



Owen Green

Acoustician

5 years of experience · San Diego, California



Owen is an Acoustician working with Stantec's buildings team in our San Diego office. He assists with a wide variety of projects that include noise and vibration mitigation, long and short-term noise and vibration measurements, data analysis, mechanical equipment noise, and SoundPlan predictive noise modeling.

EDUCATION

Bachelor of Science, Mechanical Engineering,
Lafayette College, Easton, PA, 2018

PROJECT EXPERIENCE

SoundPLAN Noise Modeling

Allium Solar Battery Energy Storage System Project
| San Benito, CA | Acoustician

Mulligan Battery Energy Storage System Project |
Logan County, IL | Acoustician

Ventasso Battery Energy Storage System Project |
El Cajon, CA | Acoustician

Stonewater Solar and Battery Energy Storage
System Project | Riverside County, CA | Acoustician

Vidal Solar and Battery Energy Storage System
Project | San Bernardino County, CA | Acoustician

Swift Current Sandhill Battery Energy Storage
System Project | Page, AZ | Acoustician

Cape Horn Pump Station No. 3 Project | Coquitlam,
BC | Acoustician

South Shore Pump Station Project | Galveston, TX |
Acoustician

Jewelflower Battery Energy Storage System Project
| Coyote, CA | Acoustician

Oppidan Data Center Project | Cheyenne, WY |
Acoustician

Oppidan Data Center Project | El Paso, TX |
Acoustician

Oppidan Data Center Project | Prineville, OR |
Acoustician

Blue Sky Water Reclamation Facility Project | Taylor,
TX | Acoustician

Gettysburg Solar Project | Kernville, CA | Acoustician

Red Egret Battery Energy Storage System Project |
Texas City, TX | Acoustician

AERA Belridge Carbon Capture & Storage Project |
Kern County, CA | Acoustician

Perris Hydrogen Fueling Station Project | Perris, CA
| Acoustician

CalCapture Carbon Capture & Storage Project |
Kern County, CA | Acoustician

AERA Energy – CarbonFrontier Carbon Capture &
Storage Project | Santa Barbara County, CA |
Acoustician

Buckeye Hydrogen Fueling Project | Long Beach,
CA | Acoustician

Chevron Eastridge Carbon Capture & Storage | Kern
County, CA | Acoustician

Seattle New Memorial Stadium Project | Seattle, WA
| Acoustician



DAVID EVANS
AND ASSOCIATES INC.

Brett Harsha

Project Manager IV

Education

AAS, Electrical Engineering,
Oregon Polytechnic Institute

Years of Experience

36

Brett has been working in the electrical industry for over 36 years. He provides and oversees electrical design and programming of the projects, including evaluation of design standards and criteria, writing of reports, and specifications and the development of electrical drawings. Brett has extensive experience in the design of water/wastewater pump stations and treatment plants. He also has experience in control systems design, integration, and programming of different devices such as programmable logic controllers, HMI systems, SCADA / remote telemetry systems, calibrating instrumentation, set-point controllers, integrating variable frequency drives into different process and positioning systems, controls design for proper ergonomic and production requirements, and troubleshooting of equipment.

HIGHLIGHTED EXPERIENCE

City of Portland, BES, Lombard Street Pump Station Upgrades, Portland, OR

DEA (through the acquisition of Elcon Associates, Inc.) is providing upgrades to the existing Lombard Street pump station to increase its reliability and to extend its service life. Services include a pump station refurbishment upgrade to the existing 277/480VAC, 3-phase electrical service by a pad mounted transformer, stand-by power system design, SCADA and instrumentation systems design, and construction administration. DEA is working closely with Portland General Electric to confirm if the existing PGE transformer is adequate and provide the design for the service upgrade as required. Brett was the Project Manager for this project, his duties include overseeing the overall electrical and instrumentation and controls design, scheduling, invoicing, managing the deliverables client communications and managing the QC effort.

City of Portland, BES, NE 6th Drive Pump Station Upgrades, Portland, OR

The NE 6th Drive Pump Station (PS), located at 9950 NE 6th Drive, is an older concrete caisson style drywell/wetwell pump station that was placed in service in 1977. The station has three 40 hp, 1,800 gpm Allis-Chalmers pumps. In 2018, the receiving manhole AAG074 was rehabilitated. In 2010, a bubbler system was installed with new conduit and compressor. BES Pump Station Operations and Maintenance (PUMA) staff indicate that the pump station is currently known to be mostly reliable and callouts are rare. It does not have a history of ragging, nor does it have a history of problems with grease or other debris. While this station has equipment similar in age and condition to other stations, the equipment elsewhere is beginning to fail and/or require maintenance call-outs. This station needs to be proactively rehabilitated to avoid the inevitable breakdown and failure of equipment and avoid causing a spill or sewer backups.

DEA (through the acquisition of Elcon Associates, Inc.) is responsible for the electrical design of a new pump station with new submersible pumps. This project includes creating a very high Level of Development (LOD) BIM model using Revit to deliver a fully integrated and coordinated model that includes all circuiting, raceways, lighting, standby power generation, cable and conduit, and panel schedules, electrical equipment, schematics, and details, in a fully coordinated Revit model. Brett was the Project Manager for this project, his duties include overseeing the overall electrical and instrumentation and controls design, scheduling, invoicing, managing the deliverables client communications and managing the QC effort.

City of Portland, BES, 33rd Drive Pump Station Improvements, Portland, OR

BES requested that a design to refurbish the NE 33rd Drive pump station be completed. The pump station is currently being fed from an existing electrical service at 480VAC, 3-phase, 4W, 60Hz. The electrical service is via a PP&L transformer. DEA (through the acquisition of Elcon Associates, Inc.) will work closely with PP&L to confirm if the existing transformer is adequate for proposed loads and any future needs and will provide the design for the stations service upgrades as required. This pump station included electrical design for pumps, lighting and instrumentation and controls BES standards. Brett performed all PM duties and led the design effort for this LOD 3 Revit project.

City of Portland BES, Ferric Chloride Storage Area Rehab Phase 2, Portland, OR

Brett performed project management and design oversight of this project. The project included a retrofit of existing valve actuators and the addition of new overflow containment monitoring sensors on Ferric Chloride storage tanks and the containment structure at the project owner's facility. Brett provided project management, including defining overall design scope, scheduling of deliverables and manpower, coordination with project stakeholders, and managing the budget. Brett worked closely with the design engineers to ensure all design tasks were completed to a high standard at each stage of the design.

Portland Water Bureau, Corrosion Control Improvements Project, Portland, OR

Brett was the lead designer and PM on the electrical and instrumentation, and controls design. The project entailed design of the electrical distribution, lighting, standby generator design, all electrical calculations, lighting, and low voltage systems.

instrumentation for interfacing chemical treatment equipment and instrumentation, and motor controls with the existing PLC and SCADA systems.

City of Vancouver, Well Pump Rehabilitation 03B and 05B, Vancouver, WA

The two well pump designs consisted of retrofits for two very large well pumps in the City of Vancouver well field and their associated pump houses and utility transformers, and incoming feeders. Brett performed project management tasks as well as leading the electrical and controls design.

City of Portland BES, Water Pollution Control Lab Facilities Upgrade, Portland, OR (Subconsultant to Akana)

Project manager and senior electrical designer responsible for electrical site evaluation, analysis and preliminary design effort for the laboratory. Brett performed power and lighting design for the storage shed and design for security and access controls. Additionally, Brett oversaw the electrical distribution equipment design as well as site design for the installation of make-ready infrastructure for electric vehicle (EV) charging. We coordinated with BES and Akana to establish preferred EV charging locations and mounting options. The make-ready infrastructure includes site design of 18 Level 2 charging stations.

City of Portland BES, Water Pollution Control Lab Uninterruptible Power Supply, Portland, OR

Project manager responsible for the replacing the existing dedicated legacy UPS units installed at various locations within the laboratory with a centrally located 60 kVA UPS, batteries, step down transformer and distribution equipment. Brett was responsible for equipment selection, layout, final electrical design, specification, cost opinions as well as bidding assistance and construction services. Dedicated UPS distribution panels were installed, and all critical loads were re-fed from these panels with UPS power. The UPS provides “ride-thru” of any momentary utility outage and in the event of a longer outage allows the standby diesel-engine generator to pickup the loads to the building and its sensitive laboratory equipment. We performed extensive as-builts of the existing laboratory. We also created a system model using SKM software and performed all load calculations and a short circuit analysis of the UPS system.

Portland Water Bureau, Bull Run Filtration Plant, Multnomah County, OR

Project manager responsible for the oversight of the electrical design for plant wide lighting and controls systems. Also designed the electrical distribution, lighting and low-voltage systems for the administration and maintenance buildings. These designs included electrical service, MCC's, distribution, low voltage systems, lighting design and controls.

Three Rivers Regional Wastewater Authority, Standby Generator Study, Longview, WA

Project manager responsible for determining the appropriate standby generator capacity to allow sufficient capacity during utility power outages. Brett is creating a report summarizing the evaluation and the recommended standby generator sizing with a planning level opinion of cost for the two facilities.

Cowlitz County Department of Public Works, McCorkle Creek On-Site Generator, Cowlitz County, WA

Project manager responsible for leading the electrical design team for the design of an on-site generator at the McCorkle Creek Pumpstations #1 and #2 site. This includes a standby generator load study, establishing interfacing needs with existing electrical service, power design, grounding design, and power system studies including arc flash hazard analysis.

Three Rivers Regional Wastewater Authority, Kelso Pump Station Equipment Evaluation, Kelso, WA

Brett provided electrical engineering services required to evaluate the existing pump station's electrical switchgear and motor control center (MCC) to determine if the switchgear and MCC's should be refurbished, retrofitted or replaced. Based on the previous evaluation and recommendations, Brett provided engineering services necessary to design the installation of a fourth pump and 75HP motor and Variable Frequency Drive (VFD) to the existing MCC, as well as a new Automatic Transfer Switch (ATS). Additionally, We provided services during the construction services phase.

SPU Ship Canal Water Quality Project, Underground Tunnel Storage, Seattle, WA

Senior electrical designer responsible for the design of electrical, instrumentation & controls, lighting, and SCADA systems for the 2.7-mile polluted water tunnel storage system. SCADA project elements include water quality monitoring, seismic and leakage detection, line pressure monitoring, and conduits and cabling for connecting all remote sensors and controllers with Seattle Public Utilities. The project will keep over 60 million gallons of polluted water out of the Lake Washington Ship Canal and surrounding bays and will limit the overflows in compliance with state and federal laws.

Seattle Public Utilities, 3rd Avenue West Tunnel Water Main, Seattle, WA

As the electrical designer for this project, Brett will be providing support to the Electrical Engineer for the design of all electrical, I&C, and SCADA systems, including water quality monitoring, seismic and leakage detection, line pressure monitoring, conduits and cabling for connecting all remote sensors and controllers with Seattle Public Utilities' SCADA central control system.

Lexington Flood Control District, Pump Station No. 2 McCorkel Creek Pump Station Transfer Switch, Cowlitz County, WA

This project consisted of providing detailed electrical design and specifications for Installing a 600 amp, 3-phase Service Entrance Rated (SUSE) Manual Transfer Switch (MTS) at McCorkel Creek Pump Station No. 2. This MTS transfer pump station normal power service, to an existing 600kW portable standby trailer mounted generator in an outage event. This project was challenging in the respect that current station Auto-CAD drawings were not available and needed to be created by documenting existing electrical service and utilization equipment, additionally physical space was very limited. Due to the space and clearance limitations, proper coordination with the local jurisdictions and Washington State L&I inspectors was critical to ensure a successful project. This switch provides for the transfer of power from a normal utility source to an emergency source. Responsibilities included modifying the existing electrical service to accommodate the new switch; specifying the new switch; and designing the installation of a terminal enclosure to house Cam-Loks, which provide quick connection to the trailer mounted standby generator. Included in the bid documents were specifications, and construction cost opinions. We provided construction services which, included bidding assistance and submittal review.

Cowlitz County Sewer Operating Board Wastewater Pump Stations, Longview, WA

Electrical designer for two major wastewater pump stations. The first, an existing pump station, included a phased approach to the design of a new electrical service. It was required to place new pumps into service while maintaining existing operations to meet sewer system demand. The second was a new pump station that incorporates a large standby diesel power generator for reliable power supply. Both stations have four (4) 250 HP, variable-frequency controlled motors for pumping to the regional treatment facility.

City of Portland BES, CBWTP Digester Gas Combustion System Design, Portland, OR

Project manager performing upgrades to electrical service at each flare including the design of branch and feeder circuits and coordination and interfacing of burner control panel with upgrades to PLC and SCADA.

City of Portland BES, CBWTP Organic Waste Receiving Facility, Portland, OR

Project manager leading the electrical design team for the electrical and instrumentation system at the BES organic waste receiving facility. Design elements include power and detailed design of PLC control and SCADA communication panels. The design also included site lighting and fiber optic upgrades.

City of Portland, Water Pollution Control Lab Uninterruptible Power Supply, Portland, OR

This project replaced the existing dedicated legacy UPS units installed at various locations within the laboratory with a centrally located 60 kVA UPS, batteries, step down transformer and distribution equipment. Dedicated UPS distribution panels were installed and all critical loads were re-fed from these panels with UPS power. The UPS provides "ride-thru" of any momentary utility outage and also allows the standby diesel-engine generator set time to start, run, and the automatic transfer switch time to transfer all power sensitive laboratory equipment to the engine-generator set after utility power has been lost. We performed extensive as-builts of the existing laboratory. We also created a system model using SKM software, and performed all load calculations and a short circuit analysis of the UPS system. Brett was responsible for equipment selection, layout, final electrical design, specification, cost opinions as well as bidding assistance and construction services.

Key Skills:

- Control Systems Design and Integration
- Water/Wastewater Systems Design
- Treatment Plant Design
- Power Distribution
- Lighting/Lighting Controls Design
- Project Management
- Integration & Programing of Devices



Aaron Eder PE

Senior Principal Conveyance Engineer
30 years of experience · Portland, Oregon

Aaron is a Senior Principal and regional conveyance practice leader with 28 years of experience in the planning, design, and construction management of conveyance projects, working almost exclusively on municipal water, wastewater, and storm drainage pipeline projects. Throughout his career, he has designed or led the design of over 55 miles of water, wastewater, and storm drainage pipelines ranging from 4 inches to 72 inches in diameter. Mr. Eder's pipe design experience includes traditional materials, such as DI and welded steel, as well as non-ferrous materials like PVC, fusible PVC, and HDPE. He uses a risk-based approach for evaluation of alignment options and uses criteria including construction cost, constructability, safety, maintenance, schedule, and impacts to businesses, residents, the environment, and traffic in evaluating pipeline alignment routing alternatives. Once an alignment is selected, his expertise includes proper analysis and sound pipeline design solutions to address challenges involving hydraulics, transient conditions, constructability concerns, cost efficiency, corrosion control, permitting, and risk issues. His project experience includes pipelines installed via traditional open-cut as well as trenchless methods including jack-and-bore, horizontal directional drilling, pipe ramming, and microtunnelling. He has successfully designed pipelines under some of the most adverse conditions, including surface congestion, underground utilities, rugged terrain, unstable or corrosive soils, and multiple river and creek crossings.

EDUCATION

MS, Civil Engineering, Portland State University,
Portland, OR

BS, Civil Engineering, University of Washington,
Seattle, WA

REGISTRATIONS

Professional Engineer #36345, State of Washington,
Valid Until: 12/26/24

Professional Engineer #62653PE, State of Oregon,
Valid Until: 12/31/23

PROJECT EXPERIENCE

WATER

Sandy Drinking Water Reinvestment Program
(SDWRP) | Bull Run | Sandy, Oregon | Task Lead

Serving as an extension of City of Sandy staff in a Program Manager / Owner's Representative role, Aaron led the development of the conceptual design of the new 5 mgd pump station and 11,000 feet of 24-inch DI water main.

Willamette Water Supply Program (WWSP) | Tualatin Valley Water District (TVWD), City of Hillsboro (Hillsboro), and City of Beaverton (Beaverton) | Hillsboro and Beaverton, Oregon, United States | Project Manager

Serving as an extension of WWSP staff in a Program Manager / Owner's Representative role, Aaron led the multi-discipline design for the conceptual design of two 15-MG AWWA D110 concrete storage tanks for the purpose of securing a land use permit from Washington County. Responsibilities included preparation of approximately 36 drawings, land use narratives, and coordination with geotechnical engineering and landscape architecture partners.

Willamette Water Supply Program | Tualatin Valley

Water District | Beaverton, OR | Subject Matter Expert

Serving as an extension of WWSP staff in a Program Manager / Owner's Representative role, Aaron served as a Subject Matter Expert responsible for providing senior-level design and constructability review and overall drawing quality review for the following pipeline design packages: A. MPE_1.1: 3,800 feet of 48-inch welded steel pipe and 4,000 feet of 16-inch ductile iron water main B. MPE_1.2: 14,000 feet of 48-inch welded steel pipe and 2,500 feet of 24-inch ductile iron water main C. MPE_1.3: 17,700 feet of 48-inch welded steel pipe D. PLM_1.3: 9,300 feet of 66-inch welded steel pipe and 1,000 feet of 12-inch ductile iron water main E. PLM_4.2: 7,200 feet of 66-inch welded steel pipe F. PLM_4.4: 3,000 feet of 66-inch welded steel pipe G. PLM_5.3: 20,300 feet of 66-inch welded steel pipe H. PLW_1.2: 3,400 feet of 48-inch welded steel pipe I. PLW_1.3: 6,900 feet of 66-inch welded steel pipe and 4,000 feet of 30-inch water pipeline J. PLW_2.0: 17,200 feet of 48-inch welded steel pipe and 2,300 feet of 12-inch ductile iron water main

Lafayette Finished Water Transmission Main | McMinnville Water & Light | McMinnville, OR | Project Technical Lead

Aaron led the design effort for approximately 7,500 feet of open-cut 28-inch HDPE water mains. His duties included management of the design team, preparation of the basis of design report, plans, and specifications, and coordination with the construction group for the preparation of the opinion of probable construction costs.

Willamette River Crossing | James W. Fowler Company | Portland, Oregon | Project Technical Lead

Aaron led the design of approximately 6,000 feet of

48-inch and 42-inch welded steel water transmission main, including a trenchless crossing of the Willamette River installed via direct steerable pipe thrusting. The project was designed under a design-build delivery method. Aaron's responsibilities included preparation of plans, specifications, and supporting calculations.

Metzger North-South Fire Flow | Tualatin Valley Water District | Tigard, OR | Project Technical Lead

Aaron led the routing and alternatives analysis for selection of the appropriate alignment of 10,000 feet of 16-inch and 12-inch DI water main and the design of the recommended alternative, currently under construction. His duties included management of the design team, preparation of a routing and alternatives analysis Basis of Design Report, plans and specifications, and coordination with cost estimators for the preparation of the opinion of probable construction costs.

Willamette Blvd Bridge Main Replacement | Portland Water Bureau | Portland, Oregon | Project Technical Lead

Aaron led the design of approximately 1,200 feet of 24-inch ductile iron water transmission main, including a trenchless crossing of BNSF railroad tracks. The existing 20-inch steel water main is hanging under the Willamette Blvd Bridge over BNSF tracks. The bridge is in poor condition, and the main has been documented to be in poor condition and has been slip-lined as a temporary repair. The design began with an evaluation of alternatives using weighted criteria including seismic resilience, constructability, construction cost, public/business impacts, life expectancy, maintenance, and schedule. Aaron's responsibilities included preparation of plans, specifications, and coordination with MWH Constructors for the preparation of the Opinion of Probable Construction Costs.

Scholls Ferry Road Water System Improvements | City of Beaverton | Beaverton, OR | Project Technical Lead

Aaron led the fast-track design effort for approximately 1,000 feet of open-cut 16-inch DI suction and discharge pipelines in advance of the Meridian Pump Station. His duties include management of the design team and routine and frequent coordination with the City in order to facilitate a fast-track design so that the project could be bid and constructed in advance of Washington County's proposed overlay of SW Scholls Ferry Road.

Finished Water Transmission Main Phase 2 | McMinnville Water & Light | McMinnville, Oregon | Project Technical Lead

Aaron led the design effort for approximately 6,600 feet of open-cut 36-inch DI water mains. His duties included management of the design team, preparation of the basis of design report, plans, and specifications, and coordination with MWH Constructors for the preparation of the opinion of probable construction costs.

Lake Oswego-Tigard Water Partnership, Finished Water Pipeline Services | City of Tigard | Lake Oswego, Oregon | Project Engineer

Aaron performed "Engineering Services during construction, and previously served as Project Engineer, responsible for preparation of water main plans and profiles for 2,400 feet of open-cut 30-inch and 24-inch ductile iron transmission main, 200 feet of 30-inch ductile iron transmission main in a 48-inch casing installed via pipe ramming, and 300 feet of 24-inch ductile iron transmission main in a 42-inch steel casing installed via pipe ramming, specifications, and various figures and narratives to assist with the land use, environmental and erosion control permitting process.

Lake Oswego-Tigard Water Partnership, Raw Water Pipeline Service | City of Lake Oswego | Lake Oswego, Oregon | Project Engineer/Raw Water Lead

Aaron performed "Engineering Services during Construction" and previously served as Raw Water Lead, responsible for preparation of water main plans and profiles for 7,700 feet of open-cut 48-inch welded steel transmission main and 3,900 feet of 36-inch welded steel transmission main installed via horizontal directional drilling under the Willamette River, specifications, and various figures and narratives to assist with the land use, environmental and erosion control permitting process.

Finished Water Transmission Main Phase 4 | McMinnville Water & Light | McMinnville, OR | Project Technical Lead

Aaron is currently leading the design effort for approximately 8,800 feet of open-cut 36-inch DI water mains. His duties included management of the design team, preparation of the plans, and specifications, and coordination with cost estimators for the preparation of the opinion of probable construction costs.

Finished Water Transmission Main Phase 3 | McMinnville Water & Light | McMinnville, Oregon | Project Technical Lead

Aaron led the design effort for approximately 4,900 feet of open-cut 36-inch DI water mains. His duties included management of the design team, preparation of the plans, and specifications, and coordination with cost estimators for the preparation of the opinion of probable construction costs.

Alignment Study and Phasing for Future Transmission Main Projects | McMinnville Water & Light | Project Technical Lead

Aaron led the evaluation of a permanent alignment for the replacement of approximately nine miles of existing 14-inch/16-inch transmission main with new 36-inch ductile iron finished water transmission main and project phasing for expanding the finished water transmission system to eventually achieve a 30 mgd capacity to match the reliable watershed yield and future buildout of the Water Treatment Plant.

Jason Hirst

Associate Registered Landscape Architect

Jason joined NNA in December 2009 after graduating from Washington State University with a degree in Landscape Architecture. In the past ten years with NNA, Jason has worked on a variety of public and private projects contributing to his skill set, giving him the experience needed to become a registered landscape architect. Jason has worked on a wide range of projects including parks, streetscapes, natural areas, and planning documents.

Adept at working with the public, as well as being able to produce materials which meet agency needs, Jason works creatively to communicate design requirements among project stakeholders. His graphic communication skills have been pivotal in being awarded ASLA awards and being featured in industry publications.

Jason is a veteran of the United States Air Force.

Education	Washington State University, Bachelor of Landscape Architecture, 2009 Big Bend Community College, Associates of Arts and Sciences, 2005
Experience	NNA Landscape Architecture (Nevue Ngan Associates), December 2009 to present The Berger Partnership, Internship, summer 2008 Mithun, Internship, summer 2007
Registration	Registered Landscape Architect No. 821, State of Oregon, 2014
Professional Awards	2011 National ASLA Design of Honor: San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook 2010 WASLA Merit Award for Functional Landscapes
Recent Relevant Projects	Portland Water Bureau Filtration Project (2020 - Current) Columbia Boulevard Wastewater Treatment Plant (2018 - Current) Boones Ferry Road (2015 – Current) Outer Powell (2014 – Current) Powell Butte Nature Park (2009 - 2019) Council Creek (2017) Hogan Butte (2017)

Curriculum Vitae for
BRUCE A. PRENGUBER
PROFESSIONAL ECONOMIST

Professional Experience: *President, Globalwise, Inc.*
1996 -- Present

- Manage a successful, diversified economic consulting practice with a portfolio of over 100 clients in the government, non-profit and private business sectors.
- Analyze and recommend actions for clients that result in new business formation and business expansion, based on recommendations for objective management decision-making.
- Analyze economic damages and lost earnings capacity for attorneys and their clients in the Pacific Northwest with court testimony and depositions as required.

Executive Director, Western U.S. Agricultural Trade Association
2000 -- 2002

- Managed 13 member state export program in cooperation with private companies. Improved overall federal funding for states and companies despite declining availability of federal funding. Annual federal funding of over \$6.3 million secured for the association through the USDA competitive allocation process.
- Led the staff in development and implementation of a project tracking and reporting system that provided new management information and documented credible results for the largest number of companies assisted in the history of the association.
- Evaluated and proposed projects in new federal programs that resulted in \$600,000 of new program funding to the association.
- Increased association reserve funds by 15 percent and led the Board to adopt new reserve fund investment policies.

Assistant Director, Western U.S. Agricultural Trade Association
1980 -- 2000

- Initiated and managed international market development programs in 10 countries that introduced over 100 U.S. companies to importers and distributors. These programs had sales of over \$10 million for U.S. companies.
- Managed program reviews and evaluation contracts that led to elimination of low performing activities and additional funding and management support to high success programs.

*Officer and Principal, Northwest Economic Associates
1978 -- 1996*

- Proposed and managed over 100 economic and marketing consulting projects with a total contract value in excess of \$2.5 million. Many clients were repeat customers.

*Research Economist, Washington Department of Natural Resources
1976 -- 1978*

- Forecasted stumpage prices, evaluated agricultural leases and performed cost-benefit economic evaluations on public trust lands managed by the agency.

Education:

University of Wisconsin
Madison, Wisconsin
M.S.--Agricultural Economics, 1975

Washington State University
Pullman, Washington
B.S.--Agricultural Economics, 1973

Teaching:

Adjunct Instructor of Economics, Washington State University-
Vancouver, WA Campus, 2004-2005

Other Activities:

Founding Member, Clark County (Washington) Food System
Council
Member & Past Chair, Friends of Washington State University
School of Economic Sciences

Selected Publications and Analyses

Recent Work

“Economic Impacts for Pacific Northwest Apples, Pears, and Sweet Cherries” for Washington Apple Commission, Northwest Cherry Growers, and Northwest Pear Bureau (in association with Belrose, Inc.), May 2021.

“The Built Environment (Agriculture Sections) for Draft Programmatic Environmental Impact Statement: Lower Green River Corridor Flood Hazard Management Plan” for King County Flood Control District (in association with Parametrix), December 2020.

- “City of Sandy WSFP Detailed Discharge Alternatives Evaluation: Market Potential for Sandy’s Recycled Water” for City of Sandy Oregon (in association with Barney & Worth), May 2020.
- “Planning and Workshop Facilitation for Understanding Farmland Protection Priorities in the North and South Puget Sound Region” for PCC Farmland Trust, April 12 and 17, 2019.
- “Major Economic Factors in the Purchase Analysis of Broetje Orchards” for Ontario Canada Teachers Pension Plan (in association with Belrose, Inc.), December 2018.
- “Strategic Implementation of the British Columbia Tree Fruits Industry Competitiveness Fund” for BC Fruit Growers’ Association, July 2018.
- “Task Reports Evaluating the Potential for Land Improvement for Grazing and Crop Production at the Westby Cattle Ranch in New Meadows, Idaho” for David and Carrie Westby, January, 2018.
- “Testimony of Bruce Prenguber on Behalf of the Friends of the Columbia Gorge in the Appeal of Clark County Decision Approving Clark County Case No. GOR2016-00002,” for Friends of the Columbia Gorge, August 2017.
- “Testimony of Bruce Prenguber on Behalf of the Friends of the Columbia Gorge in the Appeal of Clark County Decision Approving Clark County Case No. GOR2016-00004,” for Friends of the Columbia Gorge, August 2017.
- “Cowlitz County Agriculture: Profile and Analysis of Current Conditions” for Cowlitz County Planning Department, August 2017.
- “Proposed Bikeway Impacts on Agricultural Land Owners in Benton County, Oregon” for Benton County Oregon (prepared in association with Barney & Worth), May 2017.
- “Analysis of B.C. Ambrosia Marketing” for British Columbia New Tree Fruit Varieties Development Council, (in association with Belrose Inc.), December 2016.
- “Economic Conditions for Agriculture in Pierce County: An Update Assessment to Evaluate Agricultural Zoning” for Pierce County Audit Committee, July 2016.
- “Agricultural Resource Land Analysis of the Gustafson Property Along NE 152nd Avenue in Clark County” A Review of Agricultural Land Resource Conditions Under the Washington Growth Management Act” for Gustafson Investment LLC, June 2015.
- “Agricultural Resource Land Analysis of the Fudge Property at the La Center Junction: A Determination of De-Designation Under the Washington Growth Management Act” for the City of La Center, April 2015.
- “Strategic Development of B.C. Apple and Sweet Cherry Varieties” for the British Columbia Ministry of Agriculture, (in association with Belrose Inc.), March 2015.
- “Agricultural Resource Land Analysis of the Subject Properties Near NW 31st Avenue in Ridgefield, WA: A Determination of De-Designation under the Washington Growth Management Act” for 18 LLC Property Owners, December 2014.

- “The Washington Apple Industry: Updated Evaluation of Contributions to the State Economy and the Important Role of Exports” co-authored with Belrose, Inc. for the Washington Apple Commission, June, 2014.
- “Oregon Property Tax on Machinery & Equipment: Impacts of Extending the Exemption to the Bakery and Dairy Food Processing Sectors to Boost the State Economy” for Oregon FoodPac, April, 2014.
- “Analysis of Maris Farms Crop Loss Damages from Elk Intrusion” for Michael Schwartz, Law Offices of Michael Schwartz, in Administrative Appeals Hearing, Washington Department of Fish & Wildlife, hearing testimony, August 5, 2013.
- “A First Look at Produce Safety Practices and Costs on Oregon’s Small and Medium Sized Fresh Fruit and Vegetable Farms” co-author with Amy Gilroy for the National Network of Public Health Institutes, June 2013.
- “The Orting Study Area: Metrics and Economic Analysis of Organic and Sustainable Agriculture” for PCC Farmland Trust and The Trust for Public Land, February 25, 2013.
- “British Columbia Apple Industry: Strategic Choices and Directions for the Next Decade” co-authored with Belrose, Inc. for the B.C. Fruit Growers’ Association, (in association with Belrose Inc.), September, 2012.
- “Literature Review on Food Safety Adherence and Cost Among Small and Medium Size Produce Growers” co-authored with Oregon Public Health Institute for the National Network of Public Health Institutes, September 2012.
- “The Washington Apple Industry: Contributions to the State Economy and the Important Role of Exports” co-authored with Belrose, Inc. for the Washington Apple Commission, August 29, 2012.
- “Washington Business & Occupation Tax: Impacts of Removing the Exemption on the Food Processing Industry and State Economy” for Washington FoodPac, January 2012.
- “Apple Industry Cost and Returns Analysis for British Columbia and North Central Washington” co-author with Dr. Desmond O’Rourke for British Columbia Fruit Growers Association, July 2011.
- “Electrical Energy Efficiency and Emerging Technologies in Northwest Agriculture” co-author with Cascade Economics and MetaResource Group for Northwest Energy Efficiency Alliance, July 29, 2011.
- “Economic Feasibility of Organic Fertilizer Produced from Chicken Manure in Snohomish County, Washington” for Renewable Farming Group of Washington, June 2011.
- “Market Research and Strategic Initiatives for the Oregon Turfgrass Industry in U.S. Markets” co-authored with Dr. Don Roupe for the Oregon Seed Council, April 2011.

Resource Economics

- “Cowlitz County Agriculture: Profile and Analysis of Current Conditions” for Cowlitz County Planning Department, August 2017.
- “Proposed Bikeway Impacts on Agricultural Land Owners in Benton County, Oregon” for Benton County Oregon (conducted with Barney & Worth), May 2017.
- “Economic Conditions for Agriculture in Pierce County: An Update Assessment to Evaluate Agricultural Zoning” for Pierce County Audit Committee, July 2016.
- “Agricultural Resource Land Analysis of the Gustafson Property Along NE 152nd Avenue in Clark County” A Review of Agricultural Land Resource Conditions Under the Washington Growth Management Act” for Gustafson Investment LLC, June 2015.
- “Agricultural Resource Land Analysis of the Fudge Property at the La Center Junction: A Determination of De-Designation Under the Washington Growth Management Act” for the City of La Center, April 2015.
- “Agricultural Resource Land Analysis of the Subject Properties Near NW 31st Avenue in Ridgefield, WA: A Determination of De-Designation under the Washington Growth Management Act” for 18 LLC Property Owners, December 2014.
- “The Orting Study Area: Metrics and Economic Analysis of Organic and Sustainable Agriculture” for PCC Farmland Trust and The Trust for Public Land, February 25, 2013.
- “A Profile of Agriculture in the Pacific Northwest: Implications for Electric Utilities” co-author with Cascade Economics for Northwest Energy Efficiency Alliance, August 17, 2010.
- “Hood River Working Farmland Study: Summary of Grower & Agri-Business Interviews” for Columbia Land Trust, February 2009.
- “The Future for Agriculture in Yamhill County (Oregon)” for State of Oregon and Yamhill County, McMinnville, Oregon, December 2008.
- “A Profile of Yamhill County (Oregon) Agriculture” for State of Oregon and Yamhill County, McMinnville, Oregon, November 2008.
- “Pierce County Agricultural Production Capacity Study” for Pierce Conservation District, Puyallup, Washington, June 2008.
- “The Prospect for Expanding Portland’s Farmers Markets: Are Growers Ready to Ramp Up the Supply?” for the Office of Sustainable Development, City of Portland, Oregon, May 2008.
- “Summary of Farmer / Producer Survey” (Survey of 52 farmers in Oregon and Washington), for the Office of Sustainable Development, City of Portland, Oregon, May 2008.
- “Animal Byproduct Technology Assessment and Market Analysis: Options for Oregon” co-author with consultant team for Oregon Department of Agriculture and a consortium of Oregon industries and other government agencies, Portland, Oregon September 2007.

- “Analysis of the Agricultural Economic Trends and Conditions in Clark County, Washington (preliminary report), for Clark County, April 2007.
- “Analysis of the Agricultural Economic Trends and Conditions in Clark County, Washington (preliminary report), for Clark County, April 2007.
- “Local Economic Contributions by Processors of Groundfish and Pacific Whiting in California, Oregon and Washington” for West Coast Seafood Processors Association, March 2007.
- “Analysis of Rural Clark County Property for Re-Zone Request from AG-20 to R-5: Why the Coleman Property is Not Agricultural Resource Land Under Definition of the Washington Growth Management Act” for Landerholm, Memovich, Lansverk & Whitesides, P.S. and Monty Coleman, June 2006.
- “Preserving Farmland and Farmers: Pierce County Agriculture Strategic Plan” Summary Report for Pierce County Economic Development Division, January 2006 (co-authored with Barney & Worth).
- “Agriculture Industry Trends” Task 4 Technical Memorandum for Pierce County Economic Development Division, December 2005.
- “Quantative and Qualitative Assessment of Pierce County Agriculture” Task 2 Technical Memorandum for Pierce County Economic Development Division, December 2005.
- “Barriers to Entry for Farmers” Task 6 Technical Memorandum for Pierce County Economic Development Division, December 2005.
- “Aggregate Rock Markets in Southeast Alaska, British Columbia Canada, and Seattle, Washington” for Metlakatla Indian Community, Metlakatla, Alaska, May 2000.
- “Market Analysis for Metlakatla Native Plant Seed Enterprise” for Metlakatla Indian Community, Metlakatla, Alaska, September 1998.
- “Licensing Conditions and Annual Charges Related to Milford Hydroelectric Project FERC Application” for the U.S. Department of Interior, Bureau of Indian Affairs, Eastern Area Office, Arlington, Virginia, 1995-1996.
- “Market Analysis of Metlakatla Bottled Water for Sales in Asia” for Metlakatla Indian Community, September 1995.
- “Market Analysis of Metlakatla Bottled Water for Domestic U.S. Sales” for Metlakatla Indian Community, April 1995.
- “Market Analysis for Metlakatla Water—Phase I Report” for Metlakatla Indian Community, June 1994.
- “The Economic Impacts of Drawdown for Columbia River Salmon Mitigation Analysis” two chapters in a report for the Pacific Northwest Power Planning Council, March 1994.
- “Economic Analysis of the Proposed Duckwater Shoshone Indian Land Rights Act” for the Duckwater Tribe in support of their land claim, January 1994.

"Economic Impacts of the 1991 California Drought on San Joaquin Agriculture and Related Industries" for the San Joaquin Valley Agricultural Water Committee, March 1992.

"Emergency Water Hazard and Industry Emergency Water Requirements Study" for U.S. Army Corps of Engineers, June 1985.

"North Santiam River Flood Plain Land and Improvements Valuation Study" for U.S. Army Corps of Engineers, June 1985.

""Malheur Lake Basin Economic Analysis of Flood Damages and Benefits" for U.S. Army Corps of Engineers, January 1985.

"Mill Creek Flood Plain Valuation Study" for the U.S. Army Corps of Engineers, August 1984

"Mill Creek Flood Plain Valuation Study" for the U.S. Army Corps of Engineers, August 1984.

Food & Agricultural Product Marketing

"Analysis of B.C. Ambrosia Marketing" for British Columbia New Tree Fruit Varieties Development Council, December 2016.

"Market Research and Strategic Initiatives for the Oregon Turfgrass Industry in U.S. Markets" co-authored with Dr. Don Roupe for the Oregon Seed Council, April 2011.

"Exploratory Market Research for the Oregon Turfgrass Industry: Phase I Report – Depth Interviews, Formal Discussions & Secondary Analysis" for Oregon Seed Council, July 2010.

"West Coast Food Service Markets for Fresh Organic Fruits and Vegetables", proprietary market research for a west coast organic food distributor, June 2009.

"Market Feasibility of a Food Processing Facility in Port of Skagit (Washington State)" in association with Dr. Hector Saez, Washington State University, for Northwest Agri-Business Council and private investors, December 2008.

"The Prospect for Expanding Portland's Farmers Markets: Are Growers Ready to Ramp Up the Supply?" for the Office of Sustainable Development, City of Portland, Oregon, May 2008.

"Animal Byproduct Technology Assessment and Market Analysis: Options for Oregon" co-author with consultant team for Oregon Department of Agriculture and a consortium of Oregon industries and other government agencies, Portland, Oregon September 2007.

"Case Ready Beef: Evaluation of the Pacific Northwest Retail Market Channel" for proprietary client, April 2003.

"2002 Unified Export Strategy and Application" to the U.S. Department of Agriculture by the Western U.S. Agricultural Trade Association, Vancouver Washington, March 2002.

- “Value-Added Agriculture and U.S. Competitiveness: A Western U.S. Viewpoint” Analysis and speech presented at the USDA Agricultural Outlook Forum 2002, February 21, 2002, Washington D.C.
- “U.S. Food Trends: An Import Trade Data Comparative Analysis” for Alberta Department of Economic Development, Edmonton Alberta, Canada, April 2002.
- “Western U.S. Organic Livestock Feed Market Potentials” for Alberta Department of Economic Development, Edmonton Alberta, Canada, April 2001.
- “Crops and Marketing Opportunities For Agricultural Producers at the Former Wind River Nursery, Skamania County, Washington” analysis presented in “Wind River Nursery Site and Facility Plan” for Skamania County Wind River Redevelopment Team, Stevenson Washington, June 1, 2000.
- “Implications of Changes in the Food Supply Chain for Small and Medium-Sized Produce Firms in the Pacific Northwest” for USDA Agricultural Marketing Service, May 2000.
- “Food Service Development in China and Vietnam” for Emerging Markets Program, USDA, November 1999.
- “International Market Information Network for High-Value Food—Phase II Grant Report” for USDA Small Business Innovative Research Program, September 1999.
- “Organic Food Markets in Washington and Oregon—Trends and Opportunities” for Alberta Department of Agriculture & Rural Development, Edmonton, Alberta Canada, October 1999.
- “Final Evaluation of Agricultural Showcase 1995 & Recommendations for Planning Future Events” for Yakima County, Washington, February 1996.
- “International Market Information Network for High-Value Food” USDA Small Business Innovation Research Grant Report, November 1995.
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Labor Economics and Regional Economic Impacts

- “Cowlitz County Agriculture: Profile and Analysis of Current Conditions” for Cowlitz County Planning Department, August 2017.
- “The Washington Apple Industry: Updated Evaluation of Contributions to the State Economy and the Important Role of Exports” co-authored with Belrose, Inc. for the Washington Apple Commission, June, 2014.
- “The Washington Apple Industry: Contributions to the State Economy and the Important Role of Exports” co-authored with Belrose, Inc. for the Washington Apple Commission, August 29, 2012.

“Jobs and Wages for Oregonians: Impacts of Productivity Gains from the Proposed VIP Center” for Northwest Food Processors Association”, August 2006.

“Economic Impact of Food Plant Closure: Analysis of the J. R. Simplot Plant in Hermiston, Oregon” for Oregon Food Processors Council, September 2004.

“Employment, Production and Business Growth Benchmarks for the Pacific Northwest Food Processing Industry” for Northwest Food Processors Association, March 2004.

“Economic Impacts of Food Plant Closure: Analysis of the Pacific Coast Seafood Plant in Warrenton, Oregon” for Pacific Seafood Group, February 2004.

“Economic Impacts of Food Plant Closure: Analysis of the Seneca Plant in Dayton, Washington” for Washington Foods Processors Council, September 2003.

“Projections of Oregon’s Minimum Wage to the Year 2013 Under Ballot Measure 25” for Oregon FOODPAC, September 2002.

“Economic Analysis of Seasonal Worker Health Insurance Coverage in the Washington Fruit and Vegetable Industry” for the Washington Food Processors Council, January 1994.

Food Processing, Transportation and Storage Studies

“Oregon Property Tax on Machinery & Equipment: Impacts of Extending the Exemption to the Bakery and Dairy Food Processing Sectors to Boost the State Economy” for Oregon FoodPac, April, 2014.

“Washington Business & Occupation Tax: Impacts of Removing the Exemption on the Food Processing Industry and State Economy” for Washington FoodPac, January 2012.

“Review of Northwest Food Processing Market Characterization Report” for The Cadmus Group, Inc., January 2010.

“Economic Performance of the Northwest Food Processing Industry: Trends and Analysis from the Benchmark Data” for Northwest Food Processors Association, July 2009 (the 6th benchmark analysis for NWPFA dating back to 2003).

“Market Feasibility of a Food Processing Facility in Port of Skagit (Washington State)” in association with Dr. Hector Saez, Washington State University, for Northwest Agri-Business Council and private investors, December 2008.

“Energy Use by Food Processors in Idaho, Montana, Oregon & Washington” for the Northwest Energy Efficiency Alliance, Portland Oregon, October 2008.

“The Future of Farming in Washington: Review of the State’s Food Processing Industry” for the Washington State Department of Agriculture, Olympia, Washington, June 2008.

“Analysis of Cold Storage Rates and Strategic Business Opportunities”, a proprietary analysis for a private client, July 2006.

“West Coast U.S. Organic and Natural Product Markets for Alberta Agricultural Producers and Processors” for Province of Alberta Canada - Agriculture, Food and Rural Development, April 2006.

“Business Plan for Advantage Oregon” for Oregon Association of Nurseries, January 2006 (co-author with Cambium Strategies and Nobis Logistics).

"Long-Haul Transportation of Oregon Nursery Products: Economic Conditions and Actions for Improved Performance" for Oregon Association of Nurseries, January 2005.

Litigation Support/Expert Witness

“Economic Loss to the Estate of Sammuel Sheperd” for Steven Kahn, Kahn & Kahn PC, February, 2022.

“Economic Loss to the Estate of Nicholas Irwin” for Andrew Glascock, Glascock, Street, Waxler, LLP, January, 2022.

“Economic Loss of Dwight T. Barnes” for Douglas Foley, Douglas Foley and Associates, perpetual trial testimony, July 2021.

“Analysis of Economic Loss of Jason Walker” for Sean Lanz, Barger Law Group, October, 2020.

“Analysis of Economic Loss of Jason Jaros” for Sean Lanz, Barger Law Group, May, 2020.

“Economic Loss of Jaimie Reed Discounted to Present Value” for Mila Boyd, Wheeler Montgomery & Boyd PLLC, July, 2019.

“Economic Loss to the Estate of Bailey Dixon” for Mila Boyd, Wheeler Montgomery & Boyd PLLC, April, 2019.

“Analysis of Earnings Loss of Kenneth Henson” for Douglas Foley, Douglas Foley and Associates, March, 2019.

“Analysis of Earnings Loss and Present Value of Life Care Plan of Aart Lovenstein” for Stephen Hendricks, Hendricks Law Firm, court testimony, September, 2018.

“Economic Loss of Kyle Thorson Sr.” for Andrew Glascock, Glascock Street Waxler LLP, trial testimony, March 2018.

“Summary of Economic Losses of Tyler Holmes” for Amy I. Paden, Bauer Moynihan & Johnson LLP, January 2018.

“Economic Loss of Christopher Karl LaDue, Jr.” for Lawrence Peterson, Glazer, Maurer & Peterson, PC, September 2017.

“Analysis of Economic Losses of Brian Clark” for Ryan McLellan, Smith Freed and Eberhard PC, August 2017.

“Analysis of Earnings Losses of Kenneth V. Thomas” for Christopher R. Best, The Gatti Law Firm, June 2017.

“Analysis of Earnings and Household Services Losses to the Estate of Kerri E. Drake” for Gregory Price, Law Office of Gregory E. Price, June 2017.

“Economic Loss of Julie Clark” for Jane Clark, Law Offices of Jane Clark, trial testimony, May 2017.

“Economic Loss to the Estate of Evelyn Croon” for William Nelson, Baumgartner, Nelson & Wagner PLLC, deposition testimony, December 2016.

“Economic Loss of Betty Bishop” for Douglas Foley, Douglas Foley and Associates, court testimony, November 2016.

“Analysis of Economic Losses of Charlene S. Nelson” for Gregory Price, Law Office of Gregory E. Price, P.S., deposition testimony, September 2016.

“Economic Loss of Household Services to the Estate of Daniel Roberts” for Jane Clark, Law Offices of Jane Clark, August 2016.

“Economic Loss of Daniel Englund” for Douglas Foley, Douglas Foley and Associates, August 2016.

“Analysis of Economic Losses of Marcia L. Johns” for Gregory Price, Law Office of Gregory E. Price, March 2016.

“Economic Loss of the Estate of David Huynh” for Michael Jacobs and Joe Traylor, Hart Wagner LLP, January 2016.

“Economic Loss to the Estate of Dustin Blake” for Steven Kahn, Kahn & Kahn, December 2015.

“Economic Loss of the Estate of Judith Wolff” for Ryan McLellan and Sean Conner, Smith Freed & Eberhard P.C. November, 2015.

“Analysis of Earnings Loss of Mary Delucco” for Karen O’Kasey, Hart Wagner LLP, October 2015.

“Economic Loss of James Deck” for Elizabeth Lampson and Christopher Parker, Davis Rothwell Earle & Xochihua P.C., October 2015.

“Analysis of Earnings, Personal Consumption and Household Services Losses to the Estate of Matthew S. Scott” for George Curtis, Zbinden & Curtis, September 2015.

“Analysis of Earnings, Personal Consumption and Household Services Losses to the Estate of Chuck Watson” for Jeffrey Thayer; Gatti, Gatti, Maier, Sayer, Thayer, Smith and Associates, court testimony, September 2015.

“Analysis of Business Losses of Glenda and Randal Miles” for John Alexander, The John Alexander Law Firm PLLC, July 2015.

“Economic Loss of the Estate of Jason Moe v. Margaret Snow McDonnell” for Douglas Foley, Douglas Foley & Associates, July 2015.

“Summary Analysis of Economic Loss of Alan Babb” for Diane Lehn, State Farm Mutual Automobile Insurance Company, April 2015.

“Household Services Loss of the Estate of Sandra Ryder” for Jane Clark, Law Offices of Jane Clark, deposition testimony, April 2015.

“Analysis of the Present Value of Future Medical Costs of Bruce Coleman” for Eugene Tennyson, Attorney at Law, March 2015.

“Analysis of the Earnings Loss of Cary McClain” for Douglas Foley, Douglas Foley & Associates, September 2014.

“Economic Loss of the Estate of James Orr” for William Nelson, Baumgartner, Nelson & Wagner PLLC, August, 2014.

“Economic Loss of James Schwartz” for William Nelson, Baumgartner, Nelson & Wagner PLLC, perpetual deposition testimony, June 2014.

“Economic Loss of John Bechtold” for Loren Entengoff, Law Offices of Loren S. Etengoff, deposition testimony, April 2014.

“Analysis of the Past Medical Costs, Future Life Care Costs and Earnings Loss of Justice ‘Coe’ Cagle” for William Thayer; Schauermaun, Thayer, Jacobs & Staples, P.S., deposition testimony, March 2014.

“Economic Loss to the Estate of Kathryn L. Rickson” for James Gidley, Perkins Coie LLP, trial testimony, February, 2014.

“Economic Loss to the Estate of Diego Reyes Climaco” for Ryan McLellan, Smith Freed & Eberhard P.C., November, 2013.

“Economic Loss of Michael Mott” for Paul Henderson, Henderson Law Offices, court testimony, November, 2013.

“Present Value of Medical Care for John Lewis” for William Thayer; Schauermaun, Thayer, Jacobs & Staples, P.S., August 2013.

“Analysis of Maris Farms Crop Loss Damages from Elk Intrusion” for Michael Schwartz, Law Offices of Michael Schwartz, in Administrative Appeals Hearing, Washington Department of Fish & Wildlife, hearing testimony, August 5, 2013.

“Analysis of Business Losses of Valerie & Bryan Griggs” for Douglas Foley & Associates, PLLC, court testimony, March 2013.

“Economic Loss to the Estate of Steven Neva” for Thomas McDermott, Lindsay Hart LLP, March 2013.

“Economic Loss of James Collins” for William Thayer, Schauermaun, Thayer, Jacobs & Staples, P.S., October, 2012.

“Economic Loss to the Estate of Jerry Brown” for Stephen Hendricks, Hendricks Law Firm PC, October, 2012.

“Economic Loss of Deborah Armstrong Leek” for Craig Schauermann, Schauermann, Thayer, Jacobs & Staples, P.S., deposition testimony, July 2012.

“Analysis of the Economic Loss to the Estate of Edwin Lee Cain” for Kitri Ford, Bryant Lovlien & Jarvis, Attorneys at Law, June 2012.

“Value of Economic Loss and Present Value of Medical Costs for Karla Staub” for William K. Thayer, Schauermann, Thayer, Jacobs & Staples, P.S., June 2012.

“Economic Loss of Earl and Jane Steinhoff” for Steven Kraemer, Hoffman Hart & Wagner, September, 2011.

“Economic Loss of Randy Bierbrauer” for Mark Hiefield, Hiefield Foster & Glascock LLP, representing State Farm Insurance, July 2011.

“Economic Loss of Cara Graves” for Stephen C. Hendricks, Hendricks Law Firm P.C., June 2011.

“Value of Household Services Loss of Mary Harrell” for Quinn Posner, Law Offices of Andersen & Nyburg (Liberty Mutual Insurance Company), May 2011.

“Economic Loss of Roberta Ells-Christ” for William Robison, Caron, Colvin, Robison & Shafton, P.C., February 2011.

“Analysis of the Net Earnings Loss of Austin Putnam” for Glenn E. Barger, Smith Freed & Eberhard P.C., January 2011.

“Value of Household Services Loss of Michelle Riehl” for Wendell Belknap, Belknap Law Offices, November 2010.

“Economic Loss to the Estate of Michael Hendrix” for Stephen C. Hendricks, Hendricks Law Firm P.C., September 2010.

“Economic Loss to the Estate of Sara R. Stokes” for William Richardson, Smith Freed & Eberhard P.C., August 2010.

“Analysis of the Household Services Loss of Rebecca Hildebrandt” for Devin Robinson, Stewart, Shaddock & Robinson, May 2010.

“Analysis of the Household Services Loss to the Estate of Jeffrey Helgeson” for Dean Heiling, Heiling Dwyer & Associates, April 2010.

“Economic Losses of Susan Pearson” for Kenneth Friedman, Friedman Rubin, March 2010.

“Economic Losses of Nickolas Ynba” for William Nelson, Baumgartner, Nelson & Price, PLLC, March 2010.

“Economic Loss to the Estate of Jessica Blanck & the Estate of Kristyne Shaddix” for Jeff Eberhard, Smith Freed & Eberhard P.C., February 2010.

“Economic Losses to the Estates of Clinton Shultz and Kendra Shultz” for Glenn Barger, Smith Freed & Eberhard P.C., February 2010.

“Economic Losses of Sandra Winn” for William Robison, Caron, Colvin, Robison & Shafton, P.C., Analysis, deposition and arbitration testimony, January 2010.

“Economic Losses of Steve Lehman” for Steve Kraemer, Hoffman Hart and Wagner, January 2010.

“Economic Losses of Elaine Hale” for Thomas J. Foley, Attorney at Law, December 2009.

“Analysis of Loss of Business Income of Charles Collins” for William Robison, Caron Colvin Robison & Shafton, P.C., Analysis and court testimony, November 2009.

“Economic Losses to the Estate of Tara Lynne Hall” for Vicki L. Smith, Lane Powell P.C., October, 2009.

“Analysis of the Household Services Losses to the Estate of Jeffrey Helgeson” for Dean Heiling, Heiling Dwyer & Associates, October 2009.

“Economic Losses to the Estate of Cynthia Von Tungeln” for Dennis Freed and Ryan McLellan, Smith Freed & Eberhard, P.C., August 2009.

“Economic Losses to the Estate of Gary Phillips” for Glenn Barger, Smith Freed & Eberhard, P.C., June 2009.

“Economic Losses of the Estate of Lourdes Hernandez” for John Eickelberg, In-house Council for Farmers Insurance, April 2009.

“Economic Losses of the Estate of Curtis Claflin” for Vicki L. Smith, Lane Powell P.C., January 2009.

“Analysis of the Household Services Losses to the Estate of Kathleen Holt” for Bernard Jolles, Bernard Jolles Law Offices, November 2008.

“Present Value of the Life Care Costs and Lost Earnings Capacity for Timothy Renner” for Donald Templeton, Dunn Carney Allen Higgins & Tongue LLP, September 2008.

“Economic Losses of the Estate of Gretchen Burris” for Ryan McLellan, Smith Freed & Eberhard, P.C., July 2008.

“Economic Losses of the Estate of David Johnston” for Dennis Freed, Smith Freed & Eberhard, P.C., May 2008.

“Economic Losses of Janet Muirhede” for Mark Hiefield, Bodyfelt Mount Stroup and Chamberlain LLP, April 2008.

“Present Value of Future Life Care Costs for Bonnie Jones” for Eugene H. Tennyson, February 2008.

“Economic Losses of Timothy O’Neill from Wrongful Termination by Hanger Prosthetics” for Lisanne M. Butterfield, Carr Schwartz and Butterfield, Analysis and court testimony, January 2008.

“Response to Comments of Cowlitz County Planning Commission Regarding the Willow Grove Proposed Residential Development” for Michael Simon, Landerholm Memovich Lansverk & Whitesides, P.S., December 2007.

“Economic Losses of the Estate of Briana Schwesinger” for Beau Harlan, Harlan and Associates, October 2007.

“Economic Losses of Sandra Winn” for William Robison, Caron, Colvin, Robison & Shafton, P.C., September 2007.

“Analysis of the Economic Losses to the Estate of Mr. Aaron Markovich-Koyfman” for Brown & Hutchinson, February 2007

“Economic Losses of Petr Burunov, Jr.” for Baumgartner, Nelson and Price, PLLC, February 2007.

“Analysis of the Economic Losses of Patrick Holyk” for Law Offices of Stanley Horak, August 2006.

“Analysis of Economic Losses to the Estate of Mitchell Anderson” for Brophy Mills, Schmor, Gerking, Brophy & Paradis, LLP, July 2006.

“Household Services Loss Estimates for the Estate of Stacey Paxton”, for Michael Rosenbaum Law Offices, June 2006.

“Analysis of Rural Clark County Property for Re-Zone Request from AG-20 to R-5: Why the Coleman Property is Not Agricultural Resource Land Under Definition of the Washington Growth Management Act” for Randall Printz, Landerholm Memovich Lansverk & Whitesides, P.S., June 2006. (Analysis and testimony before Clark County Planning Commission.)

“Estimate of Economic Losses of William Boyd” for Bodyfelt, Mount, Stroup & Chamberlain LLP, April 2006.

“Analysis of Economic Losses to the Estate of George Green” for Smith Freed & Eberhard PC, November 2005.

“Analysis of the Food Industry: Litigation Support for Kenyon Zero Cold Storage” for Lane Powell, October 2005. (Analysis and deposition)

“Analysis of the Economic Losses of Ms. Cynthia Comstock” for Smith Freed & Eberhard PC, October 2004.

“Analysis of the Economic Losses for Ms. Darby Rucker” for Yturri Rose LLP, Analysis and court testimony, May/October 2004. (Analysis and testimony in Federal District Court, Portland)

“Review of Plaintiff Expert Methodology and Procedures to Estimate Lost Wages of Ronald L. Kramer” for Davis Wright Tremaine LLP, August 2004

“Analysis of Loss of Business Income of Jerry Presses” for Caron Colven Robison & Shafton P.S., May 2004. (Analysis and testimony at arbitration).

“Economic Losses of Damon Renfrow” for Lindsay Hart Neil & Weigler LLP, April 2004.
(Analysis and testimony in Federal District Court, Eugene).

“Present Value of Future Chiropractic Care Costs for Stacey Bailey” for Harlan and Brace,
December 2003. (Analysis and testimony in Multnomah County Circuit Court).

“Analysis of Economic Losses to the Estate of Vernon White” for Hoffman Hart & Wagner
LLP, December 2003.

“Analysis of Economic Losses to the Estate of Bryan Macklem” for Hornecker Cowling
Hassen & Heysell, LLP, November 2003.

“Analysis of the Plaintiff Damage Claim for Economic Losses to the Estate of Michael
McCaffrey” for Keating Jones Bildstein & Hughes, P.C., October 2003.

“Analysis of the Economic Losses of Barbara Huson From Termination of Employment” for
Hoffman Hart and Wagner, LLP, September 2003.

“Impaired Earning Capacity of Steven Fuller” for Lindsay, Hart, Neil and Weigler, LLP,
November 2002.

“Impaired Earning Capacity of Evelyn Wynn” for Boivin, Uerlings & DiIaconi, P.C., Analysis
and court testimony, July 2002.

“Economic Analysis of Crop Damages from Chemical Spray Drift, Re Morgan v. E.I. DuPont,
et. al.” for Smith, Free, Heald, & Chock, Attorneys at Law, 1996.

Special Studies

“Task Reports Evaluating the Potential for Land Improvement for Grazing and Crop
Production at the Westby Cattle Ranch in New Meadows, Idaho” for David and Carrie
Westby, January, 2018.

“Proposed Bikeway Impacts on Agricultural Land Owners in Benton County, Oregon” for
Benton County Oregon (prepared in association with Barney & Worth), May 2017.

“Strategic Development of B.C. Apple and Sweet Cherry Varieties” for the British Columbia
Ministry of Agriculture, March 2015.

“Apple Industry Cost and Returns Analysis for British Columbia and North Central
Washington” co-author with Dr. Desmond O’Rourke for British Columbia Fruit
Growers Association, July 2011.

“Electrical Energy Efficiency and Emerging Technologies in Northwest Agriculture” co-author
with Cascade Economics and MetaResource Group for Northwest Energy Efficiency
Alliance, July 29, 2011.

“Economic Feasibility of Organic Fertilizer Produced from Chicken Manure in Snohomish
County, Washington” for Renewable Farming Group of Washington, June 2011.

- "Economic Benchmarks for the Northwest Food Processing Industry" for Northwest Food Processors Association, July 2009 (with previous annual updates in 2003 - 2008).
- "Benchmarks to Measure the Agriculture Sector's Economic Viability" Task 8 Technical Memorandum for Pierce County Economic Development Division, January 2006.
- "Competitiveness in Agriculture and Food Processing" (Presentation to Washington State House of Representatives Committee on Agriculture and Natural Resources) for Washington Food Processors Council, December 2004.
- "Washington State Compost Marketing Plan" for the Clean Washington Center, June 1993.
- "Economic Benefits and Costs of Navigation Improvements for Yaquina Bay and River at Newport and Toledo, Oregon" for Section 107 Reconnaissance Phase Study for the U.S. Army Corps of Engineers, April 1993.
- "Indirect Economic Impacts of Alternative Columbia River Dam Operations" for an Environmental Impact Statement issued by the U.S. Army Corps of Engineers and other Federal Agencies, February 1993.
- "City of Spokane Pilot Compost Project Final Report" for the City of Spokane Solid Waste Management Department, September 1992.
- "Classifying The Food Waste Stream" BioCycle: Journal of Waste Recycling, October 1991.
- "Economic Analysis of Benefits of Coastal Projects Authorized for Commercial Fishing and Navigation Purposes" for U.S. Army Corps of Engineers, January 1988
- "Agriculture and Food Processing Electricity Sales Outlook, Pacific Power and Light Co. Service Area" for Pacific Power and Light Co., September 1985.
- "Pacific Northwest Irrigation Wholesale and Retail Rates and Designs" for Bonneville Power Administration, June 1984.
- "Economic Study of Transportation Pricing" for U.S. Army Corps of Engineers, September 1983.
- "Economic Analysis of a Ban on Log Exports in Washington State" for Washington Citizens for World Trade, July 1981.
- "Agricultural Land Resources of the Pacific Northwest" for the Northwest Agricultural Development Project, Information Report No. 13, December, 1979.
- "Transfer of Development Rights as a Land Use Control Mechanism" M.S. Thesis, University of Wisconsin, 1974.

Dana M. Beckwith, PE, PTOE

Principal Senior Transportation Engineer



Years of Experience: 26

Education: MS, Transportation Engineering, Oregon State University, 1996
BS, Civil Engineering, Oregon State University, 1995

Professional Registration: Oregon Professional Civil Engineer No. 53044
Idaho Professional Civil Engineer No. 12085
Washington Professional Civil Engineer No. 39179
Professional Traffic Operations Engineer® No. 2206

Dana Beckwith, PE, PTOE is a founding principal of GTEng and has extensive experience in supporting public agencies and private development in evaluating transportation systems and Master Planning. Dana has supported the City as a lead traffic engineer in the original Main Street Improvements and ODOT more recently on the OR99E Railroad Tunnel Illumination and ITS upgrades and the I-205 Abernathy Bridge Replacement Project. These projects have allowed Dana to work with key stakeholders associated with the project and gain an understanding of traffic concerns within the area. Dana's areas of expertise include: Traffic signal design and operations; intelligent transportation systems operations and design; roadway lighting; parking analysis; pedestrian and bikeway operations, planning and design; regional trail design; roundabouts; safety studies; neighborhood traffic calming; traffic operations analysis; roadway geometrics; roadway signing and striping; traffic management plans; temporary traffic control; construction management; and rail crossing orders.

SR502 / SR503 Improvements-Battle Ground, WA. Dana was the traffic lead for the analysis and safety evaluation of the SR502 / SR503 intersection improvements. The analysis evaluated four options for intersection design and included traffic impacts to adjacent intersections along the SR502 corridor. The evaluation included the WSDOT practical design process to develop intersection improvements that balance benefits for motorists, freight and pedestrian traffic. Key elements of the project included facilitating pedestrian and bike movements from a new trail alignment on the northeast corner of the intersection to commercial and residential developments to the west and south legs of the intersection. Safe movements across right turn lanes was a key consideration and evaluation component of the project. The project also included design of the new traffic signal system to meet WSDOT standards, roadway lighting analysis and design; signing/striping improvements; and coordination with the City and WSDOT.

NW and NE Urban Growth Area Land Use, Washougal, WA. As the traffic lead, GTEng managed the traffic analysis to determine the effect land use changes would have on the transportation network and key intersections within the City. The study included collaborating with RTC and the Region's Travel Demand Forecast Model to evaluate traffic pattern changes from the present to the future year 2035. The study included a safety review of the existing and proposed transportation network, operational evaluation using the Synchro Traffic Operations Software for key intersections, turn lane warrants, traffic signal warrants, mitigation measures where necessary, identification of new roadway connections and mitigation measures. GTEng facilitate TAC and City Council Workshops with results from the traffic analysis.

OR 8 Pedestrian Crossing Analysis-Cornelius, OR. Dana was the project manager for the analysis and safety evaluation of a pedestrian crossing at the Adair St (OR8)/14th Ave and Baseline St (OR8)/14th Ave intersections. The evaluation included NCHRP 562 analysis, pedestrian origin and destination study, crash data evaluation, volume profiles over a 14-hour period, gap analysis and sight distance field reviews. Recommended treatments were presented during key project development meetings to the City and ODOT. ODOT subsequently identified the Adair St crossing for future pedestrian flasher treatments.

McLoughlin Complete Streets Pilot Project, Vancouver, WA. As traffic lead Dana lead the existing conditions analysis to include a parking utilization and access study, collision analysis, speed and volume evaluations. The parking evaluation identified utilization and acceptable levels of reduction that would still allow for peak parking demand along the corridor. Dana supported the design team in developing bike and pedestrian treatment concepts that support the City's vision of those facilities being for all ages and abilities. The concept development was iterative in process to accommodate changes in City needs and incorporate valuable public input into the design. Dana provided technical support during open house events.

Ilwaco Transportation Element Update, Ilwaco, WA. As the lead transportation engineer, Dana led the development of the traffic analysis to support the six-year update to the Transportation Element of the City's Comprehensive Plan. The update included evaluating the existing Plan, comparing the plan and its integration into those of the surrounding agencies, conducting operational analysis based on economic forecasts at key intersections, and developing updates to the capital improvement plan. A key element of the project included developing pedestrian and bike facility plans to upgrade connectivity to key historic and recreational sites. Dana supported the City and team and City Planning and Council teams to adopt the plan and its findings.



Mark Graham PE, PMP



Mark Graham has over 25 years of broad water industry experience, with specific technical expertise in water quality and water treatment. He has provided planning, engineering, project management, and quality reviews for drinking water treatment plants throughout Washington, Oregon, and California.

Mark has prepared master plans for water treatment plants and helped clients prioritize their capital improvement programs. He has managed pilot studies involving conventional sedimentation and filtration, dissolved air flotation (DAF), Actiflo, and both pressurized and submerged membranes. He has prepared detailed designs and specifications for drinking water treatment plants using most commonly-employed processes – including conventional sedimentation, plate settlers, DAF, Actiflo, granular media filtration, membrane filtration, and ozonation. He has led designs of belt presses, centrifuges and screw presses for dewatering. He has assisted water agencies with startup and testing of new and existing water treatment plants, and developed and implemented coagulation optimization and testing programs.

EDUCATION

Master of Science, Environmental Engineering,
University of Cincinnati, 1996

Bachelor of Science, Civil Engineering, Stanford
University, 1992

LICENSES/REGISTRATIONS

Professional Engineer, Civil, WA, OR, ND, CO, CA

Project Management Professional, PMI

MEMBERSHIPS

American Water Works Association

Project Management Institute

PROJECT EXPERIENCE

Drinking Water Treatment

Bull Run Treatment Program Filtration Facility Design,
Portland Water Bureau, Portland, OR (Project
Manager)

To comply with State and Federal drinking water regulations, the City of Portland will filter their currently unfiltered Bull Run water supply. Mark is project manager for the Stantec team leading the design of this greenfield 135 MGD facility that will include ozone, conventional floc/sed basins, granular media filtration and mechanical dewatering of process residuals. The project is currently in the detailed design phase.

Water Treatment Plant Residuals Management
Planning Study, Public Utilities Department, San
Diego, CA (Subject Matter Expert)

The City of San Diego's three WTPs currently discharge process residuals back to their respective source water reservoirs. As part of the Pure Water San Diego Program, the City commissioned a study to evaluate options to eliminate these discharges. Mark served as a subject matter expert in this study, participating in the development and evaluation of alternatives and reviewing work products as they were produced.

Rinconada WTP Residuals Management
Remediation, Santa Clara Valley Water District, San
Jose, CA (Conceptual Design and Process Lead)

Due to deficiencies in the previous design, changes in the raw water quality, and a proposed expansion from 80 MGD to 100 MGD, the solids handling capability of the existing thickeners and centrifuges will need to be doubled to meet the District's performance and reliability goals. Project is currently in construction.

Corrosion Control Improvements Project, Portland
Water Bureau, OR (Project Manager)

Mark led preliminary and detailed design of new soda ash and carbon dioxide feed systems, which are sized to treat up to 160 MGD of unfiltered water from the City's Bull Run water supply. The project is a response to regulatory requirements to reduce lead levels at customer's taps, and is currently under construction.

**Green River Filtration Facility, Tacoma Water, WA
(Deputy Project Manager, Project Manager)**

Provided planning and design of this new 150 mgd hybrid direct/conventional WTP. The design included an innovative process layout with allows use of plate settlers during periods of high turbidity, and direct filtration during normal, low-turbidity raw water conditions. Processes included deep-bed granular media filters rated at 12 gpm/sf, and mechanical dewatering of process residuals using screw presses.

**South Fork WTP, City of Nanaimo, Nanaimo, B.C.
(Subconsultant Project Manager)**

As a subconsultant to another firm, conducted pilot testing and alternatives analysis, and designed processes including the submerged membranes and the centrifuges for the City's 116 MLD South Fork WTP.

**WTP Upgrades and Expansion, Cities of Lake
Oswego and Tigard, OR (Technical Advisor)**

Provided technical oversight and guidance for this project to upgrade and expand the existing WTP from 16 to 38 MGD. Replaced nearly all of the process facilities on a tightly-constrained site, adding high-rate clarification (Actiflo), intermediate ozonation, high-rate filtration, and screw presses for dewatering.

**Predesign for New Water Treatment Plant, Eugene
Water and Electric Board, Eugene, OR (Design
Manager)**

Developed a preliminary design and project implementation plan for a new WTP. The new plant will serve as a second source of drinking water for EWEB, as part of their program to improve overall water supply resiliency. Several technologies and phasing scenarios were evaluated, resulting in a recommendation for a plant capable of providing an initial capacity of 16 MGD, expandable to 30 MGD, using plate settlers and GAC filtration.

**New WTP Preliminary Design, Eugene Water &
Electric Board, Eugene, OR (Design Manager)**

Preliminary design of a new 19 MGD drinking WTP for the Eugene Water & Electric Board. The new WTP will provide EWEB with a second source of water supply, significantly improving the agency's water supply resiliency. The project is currently in progress.

**WTP Master Plan, City of Grants Pass, OR (Technical
Advisor)**

Evaluated two options: repair and upgrade the existing 20 MGD WTP or construct a new facility on a new site. The project included condition assessment, conceptual design of treatment process, cost estimating, and pilot testing of ballasted flocculation and high-rate filtration.

**Grants Pass Water Supply Improvement Project,
City of Grants Pass, Oregon (Project Manager)**

Task order contract to support facility improvements and process optimization at the historic Grants Pass WTP. Tasks included: evaluation and preliminary design of flash mixing, flocculation, sedimentation and solids handling improvements; addition of a backwash pump to an existing pump station, and repairs to existing sedimentation basins.

**Master Plan for MMWD's Drinking WTPs, Marin
Municipal Water District, Marin County, California
(Project Controls, Technical Advisor)**

Evaluated the condition and criticality of existing facilities and developed risk-based long-term master plans for MMWD's Bon Tempe and San Geronimo Treatment Plants.

**Wells 4 & 11 Treatment Facility, Sammamish Plateau
Water and Sewer District, Sammamish, WA (Project
Manager)**

Detailed design of a 3,500 gpm groundwater supply system, including a new well pump, on-site generation of sodium hypochlorite to oxidize dissolved manganese, sand filtration, and coagulation and sedimentation of filter backwash.

**Stillaguamish River WTP, City of Marysville, WA
(Technical Advisor)**

Provided engineering support during construction and led commissioning and startup of the 3.2-mgd membrane treatment system, including a tracer study of the 200,000 gallon clearwell.

**Del Valle WTP Clarification Improvement Project,
Zone 7 Water Agency, CA (Project Manager)**

Evaluated options for providing effective, reliable clarification at Zone 7's Del Valle WTP. Completed pilot-scale evaluation of Actiflo and DAF, and evaluation of alternatives for integrating new clarification technology into existing plant, including conceptual designs for retrofitting horizontal sedimentation, DAF, Actiflo, and membranes into 40 MGD surface WTP. The project included a tailored collaboration with AwwaRF, resulting in the publication of a report titled "Screening and Evaluation of Treatment Alternatives for Challenging Waters."

**10 MGD DAF Project, Zone 7 Water Agency, CA
(Project Manager)**

Designed a 10 MGD dissolved air flotation basin and other plant reliability and capacity improvements for the existing 40 MGD Del Valle WTP. Provided on-site startup support and, worked closely with operations staff in trouble-shooting and optimizing the DAF treatment chain.

**Gibson Island Advanced WTP, Queensland,
Australia (Technical Advisor)**

Provided technical advice and oversight for preliminary and final design of the chemical feed systems at the 100 MLD (26 mgd) Gibson Island Advanced WTP. Chemical feed systems included aqueous ammonia, carbon dioxide, caustic soda, ferric chloride, sodium hypochlorite, and sulfuric acid.

**Roseville WTP Expansion, City of Roseville, CA
(Project Engineer)**

Preliminary design for expansion of the Roseville WTP from 60 to 85 mgd. New treatment processes included a 25-mgd, horizontal sedimentation basin, new high-rate anthracite/sand filters, expansion of a lime feed system and a new solids handling system including a gravity thickener and centrifuges.

**Randall-Bold WTP High-Rate Testing, Contra Costa
Water District, Concord, CA (Project Engineer)**

Conducted pilot- and full-scale testing at RBWTP to evaluate the effects of increasing filtration rate to 7.5 gpm/sq. ft. to increase plant capacity. Optimized treatment processes and designed modifications to chemical feed systems and waste washwater handling systems.

Wastewater Treatment

**North Fort and South Fort WwTPs, American Water,
Ft. Polk, Louisiana (Project Manager)**

Design-build replacement of nearly all process facilities at two existing WwTPs on Fort Polk. Both plants used identical activated sludge treatment process, but the North and South Plants were designed for peak wet weather flows of 30 MLD and 53 MLD (8.0 MGD and 14 MGD), respectively.

**Design Services for McLoughlin Point WwTP,
Victoria, BC (Project Manager)**

Prepared 30% design documents to support a design-build proposal for the 124 MLD Biostyr BAF treatment facility for the Capital Regional District on Vancouver Island, B.C.



Mary Hofbeck

Acoustician

23 years of experience · Lynnwood, Washington

Mary has more than 23 years of acoustical experience in a variety of environments including civic, health care, educational, amphitheater, television studio, high-end residential, and aeronautical spaces. Mary is a life-long learner with a diverse education including a Master of Science degree in Acoustical Engineering and a Master of Business Administration with emphasis in Technology Management. She is a flexible professional with excellent communication skills and attention to detail who adapts seamlessly to constantly evolving processes and technologies. Her areas of expertise include mechanical system noise and vibration control, environmental noise control, and architectural acoustics.

EDUCATION

Master Business Administration, Technology Management, University of Washington, Michael G. Foster School of Business, Seattle, Washington, 2011

Master of Science, Acoustic Engineering, Pennsylvania State University School of Engineering, State College, Pennsylvania, 1995

Bachelor of Science, Physics/Mathematics, Adrian College, Adrian, Michigan, 1992

MEMBERSHIPS

Member, American Institute of Aeronautics and Astronautics

Member, Society of Automotive Engineers

Member, Acoustical Society of America

PROJECT EXPERIENCE

ENVIRONMENTAL NOISE MANAGEMENT

Bull Run Filtration Facility | Gresham, Oregon

Environmental noise monitoring and mitigation measures for a new water filtration plant.

Cedar River Noise Monitoring | North Bend, Washington

Environmental noise monitoring for the Cedar River Watershed, task is to measure levels for compliance twice per year. Stantec has been providing this service for more than 15 years.

Highline School District Third Runway Project* | Highline School District | Burien, Washington

As noise engineer for the Highline School District, SeaTac Airport third runway environmental noise project, Mary ensured that various elementary school classrooms were acoustically desirable by treating walls, ceilings, and window types to reduce intrusive airplane noise from the low flying aircraft.

White River Amphitheater* | Auburn, Washington

Mary utilized topographic data and ray tracing software to estimate surrounding community impact of this 20,000-person capacity amphitheater, located near Auburn, Washington.

Aircraft Mechanical System Noise Control* | The Boeing Company | Everett, Washington

Mary used noise analyst experience to design standards and implement noise mitigation solutions to improve the noise environment within large aircraft cabins. This was done through treatments of return air grilles, air conditioning systems, and air ducting throughout large commercial aircraft. Mary traveled internationally for on-site noise testing procedure verification of various pieces of mechanical equipment. In addition, she managed projects that involved controlling exterior noise environments surrounding various large aircraft models to ensure safe noise levels for airline and airport employees.

ENERGY

Burro Energy Storage Project | San Benito, Texas

Environmental noise monitoring for a battery energy storage system project.

Llano Estacado Energy Storage Project | Big Spring, Texas

Environmental noise monitoring for a battery energy storage system project.

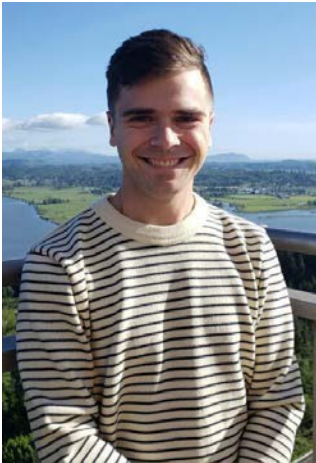
TRANSPORTATION

OCTA Transit Security & Operations Center | Anaheim, California

Acoustical design for 32,000 SF, two-story building on a 2.9 acre site, that houses OCTA's Emergency Operations Center (EOC), Central Communications (Dispatch), and Transit Police (TPS). The project specifically address the needs and requirements of OCTA's operations with the goal of supporting job duties, efficiency, functionality, communication, and operations.

Richard C Martin, EIT

Transportation Engineering Associate



Years of Experience: 4 Years

Education: BS, Civil Engineering, Oregon State University, Corvallis, Oregon, 2013

Registrations: Oregon Engineering Intern No. 87730EI;

Areas of Expertise: Planning and design; transportation safety studies; traffic operations analysis; temporary traffic control design; traffic management plans.

Background: Richard has extensive experience throughout Washington and Oregon in temporary traffic control during construction, traffic operations analysis, roadway and pathway lighting, traffic signal operations, capacity analysis, traffic impact studies, and safety studies.

EXPERIENCE

PBOT Transit Priority Spot Improvements, City of Portland, OR. As a project analyst, Richard developed capacity analyses based on existing and alternative lane/control configurations for six different intersections within the City of Portland with the goal of improving bus delays for TriMet bus lines 6, 71, and 77. Alternative lane and signal control options were examined to determine the impacts of prioritizing public transit at these intersections. Richard worked closely with PBOT and City of Portland staff throughout the project to develop sound engineering solutions.

PBOT NE 97th and NE Couch/Davis LID Area Improvements, City of Portland, OR. As project analyst, Richard developed a traffic impact study that included analysis of existing conditions, trip generation and distribution for a multifamily development, diversion analysis for changes to intersection control, 2020 and 2040 capacity analyses, safety analysis, queueing analysis, and warrants analyses. Richard coordinated with the project team and PBOT staff throughout the project.

Portland VA Hospital Parking and TDM Analysis, City of Portland, OR. As a project analyst, Richard developed a traffic analysis for a proposed parking structure to be developed at the Veterans Hospital in Portland, Oregon. This analysis included existing conditions analysis, crash data analysis, trip generation and distribution, capacity analyses for 2019 existing conditions, 2029 background conditions, and 2029 buildout conditions, traffic signal warrants, and an analysis to determine conformance with the PBOT Transportation Element of the Comprehensive Plan. This analysis included site access, on-street parking impacts, transit service and connectivity, impacts to pedestrian and bicycle facilities, neighborhood impacts, and safety for all modes. The report also evaluated Transportation Demand Management strategies.

PBOT NW Streetcar TIA - NW 23rd Wilson Vaughn Couplet Analysis, City of Portland, OR. As a project analyst, Richard developed capacity analyses based on existing and alternative lane/control configurations for a proposed Portland Streetcar alignment in NW Portland. The analysis included 2020 existing conditions and 2040 alternative conditions, as well as background growth and queueing analyses, based on standards established by the City of Portland. Richard coordinated with the project team and PBOT staff throughout the project to develop sound engineering solutions.

Transportation Management Plan for Parcel 3 Project, City of Portland, OR. As a project analyst, Richard developed the transportation management plan for a development project at 2065 S River Parkway in the South Waterfront district. This analysis included developing detour routes for different modes of transportation and consulting with governing agencies to work around a streetcar schedule to develop the safest and most efficient transportation management plan. The plan consisted of a project description, proposed construction phases, work zone impacts management, detour figures, impacts to traffic signals and lighting, and a queueing analysis.

E. ROBIN SMYTH, PE
President and Principal Engineer

AREAS OF EXPERTISE Project Management Communication System and Installation Engineering Factory and Field Testing Specifications SCADA, Controls and Protection EDUCATION BS, Electrical Engineering, Montana State University, 1973 Westinghouse Protective Relay School, 1978 Apprentice Electrician Instructor Training School, University of Wyoming, 1988-89 REGISTERED PROFESSIONAL ENGINEER IN: Alaska, #8325 California, #E 22849 Hawaii, #11365 Idaho, #14124 Iowa, #20003 Montana, #4291 Nevada, #013202 Oregon, #15180 South Dakota, #8996 Utah, #7549965-2202 Washington, #28102 (Certified NCEES #28866) CAREER EXPERIENCE GP&A, Inc., 1990-present Montana Power Company, 1973-1990 Westinghouse Service Corp., 1977 PROFESSIONAL AFFILIATIONS Institute of Electrical & Electronic Engineers Utilities Telecom Council	Robin Smyth is the owner and president of GP&A and also serves as one of the company's principal engineers specializing in telecommunication systems design. Mr. Smyth joined GP&A in 1990 and assumed his present position in 2002. He has been working in the field of electric, natural gas, water and wireless / telephone utility and telecommunications engineering since completion of his Bachelor of Science degree in Electrical Engineering in 1973. <u>REPRESENTATIVE SKILLS AND EXPERIENCE</u> • Communication Site and System Infrastructure Mr. Smyth has extensive experience in the design, procurement and installation of communications site infrastructure. He has calculated the requirements for, specified, and monitored the installation, turn-up, and test of utility telecommunications systems and ancillary systems associated with telecommunications sites, including but not limited to: – Microwave and Fiber Optic transport systems – Voice and Data Wireless systems – Building specifications – Tower specifications – HVAC (heating, ventilation, and air conditioning) – Emergency generators – DC power systems – Network management (SCADA and provisioning) • Electrical Power Transmission and Distribution Automation and Operation <u>Protective relaying</u> Mr. Smyth prepared detailed protective relay drawings for electrical transmission lines, substation buses and distribution circuits. In addition, Mr. Smyth supervised the protective relay technicians who construct, install and test protective relay systems including the placement of in-house designed and constructed micro-processor SCADA units with industry leading capabilities. <u>Transmission and distribution operations and management:</u> Mr. Smyth was responsible for design, O&M, and construction of distribution lines, substations, and transmission facilities in Montana Power's Butte Division. Tasks included distribution line layout, maintenance planning, budgeting for plant additions, and job supervision of line crews and contractors. He was also responsible for work compliance with National Electrical Safety Code and Utility Standards, as well as engineering load growth studies on distribution feeders and substations.
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YEARS OF EXPERIENCE

17

EDUCATION

BS, Civil Engineering,
Portland State University

CERTIFICATIONS/LICENSES

Professional Engineer- OR

KEY EXPERTISE

- High pressure and large capacity water pump station designs
- Hydraulic calculations and pump selection
- Multidisciplinary design team leader
- Transmission and Distribution Pipeline Routing Studies and Design
- Pump station site design

EDDIE KREIPE, PE

Eddie brings over 17 years of experience delivering water and wastewater pump station projects for local agencies. Eddie's strong technical ability has allowed him to work on some of Consor's most complicated and challenging water pump station projects, including the Portland Water Bureau's Hannah Mason Pump Station and the City of Pasco's Columbia Water Supply Project. Eddie also brings extensive field experience, having provided construction management services for many of the projects he has been involved with.

SELECT PROJECT EXPERIENCE:

CASCADE GROUNDWATER ALLIANCE GROUNDWATER DEVELOPMENT PROJECT (GDP) PACKAGE 4; ROCKWOOD WATER PUBLIC UTILITY DISTRICT; Pump Station Lead.

Design water supply improvements at Rockwood Water PUD's Cascade Site. Project includes new 29 MGD water treatment facility for groundwater, a new pump station to provide up to 29 MGD, a new equipment storage building, site improvements, permitting, landscaping, and SCADA. Eddie is the pump station lead for the project that includes six 400hp vertical turbine pumps.

FULTON PUMP STATION REPLACEMENT; PORTLAND WATER BUREAU, OR; Pump Station Design Lead.

Consor completed designs for the replacement of the existing 12 MGD Fulton Pump Station with a new station with the ability to expand to 18 MGD to meet the projected 2025 water demands for the Burlingame Service Area system. The new pump station is sited within the City's Willamette Park. Station designs accommodated expanded pumping capacity and also incorporated provisions for public restrooms and storage, as well as the latest in Green Building Policy and eco-roof design, effectively integrating the new station into the existing park surroundings. The new pump station is sited within the City's Willamette Park. Additionally, as the 60-inch diameter Washington County Supply Line (WCSL) is routed near the new pump station before it continues west along SW Nevada Street, a new suction connection to the WCSL and a new regulated intertie between the WCSL and the West Side Header are key features of the project, improving system redundancy and allowing for use of higher suction head supply from the WCSL to reduce pumping costs.

10TH STREET WATER IMPROVEMENTS PROJECT, CITY OF LAKE OSWEGO, OR. Design Lead.

Consor provided design and construction phase services for a new water pump station and removal of an existing steel reservoir in the City of Lake Oswego's historic First Addition Neighborhood (FAN). The existing facilities were obsolete, seismically vulnerable, contained lead paint, and had been identified for removal and replacement. The site itself was filled with mature fir trees towering 100 feet over the site and surrounding the facilities. Consor designed a new configuration to the City's water system to create a new and more resilient feed for the pump station. The new pump station was also designed to include an emergency water filling station to serve the neighborhood. The building architecture was designed to fit into the residential style of the neighborhood as well. Construction considerations included contract requirements for the removal of the reservoir and existing pump station to avoid tree impacts and contain and dispose of hazardous materials. In addition, construction sequencing was developed to allow the existing pump station to maintain service until the new pump station could be commissioned and online. Eddie was the design lead for the pump station elements inside the walls of the building and conducted system curve development and pump selection, multi-disciplinary project coordination, and equipment sizing and layout.



RAFAEL GAETA, PE

Civil Engineer



Bio

Rafael has 28 years of civil engineering design and management experience focused on site development, transportation, and utility projects. Specializing in site civil design, his expertise includes site layout, ADA upgrades, parking lots, sanitary and stormwater sewer conveyance, roadway, grading, drainage, earthwork, and erosion control. Rafael provides expertise in all phases of design, from conceptual design to producing final PS&E construction documents.

Education

BS, Civil Engineering, Portland State University

Registration

Professional Engineer
Washington #24002379
Oregon #55529

Relevant Project Experience

Portland Water Bureau

Bull Run Filtration Treatment Facility, Portland, OR

Task Lead for this project to construct a water treatment facility to comply with the federal Long Term 2 Enhanced Surface Water Treatment Rule requirements. Rafael led Emerio's civil team to provide site layout and design, grading, stormwater management, ADA accessibility, 1200c compliance, septic sewer design, yard piping layout, retaining walls, and roadway widening.

Portland Bureau of Environmental Services

Columbia Blvd Wastewater Treatment Plant Expansion, Portland, OR

Task Lead for this project to increase capacity and prevent unnecessary overburden of the treatment plant. Emerio's scope of work included design of demo, site, grading, drainage, erosion control, and utilities. Rafael led the Emerio team to develop PS&E construction documents for the non-process facilities and utility coordination for the process facilities.

Port of Portland

PDX Parking Additions & Rental Car Facility, Portland, OR

Task Lead and Project Engineer for this progressive design-build delivery of the new Long-Term Parking and Consolidated Rental Car facility at Portland International Airport. Emerio provided civil design services to retrofit the employee parking lot. Rafael led Emerio's team to provide grading and utility design and coordination with the prime consultant.

City of Portland

Fueling Stations, Portland, OR

Project Engineer for the replacement of two existing fuel facilities at the Columbia Wastewater Treatment Plant and the City's Interstate Fleet Station. Emerio's scope of work included conducting reviews and field measurements of the existing conditions at each project site and generating drawings of base conditions. Rafael developed preliminary plans for each site that included civil/site storm design and provided 50%, 90%, and 100% construction documents. He also incorporated stormwater management strategies that met the City of Portland design standards for source control water quality and quantity.

Portland Parks & Recreation

Fernhill Park, Portland, OR

Project Manager for this park upgrade project. Rafael led Emerio's team to provide on-site civil improvements, including a new playground area/splash pad, an ADA accessible multi-use path and curb ramps, and utility improvements for the existing restroom facility. Emerio worked directly with the city to provide grading and erosion control plans, civil design, and PS&E documents for construction, and permitting.

Tualatin Hills Park and Recreation District

La Raíz Park, Beaverton, OR

Project Manager for the development of this new two-acre neighborhood park located within Beaverton's Vose neighborhood. Rafael lead Emerio's civil team to provide design and permitting for public ROW improvements, the design of a new cul-de-sac with stormwater LIDA facilities, sidewalk improvements and an enhanced pedestrian crossing on SW Lombard and frontage areas, and storm sewer management for the addition of the cul-de-sac.

Beaverton School District

William Walker Elementary School, Beaverton, OR

Task Lead for this redevelopment project to replace the aging facility with a modern building. Rafael led Emerio's team in providing design of public street improvements, including ADA curb ramps, driveways, sidewalks, and half street improvements, and for the pipe network for both sanitary and storm sewers.

Portland Bureau of Environmental Services

SW Ventilation Facility and Capacity Improvements, Portland, OR

Task Lead for this project to reduce sewer odors and increase the capacity of the Southwest Parallel Interceptor sewer system. Rafael provided civil design, grading, and erosion control for the parking lot and small diameter sanitary sewer conveyance.

TriMet

Powell LIFT Operations Facility Relocation, Portland, OR

Civil Task Lead for this project to reconfigure the underutilized Park and Ride facility for LIFT vehicle storage, employee parking, and a new operator's building. Rafael was responsible for the site layout and overall site civil design for the new, 7,000ft² operations building and a large storage building; sewer, water, power, and communications connections; and design of the parking lot, access road, and stormwater facilities.

TriMet

Division Bus Rapid Transit Corridor (Cleveland Park & Ride), Portland and Gresham, OR

Task Lead providing civil design for this transit improvement project. Rafael was responsible for developing construction plans from the conceptual plans, designing public street improvements, and retrofitting the Cleveland Park & Ride into a layover facility for double-articulated buses. Rafael's team provided civil design services including site layout, grading, utilities (storm and sewer), and utility coordination.

TriMet/Port of Portland

Red Line Extension and Reliability Improvements, Portland, OR

Civil Task Lead for this project to provide improvements at Gateway Transit Center and Portland International Airport to improve service reliability and reduce delays. Rafael led his team to support the development and submissions of the construction plans, including design of roadways, curbs, driveways, ADA ramps, bus infrastructure, and fencing for various locations along the project corridor.



"As a Project Manager for the City of Portland, I have enjoyed working with Rafael and especially appreciate his attention to the needs of the project.

I am fully confident in his professional skills and abilities and have been impressed with his regular and clear communication."

**- Travis Ruybal,
Project Manager,
Portland Parks & Recreation**



GRACE COFFEY, AICP

Professional Employment

- **Senior Planner,**
Winterbrook Planning,
Portland, OR, March
2022 to present.
- **Project Coordinator,**
Dweller, Portland, OR,
2018 to 2021.
- **Housing and Green
Building Intern,**
*Sustainable
Connections,*
Bellingham, WA 2017.

Grace Coffey is a Senior Planner with Winterbrook with experience working on a diverse range of projects across Oregon, on behalf of both public and private clients. Grace specializes in development code analysis and amendments, housing issues, policy research, GIS mapping analytics, and site planning and feasibility analysis.

Grace provides analysis of development code implications and regulatory frameworks for projects ranging from UGB expansions to housing development. She has successfully worked with municipalities to draft, amend, and implement development codes and comprehensive plans, ensuring effective zoning and land-use policies. Additionally, Grace provides on-call planning services to several small cities.

Grace Coffey is also experienced in environmental and wetland permitting, providing crucial support for projects requiring compliance with local, state and federal environmental regulations. She has worked with clients to navigate the permitting processes related to wetland impacts, floodplain management, and habitat preservation.

Education

- **Master of Urban and
Regional Planning,**
Portland State
University, 2022.
- **Bachelor of Arts,**
Western Washington
University, 2018.

Grace holds a Master of Urban and Regional Planning degree (2022), focusing on land use and housing, and a Bachelor's degree in Urban Planning and Sustainable Development from Western Washington University, with a concentration in Environmental Justice.

Selected Planning Projects

- Oregon Parks and Recreation Department: Smith Rock State Park Master Plan
- City of Turner: On-Call Planning, Rezoning Application, Development Code Analysis and Amendments, Comprehensive Plan Amendments.
- City of Sublimity: On-Call Planning, Development Code Text Amendments, UGB Analysis and Expansion
- City of Estacada: On-Call Planning
- City of Vernonia: UGB Analysis and Adjustment Application
- City of Astoria: Development Code and Comprehensive Plan Amendments
- City of Dayton: Comprehensive Plan housing update roadmap, Buildable Lands Inventory, and middle housing engagement
- City of Rainier: UGB Adjustment Analysis

Professional Membership

- **American Planning
Association**
- **American Institute
of Certified
Planners**



TIM BROOKS, ASLA



Professional Employment

- **Principal, Winterbrook Planning**, Portland, OR, 2001 to present
- **Environmental Planning Program Manager, Adolfson Associates**, Portland, OR, 1995 - 2001
- **City Planner, City of Portland**, Portland, OR, 1989 - 1995
- **Landscape Designer, Århus Nature Department**, Århus, Denmark, 1988
- **Botanist/Surveyor, Leach Botanical Garden**, Portland, OR, 1985 - 1987

Education

- **Master of Arts, Landscape Design, Conway School of Landscape Design**, Conway, MA
- **Bachelor of Arts, Interdisciplinary, Reed College**, Portland, OR

Professional Memberships

- **American Planning Association**
- **American Society of Landscape Architects**

Tim has more than 35 years of experience in land use and environmental planning for local communities throughout Oregon. His diverse experience includes managing the land use and environmental compliance tasks for some of the largest and most complex public projects in Oregon, including Portland's CSO Tunnel, Pipeline and Pump Station projects and Water Reservoir and Treatment Improvement projects. Tim's breadth of experience includes preparing land use and environmental studies and developing plans and policies for communities across the state, including Beaverton, Corvallis, Eugene, Junction City, Medford, Molalla, Newberg, Pendleton, Portland, Prineville, The Dalles, Tigard, and West Linn.

Tim's work for local and regional public works agencies includes environmental documentation, policy planning, and regulatory compliance. Tim has led wetland delineations, environmental impact studies, Biological Assessments and NEPA Environmental Assessments. Tim has a long history of successful public works land use approvals, where he consistently led projects through public hearings and appeals. A selection of public facility projects includes the following:

Selected Projects

- BES CBWTP Secondary Treatment Expansion
- BES Tryon Creek Wastewater Facility Plan
- BES East Side CSO Tunnel and Pipelines
- BES West Side CSO Tunnel, Pipelines and Pump Station
- Clean Water Services, Durham AWTF Plan District
- Clean Water Services, Tualatin River Farm Master Plan
- Clean Water Services, Large Diameter Trunkline Rehabilitation
- Portland Water Bureau, Bull Run Filtration Program
- Portland Water Bureau, Washington Park Reservoirs Improvements
- Portland Water Bureau, Fulton Pump Station Replacement
- WES Willamette Facilities Plan

Winterbrook Planning offices are located in Portland, Oregon