



**Hyatt Regency
Huntington Beach**



GROUP DELTA



**State Route 91
San Bernardino County**

Statement of Qualifications Geotechnical Services

Serving California Since 1986
www.GroupDelta.com



**Gerald Desmond Bridge
Port of Long Beach**

Irvine
32 Mauchly
Suite B
Irvine, CA 92618
(949) 450-2100

Torrance
370 Amapola Avenue
Suite 212
Torrance, CA 90501
(310) 320-5100

San Diego
9245 Activity Road
Suite 103
San Diego, CA 92126
(858) 536-1000

Ontario
1035 So. Milliken Avenue
Suite G
Ontario, CA 91761
(909) 295-5550

Victorville
12180 Ridgecrest Road
Suite 226
Victorville, CA 92395
(760) 881-3225

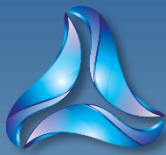
Oakland
1970 Broadway
Suite 1100
Oakland, CA 94612
(510) 671-0010

Anaheim
1320 South Simpson Circle
Anaheim, CA 92806
(714) 660-7500

"Delta is the Difference"



**Playa Vista Development
City of Playa Vista**



GROUP DELTA

WHO WE ARE



Group Delta is a consulting geotechnical and environmental engineering firm with seven offices located in the counties of Orange, Los Angeles, San Bernardino, San Diego and Alameda. Our team consists of civil and geotechnical engineers, environmental engineers, engineering geologists, laboratory and field technicians, deputy inspectors, drafting/CADD technicians, and drilling and support personnel specialized in their respective fields. We offer a broad range of services to serve the needs of our clients.

GEOTECHNICAL ENGINEERING AND GEOLOGIC SERVICES

- Feasibility studies
- Third Party Reviews
- Foundation design
- Earth Retaining Structures Design
- Pavement Design
- Earthwork and Grading
- Earthquake and Fault Studies
- Geologic Hazard Evaluations
- Numerical Modeling Analyses
- Seismic Design & Hazard Assessments
- Hydrogeologic Evaluations
- Dewatering
- Ground Improvement Analysis & Design
- Laboratory Testing
- Slope Stability & Landslide Investigation & Mitigation
- Instrumentation and Ground Monitoring



Hollywood Fault Study

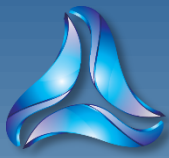
- Pile Drivability & Load Tests
- Seismic Retrofitting Design
- Geologic Reconnaissance & Mapping
- Geophysical Investigations
- Trenching Investigations

ENVIRONMENTAL SERVICES



Tank/Hazardous Materials Sampling

- Phase I Initial Site Assessments (ISAs) / Environmental Site Assessments (ESAs)
- Hazardous Materials Management & Industrial Hygiene
 - Surveys and Investigations
 - Technical Abatement Specifications and Work Plans
 - Abatement and Remediation Monitoring Services
- Phase II Site Investigations (SIs)
- Construction Environmental Compliance
- Phase III Site Remediation
- Stormwater



GROUP DELTA

FORENSIC SERVICES

- Earthquake Damage Assessments: Causation studies and preparation of repair recommendations.
- Landslide Investigations: Causation studies and/or development of stabilization schemes.
- Construction Vibrations: Vibration monitoring and geotechnical testing.
- Dam Investigations
- Settlement Analyses: Floor level surveys, causation studies and/or preparation of repair recommendations.
- Expansive Soils: Subsurface investigations, preparation of repair recommendations.
- Groundwater: Subsurface investigations, preparation of subsurface drainage recommendation.

TESTING AND INSPECTION SERVICES

Group Delta has two materials testing laboratories located in Anaheim and San Diego, California. Our laboratories are licensed as an approved testing facility by various agencies including the Division of the State Architect (DSA), City of Los Angeles, Caltrans, CCRL and AASHTO. In addition, Group Delta's San Diego laboratory has been awarded accreditation to the technical competence and quality assurance requirements of ISO/IEC 17025:2005 as determined by AASHTO Highway Subcommittee on Materials.

Soils Testing

- Classification & Index
- Strength Tests
- Volumetric Change
- Permeability
- Compaction
- Aggregate/Subgrade

Materials Testing

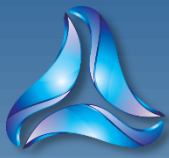
- Asphalt Testing
- Concrete Aggregate
- Concrete Cylinders
- Concrete Beams
- Masonry
- Masonry Unit Cubes
- Masonry Prisms
- Grout/Mortar
- Dry Pack Blocks
- Shotcrete
- Batch Plant Inspections
- Reinforcing Steel
- Structural Steel
- Chemical Physical Properties
- AWS/CWI Welding
- Post-Tensioning
- Epoxy Dowels/Drilled in Anchors
- Pull Testing
- Non Destructive Testing – UT/MT
- High Strength Bolting
- Fireproofing Inspections and Sampling
- Concrete & Masonry Coring and Extraction
- Mix Design Reviews & Trial Batched
- Fiber Wrap Inspection
- Vapor Emissions Testing



Direct Shear, Consolidation & Sand Equivalent Testing



Asphalt & R-Value Testing



GROUP DELTA

Group Delta meets all the requirements as an approved testing agency with the following local and national accrediting/certification authorities:

- ISO 17025
- AASHTO (American Association of State Highway and Transportation Officials)
- ACI (American Concrete Institute)
- AMRL (AASHTO Materials Reference Laboratory)
- ANSI (American National Standards Institute)
- APWA (American Public Works Association)
- ASNT (American Society of Nondestructive Testing)
- ASTM (American Society for Testing and Materials)
- AWS/CWI (American Welding Society/Certified Welding Inspector)
- California Department of Transportation (Caltrans)
- CCRL (Cement and Concrete Reference Laboratory)



- City of Los Angeles
- DSA (Division of the State Architect)
- ICBO (International Conference of Building Officials)
- NICET (National Institute for Certification in Engineering Technologies)
- UBC (Uniform Building Code)

Inspection

Earthwork Inspection and Testing – Group Delta provides geotechnical observation and testing services for all stages of site grading. Our field compaction testing services are provided by experience soils technicians working under the supervision of licenses professional engineers.

Asphalt Inspection and Testing – Group Delta provides comprehensive asphalt testing and AC Mix Design Services. We are regularly certified by AMRL in our laboratories.

Concrete Inspection and Testing – Group Delta’s concrete inspection and testing staff is re-certified bi-annually by the Cement and Concrete Reference Laboratory (CCRL) and annually by Caltrans. Our ACI certified concrete technicians perform field and batch plan sampling of concrete materials to assure compliance with project specifications.

Specialty Construction Inspection – Group Delta provides experienced special inspectors licensed by the International Code Counsel (ICC) for Sprayed Applied Fireproofing, Structural Masonry, Structural Steel Bolting and Welding, Pre-Stressed Concrete, and Reinforced Concrete. Group Delta can also provide Certified Welding Inspectors (CWI) licensed by the American Welding Society (AWS) and non-destructive testing such as mag-particle and ultra-sonic testing.

Group Delta Technicians & Inspectors hold the following certifications:

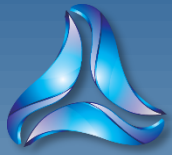
ICC Inspection

- Masonry
- Structural Steel/Welding
- Concrete
- Fireproofing
- Pre-Stressed Concrete
- Concrete

Caltrans Certified

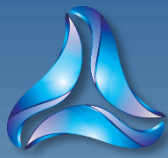
- Materials Testing
- Soils Testing
- Nuclear Gauge Safety
- ACI Certified Concrete
- Soils

City of LA Deputy Inspector



GROUP DELTA

PROJECT EXPERIENCE



GERALD DESMOND BRIDGE REPLACEMENT Port of Long Beach, CA

Project Highlights

- Highest vertical clearance of all cable-stayed bridges in the United States
- Gerald Desmond Bridge accounts for 15% of waterborne cargo movement in the US
- Higher clearance to accommodate the newest generation of efficient cargo ships
- 2nd tallest cable-stayed bridge design in the US

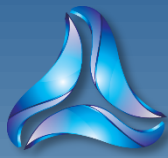
Group Delta Highlights

- Performed field and lab testing on over 130 borings up to 250 feet plus over 90 CPT's up to 150 feet deep
- Interpreting full scale pile load tests on 6-and 8-foot diameter CIDH piles, up to 180-foot long
- Geotechnical Engineer of Record and reviewing all seismic and foundation reports
- Serving as Environmental Compliance Manager



Project Information

Client:	Shimmick, FCC, Impregilo JV
Owner:	Port of Long Beach/ Caltrans
Total Cost:	\$1 Billion
Completed:	On-Going



GROUP DELTA

**DESIGN-BUILD
\$1 BILLION**

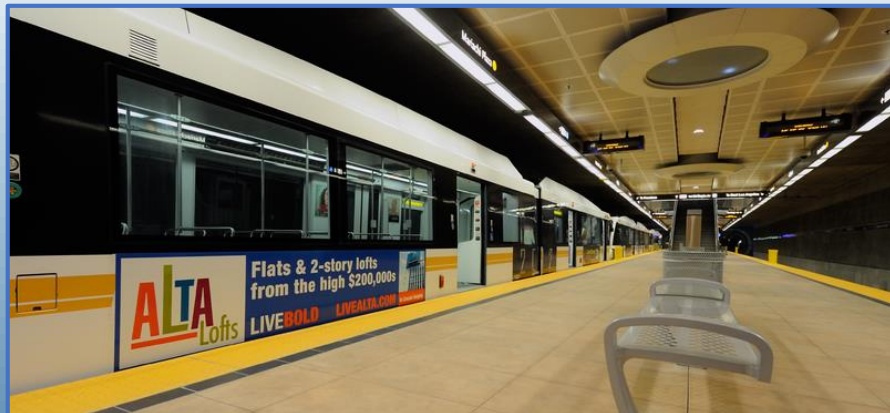
GOLD LINE EASTSIDE LIGHT RAIL EXTENSION Los Angeles, CA

Project Highlights

- Light rail system is powered electrically with overhead catenary wires
- Line includes twin tunnels measuring 1.8-miles under Boyle Heights
- Line includes eight new stations of which two stations are underground
- Directly connects to existing Metro Gold Line in Los Angeles to the Pasadena Line

Group Delta Highlights

- Provided PFRs for bridges, plus an SFR and ISA for the 101 bridge, a 9-span bridge over US 101
- Provided a preliminary foundation report which included seismic investigations for existing structures
- Geotechnical design in accordance with Caltrans standards



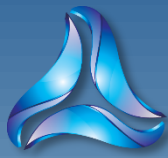
Project Information

Client: Parsons
Brinckerhoff

Owner: Los Angeles MTA

Total Cost: \$1 Billion

Completed: 2009



MTA GOLD LINE ICONIC BRIDGE Arcadia, CA

Project Highlights

- Received Engineering News Record (ENR) **Project of the Year Award** for this 11.5 mile extension of the Metro Gold Line
- **First** mass transit crossing in California to be designed by an artist
- **First** design-build project for Gold Line Authority

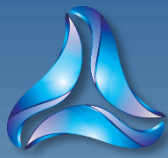
Group Delta Highlights

- Provided geotechnical seismic design for the Iconic Bridge
- Provided geotechnical engineering design recommendations and support during construction
- Provided foundation recommendations for large 10 ft. Cast In Drilled Hole (CIDH) piles



Project Information

Client:	Skanska USA & AECOM Technical Services
Owner:	Los Angeles MTA
Total Cost:	\$20 Million
Completed:	2012



GROUP DELTA

**DESIGN-BUILD
\$1.5 BILLION**

EXPOSITION LIGHT RAIL PHASE 2 Los Angeles, CA

Project Highlights

- 15.2-mile light rail line utilizing the exposition corridor with 19 stations
- Phase 2 includes 7 new stations along the Westside
- The Exposition Light Rail Transit (LRT) to Santa Monica is a significant and long-term public investment in transit, city-wide and regional mobility, and sustainability

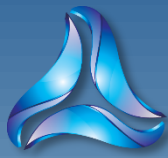
Group Delta Highlights

- Materials evaluation of 1920's brick arch tunnel under light rail road
- Provided geotechnical recommendations for Expo LRT stations over Sepulveda Blvd. and Centinela
- Multiple Mechanical Stabilized Earth (MSE) light rail walls



Project Information

Client:	Parsons Brinckerhoff/ Skanska – Rados JV
Owner:	Los Angeles MTA
Total Cost:	\$1.5 Billion
Completed:	On-going



GROUP DELTA

**DESIGN-BUILD
\$1.4 BILLION**

STATE ROUTE 91 IMPROVEMENT PROJECT Riverside County, CA

Project Highlights

- Corridor improvements focused on existing 14-miles of congestion
- Improvements to 6-mile boundary that runs from SR-241 toll road to the SR-91
- Project includes major improvements to I-15 Freeway Corridor
- Project to relieve major daily congestion

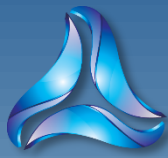
Group Delta Highlights

- Developed post advanced planning study geotechnical data reports for bridges
- Provided daily review of design-build contractors submittals
- Providing quality assurance materials testing and special inspection for multiple parcels within expanding Caltrans right of way



Project Information

Client:	Parsons
Owner:	Riverside County Transportation Commission
Total Cost:	\$1.4 Billion
Completed:	Ongoing



STATE ROUTE 22 IMPROVEMENTS Orange County, CA

Project Highlights

- Project was awarded the ACEC 2006 Project of the Year
- Improvements were made for approximately 12 miles and extended through four cities
- Included 32 bridge structures, 83 retaining walls and sound walls, 51 ramps and 317 utility crossings

Group Delta Highlights

- Developed 33 post advanced planning study geotechnical data reports for 33 bridges
- Work performed under a formal QA/QC program in accordance with the ISO 9000
- Provided construction support services including material testing and inspection
- Moderate seismic accelerations and shallow groundwater



Project Information

Client:	Parsons
Owner:	Orange County Transportation Authority/ Caltrans
Total Cost:	\$490 Million
Completed:	2008



ANAHEIM REGIONAL TRANSPORTATION INTERMODAL CENTER Anaheim, CA

Project Highlights

- New Architectural iconic terminal building, 117 ft. high with an approximate footprint of 48,000 sf
- 68,000 sf steel-framed tubular structure with Ethylene Tetrafluoroethylene (ETFE) and glass cladding as part of the terminal
- One of the largest welding projects in California

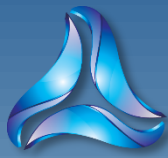
Group Delta Highlights

- Managed and responsible for all inspection and testing including coordination of welding non-destructive testing (NDT)
- Responsible for deep dynamic soil compaction, ETFE roof installation, and monolithic mat foundation inspections



Project Information

Client:	City of Anaheim
Owner:	Orange County Transportation Authority (OCTA)
Total Cost:	\$220 Million
Completed:	2014



ROBERT F. KENNEDY COMMUNITY SCHOOLS Los Angeles, CA

Project Highlights

- **Largest capital project expenditure** for Los Angeles Unified School District at \$575 Million
- First DSA approved use of a soil nail wall for a LAUSD project
- Original Ambassador Hotel site and Coconut Grove Night Club
- Three campuses – K-5, middle school and high school

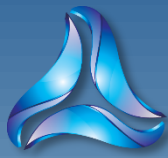
Group Delta Highlights

- Provided geologic seismic hazard evaluations and reports
- Design level geotechnical investigation, reports and design recommendations
- Materials investigation of the historic hotel and quality control inspection services for construction materials



Project Information

Client:	Los Angeles Unified School District (LAUSD)
Owner:	LAUSD
Total Cost:	\$575 Million
Completed:	2012



GROUP DELTA

**DESIGN-BUILD
\$28 MILLION**

DORSEY HIGH SCHOOL Los Angeles, CA

Project Highlights

- First Los Angeles Unified School District Design-Build Project which included a new gymnasium and ninth grade academy classroom building
- Low noise/vibration pile installed on an active school campus
- First auger cast piles project for LAUSD

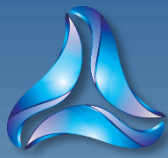
Group Delta Highlights

- Provided materials testing for Los Angeles Unified School District's first design-build project
- Geotechnical oversight provided through construction
- Quality control inspection services



Project Information

Client:	Los Angeles Unified School District (LAUSD)
Owner:	LAUSD
Total Cost:	\$28 Million
Completed:	2014



HYATT REGENCY GRAND COAST RESORT Huntington Beach, CA

Project Highlights

- 504-room, four-story, hotel complex includes two levels of subterranean parking and extensive landscape and hardscape features
- Additional features include ballrooms, conference rooms, and retail facilities
- Amenities include tennis courts, walkways and pedestrian bridges crossing Pacific Coast Highway

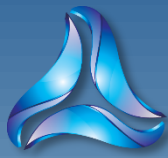
Group Delta Highlights

- Scope of work included geotechnical review of existing information for the site that resulted in providing recommendations that **saved client more than \$1 Million** in pile foundation cost
- Additional geotechnical recommendations were provided for grading, site preparation, seismic hazards, liquefaction evaluation, surcharge program and pavement design



Project Information

Client:	Robert Mayer Corporation
Owner:	Hyatt Corporation
Total Cost:	\$70 Million
Completed:	2010



PLAYA VISTA DEVELOPMENT Los Angeles, CA

Project Highlights

- Awarded the Gold Nugget Award in the single-family detached home category at the Pacific Coast Builders Conference
- Newly developed runway office, retail and housing project that will serve as Playa Vista's downtown
- Newly developed 66,000 sf \$45 Million, IMAX Headquarters

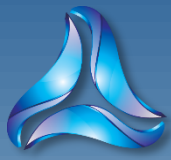
Group Delta Highlights

- Lead Geotechnical Engineering firm during both the design and construction phase
- Implemented multiple surcharge programs to mitigate large settlements
- Observed the installation of over 10,000 piles and hundreds of acres of grading
- Performed over 50 static axial pile load test



Project Information

Client:	Various
Owner:	Playa Vista LLC
Total Cost:	\$12 Billion
Completed:	Ongoing



CENTRAL PARK WEST Irvine, CA

Project Highlights

- First urban master planned community located in Orange County
- Development borders four major intersections and has close proximity to shopping areas
- Housing includes various luxury flats consisting of four-story buildings over two levels of basement parking.

Group Delta Highlights

- Provided geotechnical recommendations for the development
- Major issues for this project included shallow groundwater, heavy measurements and mat foundations
- Construction support services included quality control testing and inspection services



Project Information

Client:	Lennar Homes
Owner:	Lennar Homes
Completed:	2017



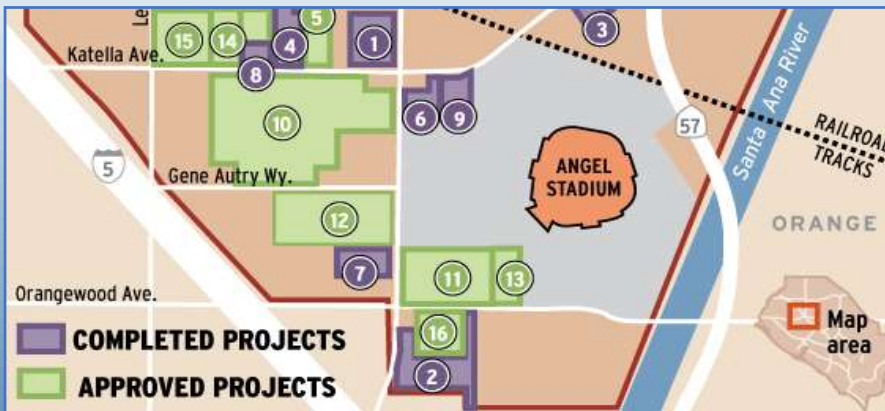
A-TOWN PLATINUM TRIANGLE Anaheim, CA

Project Highlights

- Area surrounds Angel Stadium, Honda Center and the Grove of Anaheim
- Project will bring 9,500 housing units, 5 million sq. ft. of office space and 2 million sq. ft. of commercial use and multi-level parking structures
- Urban development is under the guidelines of The Platinum Triangle Master Land Use Plan

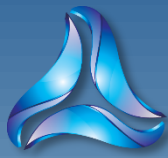
Group Delta Highlights

- Provided geotechnical investigations that provided cost-effective foundation recommendations
- Services included critical sequencing of shoring/excavation due to high density structures planned for the site



Project Information

Client:	Lennar
Owner:	Lennar
Total Cost:	\$1 Billion
Completed:	On-going



LOS ANGELES STATE HISTORIC PARK Los Angeles, CA

Project Highlights

- Redevelopment of the 32-acre Los Angeles "Cornfield" and abandoned rail yard
- Former terminus of Southern Pacific's Transcontinental Rail Line
- Will include native habitats, welcome pavilion, citrus grove and wetlands area
- Extensive legacy rail contamination

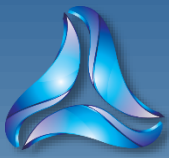
Group Delta Highlights

- Complex coordination effort with the Department of Toxic Substances Control (DTSC)
- Active construction worker hazard and risk mitigation for heavy metal contamination
- Performed site-wide Phase II ESA
- Remediation of over 60,000 cubic yards of hazardous soil
- Time sensitive and critical path deliverables



Project Information

Client:	Flores Lund Consultants
Owner:	California Dept. of Parks & Recreation
Total Cost:	\$18 Million
Completed:	Ongoing



BIG TUJUNGA DAM SEISMIC RETROFIT Los Angeles, CA

Project Highlights

- Largest infrastructure project in Los Angeles County history
- To limit thermal expansion, all concrete placements were performed at night
- Project included the addition of 80,000 cubic yards of concrete
- Complete seismic retrofitting of the dam was completed

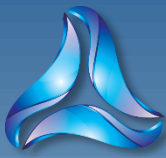
Group Delta Highlights

- Provided on-site materials evaluation and testing during construction of the retrofit
- Provided coring of the existing 1930 concrete for final materials evaluation
- Provided as-built materials analysis for the project site and all quality control for the project which was reviewed by the Division of Safety of Dams (DOSD)



Project Information

Client:	Shimmick Construction
Owner:	County of Los Angeles
Total Cost:	\$100 Million
Completed:	2012



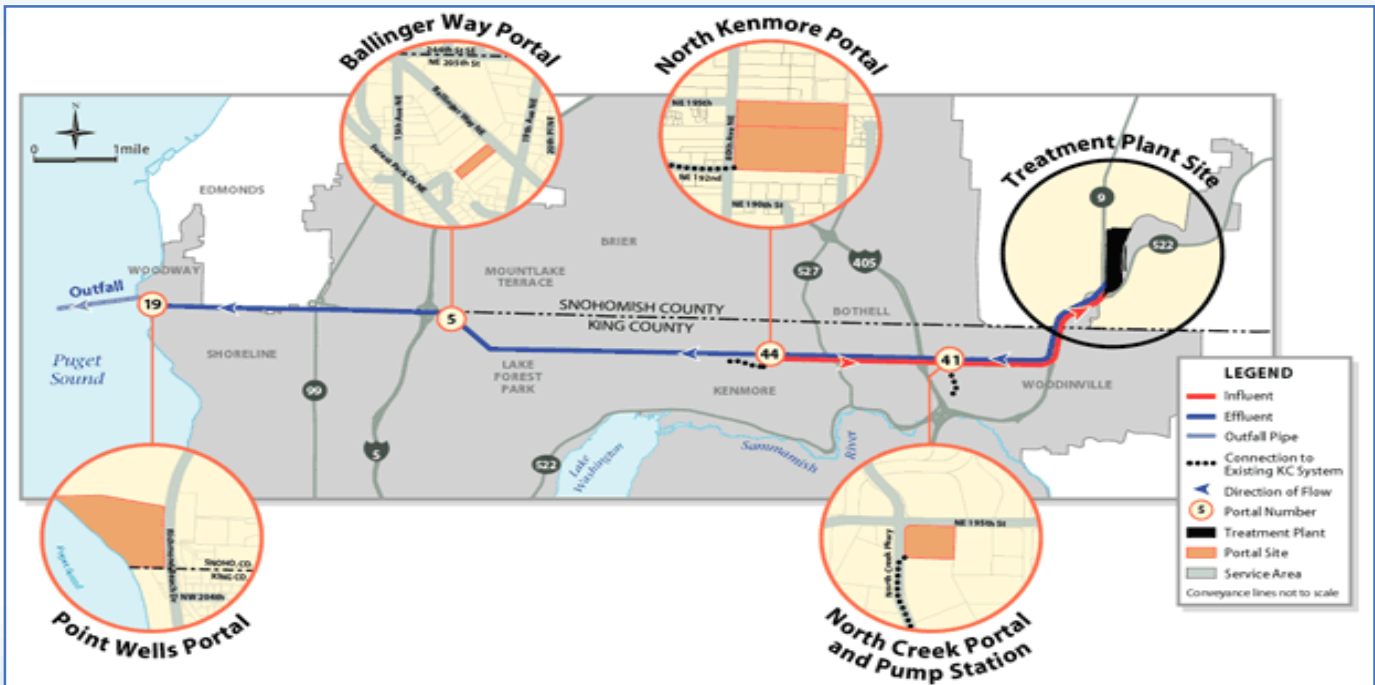
BRIGHTWATER EAST TUNNEL Bothell, Washington

Project Highlights

- Wastewater Conveyance System that includes the East Tunnel, Central Tunnel and West Tunnel Totalling 13 miles of conveyance in King County
- East Tunnel consists of 14,050 ft. of precast concrete segmentally-lined tunnel with an inside diameter of 16 ft.

Group Delta Highlights

- Provided geotechnical instrumentation installation
- Instrumentation included observation wells, piezometers, three point rod extensometer and inclinometers.
- Instrumentation for tunnel included four pipes and three fiber optic cables, launch and receiving shafts, and pump station



Project Information

Client: Kenny/Shea/
Traylor

Owner: King County

Total Cost: \$705 Million

Completed: 2010