

Testing train control systems in London...catenary design in Taipei...start-up services in Cairo...traction power and signal systems in Seattle's bus tunnel. All over the world, PB Transit & Rail provides systems engineering for every kind of rail and mass transit project.

The First Name in Transportation

Part of the Parsons Brinckerhoff (PB) group of companies, PB Transit & Rail Systems draws on the resources of a century-old, 5,000-person-strong firm with multidisciplinary capabilities in all phases of project delivery, from planning and design through construction management and operations.

Parsons Brinckerhoff is consistently ranked the leading transportation engineering firm by *Engineering News-Record*, a distinction we earn by repeat business from clients who know we deliver value. We have planned, designed and managed the construction of more miles of rail and transit systems than any other firm.

Beginning with the first New York City subway, which our founder, William Barclay Parsons, designed at the turn of the century, PB has worked on many of the world's great transit systems, and we have been involved in virtually every major transit system in the United States. Parsons Brinckerhoff was instrumental in the renaissance of rail transit in the U.S. through our work on San Francisco's BART and Atlanta's MARTA systems, and we continue to play key roles on the extensions of those systems today.

We are experienced in every form of project delivery, from traditional design-bid-build to design-build-operate-maintain (DBOM). Currently, we fill a variety of roles on projects such as the Cairo Metro; New York City's airport access project; Salt Lake City's light rail system; Tren Urbano light rail transit system in San Juan, Puerto Rico; Los Angeles Metro Rail; and New Jersey's Hudson-Bergen light rail system.

Systems Engineering Services

PB Transit & Rail Systems provides specialized services for virtually every component of rail and transit systems, including trackwork, traction power supply, overhead and third rail contact systems, operations, vehicles, fare collection, communications, train control/signaling, and corrosion control. And we provide these services for all modes of rail and mass transit, including high-speed, freight, heavy, light and commuter rail, people mover and automated guideway transit (AGT), and maglev technology (magnetic levitation). We also offer comprehensive services for bus facilities through Fleet Maintenance Consultants, our service center for bus procurement, facilities planning, design, operations and maintenance.

The First Choice for Systems Engineering

An unmatched record of experience...technical specialists without peer...a resource base second to none. PB Transit & Rail Systems is the first choice of transit agencies everywhere for systems engineering.

Representative Projects

Airport Access Project, New York City
 Baltimore MTA Bus Facility Feasibility Study
 Bangkok Light Rail Transit
 BART, San Francisco
 Cairo Metro
 Caracas Metro
 Central Light Rail Transit, Baltimore
 Cleveland Waterfront Transit Line
 Croydon Light Rail Transit System, London
 Detroit-Chicago High-Speed Rail
 Docklands Light Railway, London
 Downtown Seattle Transit Project
 Frankford Elevated Reconstruction Project, Philadelphia
 Guadalupe Corridor Light Rail Transit, California
 Ho Tung Lau Depot, Hong Kong
 Hong Kong Mass Transit Railway
 Hudson-Bergen Light Rail, New Jersey
 Jacksonville Automated Guideway, Florida
 Jakarta Mass Transit Program
 Jubilee Line Extension, London
 Kearny Connection, New Jersey
 LIRR Holban/Hillside Maintenance Facility
 Los Angeles DOT Fleet Audit
 Los Angeles Metro Rail
 MARTA Perry Boulevard CNG Bus Facility, Atlanta
 MBTA Green Line, Boston
 MBTA Vehicle Procurement, Boston
 Mercer County Bus Facility, New Jersey
 Mexico City Metro Procurement Review
 Miami Downtown People Mover
 MTA New York City Transit Braking Study
 MTA New York City Transit Vehicle Procurement
 Nankang Railroad Extension, Taiwan
 Newark Airport People Mover
 New York State Maglev Technical and Economic Feasibility Study
 NJ Transit Maintenance and Operations Facility
 North Station Garage and Commuter Railroad Terminal, Boston
 Northrail Project, Manila
 Ohio High-Speed Rail Plan
 Old Town Light Rail Transit Extension, San Diego
 OMNITRANS CNG Bus Maintenance Facility, San Bernardino, California
 PATH Main Repair Facility, New Jersey
 Pennsylvania High-Speed Rail Feasibility Study
 Phoenix Transit LNG Vehicle Inspection
 Pittsburgh Light Rail Transit
 Sacramento Light Rail Transit
 Salt Lake City Light Rail Transit
 San Francisco MUNI Diesel Bus Procurement
 Santiago Commuter Rail Study
 SEPTA Traction Power Substation Modernization, Philadelphia
 Singapore Mass Rapid Transit
 Southwest Transit Train Control and Communications Project, Chicago
 St. Charles Streetcar Rehabilitation, New Orleans
 Taipei Mass Rapid Transit
 Tasman Corridor Light Rail Transit, Santa Clara County, California
 Tren Urbano Rail System, San Juan, Puerto Rico
 Trenes de Buenos Aires Travel Demand Study
 Westside Corridor Light Rail Transit, Portland, Oregon



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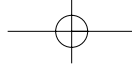
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 Providence, Rhode Island
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 Austin, Texas
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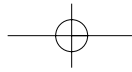
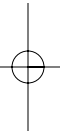
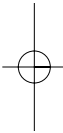
South America
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 Buenos Aires
 Venezuela
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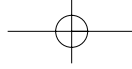


PARSONS BRINCKERHOFF

PB TRANSIT &
RAIL SYSTEMS

NO. 1





1

1 PB performed trackwork, signaling and catenary contracts for the **Cleveland Waterfront Transit Line**.

2 PB, in joint venture, provided guideway design and systems for the **Miami Downtown People Mover**.

3 PB, in joint venture, managed the procurement and inspected subway cars for **MTA New York City Transit**.

4 PB was the prime consultant on the **Downtown Seattle Transit Project**, which uses dual-propulsion diesel/electric buses.



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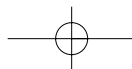


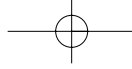
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PB TRANSIT & RAIL SYSTEMS: ON TRACK AROUND THE WORLD

Services for All Modes of Transit

- High-Speed/Intercity Rail
- Freight Rail
- Commuter Rail
- Heavy Rail
- Light Rail
- People Mover/Automated Guideway Transit
- Bus Systems
- Intermodal Facilities
- Maglev





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5 PB provides state-of-the-art communications and control systems for the **Los Angeles Metro Blue Line**.

6 PB is providing systems management and start-up and testing services for the **Cairo Metro**.

7 PB is the designer of traction power substations throughout Atlanta's **MARTA** system.

8 PB, in joint venture, provides trackwork, traction power and train control systems for San Francisco's **BART** system.

Comprehensive Systems Engineering Services

Train Control/Signaling

- Train Detection
- Interlocking
- Signaling
- ATP Speed Enforcement
- Automatic Train Operation
- Train Control Supervision

Testing/Start-Up

- Power Supplies
- Train Control/Signaling

- Communications
- Vehicles
- Integrated Systems
- Revenue Service

Communications

- SCADA
- Public Communications Network
- Central Control Complex
- Fire and Intrusion Alarm Systems
- Train Performance and Safety Monitors

Vehicles

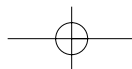
- Design
- Procurement Management
- Rehabilitation
- Inspection

Fare Collection

- Vending Systems
- Fare Gates
- Fare Structure Analysis

Traction Power

- Power Substations
- Power Distribution





9



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9 PB designed the **Kearny Connection**, a high-speed link between Amtrak and NJ Transit rail lines.

10 PB's Fleet Maintenance Consultants participated in the planning, design and construction management of **Connecticut Transit's** bus facility in Hartford.

11 PB, in joint venture, provided construction management services for the **Long Island Rail Road's Holban/Hillside Maintenance Facility**.

12 PB has performed systems design for Atlanta's **MARTA** system for 30 years.

13 PB managed the installation of credit card vending machines for **NJ Transit**.

- Overhead Contact Systems
- Third Rail
- Rail Return
- Grounding/Bonding

Trackwork

- Structures
- Guideways
- Ballast/Direct Fixation
- Special Trackwork

Corrosion Control

- Mitigation
- Testing

Simulation/Operations

- Operating Plans
- Substation Power Distribution Requirements
- Operation, Train Control, Power, Catenary Simulation and Analysis

Maintenance Facility Design

- Rail
- Bus

Advanced Technology

- Thyristor Controlled Substations
- Advanced Train Control Systems (CBTC)
- Advanced Energy Storage Systems
- Intelligent Transportation Systems
- Smart Card Fare Collection
- Low-Floor Light Rail Transit Vehicles
- AC Vehicle Power