

Point of Contact

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Introduction & Background

Hatch Mott MacDonald (HMM) is a full service consulting engineering firm serving public and private clients in all areas of transportation, tunnels, water, wastewater, environmental, pipeline and utility markets. Our full range of services includes planning, design, feasibility studies, environmental assessments, project and program management, contract administration, procurement, construction management and project management oversight.

With 56 offices and staff resources of 1,600 throughout North America, we can respond quickly and cost-effectively to any project demand. We have successfully designed and supervised construction of transportation projects throughout the world valued at over \$20 billion, including over 100 transit infrastructure projects.

Our focus on innovation and corporate dedication to quality has been widely recognized with numerous industry awards and accolades from our clients. HMM is ISO 9001 certified with an established quality policy that is actively maintained through audits and project reviews. We have held numerous on-call contracts and understand how to respond to short lead time requests by mobilizing staff and resources. Our Quality, Environment and Safety (QES) system, an ISO 9001 process, provides the procedure for all of our business and project development activities. These processes together with our commitment to bringing the highest quality service to all our clients on every project distinguish us throughout the industry.

Transit, Rail, Program, Project & Construction Management Experience

Hatch Mott MacDonald's rail/transit experience encompasses a broad range of facilities and systems as well as expansion and improvement projects that transit agencies need to provide efficient and cost effective service to riders. We have developed practical and innovative solutions to challenges resulting from site constraints, right of way, environmental factors, historic concerns, costs, and stakeholder and public perception. We also offer our transit clients expertise in a broad range of transit system disciplines including trackwork, electrification, signaling, communications, security, and life safety. For major expansions, we have successfully implemented an integrated team approach to program management. Understanding the key issues typical of public works projects, engaging stakeholders and building strong relationships with clients have contributed to our success. In addition, our staff of highly qualified professionals has a practical knowledge of the rail/transit industry as both consultants and employees of transit agencies.

Our experience in program, project and construction management oversight begins with our own internal project review and controls. HMM integrates all of our core processes into a single overarching project delivery system that encompasses project management plans, risk assessment and management plans, project controls, quality, environment, and safety. Specific key processes to measure performance and audit project progress include:

- Identifying measurable goals and performance
- Assessing, measuring and documenting any public benefits data
- Providing for economic and financial benefit analysis
- Tracking changes throughout life of project
- Status reports

Monitoring reports typically cover the following elements:

- Scope
- Schedule
- Budget
- Staff capabilities & capacity
- Summary of funding agencies & stakeholders
- Expected benefits including ROI analysis
- Safety components
- Corrective actions, when & where necessary

Hatch Mott MacDonald has provided service to transit agencies in Los Angeles, San Jose, Sacramento, Salt Lake City, Portland, Denver, Pittsburgh, Cleveland, Philadelphia, Boston, New York City, Buffalo, Calgary, Toronto, Vancouver, Washington DC, and most recently the Commonwealth of Virginia on a Program and Project Management Services assignment with the Department of Rail and Public Transportation.

Hatch Mott MacDonald's technical expertise in design, maintenance, rehabilitation, and construction includes:

- **ADA compliance**
- **Architectural design & landscaping**
- **Civil and structural engineering**
- **Communication engineering**
- **Constructability/bidability & contract packaging**
- **Construction inspection & management**
- **Cost estimating**
- **Data acquisition systems**
- **Design validation**
- **Facilities electrical & mechanical engineering**
- **Funding and cost analysis**
- **Intermodal design**
- **Life-safety, security & ventilation**
- **NEPA process**
- **Operations planning, management & mobilization**
- **Pedestrian modeling**
- **Project and program controls**
- **Project and program management**
- **Public involvement and stakeholder facilitation**
- **Public private partnerships**
- **Quality assurance/Quality control**
- **Risk assessment & management**
- **Safety and security plans & analysis**
- **Scheduling**
- **Signals engineering**
- **Start-up of revenue operations**
- **Station design**
- **Systems engineering & integration**
- **Trackway engineering**
- **Traction power engineering**
- **Train control**
- **Transit capacity analysis**
- **Transit environment systems**
- **Tunnel and underground structures**
- **Utility relocation**
- **Value engineering**

Representative Projects



Transbay Terminal Development Program

Location: San Francisco, CA
Client: Transbay Joint Powers Authority
Const. Cost: \$ 4.3 Billion

The program will enhance transit service to the region by improving the bus and rail connectivity of six Bay Area transit providers at one facility in downtown San Francisco. The \$2 billion program, the largest transit-integrating, inter-modal center west of New York City, will replace the existing terminal and provide public access to all local bus and rail services. Hatch Mott MacDonald is the program manager for the design, construction, testing and start-up of the DXT project. Specific duties include monitoring design consultant progress in terms of budget and schedule, providing oversight of design development—ensuring in each case that alternatives are thoroughly investigated, reviewing the scope, content, and quality of the design deliverables; and developing deliverables including project cost estimate, contract packaging strategy, and analysis of contract procurement methods.



LIRR East Side Access

Location: New York, NY
Client: Long Island Railroad
Const. Cost: \$4.3 Billion

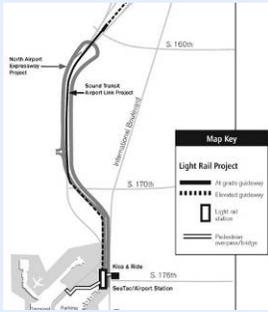
The East Side Access (ESA) Project will relieve present congestion problems and provide commuter passengers of the Long Island Railroad (LIRR) with access to the East side of mid-town Manhattan by extending the MTA Long Island Railroad via tunnel from Queens to the historic Grand Central Terminal in Manhattan. HMM serves as tunnel consultant to the Program Management team, specifically, managing the tunnel design and construction and providing review and advise on tunnel lining, ventilation systems, fire/life safety issues and assessment of tunneling methods.



Salt Lake City Light Rail Extensions

Location: Salt Lake City, UT
Client: Utah Transit Authority
Const. Cost: \$167.5 Million

The Salt Lake City light rail extension project expanded the North/South line 4.1 miles to provide service from downtown Salt Lake City to the University of Utah through the campus to the Medical Center. HMM was the lead systems engineer for the CHS design Joint Venture, providing traction power design, OCS engineering and design services, communications systems design, systems and design integration, combined systems ductwork design, and corrosion control design oversight. HMM also provided construction inspection services for the traction power and overhead contact systems.



The Airport Link

Location: Seattle, WA
Client: Sound Transit
Const. Cost: \$120 to 140 Million

The D770 Airport Link extends from S. 154th Street to Seattle-Tacoma International Airport, providing direct access to the airport from downtown Seattle. The project comprises 0.9 mile of elevated and 0.8 mile of at-grade LRT guideway and a signature station at the southern terminus of the alignment. HMM has been responsible for preliminary and final design as well as bid and design support during construction. Our scope of work includes civil, rail alignment, structural, station architecture, geotechnical, survey, landscape architecture, traffic, cost estimating, and systems integration.



S. Boeing Access Road to S. 154th Street

Location: Tukwila, WA
Client: Sound Transit
Const. Cost: \$231 Million

The D755 S. Boeing Access Road to S. 154th Street segment is the southernmost part of Sound Transit's Central Link light rail line. The 14-mile-long Central Link will provide high-capacity light rail service to the Seattle region's largest population and employment centers. As the project's prime civil and structural designer, HMM is responsible for bid support and design support during construction (DSDC). HMM has served as full-time DSDC coordinator on-site during construction to support client design and line section managers including providing coordination with the City of Tukwila.



Beacon Hill Station and Tunnels

Location: Seattle, WA
Client: Sound Transit
Const. Cost: \$280 Million

The Beacon Hill station and tunnels project is a segment in the new 14-mile-long Central Link light rail line. As the lead JV partner, HMM provided overall project management and controls, detailed design of all tunnels and portals, shafts, and mined station tunnels, including final linings and waterproofing. In addition, HMM provided design support during construction, including the engineering oversight of the critical SEM excavation and support activities.



Market Street Elevated Reconstruction Project

Location: Philadelphia, PA
Client: Southeastern Pennsylvania Transportation Authority (SEPTA)
Const. Cost: \$160 Million

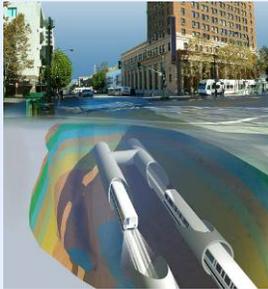
HMM provided engineering services to support the contractor in completing a test program plan for the signal system work; detailed installation drawings; workplans for staging and cutover sequencing; design changes associated with interlocking changes from a single to double crossover; overseeing installation of the signal system; and final documentation including installed drawings and software.



VTA Rail Expansion

Location: San Jose, CA
Client: Santa Clara Valley Transportation Authority (VTA)
Const. Cost: \$1.25 Billion

HMM worked with VTA in an integrated team environment to provide design and engineering oversight services as well as full program controls and construction management services on the following projects: Tasman West Light Rail Expansion (7.6-mile), Vasona Light Rail Extension (5.5-mile), Tasman East Light Rail Expansion (4.8-mile), Capitol Light Rail Extension (3.5-mile), and the Caltrain Rail Expansion Program.



Silicon Valley Rapid Transit Project

Location: San Jose, CA
Client: Santa Clara Valley Transportation Authority (VTA)
Const. Cost: \$6.1 Billion (year of expenditure dollars)

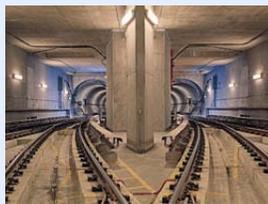
The Silicon Valley Rapid Transit Project (SVRT) will extend the existing Bay Area Rapid Transit (BART) third rail transportation system 16.3 miles from Warm Springs to Milpitas, San José and Santa Clara. HMM is responsible for the design and construction management for the tunnel segment; and project management support services, and project cost, maintaining trend log and estimating changes, performing independent cost estimates of proposed changes, and schedule controls for the entire SVRT project. We are also providing the Project Director for the engineering design phase. Project controls include scheduling, budget and cost control, estimating, and document control.



Tacoma Link Light Rail Systems

Location: Tacoma, WA
Client: Sound Transit
Const. Cost: \$80 Million

Tacoma Link is a 1.6-mile segment of light rail that runs from Freighthouse Square to the central business district. HMM performed project scheduling and provided final design, engineering support and training for the overhead contact system to the prime systems contractor. The work was performed under a Design/Build contract with Sound Transit to install the owner-furnished, 750 Vdc traction power substations as well as to design and install the signal, control and overhead contact systems.



LA Metro Red Line North Hollywood

Location: Los Angeles, CA
Client: Los Angeles County Metropolitan Transportation Authority
Const. Cost: \$1.3 Billion

The 6.3-mile Metro Red Line North Hollywood Extension (Segment 3) extends the rail line to serve North Hollywood. HMM's services included constructability analysis, maintenance procedure manuals, pre-construction surveys, contractor bid evaluation and geotechnical services. Construction services included resident engineering, contract management, scheduling, estimating, reporting, document control, cost engineering, process payments, submittals, quality control, systems safety and assurance, environmental, third party coordination, community relations, surveys, testing and startup and final acceptance.



Mission Valley East LRT Tunnels

Location: San Diego, CA
Client: Metropolitan Transit Development Board
Const. Cost: \$80 Million (tunnel segment)

The Mission Valley East Light Rail Project extends the San Diego Trolley from Mission San Diego to the Orange Line at Baltimore Drive. The project was separated into a guideway contract and a tunnel contract. HMM's services included preliminary design for a twin-tunnel design with connecting cross-passages and a mined underground station to be constructed by conventional mining. HMM produced preliminary drawings and specifications; final design for the revised alignment; design of the ventilation system, and a simulation analysis for fire/smoke modeling and ventilation system operation for fire/life safety measures.



California High Speed Rail

Location: CA
Client: California High Speed Rail Authority (CHSRA)
Const. Cost: N/A

The proposed California High Speed Train (HST) system will stretch 700 miles from San Francisco and Sacramento to San Diego, and link the states major metropolitan areas. As part of a joint venture team, HMM will prime two sections, the Palmdale to Los Angeles as the lead JV partner and the Fresno to Palmdale. Also, HMM is a sub-consultant on the LA to Orange County section. HMM services will include project management, preliminary design, environmental engineering, permitting and right-of-way acquisition services.

Grand Central Terminal Ventilation Study

Location: New York, NY
Client: Metro North Rail-Road
Const. Cost: \$10Million

Grand Central Terminal consists of three sections: the main concourses, the trainshed and associated tunnels. The trainshed area experiences extreme temperature variations. Using CFD and other modeling techniques HMM identified trends and simulated different ventilation configurations to predict their effect on temperatures within the trainshed. The models led to the development of a design to substantially reduce the trainshed temperatures.



Union Station Rail Corridor Renewal Program

Location: Toronto, ON
Client: GO Transit
Const. Cost: \$600 Million

As a key member of the HDI Joint Venture, HMM is providing overall program management services of the Union Station rail corridor renewal program in Toronto. Toronto's Union Station is at the heart of the program. Its 15 tracks service 250 GO Transit train movements on a daily basis, plus CP, CN, VIA and ON Rail movements. Passengers transferring between the commuter trains and the TTC trains also affect the volume of traffic at this station.



Shepherd Subway

Location: Toronto, ON
Client: Toronto Transit Commission (TTC)
Const. Cost: \$934 Million (excluding vehicles)

As a principal joint venture partner, HMM was responsible for overall program management including funding, project controls, procurement and contract administration. HMM provided direction and guidance of the Environmental Assessment approvals; community consultation, liaison and outreach programs, design and construction management; third party, stakeholder and utility coordination; property and right-of-way; development of design standards and manuals as well as system standards; commissioning, start-up, safety certification and training; and design of systems elements.



Calgary LRT Northeast Extension

Location: Calgary, AL
Client: Calgary Transit LRT
Const. Cost: \$66 Million

The 2.65 km extension of the Northeast LRT line in Calgary from Whitehorn Station to McKnight-Westwinds was a on an existing railway right-of-way and included connections to the new Oliver Bowen Maintenance Facility. As part of a design-build team, HMM provided the systems elements for the project. The scope included traction power, overhead catenary, and communications and signaling systems. HMM also provided the baseline budget and schedule as well as ongoing management for the control and communication of the signaling work.

