



Joshua R. Miner, PE

Josh Miner has worked on a wide variety of modeling, master planning, design, and construction services projects. He has dedicated his planning work to water distribution system modeling, water distribution system resiliency planning, water system feasibility studies, and wastewater treatment facilities planning. The focus of Josh's design and construction services work has been wastewater treatment plant solids handling and secondary clarification. His expertise includes wastewater treatment plant evaluation and design, construction management, engineering services during construction, collection and conveyance system planning, wastewater pump stations, and regulatory compliance.

Education

MS Civil Engineering with emphasis on Environmental Engineering, Stanford University, 2013

BS Environmental Engineering, Oregon State University, 2012

Licenses

Professional Engineer, Oregon

Professional Engineer, Washington

Water Planning and Design

→ Assistant project manager and mechanical dewatering building design lead for the Bull Run Water Treatment Facility, Portland Water Bureau, Oregon. Carollo, in association with a teaming partner, is assisting the client to improve their Bull Run Watershed – the last large, unfiltered municipal water supply – by integrating a new, greenfield 145 mgd filtration facility.

→ Staff engineer for the Water System Master Plan for the Clackamas River Water Authority, Oregon. This comprehensive evaluation of the District's water distribution and supply system identified system deficiencies, determined future supply requirements, and recommended facility improvements. The Plan will include a 20-year CIP. Josh led the pipeline seismic vulnerability analysis and development of the seismic mitigation plan

→ Staff engineer for the Willamette River Water Treatment Plant (WRWTP) 2017 Master Plan Update for the City of Wilsonville, Oregon. This update will provide the City with a stand-alone master plan for the upgrade and expansion of the 15 mgd WRWTP that best accommodates the City's growing needs, as well as the upcoming requirement to pump raw water to the Willamette Water Supply Program WTP. This project also included the design and construction services for the addition of a surge tank on the discharge side of the Finished Water Pump Station. Josh assisted with condition assessments, life safety assessments, and process equipment capacity analysis.

→ Staff engineer for the Geren Island Water Supply Analysis, City of Salem, Oregon. The purpose of the alternative analysis was

to address long term water supply issues at the City's Geren Island Water Treatment Plant. The analysis included reliable long term surface water supply, flood protection improvements, subsurface water treatment improvements, and a capital improvement program. Josh was responsible for developing the experimental plan and coordinating ongoing efforts for a pilot study using for using groundwater on the City's slow sand filters, which are typically fed surface water from the Santiam River.

→ Staff engineer for the Taylor Water Treatment Plant Filter Rehabilitation Project, City of Corvallis, Oregon. Carollo assisted the City with evaluations to assess the performance of their granular activated carbon filters including flocc penetration testing and backwash system evaluations. Josh assisted with these evaluations in the field and worked to capture the recommendations in a report for the City.

→ Staff engineer for the 575 Pressure Zone Hydraulic Analysis for the Tualatin Valley Water District, Oregon. The goal of this project was to prioritize the near-term improvement projects in the 575 Zone of TVWD's water system using hydraulic modeling and Optimatics Optimizer software. Josh coordinated with Optimatics staff to deliver optimized pump station controls, pressure regulating valve settings, and a prioritized CIP.

→ Staff engineer for the Powell Butte Reservoir No. 2 Wholesale Customers Study. Performed a storage sizing study on behalf of Tualatin Valley Water District and other wholesale water agencies that purchase water from the Portland Water Bureau (PWB). The PWB is seeking to allocate a portion of the costs associated with the new



Awards

Other Accomplishments

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PBR2 to its wholesale customers. To distribute these costs, this analysis included methods of calculating various components of storage given 1) the total volume available, and 2) the requirements of its retail customer base and wholesale customers.

→ Staff engineer for the Water System Resiliency Study for the City of Gresham, Oregon. The water system consists of eight storage reservoirs, nine booster pump stations and 230 miles of pipelines. The Seismic Resiliency Plan included a review and summary of past evaluations and improvements, as well as the seismic performance of the City's distribution system piping following the American Lifelines Alliance Approach, which is a GIS-based method that uses ground movement information also with an estimated fragility for each pipe segment. Josh performed the resiliency evaluation of the City's pipelines and coordinated with experts to develop seismically resilient design standard recommendations for the City.

→ Staff engineer for the Water System Plan Update, City of Camas, Washington. The plan update includes hydraulic modeling of the City's distribution system to identify improvement projects and operational recommendations to improve system operation. Josh coordinated and participated in a condition assessment of the City's assets that was performed to prioritize the projects identified through system analysis and to develop a more comprehensive capital improvements program for the City. Josh was also responsible for coordinating with City staff to update their Operations & Maintenance manual, which will ensure that institutional knowledge is captured and that operational recommendations are carried forward.

→ Staff engineer for the Lincoln Center Pipe Capacity Evaluation, Tualatin Valley Water District, Oregon. An existing District-owned water pipe located will be abandoned and new pipe will be installed. Pipe was evaluated to determine the pipe size needed to provide the same flow and pressure as the existing pipe. The District's hydraulic model was used to estimate the system capacity and a technical memorandum

was prepared to summarize the results of the evaluation including the existing and planned fire flow availability at the four hydrant locations specified.

→ Staff engineer for the Willamette Water Supply Program, Tualatin Valley Water District, Oregon. The Willamette Water Supply Program (WWSP) is an ambitious project to ensure water source redundancy and seismic resiliency for the Tualatin Valley Water District (District), City of Hillsboro, and neighboring water suppliers for generations to come. Josh provided hydraulic modeling assistance to the Program to help make informed planning and design decisions.

→ Staff engineer for the Water Master Plan, Tualatin Valley Water District, Oregon. This extensive plan included the standard master plan components (demand projections), in addition to a full rebuild of the hydraulic model, establishing the level of service goals, specific zone hydraulic evaluation, a reliability and redundancy hydraulic evaluation, seismic reliability, and several additional operational evaluations. The Plan provides a roadmap for achieving a reliable, redundant, and efficient distribution system that can meet the level of service goals under normal and extreme emergency conditions.

→ Staff engineer for the design of a new Water Treatment Plant for the City of Lebanon, Oregon. Performed an assessment of alternatives to connect the new plant to the water distribution system using the City's WaterCAD model. As part of this work system curves were prepared to aid in the sizing of finished water pumps at the new plant.

→ Staff engineer for Finished Water Pump Motor Replacement study for the Joint Water Commission. Josh evaluated the costs and benefits of replacing existing motors with premium efficiency motors. Coordinated the preparation of construction documents for the replacement of Finished Water Pump 3 and the associated motor.

→ Staff engineer for the City of Vancouver's Water System Comprehensive Plan update. Project includes development of a future demand forecasting model for future

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supply evaluation and calibration of the City's hydraulic model. Josh performed a remaining useful life assessment of the City's pipe network and assisted on a variety of hydraulic modeling tasks.

Wastewater Planning and Design

→ Staff engineer focusing on secondary clarifier mechanism replacement for the Spring Street Sewage Treatment Plant Upgrades Final Design, City of Klamath Falls, Oregon. The progressive design-build project is focused on the conversion of existing aeration basins to the bio-mag process, which uses ballasted flocculation to achieve increased performance within the existing footprint. The project also includes significant upgrades for several key process areas: headworks screening, influent pump station, aeration basins, secondary clarifiers, polymer systems, and magnetite recovery. Josh was responsible for the design of secondary clarifier mechanism replacements.

→ Staff engineer for the Portland BES Tryon Creek Secondary Upgrades, City of Portland, Oregon. The purpose of this project was to evaluate in detail the secondary treatment process upgrades recommended in the 2014 Facility Plan and progress them to a final design. Improvements include the implementation of SRT control, aeration basin modifications, secondary clarifier mechanism replacements, installing a rotating drum thickener, and WAS pump station improvements. Josh was responsible for the process mechanical design of the new rotating drum thickener, associated polymer systems, and WAS pump station improvements.

→ Project engineer and assistant project manager for the Water Reclamation Facility Solids Handling Improvement Dewatering Project for the City of Bend, Oregon. To optimize the performance of the existing dewatering process, the Carollo team completed an analysis of the dewaterability of the biosolids from the digester and provided a detailed review of the existing equipment, process, and operational strategies for the processes affecting the dewatering performance. Final design included two complete dewatering centrifuge systems,

including centrifuge control panels, and centrifuge electrical panels. Josh continued to support this project by working closely with the City as the engineer of record through the construction phase.

→ Staff engineer for the preliminary design of Solids Handling Dewatering Improvements for the City of Bend, Oregon. Carollo worked with the City to identify and implement needed improvements, including optimizing dewatering; selecting the right solids processing equipment; evaluating process control optimization; polymer system upgrades; and ventilation for staff safety and building protection. Josh assisted with the development of solids loading projections and dewatering technology alternatives analysis

→ Staff engineer for the EchoWater Tertiary Treatment Facilities Project, Sacramento Regional County Sanitation District, California. Josh assisted with the final design of the flash mixing systems, the waste filter backwashing system, and other ancillary components of the Granular Media Filtration facility.

→ Project engineer for the Willow Lake Water Pollution Control Facility Clarifier Evaluation for the City of Salem, Oregon. Performed a detailed condition assessment of aging clarifiers to plan for long-term upgrades that will improve reliability and develop a Capital Improvement Plan. The evaluation included four primary clarifiers and five secondary clarifiers.

→ Staff engineer for the centrifuge dewatering equipment replacement project at Clean Water Services' Rock Creek facility. This project included significant structural and electrical retrofits to the District's existing solids handling building necessary to convert from belt filter presses to dewatering centrifuges. Josh led the design and coordination to install the centrifuge equipment and associated supporting process equipment. A key challenge of this project was phasing work such that the existing dewatering equipment could continue to run uninterrupted throughout construction of the new improvements.

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→ Staff engineer for the Willow Lake Water Pollution Control Facility Solids Handling Improvements Project for the City of Salem, OR. Assisted with the retrofit of two existing buildings to install two rotating drum thickeners for waste activated sludge thickening and two centrifuges for digested sludge dewatering. Josh continued to support the City through the construction phase of the project acting as Carollo's representative for construction services, equipment startup, and facility commissioning.

→ Staff engineer for the Willow Lake Water Pollution Control Facility Cogeneration Upgrade Project, City of Salem, Oregon. The project includes a new cogeneration facility housing a 1,100 KW engine, electrical equipment, ancillary processes, site piping, and upgrades to the existing cogeneration facility. Josh was responsible for the process mechanical design of the digester gas conditioning system, heating hot water loop, and other ancillary project components.

→ Staff engineer for the Fall City General Sewer System Plan, King County, Washington. The general sewer plan evaluated alternatives for constructing, operating and financing a centralized wastewater treatment system in Fall City. The Plan includes planning level capital and operating cost estimates for utility management, a collection system, wastewater treatment, and an effluent management/recycling system.

→ Staff engineer for the 2018 Combined Sewer Overflow Plan Update, King County, Washington. This plan will update the 2012 LTCP and include refined cost estimates, schedule and project priorities, and assumptions. The Plan will ensure that project recommendations reflect environmental, social, and financial goals to meet current needs, consider stakeholder interests, and address Consent Decree requirements. Josh assisted with the Existing Facility Assessment and Optimization task and was responsible for delivering the findings to the County in a memorandum. Josh also developed conceptual wet weather treatment station layouts for new combined sewer overflow control alternatives.

→ Staff engineer for the Recycled Water Master Plan for Clean Water Services. Assisted with the development of a recycled water cost model, which identified potential customers, customer demands, and the capacity of existing wastewater treatment processes for producing recycled water.

→ Staff engineer for the design of Payne Pump Station for Clark Regional Wastewater District. This project included removal of an existing pump station, micro tunneling for a new gravity sewer, and installation of a new force main in addition to the construction of the new pump station. Assisted in site layout, preparation of cost estimates, and preparation of materials required for permitting.

→ Staff engineer for the Ammonia Treatment and Biosolids Dewatering Improvements Project for the City of Longmont, Colorado. To meet new ammonia limits set by the Colorado Department of Public Health and Environment this \$30 million progressive design-build project included expansion of secondary treatment capacity and incorporation of side stream treatment to meet more stringent daily effluent ammonia limits.

→ Project manager for the General Sewer Plan Update for the City of Camas, Washington. The Plan includes an update to the City's sewer system hydraulic model and an update to the City's Wastewater Treatment Plant Operations and Maintenance Manual.

→ Project engineer and assistant project manager for the Wastewater Treatment Facility (WWTF) Engineering Report for the City of Camas, Washington. The WWTF is an activated sludge wastewater treatment plant that discharges to the Columbia River. Its treatment process includes influent screens, primary clarifiers, an MLE biological treatment system with selector zones, tertiary filters, and UV disinfection. The project team is preparing a report identifying the short- and long-term improvements to the WWTF to optimize existing operations and to meet future growth.

→ Project manager for the Winston-Green Sanitary District Flow and Load Study. This small wastewater treatment plant in south-

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ern Oregon serves two small communities, which anticipate significant growth in the coming years. Carollo is developing updated flow and load projections to help plan for this growth and evaluate existing treatment plant capacity.

→ Staff engineer for the JEA Buckman WRF Biosolids Capital Conversion project. The project includes a new building to house four new gravity belt thickeners, four new dewatering centrifuges, and a biosolids dryer system along with ancillary solids pumping and chemical equipment to support these processes. Josh assisted with the final design of the solids handling equipment and polymer systems.

Previous Experience

→ Project manager for Life Cycle Analysis of Potential Recyclable Materials in California for Recology while a member of the Stanford Student Environmental Consulting Group. The student group selected several materials that are not traditionally recycled, defined functional units, and calculated life cycle costs using SimaPro 7.2. A report was delivered for each material selected.

→ Analyzed energy recovery opportunities from residential food waste in coordination with Stanford Faculty and the East Bay Municipal Utility District. The goal of this study was to evaluate the net energy recovery available from curbside collection of food waste compared to food waste, which is placed in a kitchen disposal and transported to the treatment plant through the sewer system.