

CALIFORNIA

Oakland Caldecott 4th Bore Tutor-Saliba Corp.

The three existing Caldecott Highway Tunnels are located on State Route 24 and pass through the Berkeley Hills, connecting the cities of Oakland and Orinda. The Caldecott Tunnel Fourth Bore is a horseshoe-shaped tunnel and will be 6,798 ft long, 50 ft wide and 32-ft high and will add two additional 12-ft lanes of traffic in the westbound direction. The \$214.8 million project is designed to alleviate traffic congestion along the Route 24 corridor. The tunnel will add a 10-ft shoulder on the right and a 2-ft shoulder and 3-ft walkway on the left. Construction began in January 2010 and will take approximately three years to complete. The fourth tunnel will parallel the existing third tunnel and will have seven interconnecting personnel passageways to facilitate maintenance and emergency access. Also included will be construction of a new operations and maintenance center building totaling approximately 6,000 sq ft. The project will also include the construction of retaining walls near the east and west sides of the tunnel, and permanent sound walls on the west side.

The fourth bore tunnel will be constructed by the sequential excavation method (SEM). This technique provides the required flexibility to construct a wide-span tunnel in weak and variable ground conditions. The sequential excavation will be performed by roadheader, with pre-support measures ranging from spiling to pipe canopies. A waterproof membrane will be placed on the inside face of the initial support — a mix of reinforced shotcrete, lattice girders and rock bolts — followed by the construction of a cast-in-place reinforced concrete lining.

Work is scheduled for completion in 2013 and will eliminate the need for the existing central tunnel to alternate between westbound and eastbound traffic during rush hours.

Project Manager: Ed Chammaha; Tunnel Superintendent: Bill Monahan; Senior Project Engineer: Bryan Lee. Information: (510) 665-3114.

Pacifica Devils Slide Tunnel Kiewit Pacific Co.

As of the end of April, the northbound top heading reached 1,100 m (85 percent complete), the southbound top heading 1,050 m (85 percent complete), the northbound bench 950 m (75 percent complete) and the southbound bench 900 m (70 percent complete). Currently the northbound tunnel is using mechanical excavation and the southbound tunnel is using drill-and-blast as the primary excavation method. In addition, seven of 10 cross passages have been excavated

as well as the two underground equipment chambers. The concurrent final lining concrete operations continue in both tunnels. In the northbound tunnel, 270 m of final lining arch has been placed and in the southbound tunnel, 255 m placed. To date, 170 m of invert arch has been placed in the northbound tunnel and operations are starting up in the southbound tunnel.

Kiewit Team: Project Manager: Scott Wimmer; Structures Manager: Dan Griffin; Tunnel Manager: Bhaskar Bhavsar; and Tunnel Consultants: Gall-Zeidler. Information: (650) 290-5100.

Sacramento Upper Northwest Interceptor-Sections 1 & 2 Traylor/Shea JV

This project for the Sacramento Regional County Sanitation District involves the installation by earth pressure balance (EPB) tunneling methods of approximately 19,240 lf of 144-in., PVC-lined, precast concrete tunnel segments, one 84-in. by 144-in. transition structure, one 144-in. by 120-in. transition structure, 20 access manholes, one interceptor manhole, and connection to three existing trunk sewer lines.

Notice to proceed was given on Oct. 1, 2007, and tunnel excavation completed on Nov. 23, 2009, about two months ahead of schedule. The Robbins/Mitsubishi EPBM has been completely removed from the project. The connections to the tunnel at all 20 manhole locations have been completed. The final T-Lock liner patching and final welding process will begin as soon as the utilities are removed from the tunnel. Utility and conveyor removal was 90 percent complete as of late December. The two microtunnel drives for lateral connections to the tunnel are complete, only the final surface works remain. Construction of two transition structures remain after the final tunnel patching and cleaning is finished.

TSJV Staff – Project Manager: Jeremy Theys; Project, Superintendent: Bert Dore; Project Engineer: Adam Hargreaves; Field Engineer: Eduardo Whitman. Information: (916) 515-3933.

San Diego San Vicente Pipeline Traylor/Shea JV

The San Vicente Pipeline Tunnel is an 11-mile water conveyance being built for the San Diego County Water Authority. The joint venture of Traylor Bros. Inc. and J. F. Shea (TSJV) was low bidder at \$198,366,900 on April 20, 2005. The 8.5-ft diameter pipeline will connect an existing aqueduct feeding San Diego County to the San Vicente reservoir. The system will provide additional storage during wet periods, and another water source during dry periods or when the main aqueduct suffers a catastrophe, such as an earthquake.

The tunnel runs generally east-west across the north end of San Diego County. The west terminus is a shaft

100-ft deep, the east terminus is a portal, and two additional shafts are in between, with depths of around 75 ft. Depth of tunnel varies according to the surface topography, but can be as great as 600 ft. The tunnel encounters varying geology, ranging from extremely hard granitic rock near the ends, to loosely cemented conglomerate in between. Some of the conglomerate may also be tightly cemented. The water table is below the tunnel for approximately half its length.

West Portion/Reaches 1, 2, 3, 4W — The tunnel has been excavated from Central Shaft through to the West Shaft. Installation of final liner steel pipe is complete. Pipe consists of 103-in. welded steel pipe, ranging from 3/4-in. to 3/8-in. thick. Pieces are 50-ft long, and welded together in the tunnel. Cellular grout injection into the annulus between the steel pipe and the tunnel initial support is complete. A 1/2-in. thick mortar lining is currently being applied to the interior of the pipe. Approximately 12,000 out of 26,000 ft has been installed.

East Portion/Reach 4 East — Steel liner pipe installation from San Vicente Portal is complete. Cellular grouting is complete as well. Mortar lining of the pipe will follow the lining of the West half pipe.

Project Manager: Mike Jatzak. Information: (619) 631-0777.

San Mateo County New Crystal Springs By-Pass (Polhemus) Tunnel Shank/Balfour-Beatty

The \$55.7 million New Crystal Springs Bypass (Polhemus) tunnel for the San Francisco Public Utilities Commission will be constructed parallel to and beneath the existing Crystal Springs Bypass Pipeline. At the south end of the tunnel, the South Shaft will be located in the vicinity of the existing Polhemus Fluoridation Station. At the north end of the tunnel, the North Shaft will be located near the intersection of Crystal Springs Road and Polhemus Road.

As of April 1, 2010, the contractor completed the first major milestone for the New Crystal Springs Bypass Tunnel, which included tying in ancillary facilities at the North Shaft site to an existing SFPUC 79-in. diameter water line. The existing water service line was put back in service on March 12, 2010, well within the planned shutdown window. TBM mining concluded with hole through at the North Shaft on March 24, 2010, completing the 4200 lf drive of 10-ft, 5-in. ID segment lined tunnel. Preparations are



By Jack Burke

under way for installation of the 96-in. diameter tunnel WSP, which is expected to begin at the end of April. South Shaft ancillary facility construction is expected to begin this summer.

General Manager: Jerry Stokes; Project Manager: Scott Shylanski; Project Engineer: Robert Cornish; QC Manager: Hai Ho; Safety Manager: David Tompkins; Superintendents: Jim Mulkey, Carlos Parada, David Umling and Curtis Bahten. Information: (650) 212-0151.

CONNECTICUT

Hartford

Grandby Street Sewer Separation Bradshaw Construction Corp.

Bradshaw Construction Corp. is preparing to perform 2,655-ft of pipe jacking as part of a sewer separation project. The project includes the installation of 1,560 ft of 60-in. RCP and 960 ft of 48-in. RCP via microtunneling, and 145 ft of 42-in. RCP with a conventional TBM. The work will be performed under Grandby Street in northwest Hartford, between Burlington Street and Branford Street. The soil conditions consist primarily of very soft silts and clays below the ground water table. Information: Doug Piper, dpiper@bradshawcorp.com

DELAWARE

Dover

Route 13 Sewer Interceptor Bradshaw Construction Corp.

Bradshaw Construction Corp. is preparing to construct two sewer tunnels under Route 13 and Rustic Lane. Both tunnels will be 50-in. steel casing. Ground conditions are expected to be loose, wet sand. An MTBM will be used to mine the tunnels. Information: Mike Wanhatalo, mwanhatalo@bradshawcorp.com

FLORIDA

Clearwater

FDOT SR-55/US-19 Roadway Improvements

Bradshaw Construction Corporation

Bradshaw Construction Corp. is constructing two tunnels in Pinellas County under Allen's Creek 330 ft in length. The tunnels consist of 60-in. Permalok steel casing. A Herrenknecht AVN-1200 MTBM will be utilized to excavate the tunnels. Information: Mark Rybak, (410) 977-0955 or mrybak@bradshawcorp.com.

Davie

FDOT I-595 Roadway Improvements Bradshaw Construction Corp.

Bradshaw Construction Corp. is currently constructing three tunnels in Broward County under I-595 ranging in length from 430 to 453 ft. The tunnels

consist of 54- and 72-in. direct jack RCP. A RASA-1900 MTBM will be utilized for the 72-in. RCP and a Herrenknecht AVN-1200 MTBM will be utilized for the 54-in. RCP. Information: Mark Rybak, (410) 977-0955 or mrybak@bradshawcorp.com.

Hialeah

FDOT SR-823/N.W. 57th Ave. Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing a tunnel in Broward County under FEC Railroad 185 ft in length. The tunnel consists of 84-in. direct jack RCP. A Lovat 101.5-in. TBM will be utilized to excavate the tunnel. Also included in this project is a microtunnel under FEC Railroad 100 ft in length. The tunnel consists of 42-in. Permalok Steel Casing jacked behind a Herrenknecht AVN-800 MTBM. Information: Mark Rybak, (410) 977-0955 or mrybak@bradshawcorp.com.

St. Petersburg

30th Avenue Storm Drainage Improvements

Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing a tunnel in Pinellas County under the CSX Railroad 150 ft in length. The tunnel consists of 72-in. direct jack RCP. An Akkerman 87.5-in. TBM will be utilized to excavate the tunnel. Information: Mark Rybak, (410) 977-0955 or mrybak@bradshawcorp.com.

GEORGIA

Athens

UGA Chilled Water Piping

Bradshaw Construction Corp.


Bradshaw Construction Corp. is jacking a 230-ft long steel casing at the University of Georgia for chilled water supply and return lines. The casing is being jacked through residual soils using a 60-in. diameter MTBM. Information: Eric Eisold, eeisold@bradshawcorp.com.

Atlanta

South Cobb Tunnel Project Shea/Traylor JV


Shea/Traylor Received NTP for the South Cobb Tunnel Project on July 14, 2008. The project consists of approximately 29,000 ft of 24-ft finished diameter tunnel located in rock, with depths ranging from 150 to 400 ft. Most of the tunnel will be TBM excavated. There are three major shafts on the project: two shafts 44-ft, 6-in. shafts for launching and recovery of the TBM, and one shaft 116 ft in diameter for construction of a pump station, which will be constructed under subcontract with Archer-Western Construction. Several smaller drill-blast tunnels will be connected to five diversion/drop shaft structures that interconnect with the mainline tunnel.

Current work completed to date includes: mining two miles of TBM tunnel, completion of Pump Station Tunnel (including lining), excavation by W.L. Hailley of approximately 1,000 ft of the Nickajack Tunnel and excavation of 750 ft of the Sweetwater Tunnel. Archer-Western has continued exterior structure walls and wet well walls for the pump station structure within the 116-ft shaft.



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North American Project Update

Project Manager: Dan Martz; Assistant Project Manager: Stewart Lipofsky; General Superintendent: Mike Weeks; Project Engineer: John Forero; Field Engineer: Percy Townsend; Surveyor: Bill Currier; Cobb County Water System Engineering and Records Division Manager: Judy Jones; Parsons/Jacobs Associates Construction Manager: David Rendini; Parsons/Jacobs Associates Assistant Construction Manager: Ted DePooter; JJG Design Engineer: Mike Robison. Information: (770) 941-9021.

Atlanta South River Tunnel GSC Atlanta Inc.

This \$111.6 million project includes 9,000 lf of 16-ft diameter TBM tunnel finished with a 14-ft ID cast-in-place concrete liner. Also included is a 1,060-lf drill-blast connector tunnel that is to be lined with Hobas pipe. Finally, the project requires two construction shafts, 24 and 32 ft in diameter, plus a 60-ft diameter pumping station shaft.

The TBM has been excavating for two months and is on its way to the first turn. With all the rail configuration phases complete and the California Switch installed, productions will be at their best for the remaining excavation. Nearly 2,000 lf has been excavated already and the steel headframe/rail muck car dumping system is working smoothly.

Along with the tunnel excavation, the pump station shaft base slab has been poured, and the continuous slip pour was scheduled to begin May 18. At the other side of the tunnel, the drill-blast team has mobilized and started work on the Macon Drive exit shaft.

Kiewit Team: Project Manager: Derek Brennan; Project Engineer: Ryan Terry; Safety Manager: Dale Matlock; Quality Manager: Diego Barbosa. Information: (404) 622-3476.

Kennesaw Pedestrian Underpass at CSX Bradshaw Construction Corp.

Bradshaw Construction Corp. has completed a 115-ft, 13-ft diameter pedestrian tunnel under four tracks operated by CSX Transportation. Cover over the tunnel at the tracks ranged from 5 to 7 ft. A compensation grouting program was performed successfully by Hayward-Baker Inc. Geocomp Corp. provided a real-time monitoring program using automated motorized total stations (AMTS) with website reporting used to control the grouting. Information: Eric Eisold, eeisold@bradshawcorp.com

ILLINOIS Chicago 39th Street Bypass Tunnel Kenny Construction

The notice of award was issued on Dec. 24, 2008, for the \$146,500,000 project consisting of six lined drop shafts with

inside diameters from 7-ft., 2-in. to 15-ft and varying in depth from 227 to 250 ft; a vent shaft; six connecting structures; three backflow gate structures; entrance conduit structures; manholes; replacement gates at an existing MWRDGC structure; addition of 25 existing louvers at 25 existing drop shafts and 14,740 ft of 15-ft ID lined rock tunnel.

The 75-ft deep caisson was completed followed by the drilling/shooting of the shaft to the deaeration chamber below and concrete lined back to the concrete caisson leading edge. The 42-ft high, 30-ft wide and 100-ft long deaeration/drop shaft/TBM launch chamber was excavated and the upper portion concreted. The 17-ft, 6-in. Robbins TBM refurbishment was completed in a shop in Milwaukee by Kenny crews and has been shipped to the site. The TBM was erected and production mining started in early February 2010. Mining three shifts on a five-day week, the crews are averaging well over 1,000 ft per week with 11,000 ft completed by the end of April. Mining is scheduled to be complete by May 2010.

Tunnel Division Manager: Ted Budd; Project Manager: Mike Surman; Project Engineer: Christian Heinz; Senior Staff Engineer: Donn Renfro; Senior Staff Engineer: Brett Beranek; General Superintendent: Paul McDermott; TBM Specialist: Tommie Peterson; Safety Manager: Paul Lauricella. Information: tedbudd@kennyconstruction.com.

INDIANA

Indianapolis Belmont North Relief Interceptor – Section 1 Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing a 5,300-ft long sewer relief interceptor, which includes 4,100 ft of 72-in. RCP installed by pipe jacking beneath local roads from 10th to 19th Streets on the west side of the White River. The tunnels will be mined utilizing an MTBM. Geologic conditions consist of glacial deposits below the groundwater table. An additional 1,200 ft of 72-in. RCP will be installed by open-cut through Mozel Sanders Park. The project also includes nine structures and three tie-ins to the existing system. To date six shafts have been excavated and approximately 870 ft of pipe has been jacked. Information: Todd Brown, tbrown@bradshawcorp.com

KENTUCKY

Louisville Riverbank Filtration Tunnel & Lift Station Mole/Jay Dee/Murray Hill/Kassouf JV

This \$34 million fresh water collection tunnel for the Louisville Water Company includes 8,000 lf of 12-ft diameter tunnel,

one shaft 230 ft deep, four caissons approximately 100 ft deep each, pump station and four horizontal collector wells.

The TBM was launched in 2008 and the 8,000 ft tunnel excavation is complete. All four caissons are also complete. Long Foundation completed all four of the blind drill drops. Collector Well International has completed 100 percent of the collector well laterals. Cast-in-place concrete lining of the tunnel has been completed. Reynolds Inc. has mobilized and construction of the pump station is well under way.

Subcontractors and consultants include: Jordan, Jones and Goulding (designer), Lachel Felice & Associates, Benchor Foundation Specialist, Reynolds Inc. and Collector Well International Inc.

Project Executive: J.J. Scaravilli; Project Manager: Jim Delmonte; Owner's Project Manager: Kay Ball; Engineer's Project Manager: Steve Holtermann.

Boone County Western Region Conveyance Tunnel McNally/Kiewit

This project for Sanitation District No. 1 of Northern Kentucky consists of 32,500 lf of 12-ft excavated tunnel through shale with ribs and lagging specified as the primary support. The final pass lining consists of 102-in. RCP with T-Lock lining. There are five shafts ranging in diameter from 16 to 51 ft and depths ranging from 55 to 300-ft. The project also includes a 700-ft long bridge structure carrying Hobas pipe and 3,000 ft of 102-in. sewer pipe installed by open-cut.

Site work at shafts 1 through 5 has been completed. Shaft 2 is being excavated by drill-blast and the excavation is 80 percent complete. Hayes Drilling completed the 10-ft finished steel casing auger shaft at site 4 in late October 2009.

As of April 30, the TBM has progressed 16,543 ft (51 percent). The best shift to date is 103 ft; best day 190 ft; best week 844 ft and the best month March at 3,374 ft. TBM hole through into shaft 2 is anticipated for June 1 with final hole through at shaft 1 in October.

D.L. Braugler, contracted to construct the sewer support bridge, has completed construction of the 5 piers. The piles for the east abutment have been driven and the footer construction is underway. The west abutment excavation has begun. Smith Contracting, open cut, has completed 1,148 ft of Hobas pipe installation (38 percent). Turn-Key Tunneling, 84-in. bore and jack, has completed 140 ft of excavation (80 percent).

Information: Tom Szaraz, tszaraz@mcnallytunneling.com.

MARYLAND

Baltimore Storm Drain Rehabilitation Bradshaw Construction Corp.

Bradshaw Construction Corp. has

completed rehabilitating 6,500 ft of 18- to 96-in. reinforced concrete storm drains at the Dundalk Marine Terminal using spiral-wound hard plastic liner manufactured by Sekesui. The work was done in accordance with OSHA's HAZWOPER regulations due to the presence of chromium contamination. Information: Eric Eisold, eisold@bradshawcorp.com.

Jessup

**Little Patuxent Parallel
Interceptor Sewer Phase 3
Bradshaw Construction Corp.**

Bradshaw Construction Corp. is constructing a drill-blast sewer tunnel, which will be supported by horseshoe ribs and lagging. Ground conditions expected to be hard rock. Information: Mike Wanhatalo, mwanhatalo@bradshawcorp.com.

**Montgomery and Prince George's
Counties**

**Bi-County Water Tunnel
Renda-Southland-Shaw J/V**

This \$112 million project includes 28,147 lf of 10-ft diameter rock tunnel; one main working shaft, 35-ft diameter, 168-ft deep; and two receiving shafts, one 109-ft deep 18-ft diameter and one 134-ft deep, 22-ft diameter.

The main working shaft has been completed, the starter and tail tunnels are currently being excavated. The eastern most receiving shaft is excavated to a depth of 70 ft.

Operations Manager: Don Painter, Regional Manager: Kent Vest.

Savage

**Little Patuxent Interceptor II
Bradshaw Construction Corp.**

Bradshaw Construction Corp. completed constructing two tunnels under state roads in Howard County totaling 450 ft. The 60-in. steel casing was jacked through rock, mixed face and alluvial deposits of sand, cobbles and boulders using an MTBM. Following the tunneling operation, 42-in. DIP sewer pipe was installed and grouted. Information: Eric Eisold, eisold@bradshawcorp.com.

NEW YORK

**New York City
East Side Access CM-009
Dragados/Judlau JV**

Excavation of the Grand Central Terminal caverns is continuing using a combination of both roadheader and drill-blast excavation methods. Two twin caverns, each 1,143 ft long, 60 ft wide and 65 ft tall are being excavated in stages starting from the top, then benching down. To date the project has completed 30 percent of the excavation in the East Cavern and 51 percent in the

West. The two caverns are separated by a central pillar 40 ft wide. All excavated material is exported from the Manhattan caverns to the Long Island City shaft via a system of nine conveyor belts with a total combined length of 17,000 ft. A 300 tons per hour underground crusher station has been established adjacent to the cavern excavation to allow for the drill-blast material to be carried by the conveyor system.

The location of the caverns is directly under the existing Grand Central Station and the allowable blasting vibration criteria are very strict for this, and several other adjacent historic structures. Excavating the Manhattan Schistose Gneiss material mechanically, with roadheaders, has had mixed results but generally has improved as the caverns proceed from north to south. In excavation areas where allowable blasting vibrations are critically low, roadheading can have advantages over drill-blast. Geologically the cavern material has been mostly massive with occasional fractures that can produce water under rainy conditions at the surface. The entire project is monitored by an extensive array of extensometers, which to date, have shown actual deflections to be well under predicted values.

Project Executive: Jose Miguel Gonzalez; Project Executive: Pablo Diez; Project Manager: Don Hickey; Project Engineers: Joaquin Fernandez, Julio Velez; GCT Cavern General Superintendent: Dave Dorfman; Equipment Manager: Louis Sanchez; Survey Superintendent: Jim Skura; General Superintendent: Dave Dorfman; Equipment Superintendent: Jim Disley. Information: (718) 943-1400.

**New York City
Harlem
River Tunnel
Kiewit
Constructors Inc.**

The project consists of two 165-ft deep circular shafts connected by a 675-ft long horseshoe tunnel. Bedrock in this

part of Manhattan is white marble and found at a depth of approximately 70 ft. Overburden at the shafts is a mix of sandy and silty soils with support of excavation in the overburden being secant pile wall. Shaft concrete was completed in March. Following the shaft work, excavation of the surface structures began on the Manhattan side. Installation of the FRE tunnel invert conduit began in late-March and was expected to be complete in late-April. Future operations include completion of the surface structures tie-in into the shafts where Con Edison will pull its cables for the transmission feeders.

Kiewit Team – Project Manager: Sean Menge; General Superintendent: Joe Caggianelli; Safety Manager: Royal Willard. Information: (402) 346-8535.

**New York City
No. 7 Line Extension
Shea/Skanska/Schiavone
JV (S3II Tunnel Constructors)**

The No. 7 Subway Line Extension project will provide twin subway tunnels from the current terminus of the No. 7 Subway Line at Times Square to a new station on 34th Street and 11th Avenue. After mining north under 11th Avenue

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from 25th Street and navigating a 650 ft radius curve to the right, the two double-shield Herrenknecht 22.5-ft diameter tunnel boring machines (TBMs) are now proceeding under 41st Street to Times Square where the tunnels will meet the existing tracks of the No. 7 Line just under the Port Authority Bus Terminal. The tunnels are lined with a precast concrete segment liner manufactured by Technopref. The tunnel muck is removed from the headings by side dump muck cars to the dumping hoppers located at Shaft A and then transported to the surface by a vertical conveyor.

The 34th Street Station cavern is now being lined with concrete. The working slab, grade beams and the cavern walls have been installed. The mezzanine slab is currently being placed while the muck trains travel through the cavern to support the TBM excavation north of the cavern. The entire cavern also requires waterproofing, which is being installed by Wisko America Inc.

Within the Times Square area, the tail tracks of the existing No. 7 Line have been lowered and a section of the concrete box structure has been constructed. Preparation for receiving and disassembling the TBMs is ongoing.

S3II Project Director: Jim Marquardt; Assistant Deputy Directors: Carl Christensen, Lars Jennemyr, Victor Paterno; General Superintendent: Mike Jennings; Assistant Superintendent: Bob Leslie; Equipment Superintendent: Kelvin Sampson; Electrical Superintendent: Paul McNally; Director of Engineering: Jim Rosteck; Site Managers: Brian Jepsen, Shemek Oginski. Information: Paul Matthews, MTA Capital Construction Manager, (212) 616-4462.

Croton

New Croton Aqueduct Rehabilitation Frontier-Kemper/Schiavone/Piccone

This \$91,696,805 million, 27-month contract for the New York City Department of Environmental Protection was awarded in October 2008 and the notice to proceed in January 2009. The rehabilitation primarily consists of drilling and grouting the brick lined shafts, contact and consolidation grouting within the horseshoe gravity section and circular pressurized section of tunnel and surface work.

Preparations are being made to begin shaft and tunnel operations this fall after the aqueduct is taken out of service.

Project Manager: Leon "Lonnie" Jacobs; Project Engineer: Paul Dixit; Business Manager: Tom Berger; Superintendents: Clyde Perdue, John Beasley; Field Office Engineers: David Daddario, Jeff Wolf-Jaworski, Jeff Gargoshian, Dave McMahan, Kumar Gopalsamy; Site Safety: John Ridens. Information (914) 375-3513.

Rochester

East Side Water Supply Raw Water Intake Tunnel Southland Contracting Inc.

This \$34.9 million project includes one shaft 170-ft deep; 6,000 lf of 114-in.; six 60-in. drilled pump shafts with adit excavation; and two marine intakes on Lake Ontario. Site work has been completed and construction of the main shaft is under way. NTP was given Jan. 19, 2010.

Regional Manager: Kent Vest; Project Superintendent: Burson Warren; Project Engineer: Chris Davis.

NEW JERSEY

Sayreville

Raritan River Crossing Kenny Construction

The \$41,150,000 project consists of two 80-ft deep slurry wall shafts on either side of the river and 3,900 lf of 15.5-ft diameter segmental lined tunnel under the Raritan River between the shafts using a refurbished Lovat EPB TBM. All work has been completed and accepted and the site is being demobilized.

Tunnel Division Manager: Ted Budd; Project Manager: Bob Rautenberg; Superintendent: Mike Quinn; TBM Specialist: Tom Peterson; Electrical Superintendent: Joe Johnson; Safety Manager: Dan Brennan; Project Sponsor: Mike Smithson. Information: tedbudd@kennyconstruction.com.

NEVADA

Las Vegas

Lake Mead Intake No. 3 Shafts and Tunnel Vegas Tunnel Constructors (Impregilo/Healy JV)

This design-build project for the Southern Nevada Water Authority was awarded to Vegas Tunnel Constructors in March 2008, for \$447 million. Work includes an access shaft 30-ft diameter by 600 ft deep and 15,300 ft of rock tunnel to be mined with a convertible Herrenknecht TBM, capable of operating as a hard rock machine in open mode and as a full Mixshield in poor rock and/or with high water inflows, and lined with 20-ft diameter precast gasketed segments. The tunnel may be subjected to pressures of up to 17 bars. Also included is a new intake riser structure constructed 350 ft below the surface of Lake Mead.

Project design is being undertaken by Arup USA in conjunction with Brierley Associates. The design process for the project is substantially complete. Shaft sinking and lining is complete. The TBM erection chamber, 200-ft long, 45 ft wide and 35 ft high constructed by drill-blast, and an 85-ft long tail tunnel are complete. The starter tunnel, 350 ft long, is under way. Pre-excavation probing and grouting is continuing into the starter tunnel.

Preassembly on the surface of the Herrenknecht hybrid TBM S-502 is complete. Precast segment production is about 50 percent complete. Erection of separation plant and grout plant is complete, and other tunnel support plant is being set up.

Underwater excavation at the intake site is under way, using air lift and clamshell. Blasting with specially designed shaped charges will start before June. Prefabrication of the intake riser structure also began.

Project Director: Fulvio Castaldi; Project Manager: Jim McDonald; Construction Manager: Renzo Ceccato; General Superintendent: Jim Hyatt; Marine Superintendent: Casey Graham; Plant Manager: Greg Cook; Equipment Superintendent: Tom Sepula; Electrical Superintendents: Guido dal Bosco, Zefram Houk; Safety Manager: Jackie Owens; QC Manager: James Grayson; Site Engineers: Alessandro Tricamo, Lance Waddell, Bill Kenik, Joe Nagy, BG Kunz; Arup/Brierley Leads: Don Phillips, Jon Hurt, Gregg Sherry. SNWA Construction Manager: Roger Rothenburger; Chief Inspector: Mike Byers. Information: (702) 893-2300.

Las Vegas

Lake Mead Intake No. 2 Connection and Modifications Project Barnard of Nevada Inc.

This project for the SNWA is a part of the Intake No. 3 Project being constructed to counter the recessing water levels of Lake Mead. Work includes drill-blast excavation of a 380-ft deep, 22-ft diameter shaft and 570 ft of modified horseshoe tunnel 16 ft high by 14 ft wide. The project also includes, installation of an isolation gate, connection and marine modifications to the existing Intake No. 2 Tunnel. The project successfully achieved substantial completion status in April 2010 meeting.

For Barnard - Operations Manager: Dan Schall; Project Manager: Jordan Hoover; Project Superintendent: Andy Granger; Underground Construction Manager: Brad Bush; Project Engineers: Aaron Paulson, Caroline Boerner, Dan Brown, Glenn Strid, Michael Davolt; Safety: Boodie Hurd, Mike Sinon; Walkers: Bill Kiehl, Willy Flores, Tracey Chambers. For SNWA - Project Manager: Erika Moonin; For CM/Parsons - Area Manager: Kevin Ulrey; Construction Manager: Shimi Tzobery; Chief Inspector: Gary Daniel. Information: (702) 283-5953.

Las Vegas

Lake Mead Intake No. 3 Connector Renda Pacific Inc.

The SNWA project includes drill-blast excavation of a 450 ft-deep x 26-ft diameter concrete lined shaft and approximately 2,500 feet of variable-sized modified horseshoe tunnel up to 20 ft high by 20 ft wide.

This project is a part of the Intake No. 3 project being constructed in association with the declining Lake Mead water level. The project was designed by MWHill JV while project CM services are provided by Parsons. The project was awarded in May 2009 and construction began in July.

Currently the surface preparations have been completed and the shaft excavation and concrete lining has progressed to 60 ft deep including the cast-in-place reinforced concrete shaft collar. A pre-excavation grouting program, dewatering pumping system, and ground-water treatment system have been developed for groundwater inflows during excavation.

For Renda Pacific - Project Manager: Michael Cash; Project Superintendent: Red Blanchette; For SNWA - Project Manager: Erika Moonin; For CM/Parsons - Construction Manager: Shimi Tzobery; Lead Inspector: Gary Daniel. Information: shimi.tzobery@parsons.com

OREGON

Portland

East Side CSO Kiewit/Bilfinger Berger (KBB) JV

The TBM was successfully re-launched in early March 2010. The South Tunnel Drive is progressing well through the Troutdale formation and was on schedule to reach Taggart Shaft in early May, then McLoughlin Shaft in late December 2010. Meanwhile, crews are removing utilities from the North Tunnel and preparing for the shaft adit tie-ins later this year.

Elsewhere on the Project, crews have completed the structural liners at three of the six "build-out" shafts, and concrete work is in progress at the three remaining "build-out" shafts. Excavation has started at the final two outfall diversion structures. The support of excavation for both diversion structures consists of soldier piles and timber lagging.

Project Director: Tom Corry; Project Manager: Niels Kofoed; Tunnel Manager: Christof Metzger; Engineering Manager: Matt Bartlett; Safety Manager: Paul Weisheit; Quality Manager: Kevin Krank; Information: (503) 290-7000.

PENNSYLVANIA

Delta

Delta Power Plant Intake/Discharge Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing jacking a 1,500-ft long steel casing under the Susquehanna River to facilitate the construction of intake and discharge pipelines for a new 545 megawatt power plant. The casing is being jacked through hard rock and soft silt using a 60-in. diameter MTBM. Information: Eric Eisold, eisold@bradshawcorp.com.

SOUTH CAROLINA

Rock Hill

Manchester Creek Sewer Interceptor Bradshaw Construction Corp.

Bradshaw Construction Corp. is constructing jacking a 300-ft long steel casing under Interstate 77 in Rock Hill, S.C., for a sewer line. The casing is being jacked through residual soils using a 60-in. diameter MTBM. Information: Eric Eisold, eisold@bradshawcorp.com.

VIRGINIA

Arlington

Potomac Interceptor Bradshaw Construction Corp.

Bradshaw Construction Corp. is preparing to construct three sewer tunnels under Arlington National Cemetery. Two of the tunnels will be direct jacked 48-in. RCP, and the third is a 60-in. steel casing. Ground conditions range from rock to loose, wet sand. An MTBM will be used to mine the tunnels. Information: Eric Eisold, eisold@bradshawcorp.com.

Crystal City

National Center Sanitary Sewer Bradshaw Construction Corp.

Bradshaw Construction Corp. has started to construct a 1,900-ft long sewer tunnel under Jefferson Davis Highway. Support is by 68-in. rib-and-board. Ground conditions consist of loose to dense sand near the water table. A conventional TBM is being used to mine the tunnels. The project also includes five structures and a tie-in to the existing system. Information: Eric Eisold, eisold@bradshawcorp.com.

Woodbridge

Cow Branch Sewer Replacement Bradshaw Construction Corp.

Bradshaw Construction Corp. is preparing to perform 950 ft of pipe jacking as part of the Cow Branch Sewer Replacement project. Bradshaw will be microtunneling under a branch of the Potomac River to install a 36-in. sanitary sewer line between Neabsco Road and Blackburn Road. The soil conditions will be very soft silts and clays below the ground water table. Information: Doug Piper, dpiper@bradshawcorp.com.

Fairfax

Corbalis to Fox Mill 54-in. Water Main Kassouf/Clinton Road Equipment JV

The project for Fairfax County Water Authority consists of 8,400 ft of 99-in. TBM excavated rock tunnel and 2,400-ft of open cut (subcontracted to Casper Colosimo & Son Inc., Pittsburgh). The tunnel will be lined with 54-in. cement coated American Spiral Weld Pipe.

The TBM is under rebuild by Clinton Road Equipment in Kassouf shops in Ohio together with the trailing gear and

backup. A new rock cutterhead has been ordered from Lovat.

The main launch shaft overburden excavation is complete and rock drilling excavation has started. All four sites have been developed. There is still an easement issue that is causing a delay. This was expected to be resolved by mid-May. Ground modification operations for the tunnel include roughly 200 ft of two-pass permeation grouting.

Project Manager: Jim Foley. Information: (216) 409-3416.

WASHINGTON

Seattle

University Link Light Rail, Contract U220 Traylor/Frontier Kemper JV

The job consists of a large slurry wall excavation at the University of Washington station, from which two side-by-side EPB TBM tunnels will be mined. Each tunnel is approximately 11,400 lf, with 16 cross passages connecting the running tunnels. The TBM will erect the final lining of bolted, gasketed, precast concrete segments. Once mining is complete, a concrete invert and sidewalk will be placed.

Full Notice to Proceed was given for Jan. 4, 2010. The full project team has arrived on site, and early utility work has begun. Slurry wall construction for the station box is scheduled to begin in mid-summer 2010. Two Herrenknecht EPB TBMs have been ordered with arrival set for spring 2011. A joint venture of Condon Johnson and Nicholson has been subcontracted to perform the site shoring work as well as the slurry wall construction.

Project Manager: Dave Ferguson, Project Engineer: Michael Krule, P.E. Information: (206) 285-8888.

Bothell

Brightwater Conveyance System - East Contract Kenny/J.F. Shea JV

This \$130.8 million project includes 14,050 lf of 18-ft, 10-in. EPB TBM mined tunnel using 16-ft, 8-in. ID bolted, gasketed precast concrete segments for a primary liner and related shaft construction. The Lovat TBM completed mining in November 2009. During the drive, numerous compressed air interventions were required with entry pressures topping out at 48 psi.

The tunnel was stripped of mining utilities and the pipe placement followed for the installation of the 56,000 ft of piping (four runs of 27-, 48-, 66- and 84-in. steel pipe at 14,000 lf each) and the 52,000 ft of fiber-optic cable (three runs). After all of the pipe and cable was installed, the grout crews started the placement of the 70,000 cu yd of cellular grout. It was anticipated that the grouting would be completed in March 2010 followed by

the repair of the polyurethane lining at the grout ports, pipeline acceptance and tie-in to the new plant piping.

Tunnel Division Manager: Ted Budd; Project Manager: Luminita Calin; Project Engineer: Jake Taylor; Asst. Project Engineer: Tony Huphauf; QA/QC Manager: Erik Simonson; Project General Superintendent: Jack Finn; Electrical Superintendent: Dale Wold; Warehouse Manager: Terry Walls; Safety Manager: Rick Sutton; Home Office Sponsor: Austin Cooney. Information: (847) 541-8200, tedbudd@kennyconstruction.com.

Richmond

Brightwater Conveyance System – West Contract

Jay Dee/Coluccio/Taisei JV

The project consists of approximately 21,100 lf of 13-ft diameter segment lined tunnel, constructed with an EPB TBM, 500 lf of 84-in. microtunneled effluent sewer and one portal structure for TBM launching.

The JV successfully launched the TBM starting on September 10, 2008 and mined past the BNSF RR tracks less than 60 ft from the tunnel eye with virtually no movement or disruption to the tracks. As of Feb. 3, 2010, 4,163 rings had been installed for a total length of 20,815 lf. The best week was 580 lf and the best day was 130 lf.

In January 2010, King County started negotiations with the JV to continue past the Ballinger Way Shaft to finish Central Contract. The Central Tunnel production had encountered problems and the TBM for that project was stalled about 10,000 lf short of the Ballinger Way Shaft. In April there was an agreement in place between Jay Dee Contractors Inc. and Frank Coluccio Construction Co. and King County.

Taisei Inc., from Tokyo, decided not to participate because of the uncertainty in the international market and prior commitments. The JV was given NTP on April 12.

It is anticipated that the TBM will complete the last 150 lf of the original West Contract in late June. Then while in the Ballinger Way shaft rebuild the cutter head completely, enhance the seals and articulation joints and replace all tail seal brushes including adding a fourth row with a longer tail can. Resumption of tunneling on the new BT3C section should start before the end of September 2010.

Managing Partner for the JV: Thomas S. DiPonio; Project Manager: Greg Hauser; General Superintendent: Tom McMahon; Walkers: Martin Vales, Eucario Ramirez; Project Engineer: Gregg Olsen; Tunnel Engineer: Mina Shinouda; Tunnel Heading Engineers: Peter Wang, Will Hodder; Health and Safety Officer: Al Hockaday; Office Manager: Renee Halley; Microtunnel Manager: Bill Aus-

tell. Site environmental services are provided by Kroner Environmental Services and Ken Hicks is the full time site manager for Kroner.

For King County, Judy Cochran is the Project Representative. Brad Cowles of Jacobs Engineering is the Resident Engineer, and Mike Cole of EPC Consultants is the Assistant Resident Engineer. Ken Rossi of EPC Consultants is the Chief Inspector, Carl Neagoy and Stan Burns are tunnel inspectors. John Giandrone of Jacobs Associates is the Design Engineer. Information: (206) 542-2865.

Brightwater Central Vinci/Parsons/FKCI JV

This four-year, \$210 million project includes two 14.33-ft diameter segmental lined tunnels – one 21,100 lf (BT-3) and the other 11,600 lf (BT-2) – both to be constructed using mix shield slurry TBMs. As of March 2010 the BT-2 TBM “Helene” had advanced 8,855 ft and the BT-3 TBM “Rainier” had advanced 10,085 ft.

Project Manager: Thierry Portafaix; Deputy Project Manager: Shane Yanagisawa; Project Engineer: Yvonnick Rescamps. Information: Steve Redmond, Superintendent, (206) 766-8106.

WISCONSIN

Milwaukee

Jones Island Harbor Siphons Job Shea/Kenny JV

Both tunnels and three shafts have been completed. The high level sewers have been diverted into the new valve chambers. The low level sewers were to be diverted in April-May 2010.

Personnel: Project Superintendent: Jerry Straube; Office Manager: Bonnie Senkowski; Vice President: Martin Vliegthart.

Inland Storage System (ISS)

North 27th Street ISS Extension Shea/Kenny JV

The 23-ft diameter bored tunnel broke through on June 25, 2009. Progress was slowed considerably by unexpected water intrusion (3,000 gpm). The tunnel was being lined with concrete to 21-ft diameter and was expected to be complete by April 1.

Project Manger: Leonard Postregna; Project Superintendent: Ron Walton; Project Engineer: Tim Benson; Project Safety Coordinator: Paul Pietsch; Office Manager: Bonnie Senkowski; Vice President: Martin Vliegthart.

Wauwatosa

Milwaukee County Grounds Floodwater Tunnel Shea/Kenny JV

The Metropolitan Sewerage District Commission announced the low bidder Shea/Kenny with a bid of \$52,255,965.00

to construct a 17-ft tunnel to divert water from Underwood Creek during heavy flooding. A 3,000-ft long tunnel will be excavated through a hill, extending from the creek to Highway 45 to the west end of a basin along Swan Blvd. on the Milwaukee County Grounds in Wauwatosa. The basin is designed to hold 315 million gallons of water. It will slowly drain into the Menomonee River and help ease downstream flood levels. The tunnel is part of a \$100 million County Grounds flood control project.

Tunneling started on Dec. 8, 2009. Tunnel is being driven by a LOVAT EPB at 19-ft, 3-in. diameter and lined with a one-pass 17-ft ID lining.

Project Manger: Leonard Postregna; Project Superintendent: Keith Walter; Project Engineer: Eric Haacke; Project Safety Coordinator: Paul Pietsch; Office Manager: Bonnie Senkowski; Vice President: Martin Vliegthart. Information: (414) 258-2510.

CANADA

BRITISH COLUMBIA

North Vancouver

Seymour-Capilano Twin Tunnel Seymour-Cap Partnership

Metro Vancouver awarded the joint venture a completion contract for the twin tunnels that were partially completed by previous contractor Bilfinger Berger. The fixed price bid of \$181 million will allow completion of the project.

The Seymour-Cap Partnership (SCP) is a joint venture comprised of Frontier-Kemper Constructors, Aecon Constructors and J.F. Shea. The project was awarded in late February 2009 and the notice to proceed was received in early April 2009.

Tunneling resumed in July 2009 in the Treated Water Tunnel (TWT) and one month later in the Raw Water Tunnel (RWT). SCP has advanced approximately 2 km in the TWT and 1.7 km in the RWT. Tunnel excavation is scheduled to be completed before the end of 2010.

Excavation of both tunnels will be followed by excavation of the underground chamber at Capilano by drill-blast methods, excavation of two 270-m deep shafts with raise-bore machines, installation of steel lining with backfill grouting in all shafts and portions of the tunnels, and interconnection pipes from the shafts to nearby water mains. Completion is scheduled for early 2013.

Project Manager: Serge Moalli; Project Superintendent: Ellis Phillips; Field Operations Engineering: Jonathan Prenger; Planning: Richard Boutelle, Farouq Esmail; Tunnel Superintendent: Marc Wagner; Walkers: Jason Sale, Geoff Robinson, John Thorn, Ben Stanton; Office Manager: Sandra S. Prenger. Information: (206) 766-8106.