2.2.1 Understanding of Requested Services

Demonstrate o clear and concise understanding of the scope of Services being requested in this RFP.

ODOT intends to award Price Agreements (PA) to full-service Consultant teams to provide professional services for Local Public Agency (LPA) projects. These PAs will be utilized by LPA's for procurement of services for State Transportation Improvement Program (STIP) approved local program projects.

ODOT has stewardship responsibilities for its STIP funding packages and is looking for engineering consultants that understand all funding program requirements. The TYLI Team will assist ODOT with those stewardship responsibilities by fully supporting ODOT 's administration and management staff and by coordinating with Local Agency staff and other reviewing and/or permitting agencies, as appropriate, to deliver projects that meet all program guidelines.

STIP approved projects typically include:

- Modernization – transportation system improvements to accommodate traffic growth;
- Bridge – replacement, rehabilitation, or seismic retrofit of bridges;
- Transportation Enhancement – mainly bicycle and pedestrian facilities, but can also include historic preservation, scenic beautification and water pollution mitigation projects;
- Congestion Mitigation and Air Quality – projects to reduce congestion and carbon monoxide in Clean Air Act non-attainment or maintenance areas;
- Pavement Preservation – improvements to rebuild or further extend the life of pavement sections; and
- Operations (Sign, Signals, Rock Slides).

Additionally, other projects may be funded by other federal programs. The most common in Oregon include the: Rail/Highway Grade Crossing; Highway Safety Improvement; High Risk Rural Roads; Emergency Relief; High Priority Projects/Transportation Improvements; Construction of Ferry Boats and Ferry Terminal Facilities; Federal Lands Highway; National Historic Covered Bridge Preservation; National Scenic Byways; Recreation Trails; and Safe Routes to Schools programs.

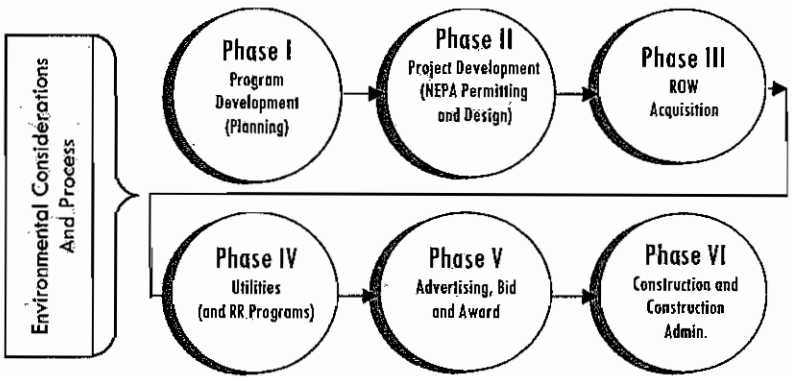
Oregon also has a Bicycle and Pedestrian Program, created from state law that requires cities and counties to spend not less than one percent of their portions of the State Highway Fund on footpaths and bikeways when modernizing roadways.

Local Program Project Delivery Process

Local Program projects are unique in that they must address multiple (and sometimes competing) issues such as limited staff resources; limited funding; and focused and unfocused expectations from City Councils, County Commissions, stakeholders and the public.

Local Program projects are delivered in accordance with the Local Agency Guidelines (LAG) manual. The LAG manual provides the process (see graphic below) that non-certified, certified, and partially certified Local Agencies must use to facilitate their projects. A "certified" agency retains more approval authority and project control for FHWA funded non-National Highway System projects. Agencies may become certified in:

- Design;
- Consultant Selection;
- Advertising, Bid and Award; and
- Construction Contract Administration.



As such, successful delivery of Local Agency projects will require engineering firms that (1) execute projects that meet all state and federal requirements, (2) develop solutions that are cost-effective and appropriate to address the particular needs of the LPA, (3) has comprehensive knowledge of the LAG manual, for both certified and non-certified agencies,

as well as ODOT Project Development Standards and Processes, (4) cost-effectively manage scope, schedule, and project issues, and (5) work proactively with local agency staff to maintain credibility and a positive perception with City and County officials and the public.

To ensure that these covenants are met, the TYLI Team:

- Is comprised of WOM's and production staff that are thoroughly fluent in AASHTO and ODOT standards and project development procedures, including right-of way certification, environmental clearances, and utility relocation.
- Is experienced in "right-sizing" solutions that are appropriate for the site, and includes several members experienced in working with contractors and with current material pricing trends, thereby able to develop accurate cost estimates.
- Includes members with extensive experience in the delivery of Local Program projects through PE and CE phases, per the LAG manual.
- Rigorously implements project control tools that maintain scope, schedule, budget, and issues.
- Is proactive in project communications; e.g., open and collaborative communication with all project stakeholders, and follows-through with delivering projects to meet expectations and perceptions of context.
- Ensures that funding limitations are clearly understood and accurate project scopes developed to make sure that the Local Agency receives the project it wants within the budget it has.

Services

As shown in our Organization Chart and in Table II.1 (both in Section 2.2.2), the TYLI Team is comprised of 30 qualified and respected firms. Each firm has a background working on transportation improvement projects, specifically bridge, traffic, and road design, for public agencies. This experience gives our team an excellent understanding of what it takes to execute projects in the most time and cost efficient manner possible.

Our TYLI Team has the capability and capacity to provide all Preliminary Engineering and Construction Engineering services, with a context-sensitive approach, for any project assignment throughout ODOT Regions 1 through 5.

The following summarizes our team's understanding of the various types of anticipated services that will be encountered on this On-Call contract:

PRELIMINARY ENGINEERING TASKS

- Work Order Contract Development
- Project Management and Meetings (including kick-off, milestone delivery reviews, plans-in-hand, general progress and strategy)
- Field Surveys and DTM Development
- Geotechnical Investigation/Reports
- Hydraulic Investigation/Reports
- Utility Relocation Coordination
- Stormwater and Hydraulics Design
- Preliminary Design (Bridge/Civil/TP&DT)
- QC, Constructibility, and Integration Reviews
- Environmental Documentation
- Acquire Permits (federal, state, local land use)
- Hazardous Materials Assessments
- Public Involvement
- Right-of-Way Survey, Description, Acquisition and Title
- Landscape Architecture
- Final PS&E
- Bidding Assistance

CONSTRUCTION ENGINEERING TASKS

- Project Management and Contract Administration
- Preconstruction Conference
- Office Engineering
- Environmental Monitoring and Compliance
- Construction Monitoring, Inspection and Documentation (including TP&DT)
- Shop Drawing/Submittal/RFI Reviews
- Field, Off-Site, and Laboratory Material Testing, Inspection and Documentation
- Survey Control
- Grade Establishment/Construction Staking
- Quantity Measurement
- Prepare "As-Constructed" Plans
- Issues Resolution/Claims Support
- Public Relations
- Right-of-Way Monumentation
- Project Closeout
- Bridge Load Rating

2.2.2 Proposer's Project Management

Management and Organizational Structure

Describe firm's management and organizational structure, and how that structure aids project services delivery - including chain of command.

The T.Y. Lin International (TYLI) Team has the multi-discipline capabilities to provide Local Agencies with full engineering, environmental, technical support, and construction engineering and inspection/contract administration services for this important Local Agencies On-Call Contract.

The TYLI Team is organized around a single-point of contact for contract management – PIC John Ferguson (also serving as a work order manager). John is supported by other experienced WOMs, as well as complete engineering and environmental resources to support preliminary and construction engineering work orders. Our single-point-of-contact structure allows for immediate and proper response to any Local Agency service request. **WOM selection is based on his/her relevant project history, complete availability for the project duration, and overall compatibility with the Local Agency's and ODOT's project expectations.** Our organization chart (on the next page) illustrates our team's management and organizational structure.

To support our team's focus on quality and our objective to meet delivery schedules and budgets, John will be briefed weekly by each WOM on the progress of each WOC assignment. This interaction will ensure performance at levels expected by the Local Agencies and ODOT and that each assignment is adequately resourced. John is also available to meet with Local Agency and ODOT project/program staff on a monthly basis, to mitigate issues before they develop, and to review the performance of the TYLI Team.

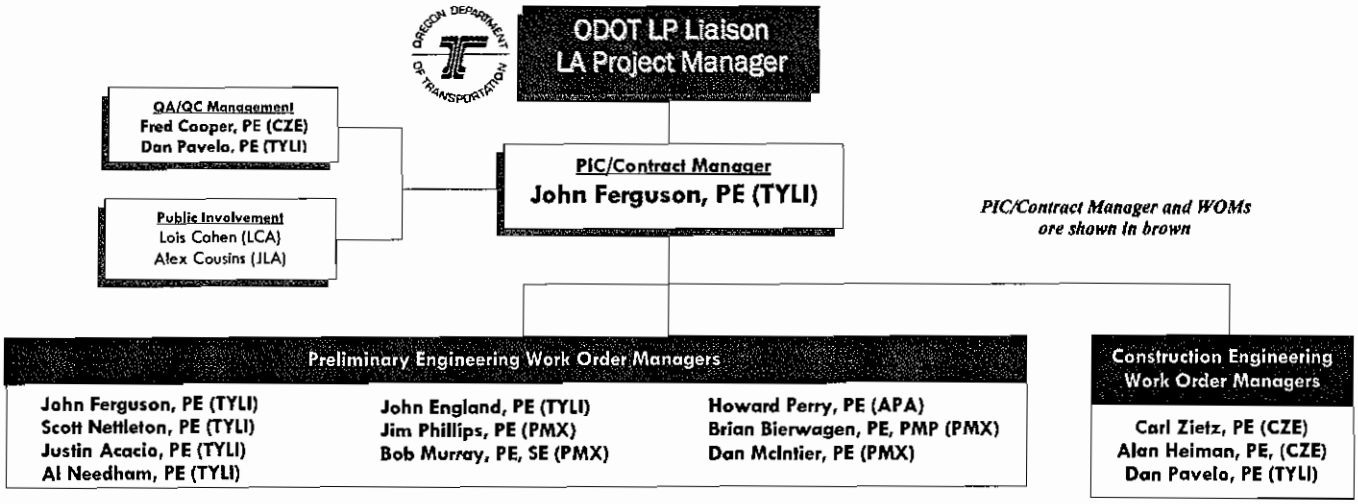
We have several TYLI Team key individual WOMs who will serve as the day-to-day project delivery single point of contact for Local Agency and ODOT representatives and have specific duties that are implemented, regardless of a project's size. These staff members are directly responsible for project management and the coordination of all technical work. The WOM will:

- Work with the Local Agency and ODOT PMs to develop and negotiate a scope and budget for the WOC.
- Develop a Work Plan and Instructions to clearly convey goals and objectives of the project and provide clear direction of assumed task means and methods for on-time, on-budget, and high-quality delivery to the project team.
- Regularly compare the contracted scope and budget vs. actual real-time costs;
- Provide timely communication to all team members through efficient use of team meetings and all communication mediums;
- Proactively track project issues, decisions, and action items using proven management tools and approaches.
- Work with CM (John Ferguson) to monitor the team's performance and make any adjustments necessary to deliver as planned and exceed Local Agency and ODOT expectations.

The diversity and depth of our WOMs provides Local Agency and ODOT PMs with the ability to work with proven project leaders regardless of whether the assignment is focused on bridge, roadway, or traffic design; transportation or environmental planning; or construction inspection and contract administration.

Combined with our specialty subconsultants, our TYLI Team holds an abundance of resources located throughout the state in all service areas that may be required under this contract. In many cases, disciplines are covered by multiple firms. This structure benefits Local Agencies, ODOT and projects by:

- Always providing the **"A-Team"** on work order assignments, regardless of project type, location, disciplines required for delivery, project schedule, or current assignments.
- Immediately offering the appropriate level and experience of staff necessary to successfully deliver projects under tight delivery schedules. The combined resources of our TYLI Team's firms are extensive and can easily accommodate any WOC demands required under this contract.
- Providing resources from multiple firms for a single discipline, if necessary, in order to adjust to unforeseen project circumstances and developments; e.g., change in delivery schedule or level of expertise required.



Bridge Engineering
- Scott Nettleton, PE (TYLI)
- John England, PE (TYLI)
- Joe Krajewski, PE (TYLI)
- Mike Lopez, PE (TYLI)
- Dan McIntire, PE (PMX)
- Bob Murroy, PE, SE (PMX)
- Allen Rieke, PE (APA)
- Hardy Li, PE (CP)

Civil Engineering
- Al Needham, PE (TYLI)
- Jerry Swain, PLS (TYLI)
- Jim Phillips, PE (PMX)
- Tony Roos, PE (CWRG)
- Cedamir Jesic, PE (CWRG)
- Howard Perry, PE (APA)
- Ralph Dunhom, PE (STZ)

Stormwater Design
- Ken Vigil, PE, LEED AP (VA)
- Jay Greene (TYLI)
- Doug Gates, PE (PMX)

Transportation Planning
- Anne Sylvester, PTE (PMX)
- Bill Ciz (PMX)
- Mio Burk (APD
- Rory Renfro, AICP (APD)
- Mike Tresidder (APD)

Traffic Engineering/ITS/TP&DT
- Eric Destival, PE (TYLI)
- Andy Sumanadasa, PE, PTOE (TYLI)
- Karl Birky, PE, PTOE (TYLI)
- Brian Copeland, PE (DKS)
- Dana Beckwith, PE (DKS)
- Charles Radosta, PE (KAI)
- Hermanus Steyn, PE (KAI)
- Wade Scarbrough, PE (KAI)

Utility/RR Coordination
- Justin Acacio, PE (TYLI)
- Scott Nebeker, PE (PMX)

Constructibility/Cost Estimates
- Dave Place, PE (DPC)
- Dan Pavela, PE (TYLI)

Surveying/ROW Mapping
- Beau McLendon, PLS, (APA)
- Dave Mills, PLS (DMC)
- Hayes McCoy, PLS, PE (AKS)
- Keith Jehnke, PLS, PE (AKS)
- Carey Woodruff, PLS (STZ)
- Tom Hoshall, PLS (STZ)
- Samantha Bianco, PLS (CWRG)

ROW Appraisal/Acquisition
- Leslie Finnigan, SR/WA (UFS)
- Regina Thompson (UFS)
- Roger D. Hanna (HMA)
- David R. Johnson (HMA)

Geotechnical Engineering
- William L. Nickels, Jr., PE, GE (FEI)
- Timothy J. Pfeiffer, PE (FEI)
- Rick Thrall, PE, PhD (PBS)
- John Jenkins, RG, CEG (PBS)
- Rajiv Ali, PE, GE, PhD (PBS)
- Park Piaa, PE (SWI)
- Kim E. Elliott, CEG (SWI)
- Alan P. Bean, PE (NWI)
- Mark V. Herbert, PE (KF)
- Arlan Rippe, PE (KF)

Hydraulics
- Thomas Grindeland, PE (WC)
- Hans Hadley, PE, PG (WC)
- Chris Bahner, PE, D.WRE (WC)

Landscape Arch/Erosion Control
- Ben Ngan (NNA)
- Kevin Robert Perry (NNA)
- Larry Gilbert, ASLA (CMGS)
- Matt Koehler, ASLA, LEED (CMGS)
- Jim Hensley II, ASLA (AKS)
- Steve Durrant, ASLA (APD)

Hazardous Materials
- Randy Reid (KF)
- Dulcy Berri, RG, LG, LHG (PBS)
- Kim Elliott (SWI)
- Peter Stroud (KF)

ESA Permitting
- Randy Reeve (PMX)
- Bill Hall (PMX)
- Mark Hynson (MBG)

NEPA
- Mark Wigg (ICF)
- John Vlastelicia (VAI)
- Bob Carson (MBG)

Environmental/Land Use Permitting
- Susan Cunningham (VAI)
- Stuart Myers (MBG)
- Colin McArthur, AICP (CMGS)

Wetlands
- Shane Latimer (ICF)
- Maureen Raad, RLA (VAI)
- Paul Agrimis, RLA (VAI

Watershed Restoration
- John Runyon, CFM (ICF)

Cultural Resources
- Jo Reese, MA, RPA (AINW)
- K. Toepel, PhD, RPA (HRA)
- R. Musil, PhD, RPA (HRA)
- Stacy Schneyder (ICF)

Air Quality & Noise
- Michael Minor (MMA)
- Roger Whitaker, PE (MMA)

Inspectors
- Tom Siniscal (TYLI)
- Justin Acacio (TYLI)
- Jay Greene (TYLI)
- Gail Hunt (CZE)
- Joshua Valenzuela (CZE)
- Mark Dawson (CZE)

Environmental Compliance
- Tim Oliver (CZE)

Construction Quality Compliance
- Gail Hunt (CZE)
- Darrell McKenzie (CZE)

Contract Documentation
- Rick McNichols (CZE)

Scheduling
- Mark Dawson (CZE)
- Dave Place, PE (DPC)
- Dan Pavela, PE (TYLI)

Construction Surveyors
- Project Surveyors

Shop Drawings/RFI's
- Project Engineers

Legend
- TYLI – T.Y. Lin International
- AINW – Archeological Investigations NW
- AKS – AKS Engineering & Forestry
- APA – Anderson Perry & Assoc.
- APD – Alta Planning + Design
- CMGS – Cameron McCarthy Gilbert & Scheibe [4]
- CPI – Convergent Pacific, Inc. [1, 3, 4]
- CWRG – Cardno WRG
- CZE - Cooper Zietz Engineering [1, 3]
- DKS – DKS Assoc.
- DMC – Dave Mills Consulting, Inc. [4]
- DPC – Dave Place Consulting
- FEI - Foundation Engineering, Inc.
- HMA – Hanna, McEldowney Assoc.
- HRA – Heritage Research Assoc. [1, 2, 4]
- ICF – ICF Jones and Stokes
- JLA – Jeonne Lawson Assoc. [1, 2]
- KAI - Kittelson & Assoc.
- KF – Kleinfelder
- LCA – Lois Cohen & Assoc. [1, 2, 4]
- MBG – Mason, Bruce and Girard
- MMA - Michael Minor Assoc. [1, 3, 4]
- NNA – Nevue Ngon Assoc. [3, 4]
- NGI – Northwest Geotechnical, Inc. [1, 3]
- PBS – PBS Engineering & Environmental
- PMX - Parametrix
- STZ – Stuntzner Engineering & Forestry
- SWI - Shannon & Wilson, Inc.
- UFS - Universal Field Services
- VA – Vigil-Agrimis [1, 3]
- WC - West Consultants

D/W/MESB Firms in RED
DBE – 1 WBE – 2 MBE – 3 ESB – 4

In assembling our TYLI Team, we carefully selected our subconsultants to meet the specialized services typically required under this type of on-call program; for their demonstrated competence in working with TYLI, Local Agencies, and ODOT on previous projects; for their reputation in providing responsive service. The benefits of our TYLI Team to Local Agencies and ODOT include:

- **Established Local Agency Contract Manager (CM) and Single Point of Contact** – John Ferguson, PE has over 17 years experience in Contract and Project Management of Local Agency projects. John has

served as a PIC, CM or PM for Local Agency projects in all ODOT Regions (except five) and brings established relationships with Local Agency and ODOT staff, as well as a consistent approach to Local Agency project delivery.

- **Local Agency Experienced Team** – our team members have deep histories delivering Local Agency projects. Many of our WOMs, technical discipline leaders, and project staff previously worked for government agencies, which enables us to always provide project staff that intimately understands how to deliver projects the "Local Program" way - based on Local Agency/ODOT policies and the LAG Manual that result in products that look as if produced by Local Agency/ODOT staff.
- **Fully-Mobilized Team** – this is not the first time this team has been assembled. Almost all of our team members have worked, or are currently working, together on projects. There is no learning curve involved with our understanding and expectations of each other. This instinctual working relationship provides Local Agencies/ODOT with efficient project team delivery capabilities regardless of the type, size, and duration of the work order.

Describe subcontractor selection, utilization and management. Include a list/org chart showing subconsultants/proposed role and discipline.

TYLI fully appreciates the importance of our specialty subconsultants. Within the last four years, we are working, or have worked, with many of our subconsultants on the following projects: Cardwell and Panther Creek Bridges (Coos County), Springfield Viaduct Extension (City of Springfield), Sellwood Bridge EIS (Multnomah County), Willamette River (Eugene) Bridge CMGC, Elkhead to Knowles Creek DB; I-5: Camas Swale to Saginaw Rd; Pirate's Cove Partial Viaduct; OR38: Elk Creek to Hardscrabble Creek DB; Beaver Creek-Mid Fork Coquille Rd; I-5: N. Umpqua River (Winchester) Bridges Repair; and Pioneer Mountain to Eddyville DB – projects totaling more than $700M in construction.

From this experience, we know our subconsultants' respective services will bring a wealth of local knowledge and insight to a project and aid in a cost-efficient, high-value end-product.

Once assigned a WOC by the TYLI Contract Manager (John Ferguson), the WOM will work with John to identify the services required on the project and **begin a process to assess each subconsultant's:**

- service capability and staff's previous experience with the Local Agency and with similar projects (this many times includes interviewing the Local Agency PM to determine previous experience);
- proximity to project location;
- workload and availability of proposed staff throughout the WOC's project schedule; and
- the overall cost effectiveness of utilization. This may include requesting multiple subconsultants to submit estimates to complete the work and choosing the lowest.

Our Organization Chart (on the previous page) and **Table II.1** (on the following page), lists our subconsultant team members and the services they will provide to the team. Our subconsultants are held to the same internal controls and standards as our TYLI staff, are fully integrated into our Work Plans, and are included in all related project management matters; e.g., team correspondence, work sessions, and QC and cost protocols. ***It is from our working relationships with our subconsultants (on past and current projects) that we understand what to expect from one another to affect a smoothly run and successful project.*** This knowledge enables project staff to concurrently focus on their respective tasks while maintaining vision of overall project goals and expectations.

List branch or satellite offices located within the State and the types of services these locations are capable to perform.

TYLI has offices in Salem and Beaverton Oregon, staffed by 34 professionals who have, over the past five years provided project management and multi-discipline services for numerous projects located throughout Oregon (in all five ODOT Regions), including our current Springfield Viaduct Extension project for the City of Springfield, the Panther Creek and Cardwell Creek Bridges Replacement projects for Coos County, and the Sellwood Bridge EIS for Multnomah County.

As shown in Table II.1, our team includes all of the necessary disciplines to meet every Local Agency request for service.

Table II.1

Firm	Location	Services
T.Y. Lin International	Salem/Beaverton	Bridge, Civil, and Traffic design; construction inspection, engineering, and management
Arch. Investigations NW	Portland	Cultural Resources
AKS Engineering	Sherwood/Redmond, and Vancouver, WA	Survey; Landscape Architecture
Anderson Perry & Assoc.	La Grande and Walla Walla, WA	Bridge and Civil Engineering; Survey
Alta Planning + Design	Portland	Transportation Planning
Cameron McCarthy Gilbert & Scheibe	Eugene	Landscape Architecture
Convergent Pacific, Inc.	Tigard	Bridge Engineering
CardnoWRG	Portland and Eagle, ID	Civil Engineering; Survey
Cooper Zietz Engineering	Portland and Battle Ground, WA	Quality Assurance / Quality Control
DKS Associates	Portland/Salem	Traffic Engineering
Dave Mills Consulting	Beaverton	Survey; Right-of-Way Research
Dave Place Consulting	Bend	Constructibility/Cost Estimating
Foundation Engineering	Corvallis/Beaverton	Geotechnical Engineering
Hanna, McEldowney Assoc.	Portland	ROW Services
Heritage Research Assoc.	Eugene	Cultural Resources
ICF Jones and Stokes	Portland/Ashland	Environmental Services
Jeanne Lawson Asso.	Portland and Vancouver, WA	Public Involvement (PI)
Kittelson & Asso.	Portland/Bend and Boise, ID	Traffic Engineering
Kleinfelder	Beaverton/Bend and Boise, ID	Geotechnical Eng.; Hazardous Materials
Lois Cohen & Assoc.	Portland	Public Involvement (PI)
Mason, Bruce and Girard	Portland	Environmental Services; PI
Michael Minor Assoc.	Portland	Noise and Air Studies
Northwest Geotechnical	Wilsonville	Geotechnical Services
Nevue Ngan Assoc.	Portland	Landscape Architecture
PBS Engineering	Portland/Eugene/Bend/Coquille, Vancouver, WA and Boise, ID	Geotechnical Services; Hazardous Materials
Parametrix	Portland/Corvallis/Bend and Boise, ID	Environmental Services; Bridge and Civil Engineering; Transportation Planning; Survey; Stormwater Design; Public Involvement
Stuntzner Engineering	Coos Bay/Brookings/Forest Grove/Dallas	Civil Engineering; Survey
Shannon & Wilson.	Lake Oswego and Richland, WA	Geotechnical Services
Universal Field Services	Salem, OR	ROW Services
Vigil-Agrimis	Portland/Bend, OR	Environmental Services; Land Use Planning; Stormwater Design
West Consultants	Salem/Portland, OR	Hydraulics

Coordinating and Expediting Project Elements

Describe methods of coordinating and expediting all elements of projects to meet delivery schedules without sacrificing quality.

TYLI has developed a reputation as a multi-discipline firm that can be depended upon to deliver high-quality engineering products and provide exceptional cost-effective services within the project's schedule. This success is based on the following key principles:

1) Knowledge of our client's processes and those elements that drive projects

A thorough knowledge of the Local Agency Guidelines (LAG) Manual and elements that drive Local Agency projects and project schedules is critical in coordinating multi-discipline projects and meeting delivery schedules, including:

- **Submittal Milestones** – complete understanding of the "lock-in dates" from bid let for submittal of the Design Acceptance Package (DAP), Preliminary Plans, Advance Plans, Final Plans, and PS&E submittals,
- **Environmental Permits and Clearances** – clear understanding of regulatory agency review periods of state and local permit applications, biological assessments, FHWA 4(f) processes, etc. (there are over 50 different permitting standards), so that timelines can be back-calculated from the PS&E date to determine when applications and documentation need to be submitted, and used as a reality check on the defined DAP submittal date.

  FHWA Oregon Division will no longer Authorize Federal Aid funding for Right-of-Way (R/W) Acquisition or Construction until a Categorical Exclusion (CE) Closeout Document has been completed and approved by FHWA. The CE Closeout Document was developed by FHWA Oregon Division to document NEPA compliance for proposed actions classified as a CE, and focuses primarily on compliance with Federal statutes, regulations, and policies.

  Basis of Design Memo and Design Exceptions – establishing design criteria early and conducting the appropriate level of work up front in order to justify exceptions and provide the information necessary for approval.

- **Right-of-Way (R/W) Acquisition** – ODOT has overall responsibility to FHWA for R/W acquisition. Federal regulations require that ODOT provide the R/W certification. Therefore, it is critical to have an understanding of the ODOT Right-of-Way Manual and statutory-defined (and other) timelines involved in programming, appraisal, acquisition, and certification. These timelines can also be back-calculated from the PS&E date to determine when legal descriptions and exhibit maps need to be submitted to and approved by ODOT, and used as a reality check on the defined DAP submittal (when the project footprint is frozen).
- **Guidelines for Pre-Letting** – use of the Project Completeness Checklists to ensure that PS&E submittals are thorough. FHWA and OPL will no longer approve advertising for bid a project that includes a "Tindal Letter" for environmental permitting.

2) Project management and coordination approach

Our project management and coordination philosophy revolves around early and frequent communication with all project team members, including ODOT staff, subconsultants, and project stakeholders, as well as attention to detail – making sure that project issues and action items do not slip through the cracks. Integrating the entire team, we use the following approach:

- **Conduct on-site meetings** with Local Agency and ODOT staff during scope development and to establish Local Agency objectives and expectations.
- **Prepare a Work Plan** that addresses staffing and assignments, scope of work, deliverables, budget, and schedule. The Work Plan provides definitive directions to the project team (to keep them focused on work product quality and schedule) and includes specific statements regarding assumptions and study methodologies agreed to by the Local Agencies and ODOT during scope negotiations, as applicable.
- **Conduct frequent (typically weekly) project team meetings** to facilitate informed discussions and decisions and team consensus on solutions and action items. Regardless of the frequency of team meetings, Local Agency and ODOT staff is

always invited to participate. We also produce thorough meeting minutes to accurately dictate discussions, to highlight decisions and resulting action items, and to prompt follow-through. Schedule, including milestones and deliverables, is discussed at every team meeting.

- **Consistently use project tracking tools**, such as Issues Logs, Decision Logs, frequent progress reports and schedule updates, earned value graphs, and action plans. These documents are frequently maintained and submitted to all team members and discussed at team meetings.
- **Effective use of communication mediums** (face-to-face, phone, email, written documents, video- and web conferencing, and fax) tailored to meet the project needs and the Local Agency PMs style.
- **Actively schedule QC processes** in the project schedule, including both internal design team and external (Local Agency and/or ODOT) QC reviews so that it is clear from Day 1 when designs need to be completed in order to provide ample time for thorough QC reviews.

By having a complete understanding of the processes and associated timelines involved in a Local Program project, project activities are thoroughly scheduled from the onset minimizing the potential for surprises. Combined with carefully controlling project activities using proven project management tools and approaches, TYLI is able to coordinate the many moving parts of a Local Program project and meet all delivery schedules without compromising quality.

Describe approach to adjusting schedules or adjusting level of effort to meet a schedule while keeping a project within a stated budget.

The TYLI Team effectively avoids schedule delays by implementing the Project Management and Coordination approach described above. In particular, TYLI "freezes" design decisions during project development through the use of strategy work sessions with project stakeholders. If a project schedule is impacted, TYLI will execute the following process:

- ➲ Meet with the Local Agency and ODOT PMs and other stakeholders to identify and quantify the schedule impediment.
- ➲ Review impacts to the bid letting schedule; major deliverable "lock-in" dates prior to bid letting; and in-water construction work windows.
- ➲ Identify project schedule areas that may be accelerated (e.g., compressing design activity timelines).
- ➲ Work with our project partners to identify other schedule recovery options, such as compressing standard review timelines; compressing environmental review and clearance timelines; and/or compressing right-of-way certification timelines.

One of the benefits of the TYLI Team is how we are structured to overlap in disciplines anticipated under this contract. Collectively, the TYLI Team brings together our area's industry leaders in specialty services. By having most disciplines overlapped with resources from two or more firms, the TYLI Team offers Local Agencies and ODOT a deep bench of work order managers, technical experts, and production staff.

In addition to recovering schedule through overtime assignments, our team structure allows us to immediately bring on additional staff resources when needed for schedule recovery.

If assumptions made during scope development do not materialize, at times it is necessary to adjust level-of-effort in order to maintain budget. This can be accomplished by working with the Local Agency and ODOT PMs to discuss modifications to current task approaches and re-assigning tasks to lower-cost staff.

Quality Control

Summarize your firm's Quality Control procedures and policies.

Our Quality Control procedures and policies ensure that our work is focused on the Local Agency and ODOT's objectives for each WOC and that our work is responsive to any change in information needs by the Local Agency over the course of the contract.

In-house TYLI staff and our subconsultant, Cooper Zietz Engineers (CZE), will provide **independent** Quality Assurance Management on our WOC assignments. These team members' main function is quality assurance - to manage, track, and report on quality control tasks - which benefits Local Agencies by ensuring that the Quality Control Plan is followed by eliminating potential conflicting priorities due to workload or otherwise. All deliverables are reviewed prior to submittal to the Local Agency and ODOT.

Our standing Quality Control Plan establishes policies, procedures and protocols that will be implemented independently of the WOM, as well as the design and construction staff, to ensure that the work is completed accurately; responds to the program requirements; and provides a means to verify and validate environmental compliance, design, and construction activities from DAP through final acceptance during construction. Our Quality Control Plan emphasizes thorough and traceable documentation and contains the following elements:

Quality Control - Preliminary Design

- **Schedule** – our project schedules highlight the quality control process and build design development timelines around those appropriately needed for internal and external reviews. This enables the Quality Manager and all checkers and reviewers to clearly understand the timing and duration of reviews.
- **Independent Check and Review Staffing** – appropriate levels of all independent checks and reviews are implemented per current ODOT office practice. For each WOC, a staffing plan, developed by the WOM in consultation with the Quality Manager, is assembled to identify independent checkers and senior reviewers (not part of the WOC design team) who will conduct independent reviews of all documents to verify the facts and judgments presented in deliverables; the product's adherence to guidelines and the Work Plan; and the maintenance of Quality Control records.
- **Plans and Specifications Review Checklists** – we maintain design review checklists for each technical discipline and for each major phase of project development (DAP, Advance Plans, Final Plans, PS&E). The Quality Manager ensures that the process is implemented, and requires signatures from the designer, checker, reviewer, and WOM certifying completion. Review checklists, marked-up check prints, and comment forms are kept on file for easy accessibility.

  Cross-Discipline, Environmental Compliance, and Constructibility Reviews – these are performed prior to submittal of milestone deliverables to ensure compatibility between disciplines, and that designs are constructible and can be permitted. Checklists, certifications, and comment forms are also completed for these reviews.
- **Reports, Design Calculations, and Comment Review Forms** – all reports and design calculations are reviewed by senior staff. The reviewers sign or initial the marked-up report and complete a comment review form. Comment forms are completed for all reviews and submitted to the designer and the Quality Manager, who is responsible for tracking review comments, responses, and facilitating closure of unresolved issues. Design reviewers back-check all revisions and note that all design comments have been resolved in an agreeable manner.
- **Progress Meetings** – team meetings are used as a tool in the Quality Program. Proactive and regular use of meeting minutes and action and decision logs resolve project issues that left unattended can hamper review processes. Focused Design Review meetings, attended by project staff, are also conducted to discuss resolution of comments.

Quality Control - Construction

The role of the Construction Engineering (CE) WOMs will include daily coordination with the Prime Contractor and specialty subcontractors, overseeing QC testing and inspection activities, maintaining and reviewing QC documentation, and resolving non-conformances. In addition, the CE WOMs will provide ODOT with reports and briefings as to the overall status of the project schedule, quantity and quality of the work. CEI/CA activities follow the procedures outlined in the ODOT Construction Manual (ODOT CM). Activities in which our team has developed specific procedures and methods of documentation include:

- **Daily progress reports** - thorough and concise reports, including use of supplemental inspection checklists (concrete placement, pile driving, drilled shafts, deck pours, crack injection, pre-cast plant, etc.) are used to document material installation quality and daily quantity totals.
- **Material Certifications** - consistent and complete attention to construction material certification; completion of Field Inspection Reports; and use of Field Inspection Stickers, as shown in ODOT CM Chapter 12.

- **Conferences** - insistence upon comprehensive pre-construction and pre-deck pour conferences.
- **Quantities Review** - regular review of installed quantities to ensure adequate frequency of field testing. Quality and quantity documentation are entered into the Test Summary Sheets per the ODOT CM.
- **Inspection and Testing** - use of appropriately trained and certified construction inspectors and testing technicians. Non-certified personnel are not allowed to perform field or non-field materials testing.
- **Plans Monitoring and Maintenance** - monitoring of traffic control, safety and environmental compliance plans and activities and consistent maintenance of red-lined plans, non-conformance and other field logs.
- **Quality Assurance** - fully completed and available documentation for ODOT QCCS review and Regional Assurance activities and Q&Q audits; and submittal of material samples for ODOT quality verification.
- **Contractor/Contract Oversight** - maintain and verify contractor labor compliance; workforce utilization; QC program; installed quantity, progress payment, and materials on-hand documentation; contract change orders; and subcontracting (including DMWESB participation) and force account work.

2.2.3 General Qualifications

Firm Qualifications & Proficiencies

Describe your firm's qualifications and proficiencies to complete the requested Services.

The T.Y. Lin International (TYLI) team has the multi-discipline capabilities to provide Local Agencies and ODOT with full engineering, environmental, technical support, and construction engineering and inspection/contract administration services for this on-call contract.

Our Portland and Salem offices are staffed by 34 dedicated professionals: 14 registered Bridge and Civil Engineers (three are Traffic Engineers), one PLS, and 19 designers, drafters, and administrative personnel. Our staff is devoted exclusively to the study, design, and construction management of bridges and roads. Services provided by these offices include:

Bridge and Structure Design and Inspections

- Single- and multi-span steel, post-tensioned reinforced concrete, and precast concrete slab and girder structures for vehicular, pedestrian, and transit users
- Bridge rehabilitation and strengthening designs for single-span and long, multi-span structures consisting of reinforced concrete deck girder (RCDG) and RC box, precast girder and slab, and steel plate girder and truss spans
- Final design, PS&E
- Seismic retrofitting
- Advance planning and DAP studies
- Feasibility studies
- Load Rating analysis
- Value engineering analysis
- Retaining and soundwall structures including reinforced slopes, mechanically-stabilized earth (MSE) and concrete and masonry cantilever and gravity systems
- Structure inspections
- Long-span and signature bridge design
- Alternative delivery (DB and CM/GC)
- Sign and signal support design
- Maintenance inspections
- Emergency damage repair design

Roadway Design

- Interstate, highway, local road, interchanges, intersection design
- Feasibility studies
- DAP studies
- Final designs (PS&E)
- Rail Retrofit
- Drainage studies
- Stormwater Management
- SWPPP compliance
- Value analysis
- Cost Estimating

Traffic Engineering and Planning

- Feasibility and location studies
- Traffic Impact Analysis
- Traffic Operations Analysis

- TP&DT design
- Traffic signal and safety lighting design
- Signing/Striping Design

Construction Management

- Resident engineering
- Quality assurance/control
- RFI/CCO preparation
- Construction inspection
- CPM scheduling
- Claims analysis/resolution

TYLI has an additional 20 engineering, drafting, and administrative professionals in our Olympia and Bellevue, Washington offices, and over 580 additional professional staff throughout the United States with a variety of specialized skills in transportation and infrastructure engineering. These services range from typical bridge, civil and traffic engineering to aviation, federal and non-federal facilities, port/marine, and transit design; multi-modal transportation planning; environmental; and water resource analysis, as well as more specialized services, such as implementing structure forensics to analyze existing structure components or utilizing our team's comprehensive 3D modeling capabilities for visualization of the project design details.

The TYLI Team includes 30 subconsultants. Some of these firms, such as Parametrix, Anderson Perry and Associates, and CardnoWRG offer multi-discipline, if not complete services. Other subconsultants provide specialty tasks, such as Environmental services, Survey, Landscape Architecture, Geotechnical Engineering, Transportation Planning, QA/QC Management, CEI/CA, Traffic Engineering, Right-of-Way, Constructibility Reviews, Cost Estimating, Public Involvement, and Hydraulic Design.

This collection of professionals offers Local Agencies and ODOT industry-leaders in each technical or support discipline required under this on-call contract.

TYLI's reputation for crafting innovative, yet cost-effective solutions, attention to detail, and responsive service is impeccable. Our experience and drive to make our clients successful will benefit Local Agencies and ODOT.

In addition, each of our TYLI team member firms has sufficient local resources, to mobilize for any assignment throughout ODOT Regions 1 to 5.

These firms are located throughout Oregon, some also with offices in Vancouver, Washington, and/or Boise Idaho. Collectively, we have a total of *1016 professionals on the TYLI team ready to immediately respond to any request for services regardless of location.* The table at right shows the number of staff for each team member firm.

Subconsultant Team Member	Staff #
Archeological Investigations NW	25
AKS Engineering & Forestry	28
Anderson Perry & Associates	63
Alta Planning + Design	28
Cameron McCarthy Gilbert & Scheibe	13
Convergent Pacific, Inc.	12
CardnoWRG	56
Cooper Zietz Engineering	45
DKS Associates	43
Dave Mills Consulting, Inc.	6
Dave Place Consulting	1
Foundation Engineering, Inc.	14
Hanna, McEldowney Associates	7
Heritage Research Associates, Inc.	22
ICF Jones and Stokes	42
Jeanne Lawson Associates	14
Kittelson & Associates	67
Kleinfelder	50
Lois Cohen & Associates	3
Mason, Bruce and Girard	65
Michael Minor Associates	3
Northwest Geotechnical, Inc.	35
Nevue Ngan Associates	7
PBS Engineering	98
Parametrix	102
Stuntzner Eng. & Forestry	30
Shannon & Wilson, Inc.	57
Universal Field Services	10
Vigil-Agrimis	18
West Consultants	18
Total Subconsultant Staff	**982**
TYLI Staff (OR only)	**34**
Total TYLI Team	**1016**

Comparable Projects

List projects and contract services performed within the last 3 years by type and location, most comparable to the requested Services.

In the last three years, we have participated in many projects – either under stand-alone or work-order based contracts. We have established the kind of working relationships and trust with our clients that have led to numerous subsequent projects. Our firm's past performance for responsive service; adherence to schedule; production of high quality construction documents; and client satisfaction is outstanding.

Project Name	Type	Location
Elkhead Road to Knowles Creek DB	Bridge Replacements, Roadway Realignments	Lane and Douglas Counties
OR 140: Dairy Bridge	Bridge Replacement	Klamath Falls
OR 39: Alameda Bridge	Bridge Replacement	Klamath Falls
Panther Creek Bridge	Culvert Replacement	Coos County
Cardwell Creek Bridge	Culvert Replacement	Coos County
Willamette River Bridge CM/GC	Bridge Replacements, I/C Improvements	Eugene / Springfield
Springfield Viaduct Extension	New Pedestrian Bridge	Springfield
Western Interlock	Traffic Impact Analysis	Rickreal
Vista Noel TPR Analysis	Traffic Impact Analysis	Estacada
Byrd Nest TPR Analysis	Traffic Impact Analysis	Estacada
Sellwood Bridge EIS	EIS - Structure Alternatives Analysis	Multnomah County
OR 42: Beaver Creek-Mid Fork Coquille Road	Bridge Repairs and Maintenance	Coos County
I-5 Camas Swale Saginaw Rd	Bridge Replacements, Interchange Improvements	Lane County

Project Name	Type	Location
Simpson Creek (US20 Pioneer Mtn Loop Rd)	New Bridge	Lincoln County
Elk Creek to Hardscrabble Creek DB	Bridge Replacements, Roadway Realignments, I/C	Douglas County
Winchester Bridges	Bridge Repairs	Douglas County
Pirates Cove Structure Design	Viaduct extension along OR Coast Hwy. No. 9, US 101	Depoe Bay
US Hwy 20: Pioneer Mtn to Eddyville DB	New Bridges and Roadway	Eddyville
US97: Willowdale to Madras	Rail Retrofit	Madras
Fort Creek Bridge	Bridge Replacement	Klamath County
Albany VMS	Sign Bridge	Albany
Maupin Bridge Over the Deschutes River	Bridge Repair	Deschutes County
Ochoco Hwy Rail Retrofit	Bridge Rail Retrofit	Crook County
OR:99 Barger Ave UPRR	Bridge Repair	Eugene
OR126 MP 97 to Rimrock Way	Bridge Repairs	Deschutes County
Redmond Reroute	Sign Bridge	Redmond

Comparable Project Descriptions

List three recent projects

OR 42: Beaver Creek-Mid Fork Coquille Road, Coos County, OR - This $3.4M (construction) project involved the repair and Phase I seismic retrofit of nine bridges along Hwy 42. Structure types include cast-in-place concrete and steel. To keep traffic moving at all times, the project featured extensive traffic control during construction and utilized a temporary traffic signal at one site. The project also included full survey and base mapping, securing environmentol permits under the OTIA III programmatic guidelines and agreements, securing individual permits for three non-OTIA III bridges, utility coordination, site restoration, and public involvement. The objectives included: **Design** – Built between 1949 and 1962, the bridges need repair to ensure continued safety and keep traffic flowing smoothly and efficiently along Hwy 42. All nine bridges require repairs to meet modern standards for freight loads and earthquake safety. **Construction** – Maintain freight mobility throughout; Minimize project bid cost. The project was on budget ($2.1M Fee) and on schedule*. The timeline to accomplish tasks was:

NTP	04/2008	Final Design QP	05/2008	DAP	11/2008
Progress Plans	N/A	Advance Plans	04/2009	Add'l Advance Plans*	06/2009
Final PS&E	08/2009	Bid Date	11/19/2009	Design Duration	19 Months

**Three bridges were added to the contract at the original Advance Plans submittal phase. An additional Advance Plans submittal was required for design and Agency review of these bridges.*

I-5: North Umpqua River (Winchester) Bridges, Douglas County, OR – This $9.2M (construction) project involved the repair and Phase I seismic retrofit of two 1600'+ long structures, which consists of steel deck trusses, precast and CIP girders. Scope of repairs included strengthening of fracture critical steel connections, steel truss members, crossbeams, decks and concrete girders of the RCDG and PS approach spans. To keep traffic moving, the project features extensive traffic control during construction and during inspections of the existing bridges. The objectives included: **Design** – The bridges are more than 40 years old and needed repair to ensure that commercial and local travel on I-5 can be sustained into the future. The northbound bridge needed repairs to meet modern earthquake safety standards. **Construction** – Maintain freight mobility throughout; Maintain function of park below bridges; Minimize project bid cost. The project was on budget ($1.8M Fee) and on schedule. The timeline to accomplish tasks was:

NTP	01/2007	Final Design QP	02/2007	DAP	07/2007
Progress Plans	12/2007	Advance Plans	03/2008	Final PS&E	05/2008
Bid Package	07/2008	Bid Date	09/25/2008	Design Duration	20 Months

I-5: Camas Swale to Saginaw Road, Lane County - This $9.4M (construction) project replaced three deteriorated bridge; two bridges on I-5 and one overcrossing I-5. This is the first OTIA III bridge replacement project to construct within a designated FEMA floodway. Environmental mitigations included removal of piping that presented a barrier to fish passage and the first project in this program to construct on-site wetland mitigation. TYLI managed a full-service team and provided construction support with field meetings, submittal reviews and support to the field inspection team. The objectives included: **Design** – Replace 3 bridges; Maintain environmental performance standard and avoid permitting delays; Avoid ROW take; Eliminate vertical clearance restriction at O/C; Provide for future freeway expansion to 6 lanes; Provide aesthetically pleasing structure design. **Construction** – Maintain freight mobility throughout; Minimize project bid cost. The design was on budget ($1.4M Fee) and on schedule. The timeline to accomplish tasks was:

NTP	10/2005	Final Design QP	11/2005	DAP	02/2006
Progress Plans	06/2006	Advance Plans	08/2006	Final PS&E	10/2006
ROW Certified	N/A	Bid Date	03/22/07	Design Duration	15 Months

2.2.4 Proposer's Capabilities

Proposer's Capacity

Describe Proposer's staffing levels and capacity for the types of projects that may be assigned via WOCs.

TYLI Oregon employs a staff of 34. Assuming a 40-hour work week, we have over $6M per year in production capacity. As shown in Table II.1 on page 6, our team also includes 30 specialty subconsultant firms, collectively with offices in all 5 ODOT Regions, that bring over 982 Oregon professionals to this Local Agency Program. Therefore, any work orders assigned under this on-call contract will seamlessly be integrated into our production efforts. If necessary, TYLI Oregon can also call upon our nationwide resources (over 600 staff in the U.S., many who have worked on projects in Oregon) to successfully deliver projects.

Our plan however is to exclusively utilize our TYLI Oregon and Oregon subconsultant staff for work orders delivered under this contract – to provide immediate availability and the direct, local attention that is required for the services sought with this procurement.

We will commit a baseline allocation of local resources exclusively to this on-call contract based on our past experience with similar on-call contracts. If work load leveling is required to balance overall demand from our Local Agency project assignments with Oregon staff capacity, we will either:

- utilize additional subconsultant resources;
- address the excess demand through TYLI Oregon staff overtime;
- seek to outsource work from our other projects;
- implement a combination of the above remedies.

This approach enables us to always make available local staff with the appropriate expertise that aligns with the needs of each individual work order for the Local Agency.

The expertise and Local Agency project experience of the TYLI team, combined with our approach to workload leveling and staffing, ensures that each Local Agency project will be staffed with WOMs and production staff that are familiar to the Local Agency and have performed similar work several times in the past, leading to cost-effective production, timely delivery, and impeccable service.

Describe how the Proposer can accommodate varying levels of work assigned under the Price Agreement, including any limitations.

Not only does the shear number of TYLI team staff enable us to accommodate varying levels of work, but how our team is structured to overlap in disciplines anticipated under this contract also provides additional benefit. Collectively, the TYLI team brings several full-service, multi-discipline firms and the industry's leaders in specialty services.

By having most disciplines overlapped with resources from multiple firms, the TYLI team offers ODOT and Local Agencies a deep bench of work order managers, technical experts, and production staff. This allows our team to fluidly respond to and staff work orders regardless of the scope and, more importantly, how many current projects we are delivering of the same scope.

In addition to having a large pool of resources to draw upon and staff work orders, accommodating varying levels of work is accomplished by careful resource and project planning. TYLI conducts weekly meetings to discuss project planning, workload leveling, and assess critical staff assignments.

For example, if a TYLI staff member has upcoming QC responsibilities, no other assignments will be allocated to that person that would impede his/her ability to succeed in performing a critical design check or independent review.

Accommodating varying levels of work is also made possible with efficient and timely project execution. Schedule delays and budget shortfalls are unplanned, increasing the difficulty to efficiently deploy additional resources.

TYLI's seasoned WOM's diligent implementation of project management controls such as strategy worksessions; issue, action item, and decisions logs; critical-path, resource-loaded scheduling; and other project management strategies discussed in Sections 2.2.2 and 2.2.6 of this proposal, ensures projects are delivered on time and on budget, facilitating effective resource planning activities.

Lastly, our Project Principal/Contract Manager, John Ferguson, will conduct weekly performance briefings with the WOMs and subconsultants to discuss staffing needs, upcoming schedule needs and challenges, and any project issues that require increases in staffing to

address. John will work with the WOMs and subconsultants to make sure necessary staff is always made available to deliver projects that meet budget and schedule expectations.

Proposer's Location / Ability to Accommodate All of Oregon

How will Proposer accommodate working on projects that may be located in various parts of Oregon. Describe Proposer's branch or satellite offices located within the state and the types of services these locations are capable to perform.

TYLI has the ability to respond efficiently and effectively to any project location. TYLI has offices in Salem and Beaverton, and has effectively delivered projects in ODOT Regions 1-4 for over 14 years.

The TYLI team also consists of 30 subconsultants with over 57 offices located in cities throughout the state, including:

- Region 1 – Portland, Tigard, Wilsonville, Forest Grove, Lake Oswego, Beaverton
- Region 2 – Salem, Eugene, Corvallis, Dallas
- Region 3 – Ashland, Coquille, Coos Bay, Brookings
- Region 4 – Redmond, Bend
- Region 5 – La Grande, Boise, Idaho (to serve eastern and southern areas of Region 5)

Please see Section 2.2.2 – Project Management, page 6, for a table that lists the branch locations of all team members, and the services they will perform.

Project activities can be scheduled and coordinated in TYLI or our subconsultant offices to efficiently mobilize project resources, such as planned or impromptu site visits or team meetings, and "quick hit" tasks, such as pick-up survey work, right-of-way staking, and construction-related tasks.

In addition to firms with specialized capabilities, the TYLI team includes other large firms with multi-discipline project management and production staff capabilities. By having an overlap in most technical and support disciplines with resources from these other large firms, the TYLI team offers a large roster of WOMs, technical experts, and production staff located throughout the state that can accommodate the needs of any work order regardless of size, location, and schedule.

For example, the TYLI team includes **Anderson Perry and Associates, and Parametrix.** Both firms have senior staff with experience managing multi-discipline projects, as well as production staff with capabilities in bridge, civil, and traffic engineering; survey, environmental, and other disciplines typically needed for Local Program projects. With offices located in La Grande, Bend, and Boise Idaho, these firms will be coordination focal points for projects delivered in ODOT Regions 4 and 5.

In building the optimal team to successfully delivery any WOC assignment, significant consideration will be given to selecting team members located near the project to take advantage of project familiarity, local knowledge, and "arms-length" efficiency.

In addition to traditional phone-conference calls, the TYLI team frequently uses state-of-the-art communications, such as video-conferencing and virtual internet meetings (e.g. web-conferencing), involving multiple stakeholders and offices, thereby reducing travel needs for everyone, and effectively enhancing our ability to serve the needs of any project regardless of location. This technology is used during both the PE and CEI/CA phases of any project.

Considering CEI/CA WOCs, Cooper Zietz Engineering (CZE), TYLI, and many of our other subconsultant partners have construction inspection staff located throughout Oregon, providing the opportunity to staff projects with nearby residents and eliminating long-term travel, lodging, and per diem.

In addition many of our construction inspectors are "mobile", meaning they travel from project-to-project in mobile homes and establish temporary residency near the project sites. TYLI will also seek opportunities to hire temporary local help; e.g., if a field clerk is required, rather than relocate a current permanent employee.

Combined, these strategies enable the TYLI team to not just provide staff located geographically near the project, but to provide staff located geographically near the project **that also possess the experience and expertise to effectively provide the services needed to deliver any project.**

2.2.5 Project Team and Qualifications

Extent of Principal Involvement

Describe extent of principal involvement

Our Principal-in-Charge/Contract Manager, John Ferguson, is a "hands-on" working executive and will ensure that all resources are made available to the team. He has managed over a dozen full-service, on-call contracts, and is currently TYLI's PIC for two LA projects: **the Springfield Viaduct Extension project for the City of Springfield; and the Panther Creek and Cardwell Creek Bridges Replacement project for Coos County.**

As Contract Manager, John will be the "single point of contact" for ODOT. Upon receiving a Work Order, John will assign a WOM (based on the project's preliminary scope). Together, they will identify the appropriate TYLI team members and subconsultant firms needed for the project. John and the WOM will then work with the LA and ODOT to define and negotiate a scope and fee. During the project's progress, John will work with the WOM to make sure that there are enough resources on the job, and will also check in regularly with the Local Agency and ODOT to inquire about performance.

Project Managers' Experience

Project Manager(s) experience with interdisciplinary teams.

John Ferguson has 18 years managing inter-disciplinary teams on some of the largest and most difficult transportation projects throughout Oregon. This experience includes several high-profile bridge rehabilitation and replacement projects in Multnomah County, including the Burnside, Broadway, Morrison, and Sauvie Island Bridges, over a dozen for the City of Portland, and others in Clackamas County, City of Oregon City, and throughout ODOT Region 1. John has managed Local Agency projects in all ODOT regions except 5. As his resume shows, John's unique blend of local agency and ODOT transportation project experience will provide LPAs and ODOT with a highly proficient Contract Manager and WOM; one who is intimately familiar with transportation projects in the Oregon area marketplace.

The TYLI team also has ten multi-discipline specialist WOMs for PE services and three WOMs for CE services. In addition, numerous Key Staff shown in our organization chart can manage work orders focused on specific disciplines. Whether a project is bridge, roadway, or interchange PS&E; traffic studies or planning; NEPA and environmental planning; or construction engineering or inspection, our team has WOMs with the right experience to provide ODOT with an **"A-Team"** leader that can deliver any work order under this contract.

As shown in their respective resumes (following this section), our WOMs have worked on projects involving a variety of disciplines. It is from their respective experiences that each of the TYLI team WOMs fully understands ODOT's responsibilities and processes, and the significant accountability ODOT and Local Agencies have to the public for delivering transportation projects throughout the state, on time and within budget.

Work Order Managers

T.Y. LIN INTERNATIONAL

Our WOMs, Scott Nettleton, John England, Al Needham, Dan Pavela, and Justin Acacio have 105 years collective experience in the design and management of public infrastructure projects requiring full engineering and support services.

> "I really appreciated **the speed** with which TY Lin provided a cost comparison and **their willingness** to discuss the issue so openly and on short notice, **nice job.**"
>
> ***JD Johnson, PE***
> ***ODOT Program Manager***
> ***OR126 Deschutes River Bridge Project***

Scott Nettleton has 19 years personal professional experience. In addition to Project Management, he has experience in bridge engineering (nearly 500 PCPS element designs), Structures Materials Inspection, Specifications, Roadway Geometrics, and Construction Support. Example projects Scott has managed include:

- I-5: Elkhead Road to OR126: Knowles Creek, ODOT
- I-5: Camas Swale to Saginaw Road, ODOT
- Pirates Cove Partial Viaduct, ODOT R
- OR99: Barger Avenue – Washington/Jefferson Street (Eugene) Bridge Rehabilitation, ODOT

John England specializes in the analysis and design of bridges, grade separations, and railroad structures involving a variety of bridge projects, from the simple to complex. His areas of expertise include seismic analysis, retrofit, rehabilitation, and retaining wall

design. With 17 years experience, he is proficient in performing all phases of a bridge project, from the Design Acceptance Package (DAP) stage through design and construction support services, and is extremely knowledgeable of AASHTO design standards.

John's recent management experience includes working as a Project Manager and Lead Bridge Engineer on the Alameda Ave Partial Viaduct Bridge, and the Dairy Bridge Replacement project; TYLI's Project Manager and Lead Bridge Engineer for the Panther Creek and Cardwell Creek Bridges Replacement projects; Asst. Design Manager and Lead Bridge Engineer for Elkhead Road to Knowles Creek DB; Sr. Engineer on the I-5: Willamette River Bridge; and Lead Bridge Engineer for the Beaver Creek-Coquille Road Bridge project.

Al Needham has a comprehensive history in delivering transportation projects. For over 40 years, Al has worked on a variety of roadway projects, serving as a Roadway Engineer responsible for the technical quality assurance review of bridge replacement or repair projects in various stages of completion under the OTIA III State Bridge Program. These projects included traffic control, stage construction and detour design around bridge replacement sites.

Recently joining TYLI, Al is currently working as the Senior Roadway Reviewer for the City of Springfield's Springfield Viaduct Extension project, and as a Senior Roadway Engineer and QA/QC oversight for the I-5: Willamette River Bridge in Eugene.

Justin Acacio has seven years of progressive engineering experience as a Project Manager and as a design engineer. He specializes in the design and contract document preparation for transportation structures, including reinforced concrete, pre-stressed concrete, and steel highway structures, sign supports, and retaining walls. Projects Justin has recently managed include:

- City of Springfield's Springfield Viaduct Extension
- OR 42: Beaver Creek-Mid Fork Coquille Road
- US97: Willowdale to Madras Bridge, Madras, OR
- OR126 M.P.97 to Rimrock Way Bridges, ODOT

Dan Pavela has over 30 years of construction and engineering management experience as a Resident Engineer and as a Construction Liaison to Design Engineers. Dan's hands-on field experience includes inspector, contractor, and Resident Engineer. This diverse background enables Dan to liaison between design engineers and contractors to mitigate in-field construction issues. Dan is currently serving as a Quality Control Manager/Scheduler for the I-5: Willamette River Bridge project and the I-5: Elkhead Road to OR126: Knowles Creek DB project.

Subconsultant Work Order Managers

Our Subconsultant Work Order Managers bring comprehensive and notable experience to the team. They include:

ANDERSON PERRY & ASSOCIATES
Howard Perry, PE has 37 years experience and is intimately familiar with ODOT Region 5. His experience includes managing the Barnhart Road/Airport Road Connector, Pendleton; and the Gekeler Lane Improvements project, La Grande/Union County.

PARAMETRIX
Brian Bierwagen, PE, Jim Phillips, PE, Bob Murray, PE, SE, and Dan McIntier, PE collectively have 103 years of experience working on projects throughout Oregon, including the Columbia Boulevard Resurfacing, St. Helens; Port Westward Road Improvements Phase 1A and 1B, Columbia County; and the Buckner Creek Bridge, Clackamas County.

COOPER ZIETZ ENGINEERS, INC.
Carl Zietz, PE and Alan Heiman, PE have 58 collective years of experience. In addition to working with TYLI on our OR38 / Elk Creek to Hardscrabble Creek and our Elkhead to Knowles Creek DB projects, they have worked on numerous Oregon projects, including the I-205 Sandy Blvd. and Glisan Street Overpasses, Portland; and the I-5 / Columbia River Crossing Project, Portland and Vancouver.

Key Staff Resumes

A project's successful conclusion depends, in part, on the staff assigned to the project; their ability to coordinate technical work involving multiple disciplines; and ensuring work products are biddable and constructible. TYLI has assembled a solid team of professionals with extensive experience working together and with ODOT and LPAs. Our team provides ODOT with numerous industry veterans with proven records in successfully delivering ODOT projects and providing extraordinary service. The following section includes resumes for our TYLI team WOMs and key staff.

2.2.6 Cost Effectiveness

Cost-Effective Project Completion

Describe specific efforts your firm makes to ensure tasks and deliverables are completed in the most cost-effective manner. Explain how your firm ensures travel, lodging, and per diem expenses are kept low (including for long-term CEI/CA projects).

Contrary to popular belief, engineering is not an exact science. In most instances, multiple approaches can be used to adequately accomplish the objective at hand. TYLI determines and maintains the most cost-effective manner to perform tasks by:

- **Discussing means and methods during WOC negotiations.** In the course of agreeing to the steps involved in completing tasks, ODOT PMs, Local Agency PMs, and consultant WOC Managers will discuss the most cost-effective means and methods to meet project goals.
- **Conveying means and methods to production staff during project kick-off.** During internal worksessions, discipline leads will convey the agreed upon task approaches to address project issues, objectives, and expectations as discussed during the WOC negotiations.
- **Conducting Team Strategy Worksessions.** These are used to provide comprehensive information to team members and facilitate informed decisions that are frozen. This eliminates additional costs and schedule threats through rework.
- **Monitor production work.** In the course of managing and mentoring younger production staff, our tasks leaders and senior staff perform frequent "check-ins" to monitor progress, offer problem-solving assistance, and provide direction to keep efforts focused. In addition, TYLI conducts staff meetings in which production efforts on all on-going projects are discussed and action items defined to minimize costs and maintain schedules.
- **Optimizing means and methods.** TYLI utilizes new information discovered during the course of project delivery to revisit approaches and seek ways to further optimize means and methods in order to **complete the project under the WOC budget.**

Ensuring Accurate Tracking of Costs

In addition to defining the most streamlined approach to completing tasks, cost-effective project completion is achieved though accurate cost monitoring. Accurate tracking of costs is achieved through application of several different cost tracking methods. This also includes tracking progress (e.g., percent complete) and comparing to costs incurred in order to assess project status and ensure cost-effectiveness. Our work order managers monitor costs and progress on a weekly basis using the following methods:

- **Resource-loaded scheduling** – in addition to using MS Project to establish and track task progress against project schedules, our work order managers are well-versed in Primavera and use this tool to track individual task budgets versus task schedules and determine earned values.
- **Burn rate projections** – using PSMJ and in-house software, weekly task charges are extrapolated to the end task dates and adjusted to consider varying levels of production during various task stages (e.g., reduced production during ODOT and/or Local Agency submittal reviews).
- **Review of weekly accounting system labor expense postings** – our work order managers can quickly detect anomalies in project charges due to untimely work being performed. This allows for immediate communication with staff to identify and remediate production issues.
- **Sub-milestone definitions** – tasks are broken down into subtasks with sub-milestones (dates) and assigned a target percent complete based on the relative levels of effort between subtasks. Each time a subtask is completed, the corresponding percent-complete is immediately compared to the amount of effort spent completing the subtask.

Through our effective staff management and use of work-load leveling tools, the TYLI team has the capability to efficiently accommodate project locations anywhere in the State. Our approach to ensure that travel, lodging, and per diem expenses are as low as possible includes the following:

- Combining task assignments with task assignments from other projects throughout the state to minimize overall travel expenses.
- Selecting team members located near the project for WOC assignments to take

advantage of project familiarity and/or local knowledge.

- Leveraging the TYLI teams comprehensive coverage of the state by utilizing local team offices to minimize travel costs and to efficiently respond to planned or impromptu site visits or team meetings, and "quick hit" tasks, such as pick-up survey work, right-of-way staking, and construction-related tasks.
- Seeking alternatives to traveling such as conducting meetings using video-conferencing, conference calls and web-conferencing.

For example, during our Winchester Bridges Repair project, a meeting was scheduled at ODOT Region 3 Headquarters to discuss the project's public involvement program. During the same day, our team scheduled other meetings with stakeholders, a site visit to discuss mobility issues, and a meeting to discuss potential traffic management plan overlaps between the Winchester project and the nearby Del Rio Rd. interchange project (delivered by ODOT). This allowed us to complete multiple long-distance activities while expending travel costs only once.

Likewise, during the Winchester project, we scheduled an environmental-related pick-up survey task with required survey work on other nearby projects, completing several required tasks while expending travel costs only once. Consolidation of these efforts was accounted for in developing the Project Fee Estimate.

Considering CEI/CA WOCs, Cooper Zietz Engineering (CZE) and TYLI have inspection staff located throughout Oregon, providing the opportunity to staff projects with nearby residents and eliminating long-term travel, lodging, and per diem. Other creative solutions for saving costs will be brainstormed and employed accounting for each project's particular needs. For example, during the Clarks Branch DB project, CZE rented apartments for the field staff on a monthly basis, avoiding expensive hotels, which dramatically reduced lodging costs. In addition, many of our Construction Inspectors are "mobile"; meaning, they travel from project to project in mobile homes and establish temporary residency near the project sites. TYLI will also seek opportunities to hire temporary local help; e.g., if a field clerk is required, rather than relocate a current permanent employee.

If the opportunity presents itself, we seek to reduce administration efforts and total costs by establishing a central field office that services multiple, concurrent, nearby projects. In addition, similar to PE project phases, the TYLI team frequently uses state-of-the-art communications, such as video conferencing and virtual Internet meetings, involving multiple stakeholders and offices, thereby reducing travel time for everyone.

Cost Estimate Methodology

Describe specific methods, tools, and processes used to develop estimate for services. How do you ensure that estimates are fair and reasonable to both the government and your firm?

Developing Preliminary Engineering Services Summary of Estimate

While the types and sizes of projects anticipated under this contract are numerous, most will involve preliminary engineering (PE) services. TYLI's approach to estimating PE services involves estimating a level of effort to complete tasks defined in the WOC, then employing several methods to check those estimates. Estimates proposed are those in which the results of the following methods converge to particular task and overall costs.

- **Estimate of hours** – approximate how long it should take (and by whom), along with required expenses, to complete each subtask necessary to accomplish the various scope of services. This method is the primary method used in all estimate development.
- **Historical data** – how much did it cost during the previous project involving the same services? Historical costs are adjusted when necessary to account for differences in the project-specific parameters associated with the previous and upcoming projects.
- **Cost per sheet** – applies historical data "rules of thumb" costs per developed contract drawing for technical disciplines. The number of sheets is estimated using past Local Agency project plan sets, the ODOT Plans Preparation Manual, ODOT Roadway Design Manual, and ODOT Bridge Engineering and Bridge Office Practice Manuals, as Local Agencies typically refer to these documents as their standards.

- **Hours per sheet** - applies historical data "rules of thumb" levels of effort in hours per developed contract drawing for technical disciplines.
- **Percentage of Construction** – applies an industry standard percentage to planning or scoping construction cost estimates. Percentages vary depending on the complexity and size of the project.

A variation of this method utilizes the ACEC "curves" or algorithms to calculate appropriate median compensation as a percentage of construction. It is necessary to adjust the ACEC curves as they do not consider Design Acceptance Package (DAP) efforts, high-end analyses (such as seismic design for bridges), inflation, and fluctuations between construction cost increases versus increases in engineer salaries.

In addition, discipline-specific estimating tools are also used for comparison of task level of effort estimates in hours. For example, considering bridge design, this includes:

- **ODOT Bridge Office Practice Manual Bridge Design Cost Curves** – these cost-calculating algorithms are adjusted to consider inflation for the year the latest curves were developed; differences in consultant and ODOT staff labor mark-up rates; changes to current LRFD design specifications; and fluctuations between construction cost increases versus increases in engineer salaries.
- **Caltrans Bridge Design Office Practice Bridge Design Level of Effort Curves** – these level-of-effort algorithms are adjusted to consider the change to current LRFD design specifications, development of specifications and construction cost estimates, and DAP efforts.

Developing Construction Engineering Services Summary of Estimate

After reviewing available contract documents, our approach involves estimating a level of effort by resource-loading the construction schedule developed during preliminary engineering and verifying the estimate using industry standard percentage-of-construction calculations.

We also rely on our team's documented history of delivering thorough, responsible CEI/CA services at fair and reasonable costs, and use this as a check of our estimating practices.

We determine the level of full-time and part-time staffing required and direct expenses estimate based upon the job site location.

Estimating practices include matching project requirements to "Basic Services" including CPM schedule development; contractor observation and enforcement of contracted services; price negotiation of specialty items and change orders; inspections monitoring and documentation; project cost reconciliation; and general project administration through project closeout.

Engineering support services (e.g., shop drawing review and addressing RFIs) are estimated using the Estimate of Hours approach described in the developing PE Services Estimate section.

Ensuring Estimates are Fair and Reasonable

For preliminary and construction engineering estimates, our experience has been that when the majority of the various aforementioned methods converge to particular task costs and overall costs, the resulting final costs have represented a fair and reasonable balance that provides the Local Agencies and ODOT with cost effective services.

TYLI's approach to work order negotiations embraces a collaborative exchange. We share all information and data used in developing WOC estimates with the ODOT and Local Agency PMs and staff.

Using this approach, we have found that negotiations are completed quickly, as differences in opinion on the cost of performing a task are typically not due to the estimated number of hours to complete the work, but rather to different perceptions of the appropriate steps needed to complete it.

Once the appropriate steps to task completion are agreed upon, the costs are typically agreed upon as well. This approach also facilitates a forum for collaboration and learning by ODOT, Local Agency and TYLI staff and fosters building relationships that starts the project off on the right foot.