

Infrastructure advisory for today's complex projects

Developing solutions that are cost-effective and resilient



Today's major projects need smart strategies and focus

Our communities are growing

An expanding population, urbanization, and the demand for better service have shown that reliable and sustainable infrastructure is more important than ever. Infrastructure projects are responding by becoming bigger and better: they span multiple delivery phases, they require larger project teams, and when built, they service more users than ever before. With more stakeholders and discipline streams involved over a multi-year project process, these infrastructure projects need forward-thinking experts who can identify and mitigate risks before they begin and help guide overall delivery.



Better informed to build better projects

Project owners have the vision. They recognize the need and can visualize the future outcome, but how do we get there? Technical advice and risk assessments by an industry professional can help set the foundation for a successful project. Pertinent information that analyzes risks from cost, schedule, and organizational points of view can refine strategy and define the procurement and execution approach.

Project partners needed

A trusted, long-term relationship with an industry consultant who understands the current market and the major players in construction, finance, legal, and engineering can get your project where it needs to go. Mott MacDonald is your partner.

To relieve traffic congestion and improve safety, the Alabama Department of Transportation will build an eight-mile, six-lane cable stay bridge across the Mobile River, as well as new interchanges. As Project Manager, Mott MacDonald oversees all aspects of this complex \$2 billion project, the first public-private partnership (P3) undertaken by the Department. We are also leading the design for the East Approach, including surveying, storm surge modeling, and bridge, coastal, and roadway design.



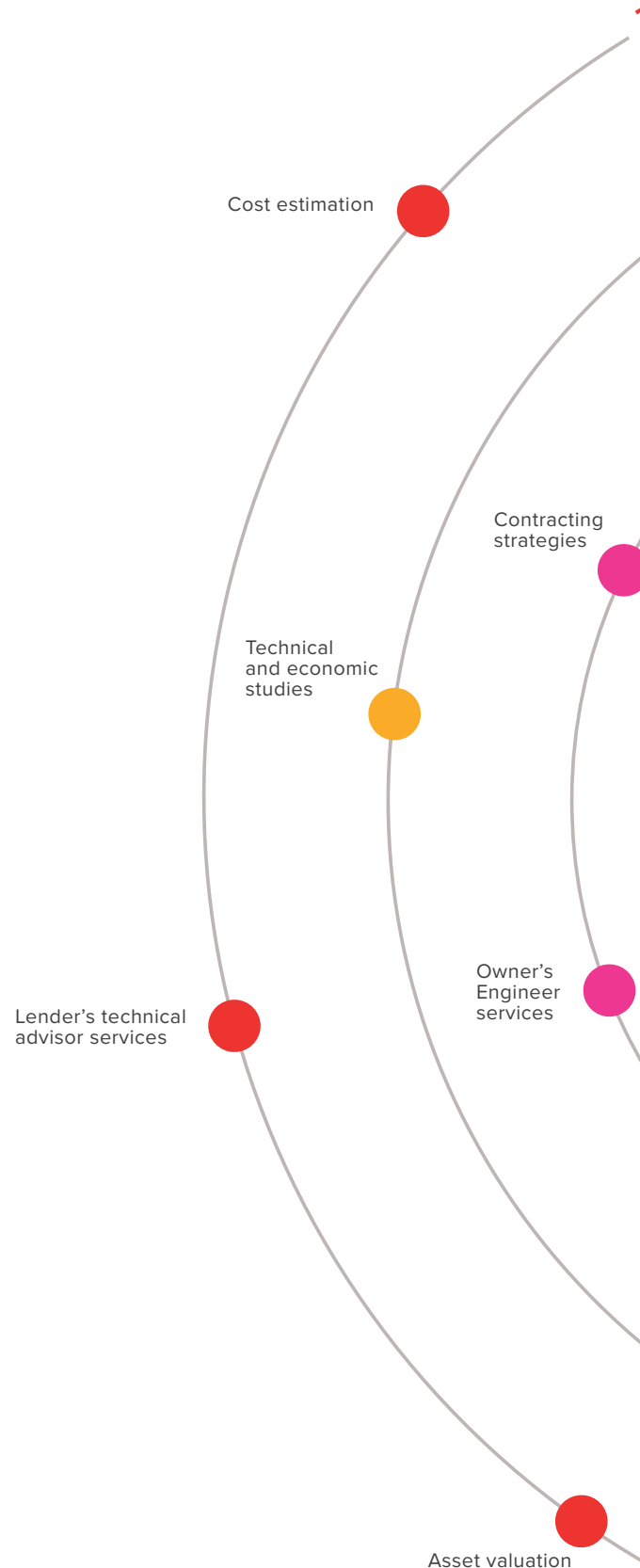
Long-term partnerships lead to successful projects

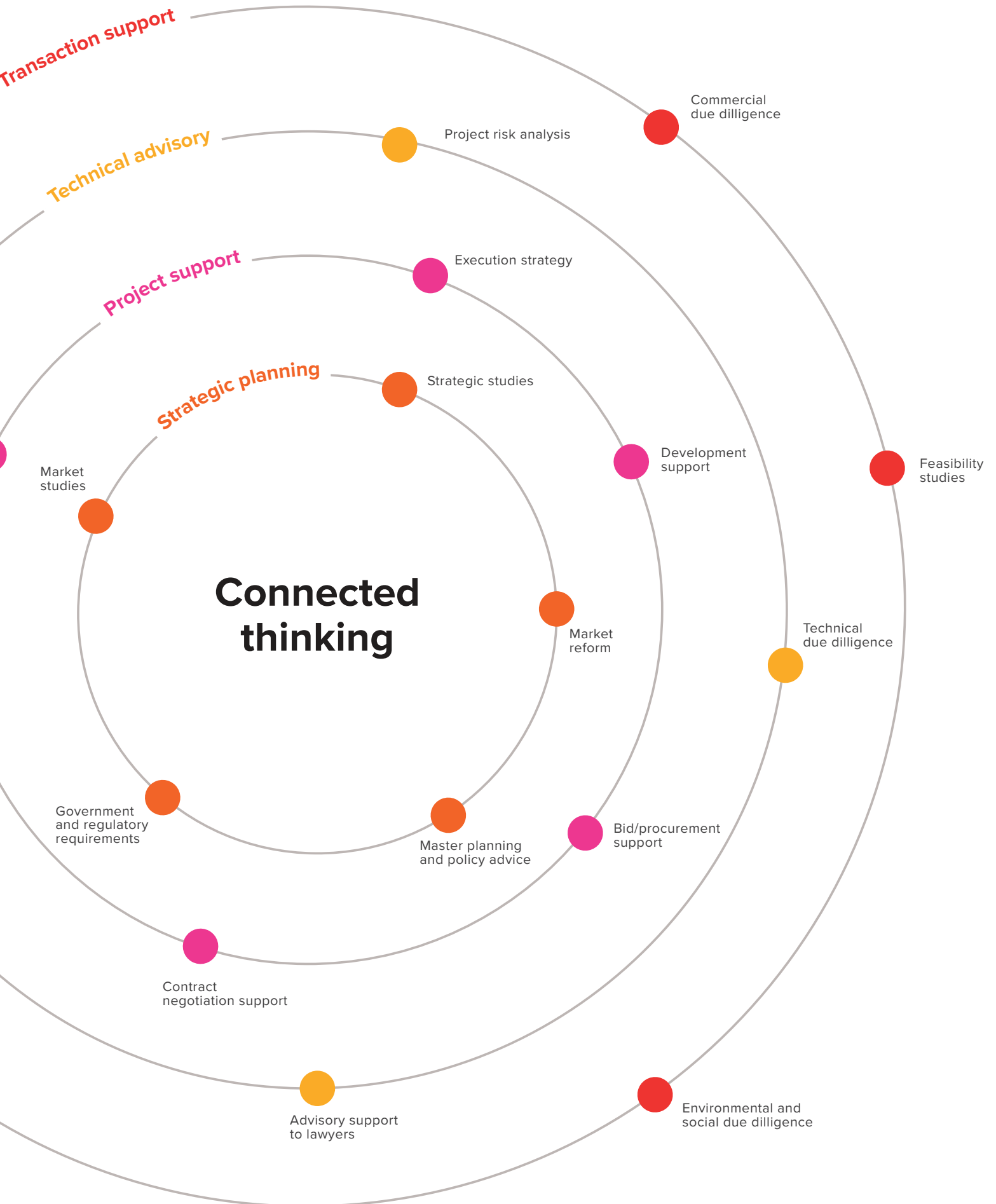
We work with you from the very beginning — building trust, focusing your strategy, and finding ways to add value to your project.

Mott MacDonald is a global leader in project advisory and delivery. Our integrated team of subject matter experts are strategically located around the world and help clients develop, procure, and manage complex projects while keeping key drivers in mind: value for money, whole life cost, and long-term resiliency. Even before a project begins, we are building trusted relationships with owners, contractors, consultants, operators, and financial and legal advisors, with the goal of successfully delivering your project.

Working with us means you receive a long-term, trusted project partner. We will work with you to understand and effectively plan every phase of your project, from business case development and funding applications to procurement, design, construction, and operations and maintenance. Your project will benefit from our decades of experience with diverse clients and projects. Together we will tailor an approach that is unique to you and your goals.

Let's open more opportunities with connected thinking.



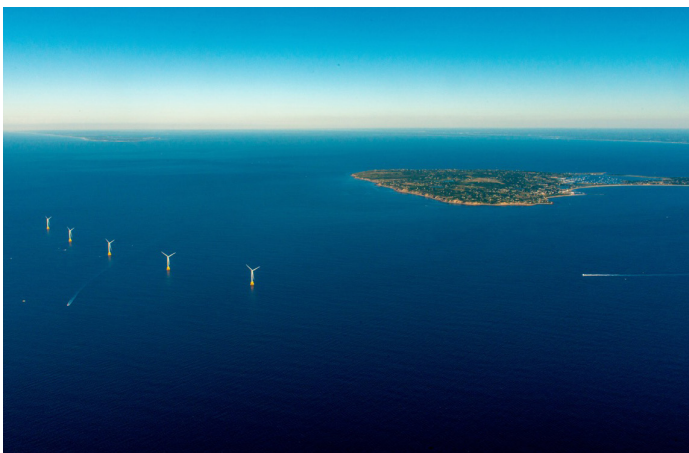


Power

Harnessing the wind at Block Island

Opportunity

For many years, Block Island, about 14 miles (23 kilometers) off the coast of Rhode Island, depended on polluting diesel generators for its electricity. Residents paid some of the highest electric rates in the country. The Block Island Wind Farm, the first offshore wind farm in the US, was designed to change all that.



Project

Block Island Wind Farm

Location

Block Island, Rhode Island

Client

Deepwater Wind

Expertise

Lenders' technical advisor,
construction monitoring



Outcome

Five wind turbines generating 30 megawatts of power now produce more than 125,000 megawatt-hours per year, allowing the diesel generators to be retired and cutting up to 40% from local electric bills.

Jeffrey Grybowski, CEO of Deepwater Wind, said, “Mott MacDonald is a world-class engineering and consulting firm with market-leading experience in the offshore sector. We are proud to have them as part of the Block Island wind farm team and their insight into this complex industry has proven invaluable.”

Solution

Mott MacDonald served as the lenders’ technical advisor during the project’s due diligence phase, reviewing project design, construction schedule, yield assessment, climate conditions, financial models, and permitting. Mott MacDonald monitored construction as an independent engineer, including scoping documents, schedule and construction tracking, site visits, and reporting to lenders.



The Block Island Wind Farm generates enough electricity to power more than 17,000 homes.

Clean, reliable power for Vancouver Island

Project

John Hart Generating Station
Replacement Project

Location

City of Campbell River,
British Columbia

Client

InPowerBC General Partnership

Expertise

Due diligence, construction
monitoring, geotechnical
risk allocation

Opportunity

The John Hart Generating Station, an important source of energy for the communities on Vancouver Island, has been operating since 1947. The project was marked for an upgrade, which will increase the annual power output to supply 80,00 homes. Other upgrades included a replacement water intake at the spillway dam, new penstocks and tunnel, and a new generating station and water bypass facility.



Solution

Mott MacDonald has worked on the project since its early beginnings, providing valuable review and due diligence services for the financial lenders. We have had a long-term relationship with the lenders for this project, working with them since the bid stage.

As Lenders' Technical Advisor, we provided an independent technical review and due diligence and advice to the lenders. Our advisory team has leveraged Mott MacDonald's global expertise by engaging the tunnels and hydroelectric teams to deliver sector-specific technical knowledge and context. Currently, we are monitoring construction progress on behalf of the lenders and providing updates on supervening events and disputes.

Outcome

By providing an analysis of the project risk, communicated in a way that met our clients' expectations, the project successfully secured private financing. Our global hydropower expertise, combined with our knowledge in public-private partnership (P3) best practice, was leveraged to provide comfort to the lenders that the standard Partnership BC model could be adapted to deliver a successful energy project.



Healthcare

Managing construction for Canada's biggest P3 healthcare project

Opportunity

A major investment for the City of Montreal, the Centre Hospitalier de l'Université de Montréal (CHUM) will consolidate three aging university hospitals in Montreal, combining teaching, research, and healthcare. The project requires design and construction that can be executed on the confined site of the existing St. Luc Hospital.

Solution

Mott MacDonald is the Independent Certifier for the construction phase of the CHUM project, responsible for checking the compliance of the facility against the clients' requirements, and ultimately certifying that substantial completion is achieved.

Outcome

CHUM will be the most important public research center in Quebec, and a major training center. It will provide specialized and ultraspecialized care in 35 medical disciplines. CHUM is expected to serve about 22,000 inpatients, 65,000 emergency patients, and 345,000 outpatients each year.

Project

Centre Hospitalier de l'Université de Montréal (CHUM)

Location

Montreal, Quebec

Client

CHUM, Collectif Santé Montréal, Fiera-Axium, Acciona, HSBC Infrastructure Consortium

Expertise

Compliance certification



CHUM is designed to take advantage of natural light and provide open and welcoming spaces and beautiful views of Montreal. The architecture of CHUM embraces the principles of sustainable development, and is intended to achieve Leadership in Energy and Environmental Design (LEED) Silver level.

Beyond bricks and mortar

Project

Stanton Territorial Hospital
Renewal Project

Location

Yellowknife, Northwest Territories

Client

Department of Public Works and
Services, Government of the
Northwest Territories (GNWT)

Expertise

Technical advisory, facility management,
due diligence, procurement
advice, operational readiness

Opportunity

The city of Yellowknife, the capital of the North West Territories, was founded in 1934. Three years later, the Con Mine hospital began serving the first gold mine in the region.

Over the years, the hospital grew and changed locations, until a modern new facility was built in 1988. The new hospital achieved the highest level of accreditation in 2011 — but improvements were needed, from new rooms and an expanded emergency department, to new laboratory and imaging space.

Solution

Originally appointed as the facility management advisor for the project, Mott MacDonald soon began working alongside the legal and architectural advisors. We developed the output specifications, including the lifecycle and handback requirements, and collaborated with other project advisors to fine-tune the payment mechanism and procurement documents.

We identified potential opportunities for innovation, developed maintenance and lifecycle costs, identified key performance indicators, undertook scenario modeling, and developed evaluation criteria for Requests for Proposal. Our approach to calibration and market testing of the payment mechanism enabled the client to avoid onerous penalties.

Outcome

Our innovative, market-accepted facility management proposals helped the client achieve a compliant and affordable contract. For the next phase of the project, we are addressing facility management issues during construction, preparing the client for operational readiness (including contract management training), and conducting operational audits. We have been named the facility management advisor for the operational readiness phase.



Highways



The Portsmouth Bypass is a safer, faster, more efficient route that will save drivers up to 16 minutes per trip.

Smoothing the way for complex highway projects

Opportunity

Drivers in southern Ohio have had to contend with the many traffic signals, intersections, and driveways that interrupted traffic through the Portsmouth area.

The Southern Ohio Veterans Memorial Highway, also known as the Portsmouth Bypass, is a 17-mile (27-kilometer), 4-lane divided highway that will allow drivers to take a faster, safer, more efficient route around the city.

Solution

Mott MacDonald served as project coordinator and provided technical advisory and coordination services in support of this complex design-build-finance-operate-maintain (DBFOM) project.

We assisted the Ohio Department of Transportation and the project team in reviewing and evaluating options to bring this greenfield facility to reality. Mott MacDonald assisted with the project development strategy and master delivery schedule, provided procurement advisory services, reviewed technical documents and studies, and helped with industry outreach.

Outcome

The Portsmouth Bypass will allow drivers to avoid many interruptions along the 26 miles of the current route, saving up to 16 minutes per trip. The project will improve safety, mobility, and transportation efficiency in the region.

Project:

Portsmouth Bypass

Location

Scioto County, Ohio

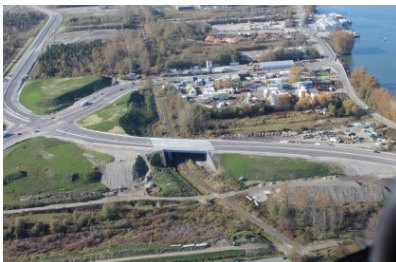
Client

Ohio Department of Transportation

Expertise

Technical advisory and coordination services

Helping project owners understand risk



Project

Project Garnet

Location

Delta and Surrey, British Columbia

Client

Fiera Infrastructure

Expertise

Technical advisory, due diligence, cost analysis, benchmarking, contract reviews

Opportunity

The South Fraser Perimeter Road is part of Highway 17 in Metro Vancouver, connecting the Tsawwassen Ferry Terminal in southwest Delta to 176 Street (Highway 5) in north Surrey. It also connects Highways 1, 91, 99, and the Golden Ears Bridge.

The Perimeter Road was procured as a P3 project with a design-build-finance-maintain model. After design and construction, the concessionaire planned to sell the project in a secondary market sale transaction.

Solution

As technical advisor, Mott MacDonald worked closely with a potential private buyer to review the current state of the project and assess the risks of taking on this asset. Our team managed and delivered a due diligence mandate that assessed the relationship

structure between the new consortium and the province and reviewed the existing and future rehabilitation and maintenance budgets.

We mobilized a team of subject matter experts in transportation infrastructure, pavement management, and geotechnical engineering who brought valuable technical knowledge and context to the due diligence activities.

Outcome

Our client benefited from our experience with advising future project owners on contractual requirements, organization, and risk allocation and sharing. Cost benchmarking helped our client understand the remaining operations and maintenance costs, and the social and horizontal infrastructure, enabling it to make an informed decision.

Railways

San Francisco to LA
in 2 hours, 40 minutes



Courtesy of Newlands Company

California High-Speed Rail will move people, goods, and services more efficiently, cut greenhouse gas emissions, and reduce the state's dependence on foreign oil.

Opportunity

From 2000 to 2050, the population of California is projected to increase from 35 million to 60 million. The California High-Speed Rail project will help serve them with a bullet train running 520 miles (837 kilometers) between San Francisco and Los Angeles.

Solution

Over a five-year period, Mott MacDonald provided project management, preliminary design, environmental engineering, permitting, and right-of-way acquisition services for three segments of the system, each with challenging elements.

Mott MacDonald is currently studying plans for new high-speed rail stations at Gilroy and Merced, and helping identify potential sources of revenue, such as outsourcing the construction of parking structures and operations, and capturing value from land development within a half-mile radius.

Outcome

California High-Speed Rail is expected to create an estimated 100,000 construction jobs each year of construction and to generate 450,000 permanent new jobs across the state, due to its contribution to economic growth.



Project

California High-Speed Rail

Location

California

Client

California High-Speed Rail Authority

Expertise

Project management, preliminary design, environmental engineering, permitting, and right-of-way acquisition

A new transit vision for Edmonton LRT

Opportunity

Since the late 1970s, the City of Edmonton has pursued alternative and sustainable modes of transportation, focusing on light rail transit (LRT) and building a compact and livable city.

The Valley Line is a 17-mile (27-kilometer) low-floor urban line running from Mill Woods to Lewis Farms and crossing downtown Edmonton — separate from Edmonton's existing high-floor LRT system. Developing the route, station locations, and connections to pedestrian and cyclist pathways required extensive public consultation, as well as the system's overall design philosophy and public art opportunities.



Project

Edmonton Valley Line LRT

Location

Edmonton, Alberta

Client

The City of Edmonton

Expertise

Technical advisory, engineering, systems engineering, operations and maintenance, life-cycle management, cost facilitating, procurement

Solution

Mott MacDonald has long been a key consultant for the City (originally as HMM, a joint venture of Mott MacDonald and Hatch). As part of the ConnectEd Transit Partnership, we served as the City of Edmonton's owner's engineer and P3 technical advisor for the proposed Valley Line LRT.

Our team also helped complete the preliminary engineering phase and finalize the P3 project delivery documents for the implementation of an 8.7-mile (14-kilometer) Stage 1 from downtown to Mill Woods. We provided proponent evaluation services during the procurement phase of the Request for Proposal.

Outcome

The City decided to procure the Valley Line as a P3, which offers benefits in cost savings, risk management, and infrastructure warranties. The Stage 1 southeast portion of the Valley Line is currently under construction and is expected to be open to the public by 2020. The new line will feature modern, low-floor light rail vehicles running along existing streets and integrating with Edmonton's neighborhoods.



Water and wastewater

Turning the sea into drinking water

Opportunity

San Diego County has limited local water resources, with relatively small aquifers and no major rivers. In recent decades, the county has imported more than 80% of its water from Northern California and the Colorado River.

The Carlsbad Desalination Project is an important part of the San Diego County Water Authority's long-term strategy to improve the reliability of the region's water supply by diversifying the sources of supply.



Project

Claude "Bud" Lewis Carlsbad Desalination Plant

Location

Carlsbad, California

Client

Stonepeak Infrastructure Partners

Expertise

Technical advisory services including due diligence, document review, and oversight

Solution

The Carlsbad project was developed by Poseidon Water under a 30-year Water Purchase Agreement with the Water Authority. Mott MacDonald provided technical advisory services to Stonepeak Infrastructure Partners, the private equity investor for the project, from the project initiation to plant commissioning and testing.

Mott MacDonald's services included pre-award due diligence, pilot testing and plant design documents review for compliance with Water Purchase Agreement requirements, advisory on technical issues during construction, and oversight during plant commissioning and performance testing.





Outcome

The Carlsbad Desalination Plant began operation at the end of 2015. The plant can produce up to 56,000 acre-feet of water per year, or 50 MGD: enough to meet the needs of about 400,000 people. The plant accounts for about a third of all water generated in San Diego County.

The Carlsbad Desalination Plant will reduce San Diego County's the need to import water.

Opening opportunities with connected thinking.

For more information, write to
americas@mottmac.com or call 800.832.3272.

mottmac.com