE 162nd Avenue to SE 172nd Avenue, Clackamas County
- Sunnyside Road, Phases 1, 2, and 3A, Clackamas County
- Sunnybrook W. Alignment Analysis, Clackamas Development Agency
- Farmington Road Improvements, City of Beaverton
- Rock Creek Boulevard Arterial Roadway, North Clackamas School District

Howard Perry, PE, is the principal-in-charge for many roadway projects and regularly supervises and reviews projects, writes grants, designs, and provides contract administration for communities and public agencies throughout Eastern Oregon. He has **36 years** of experience managing interdisciplinary teams on design and construction of a broad variety of street and road projects, including:

- Airport Road in Pendleton, ODOT
- Imbler-Riddle Road in LaGrande, ODOT
- Lexington/Heppner Road, ODOT
- Union County Transportation Corridor in Union, ODOT
- La Grande Gekeler and 12th Street, ODOT
- North Oregon Street Improvements in Ontario, ODOT

Key Staff Experience

The CH2M HILL team offers ODOT and its local agency partners the depth and breadth of staff, bringing 28 Professional Engineers registered in Oregon and six Professional Land Surveyors with Oregon registrations. Resumes for each of our key staff are provided at the end of the proposal. Exhibit 9 summarizes the our team's key staff capabilities to deliver not just any scope of services likely under this on-call contract, but also to deliver multiple projects at once including projects of any size.

- **Roadway design team:** Strong mix of skills and experience from interstate roadways to pedestrian facilities
- **Bridge/structure design team:** Delivers projects from major river crossings to basic retaining and foundation structures
- **Survey/Right of Way team:** Expertise in boundary and monumentation; right of way, property identification, acquisition, and relocation; and grade establishment and construction staking for every type of transportation project
- **Environmental/Permitting team:** Delivers local, state, and federal expertise in all environmental and permitting fields, including NEPA documentation/compliance and expertise in biological, wetlands, fisheries, cultural, historic, air quality, noise, hazardous materials, ecological systems to support any transportation effort — moving it effectively through compliance and permitting

- **Construction Services/Bidding Assistance team:** Extensive experience and Oregon construction certifications to effectively represent ODOT and its local agency partners in all construction phases.

As a team we are committed to providing ODOT and its local agency partners the right skills, experience, local knowledge, and leadership to match each individual project. In fact, if we find that one of our subconsultants' staff in a leadership role would best serve ODOT's interests and needs on a particular project, instead of a CH2M HILL staff, then that is the right choice for us too. The resumes at the end of the proposal demonstrates the strength of our team to meet that commitment and deliver effective quality projects with the right team for any type of job.

EXHIBIT 9
Team Members are Experienced in Scope Items

TEAM MEMBER	Project Management	Prospectus Preparation	Preliminary Field Surveys	Geotech Invest., Reports, Design	Hydraulic Studies and Reports	Preliminary Design	Hazardous Materials Assessments	Environmental Analysis, Compliance	Public Involvement/Information	Permit Application Preparation	Landscape Architecture	Survey/Right of Way	Final Plans, Provisions, Cost Estim.	Bidding Assistance	Office Engineering	Construction Monitoring and Inspec.	Contract Administration	Quality and Quantity Assurance	Material Testing and Inspection	As-Constructed Plans Preparation	Public Relations	Construction Layout and Staking	Grades Establishment	Survey Control	Remeasures	Monumentation
Bridgette Adame																			■							
Rick Abelson, RLA											■															
Mark Anderson, PE	■				■																					
Rick Attanasio, PE	■				■																					
Mike Bartholomew, PE						■												■								
Mark Bastasch			■					■																		
Mia Birk	■		■			■																				
John Bland, PE	■					■							■		■											
Art Bowcock, CBI	■													■		■	■									
Tony Brooks, PLS												■										■	■	■	■	■
Don Caniparoli			■					■																		
June Carlson		■							■												■					
Travis Carter																			■							
Lois Cohen									■												■					
Gary Conner, PE	■					■									■											
Brian Copeland, PE						■							■													

EXHIBIT 9
Team Members are Experienced in Scope Items

TEAM MEMBER	Project Management	Prospectus Preparation	Preliminary Field Surveys	Geotech Invest., Reports, Design	Hydraulic Studies and Reports	Preliminary Design	Hazardous Materials Assessments	Environmental Analysis, Compliance	Public Involvement/Information	Permit Application Preparation	Landscape Architecture	Survey/Right of Way	Final Plans, Provisions, Cost Estim.	Bidding Assistance	Office Engineering	Construction Monitoring and Inspec.	Contract Administration	Quality and Quantity Assurance	Material Testing and Inspection	As-Constructed Plans Preparation	Public Relations	Construction Layout and Staking	Grades Establishment	Survey Control	Remeasures	Monumentation
Alex Cousins									■												■					
Dave Dailer, PE				■																						
George Donnerberg, MAI												■														
Jodie Dubose, CBI														■		■	■									
Jessica Feldman			■					■																		
Leslie Finnigan												■														
Herb Fricke, PE	■					■							■	■												
Bud Furber, PE						■							■													
Hans Hadley, PE					■	■																				
Pat Heins							■	■		■																
Mark Herbert, PE				■		■																				
Darren Hippenstiel, PE	■					■							■		■		■									
Michael Hoffmann			■					■		■																
Danial Houf, PE	■	■				■							■		■		■									
Leslie Howell		■	■					■	■	■																
Kristin Hull									■												■					
Steve Katko, PE	■					■							■				■									
Ken Kong,												■										■	■	■	■	■
Burak Koru, PE						■							■													
Rick Kuehn, PE	■					■							■				■									
Steve Mader, PWS			■					■																		
Carol Mayer-Reed, FASLA											■															

EXHIBIT 9
Team Members are Experienced in Scope Items

TEAM MEMBER	Project Management	Prospectus Preparation	Preliminary Field Surveys	Geotech Invest., Reports, Design	Hydraulic Studies and Reports	Preliminary Design	Hazardous Materials Assessments	Environmental Analysis, Compliance	Public Involvement/Information	Permit Application Preparation	Landscape Architecture	Survey/Right of Way	Final Plans, Provisions, Cost Estim.	Bidding Assistance	Office Engineering	Construction Monitoring and Inspec.	Contract Administration	Quality and Quantity Assurance	Material Testing and Inspection	As-Constructed Plans Preparation	Public Relations	Construction Layout and Staking	Grades Establishment	Survey Control	Remeasures	Monumentation
Beau McLendon, PLS											■											■	■	■	■	■
Mike McNeill												■														
Richard McNichols														■		■										
Mark Mutch, CBI																■										
Haregu Nemariam, PE						■							■													
Ben Ngan	■										■															
Jean Ochsner			■					■		■																
Howard Perry, PE, PLS	■	■				■							■				■									
Charles Radosta, PE						■							■													
Dan Raynor, PE	■					■							■		■											
Allen Rieke, PE, PLS						■							■													
Bonnie Schee-land, PE	■															■	■	■								
Dave Simmons, PE	■	■				■							■		■		■	■								
Jim Stowe, PE						■							■													
Deanne Takasumi, PE				■		■							■													
Bob Thatcher														■		■	■									
John Trumbull						■				■																
Don Wagner, PE						■							■					■								
Greg White			■					■		■																
Dale Wilson, CBI														■		■	■									

2.2.6 Cost Effectiveness

Cost-Effective Delivery

Successfully and cost-effectively delivering PE and CE services is a challenging task, but one that our project managers are well accustomed to. Specific efforts we undertake on all projects to ensure cost-effective delivery are as follows:

- **Assigning the right staff up front.** This means staff that are qualified, that understand the work to be done, and that can perform it correctly the first time. Assigning the right staff also means the right mix between junior and senior to deliver value and keep costs in line.
- **Carefully defining scope.** How many projects have gone wrong because of a poor understanding or a misunderstanding of just what the deliverable was supposed to be? We write clear and precise scopes of work that allow us – and our ODOT and local agency partners – to know what the work is we are doing and in turn price it accurately.
- **Managing staff.** It is our project manager's job to manage the staff producing deliverables for a project. Checking in just here and there usually doesn't cut it and allows a deliverable to get off track so far we can't get it back without significant re-work.
- **Managing change.** Nothing blows a budget like a change that is poorly managed. We know projects are often a little different in reality than they seemed on paper at the scoping stage. Our project managers identify change proactively while there is still time to modify the approach and make other decisions to maintain the budget.
- **Managing finances.** CH2M HILL has an accounting system that allows us to status projects weekly. On Monday morning, we know who has charged how much to which task for the previous week. Our project managers are also required to complete a monthly estimate to complete for their projects. This means they constantly re-assess the actual effort – budget – they need to complete each task, again allowing for advance identification of any trouble spots.

Managing Travel and Other Expenses

In Oregon, many of the professional engineering services firms and their staff are located in the Portland region and risk being overpriced or out of touch with smaller or more distant communities. Our staff regularly deliver projects **from Portland to distant locations in each corner of the state**, such as Ontario, Burns, Imbler, Astoria, Cottage Grove, Wimer, and Bend, to name a few. To ensure cost-effectiveness, we employ the following methods.

Staff Locally. When we can deliver a project from a local office, and when that reduces costs, we pass that savings along to clients. Our team for this contract together has offices around the state. This provides us a number of staff who can be on the ground easily and cheaply in a variety of project locations. For this contract in particular, we have identified subconsultants who can manage projects in Regions 4 and 5 where CH2M HILL does not have full-service offices.

Combine Trips. It is our standard practice to combine trips whenever possible to save money. For the many projects we have performed on the North Coast or in Bend and staffed from Portland, for example, we typically schedule management team and other meetings on the same day to reduce costs.

Use the Phone. Often, there is no substitute for face-to-face meetings. But for interim milestones with a project management team, a conference call or video conference can accomplish most of the objectives at a fraction of the cost of travel to a distant location.

Avoid Overnights. When it is safe and reasonable to do so, we avoid overnight travel. This saves not only on hotel charges but also on extra meals the following day. For example, for a recent design project in Ontario, our two Portland staff took the 6:00 am flight to Boise, drove to Ontario for a day of well-coordinated meetings, and returned on the 8:00 pm flight to Portland, saving the overnight and other costs. We also used staff from our Boise office, only an hour from the project location.

Seek Low-Cost Housing. For long-term CEI/CA projects, our greatest success in keeping costs low is to first, match the staff person to the job, given the significant portion of the cost that is related to salary. Beyond that, we identify housing appropriate to the stay, such as an apartment or trailer instead of a hotel.

Be a Public Steward. When lodging or other travel expenses are incurred, our staff understand they are

stewards of public funds and select their accommodations accordingly. CH2M HILL seeks out and qualifies for lower government rates.

Carpool. While it is obvious that carpooling saves fuel and money, it's also a great time for team members to collaborate about what will be presented at the meeting and next steps afterward. Potential "dead time" in the car thus becomes productive.

Ensuring Fair and Reasonable Estimates for Services

We take seriously the trust ODOT places in its consultants in the scoping and budgeting process for work order contracts. To that end, we employ the following key processes and tools to assure that our fee estimates are fair and reasonable to both the state and our consultant team.

Document and Clarify Assumptions. Agreement about the level of effort for a task begins with common understanding. How long are the meetings and where will they be held? What are the expectations for specific design milestones and technical memos?

Having completed many Work Order Contracts for local agency and similar projects around the state, we have standard scope and budget formats, templates, and numerous examples to serve as prompts for key assumptions and for scoping language that has been approved by DOJ and Contracts branch reviewers.

Use Direct Experience. Within their areas of experience, our project managers know whether a given deliverable typically requires an hour, a day, or a week to complete. Or, they consult with staff who do know, in order to develop a number with a basis, rather than just making up a ballpark estimate.

Compare Actuals. Our staff have easy access to our state-of-the art accounting system, which tracks actual vs. budgeted costs on all projects at the task or subtask level, including actual hours each staff person charged. This database of actual experience (combined with our project manager's own knowledge) is probably our best resource to continuously calibrate level of effort to assure fairness both to ODOT and the local agency and to our firm.

Conduct Internal Review. CH2M HILL's procedures require that every scope and budget be reviewed by our Project Delivery Review staff before it is sent to ODOT. One of the key benefits is for an experienced project manager not involved in the project to advise on whether the scope is clear and whether the budget matches the scope.

Conduct Client Review and Validation. By the time we share a scope and budget with ODOT and the local agency, it represents our best professional opinion. But this is not the end of the process. Client review is an important part of the process and often leads to questions about assumptions or the associated deliverables and further refinements.