

Ana Tijerina Esquino, EIT

Personal summary

Education:

MS, Civil Engineering
Geotechnical and Structural
discipline, Portland State
University, 2025 (projected)

BS, Civil Engineering,
Portland State University,
2020

Registrations:

Engineer-in-Training, Civil
Engineering, OR #96650 EI,
2020

Years with Mott MacDonald:

3

Years with other firms:

6

Professional memberships:

American Society of Civil
Engineers (ASCE)

Committee participation

Western Region Member,
ASCE Committee for Younger
Members

Member at large, ASCE
Committee for America's
Infrastructure

Legislative advocacy captain,
ASCE Oregon Section

Relevant Courses:

Recent Perspectives and
Practices for Seismic Design
in Pacific Northwest Silts,
Portland ASCE Geo Institute

Key skills:

Technical writing and
communication;

Transportation project
management;

Contracting and change
management;

Stakeholder engagement;

Estimating and life-cycle cost
assessment;

Structural analysis;

Structural and geotechnical
condition assessment;

Public speaking;

Data analysis.

Ana is an Engineer-in-Training with experience in project management, estimating, change order management, contracting, stakeholder engagement, structural analysis and condition assessment, geotechnical and environmental site reconnaissance, geotechnical field investigation and laboratory testing, and construction observation. She is proficient in transportation data analysis, construction management, finance, and civil design. Ana brings an ability to convey and communicate complex technical concepts to stakeholders of varying technical backgrounds. She is an energetic consultant with strong interpersonal, analytical, and organizational skills. Ana also fills a dedicated role leading early career professionals to help deliver Mott MacDonald's inclusive social outcomes agenda embedding long lasting positive change in project design and delivery.

Ana has three years of engineering consulting experience and a combined nine years of experience in construction management, finance and credit, and project management. She is skilled in a variety of project management software, data analysis tools, climate mitigation studies, alternative analysis, and life-cycle cost assessments. Ana is a skilled communicator with experience in report writing, auditing, public speaking, and collaboration with diverse stakeholders.

Selected projects

Swan Island Basin Remedial Design, HydroGeologic, Portland, OR: Inspector and Staff Engineer. Provided geotechnical and environmental field investigation support including geotechnical sampling, borehole logging, field reconnaissance, mapping, and subcontractor coordination. Completed field investigation and data collection for BANCS erosion prediction model and assisted in the creation of the Bank Erosion Hazard Index (BEHI) for riverbanks. Visually assessed riverbank slopes for evidence of slope instability, mapped observed riverbank surface protection including rooted vegetation and riverbank armoring, and classified surficial riverbank soil samples collected for laboratory testing. Completed geotechnical and environmental laboratory sample preparation, test assignment, and data review. Conducted visual inspection and condition assessment of marine structures as prescribed by ASCE's Waterfront Facilities Inspection and Assessment Manual of Practice (MOP) 130. Assessment included evaluation of fendering systems, mooring appurtenances, wharf structural systems, pile supported and bulkhead foundations. Performed foundation condition assessment and documentation of wharf structures supported on deep foundation elements, including timber piles, precast concrete piles, and cellular sheet pile structures. Supported geotechnical data report preparation and acted as the delivery coordinator, facilitating communication and comment resolution between the lead geotechnical engineer, the prime consultant, and various stakeholders. Completed data review and validation process for riverbank and physical shoreline evaluations. (2021 – Present)

Federal Way Link Extension, Sound Transit, Seattle, WA: Contract Change Manager for Design Build Project Management team. Managed incoming change requests and reviewed changes for merit and contractual obligation. Coordinated with technical experts and the Client's design build team to draft all responses to Contractor. Managed changes with estimated costs of up to \$140 Million. Wrote summarizing documentation for Sound Transit executive team to aid in determinations. Reviewed Contractor's cost estimates and prepared Independent Cost Estimates for client. Conducted scoping meetings with Contractor and led negotiations for disagreements as to pricing or means and methods. Assisted with review of geotechnical documents and assessment of Differing Site Conditions claims. Performed field observation and data review of Cone Penetration Testing (CPT). (2020 – Present)

Condition Assessment, Port of Portland, Portland, OR: Inspector and Staff Engineer. Conducted visual inspection and completed condition assessment of four marine facilities as prescribed by ASCE's Waterfront Facilities Inspection and Assessment Manual of Practice (MOP) 130. Facilities assessed include a sand-filled cellular sheet pile wharf, a retrofitted floating dock, and a reinforced concrete pile supported wharf. Assessment included evaluation of fendering systems, mooring appurtenances, wharf structural systems, pile supported and bulkhead foundations. (2021 – 2022)

Project Delivery Alternatives Study, Transbay Joint Powers Authority (TJPA), San Francisco, CA: Project management and market engagement lead. Conducted structured decision-making process to recommend and develop a contract packaging and procurement

strategy for a 1.2-mile tunnel train extension. Conducted workshops to engage stakeholders and get concurrence on option development. Conducted Industry Sounding with a group of developers, asset managers and design builders to gauge market appetite for alternatively financed procurements. (2021 – Present)

East County Transit Center, SANDAG, San Diego, CA: Supported the design of cast-in-place (CIP) retaining wall sections for a proposed transit station, including selection of Caltrans Standard Plan Type 1 retaining walls and development of project specific Standard Special Provisions for use along with Caltrans Standard Specifications. (2021)

Support for Rolling Stock, State-Amtrak Intercity Passenger Rail Committee (SAIPRC), Nationwide, US: Technical writer. Prepared Capital Investment Plan (CIP) for fiscal year 2021 and fiscal year 2022. Coordinated with Equipment Working Group which includes representatives from Amtrak, FRA, and member states to ensure that the calculated equipment capital use charge for FY 2021 is prepared in an equitable manner for all stakeholders with considerations taken for COVID interruptions in service plans. Communicated capital use charge process with all stakeholders to ensure buy-in from all SAIPRC member states and Amtrak. (2021 – 2021)

Passenger Rail Consulting, Oregon Department of Transportation (ODOT), Portland, OR: Technical writer. Funding tracking services and positioning. Created and maintained funding memo which tracks upcoming federal grants for passenger rail as well as a variety of other funding opportunities including federal loan programs and infrastructure funds allocated to the state. Worked with client to determine grants of interest and assist in positioning. (2021 – 2021)

Portland Bulk Terminals Storm Water, Canpotex, Portland, OR: Assistant Project Manager and engineering support. Engineering and project management support for design and construction management team. Completed review of geotechnical reports and design of infiltration basin using Portland Stormwater Manual. Completed structural calculations for gutter hangers, pipe hangers and handrails. Manage incoming RFI's and review internal changes using Bluebeam Revu Extreme. Update of design drawings and calculations using AutoCAD Civil 3D. Compile weekly reports outlining project progress. (2020 – 2021)

Bus Stop Improvement Program, Cherriots, Salem, OR: Assistant Project Manager and construction oversight. Project management services for bus stop improvement project (BSIP). In total the BSIP includes 748 bus stops. Improvements were prioritized for stops with high ridership. Created and managed schedule which broke up bus stop improvement process into phases to allow for concurrent ROW work, design, permitting, procurement, and construction of different batches of bus stops. Coordinated with permitting to ensure requirements are met prior to procurement. Attended weekly check-ins with client and maintained communications regarding progress. (2020 – 2022)

Terminal 6 Assessment, Port of Portland, Portland, OR: Staff Engineer. Engineering support and project management. Worked alongside client team to determine the feasibility of the use of a Liebherr LHM 800 or LHM 600 mobile harbor crane. Prepared a conceptual study analyzing the current site conditions at the Terminal using historical structural and geotechnical data and past geotechnical reports and as-built drawings. Assisted with engineering analyses to assess crane load distribution through the existing pavement subgrade and structural elements. Prepared reports for the Port outlining recommended upgrades to pavement sections and access pathways to allow for the full utilization of the desired crane. Provided Port with estimates based on a phased design approach. Completed an equivalent carbon cost analysis for different pavement options considered and drafted a conceptual sustainability plan. (2020 – 2021)

Triple Crown Construction, A.C. Schommer & Sons & Domaine Serene, Dundee, OR: Construction support services for construction of winery club house and residence. Performed construction oversight during installation of micro-pile foundation elements and buried utilities, as well as framing, carpentry, and plaster work. (2018 – 2020)

Fernhill Lake Water Quality Analysis, Portland State & Clean Water Services, Portland, OR: Model Lead for student project. Created 2D hydrodynamic model using CE-QUAL-W2 for 22-acre Fernhill wetland lake. Modeled dissolved oxygen and temperature distribution with three mitigation scenarios and a no build option: the methods tested the use of a curtain weir, a mechanical mixer, and a bathymetric reorientation. Wrote report for Clean Water Services detailing options evaluated and comparing efficacy of mitigating methods. (2019 – 2020)