

VEHICLE ENGINEERING

MODERN TRAINS FOR A MODERN WORLD



Jacobs has extensive, global experience in rail vehicle engineering projects with a focus on new vehicle procurements, technical advisory services, modification designs, performance simulations, testing and commissioning efforts, condition assessments, manufacturer audits, maintenance optimization, and major overhaul and modification programs.

OUR APPROACH

Jacobs brings an owner's perspective to our approach to vehicle procurements, overhauls, and services. We offer a balance of commercial experience and technical expertise, a deep bench of experts, and a focus on results backed by strategic oversight. Our goal-oriented approach is supported by an ability to get into technical detail when needed. We think holistically, focusing on performance and results over prescriptive requirements.

PROJECT EXAMPLES

SERVICES PROVIDED

- Fleet plans
- Cost benefit analysis
- Alternatives analysis and simulation
- Requirements Development and Specification writing
- Procurement Support Engineering support and review
- Manufacturing phase support
- Testing and safety analysis
- Maintenance support
- Reliability improvement and overhauls
- Engineering design
- Maintenance Facility planning and design

For more information contact our Global Principal for Vehicle Engineering, **Gavin Fraser** at railandtransitinfo@jacobs.com.



Light Rail Vehicles for San Francisco

Jacobs has supported the LRV4 procurement from Siemens since its inception, developing the strategy for a 260-car complete fleet replacement, addressing service reliability, and growth and capacity needs. Jacobs supported SFMTA through the procurement phase, including requirements definition, bid phase support, proposal review, and support of contract award. Our ongoing scope includes engineering, quality, operations and maintenance, and analytical tasks through the design, production, and testing phases.



VIA Rail Canada Fleet Renewal

VIA Rail is procuring a fleet of 32 trainsets from Siemens to operate their Montreal-Toronto-Windsor Corridor passenger service. Jacobs was responsible for finalizing the technical requirements and played a key role in evaluation and negotiation during the procurement. During project implementation we review designs, to ensure their suitability and compliance with the technical specification, and provide quality assurance services.

Jacobs is also supporting business case, and requirements and technical specification development for a fleet to those operating the remainder of VIA Rail's services across Canada, including specialty cars offering high levels of customer service.



Electric and Battery Electric Multiple Units in the UK

Merseytravel is modernizing the Merseyrail Electrics network to meet the growing needs of the Liverpool Region with a fleet of Class 777 Electric Multiple Units from Stadler. Seven of these are Battery Electric for use on non-electrified lines. Jacobs provides the technical and engineering resource for the project team and supports Merseytravel in the commercial, project, engineering, quality, safety, sustainability, risk, and approvals management activities across the breadth of the procurement program. A core multidisciplinary team is embedded in the project team, calling upon our wide range of experts as and when necessary.



Kuala Lumpur Metro

Jacobs provide design review services, on site resident engineers, technical support and certification to Prasarana to support their fleet. Projects delivered include: Procurement of new driverless Alstom Innovia trains including wayside upgrading; and Overhaul and modification, including new propulsion controls, of trainsets from Prasarana's original Bombardier fleet.



Battery Locos for Australia

Jacobs is delivering multiple projects as Owners Engineer for decarbonization of rail operations for several freight operators across Australia. Work includes specification, procurement support, engineering, and design review for purchases of battery electric locomotives, as well as design and engineering associated with conversion of locomotives from diesel to battery power.



Some of our other representative projects include:

- Amtrak ACS-64 Electric Locomotive procurement and TSSSA support
- Baltimore MTA Light Rail Vehicle Overhaul
- Battery Electric Locomotives for several Australian Freight Operators
- Boston MBTA Red and Orange Line subway cars
- California – Charger Locomotives, Venture Coaches and hydrogen fuel cell multiple units and locomotive prototype
- Etihad Rail Locomotive, Freight Car and Passenger Trainset procurement
- Irish Rail Electric and Battery Electric Multiple Units
- Kuala Lumpur Metro Car Procurement and Overhaul
- London Underground Engineer's Vehicles Modification Design
- Los Angeles Metro P3010 Light Rail Vehicles
- Melbourne Suburban Rail Loop Electric Multiple Units
- Toronto Metrolinx Light Rail Vehicle Procurements
- New York City Transit R211 Subway Cars
- Oklahoma City Streetcars
- San Francisco MTA Light Rail Vehicles
- VIA Rail Long Distance Locomotive and Coach Fleet Replacement.



Link to our website: <https://www.jacobs.com/solutions/markets/infrastructure/transportation/rail-transit>