

**IV Encuentro UPR/MIT sobre el Tren Urbano
8 al 16 de enero de 1998**

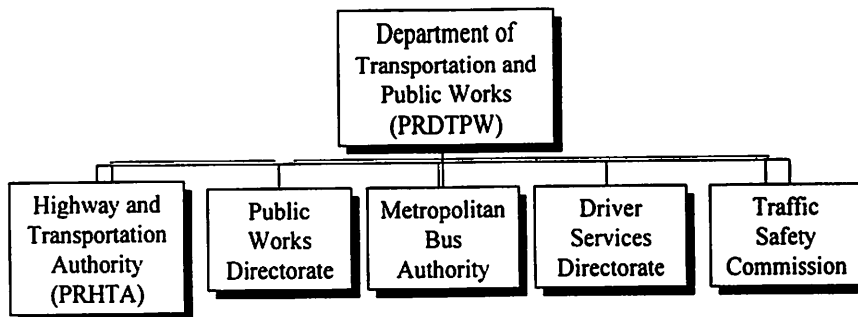
**Tren Urbano's Organizational Structures
and Contractual Relationships**

**Geoffrey Fosbrook, GMAEC
Tuesday, January 13, 1998
Tren Urbano Offices Hato Rey**

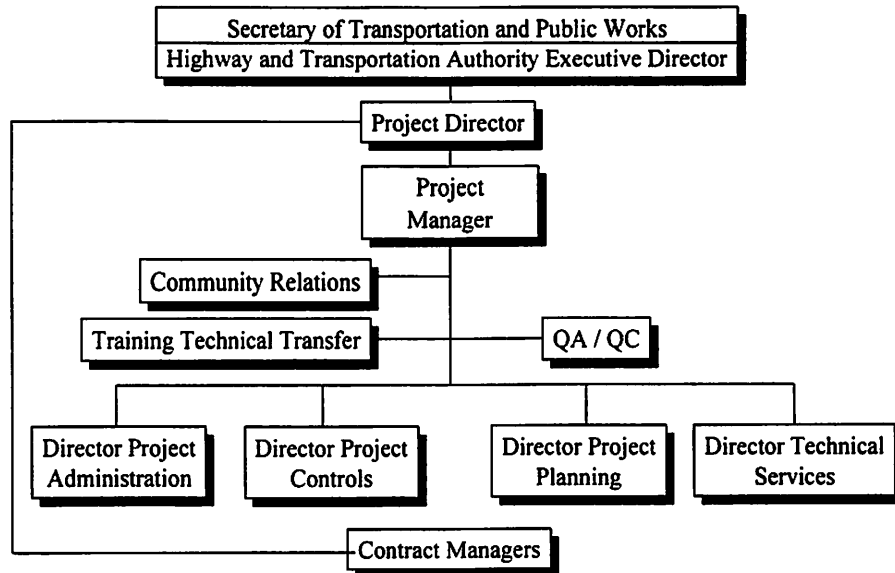


TREN URBANO

PRDTPW: An Intermodal Umbrella



TUO/GMAEC Organization



Project Achievements

- ⇒ **August 23, 1994: Sign contract with the General Management, and Architectural, and Engineering Consultant (GMAEC) team:**
 - Daniel, Mann, Johnson and Mendenhall
 - Frederic R. Harris, Inc.
 - Barrett and Hale
 - Eduardo Molinari and Associates
 - 22 subconsultants
- ⇒ **FEIS approved in February, 1996**
- ⇒ **FFGA signed in March, 1996**
- ⇒ **All Construction Contracts, Awarded by June 1997**

GMAEC Contract

- ⇒ **Duration: 2 years and 2 years extension with the possibility of an additional extension at the option of the PRHTA**
- ⇒ **More than 50 % of the work is being performed by Puerto Ricans**
- ⇒ **At least 30 % of the work will be performed by Puerto Rican firms**
- ⇒ **More than 83 % of the work will take place at the local project office**
- ⇒ **Technology transfer program in coordination with UPR and MIT**

GMAEC Responsibilities

- ⇒ **Advance design to the 30 % level**
- ⇒ **Prepare necessary documents in order for the PRHTA to award design/built contract(s)**
- ⇒ **Environmental process**
- ⇒ **ROW acquisitions**
- ⇒ **Urban Planning**
- ⇒ **Coordinate community communications and participation**
- ⇒ **Project Controls**

Procurement Process

Design-Build Approach

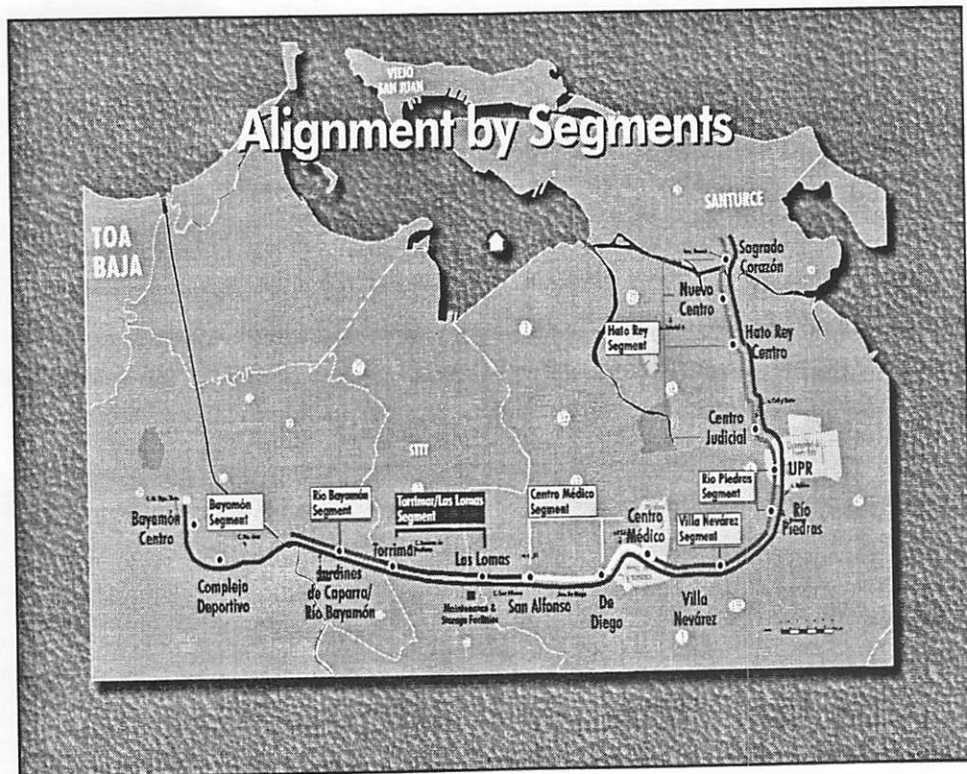
PRHTA Responsibilities

- ⦿ Preliminary design
- ⦿ Right of way acquisition
- ⦿ Permits (Department of Natural Resources, Corps of Engineers, etc.)
- ⦿ Environmental Impact Statement
- ⦿ Construction Management

Procurement Activities

Best Value Procurement Process

- Issue Request for Proposals
- Determination of Technical Sufficiency
(Price Proposals Remain Unopened)
- Prices Opened and Competitive Range Established
- Discussions With Proponents in Competitive Range
- Issue Request for Final Proposal
- Technical and Management Evaluation
- Open Prices
- Final Selection
- Award Contract

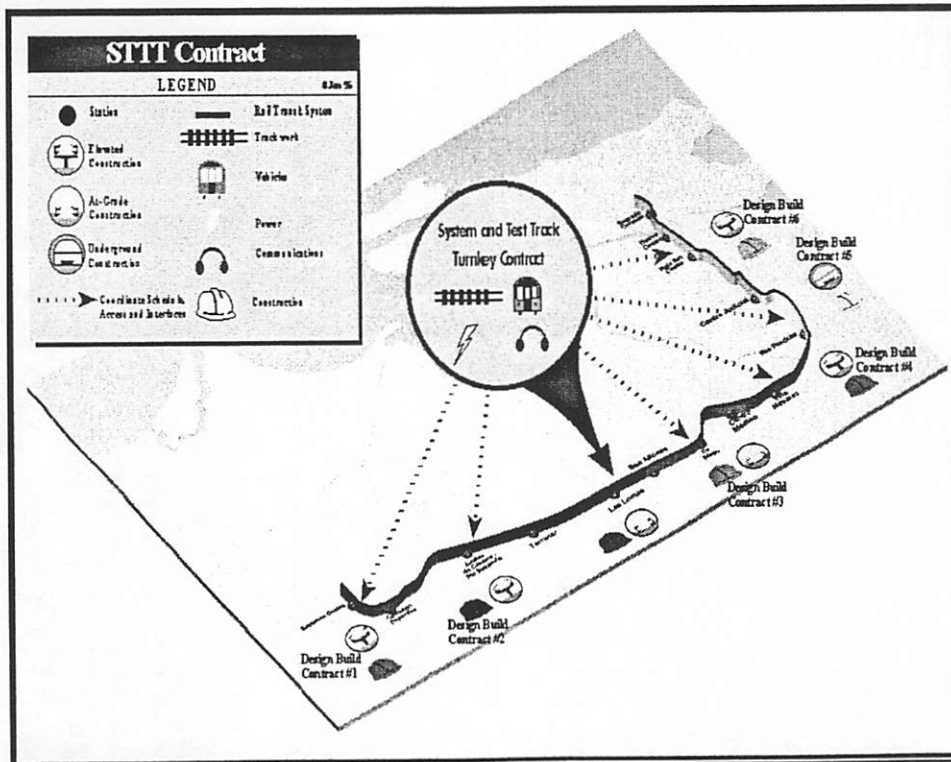


Procurement Strategy

⇒ STTT: Systems and Test Track Turnkey

- Fixed facilities (all design/build)
 - 2.5 km of track, two stations (Torrimar and Las Lomas), yards and shops, elevators, escalators, and signage.
- Systems
 - Vehicles, trackwork, power, train control, and communications.
- Management Role
 - Coordination for other civil Design/Build packages.
 - Operations and maintenance (at least 5 years).

⇒ Design/Build civil packages



STTT Contract

⇒ Systems for All Tren Urbano

- 64 Vehicles
- Train Control Systems
- Traction Power System
- Communications
- Track and Rail System
- Operations Control Center

⇒ Maintenance and Storage Facilities

⇒ Torrimar and Las Lomas Stations

⇒ Five-Year Operations and Maintenance

Tren Urbano Vehicle

- ⇒ Length: 23 M
- ⇒ Width: 3.1 M
- ⇒ Seats: 72
- ⇒ Total Capacity: 182 Passengers
- ⇒ Three Double-Doors by Side
- ⇒ Air Conditioned
- ⇒ Third Rail Electric Power Supply
- ⇒ High Performance: Acceleration and Speed

Procurement Documents

- Request for Proposals
- Agreement & Special Provisions
- Design Criteria
- Technical Provisions
- Contract Drawings
- Contract Exhibits

ALIGNMENT SEGMENTS - PROGRESS REPORT

Segment	Length	Stations	Cost (\$ M)	Status	Consortium
1 Bayamón	2.9Km	1 Bayamón Centro 2 Complejo Deportivo	68	Design/Constr. NTP 09/96	Grupo Metro San Juan
2 Río Bayamón	1.7Km	3 Río Bayamón	37	Design/Constr. NTP 02/97	Redondo-Entrecanales
3 Torr./Las Lomas	2.6Km	4 Torrimar 5 Las Lomas	554	Design/Constr. NTP 08/96	Siemens Transit Team
4 Centro Médico	2.5Km	6 San Alfonso 7 De Diego 8 Centro Médico	72	Design/Constr. NTP 01/97	Redondo-Entrecanales
5 Villa Nevárez	1.9Km	9 Villa Nevárez	72	Design/Constr. NTP 06/97	Redondo-Entrecanales
6 Río Piedras	1.8Km	10 Río Piedras 11 UPR	226	Design/Constr. NTP 04/97	Grupo Kiewit
7 Hato Rey	3.6Km	12 Centro Judicial 16 Domenech 13 Hato Rey Centro 14 Nuevo Centro 15 Sagrado Corazón	117	Design/Constr. NTP 05/97	Entrecanales-Redondo

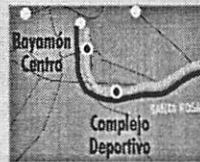
Segment 1 - Bayamón



Bayamón Centro



Complejo Deportivo



Grupo Metro San Juan	
Investment	\$68M
Start	09/96
Finish	09/99

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Segment 2 - Río Bayamón



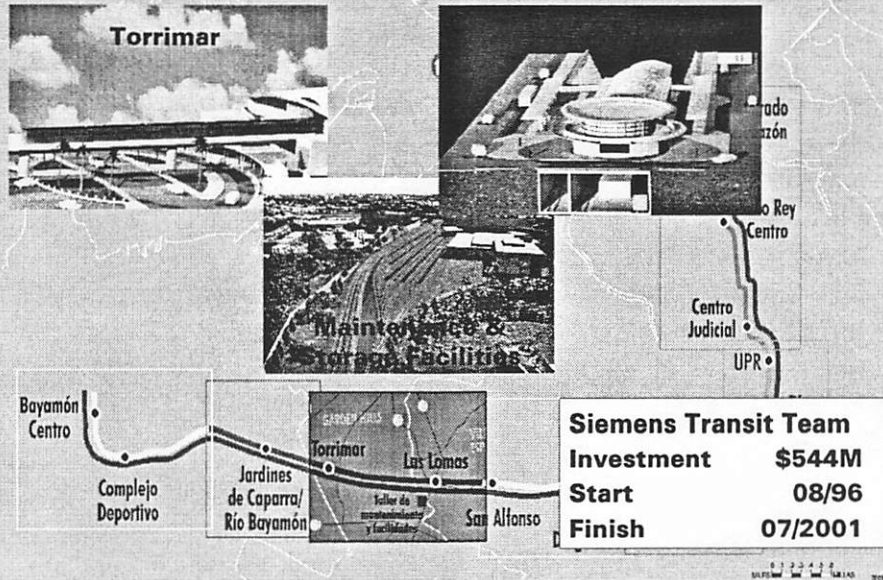
Río Bayamón



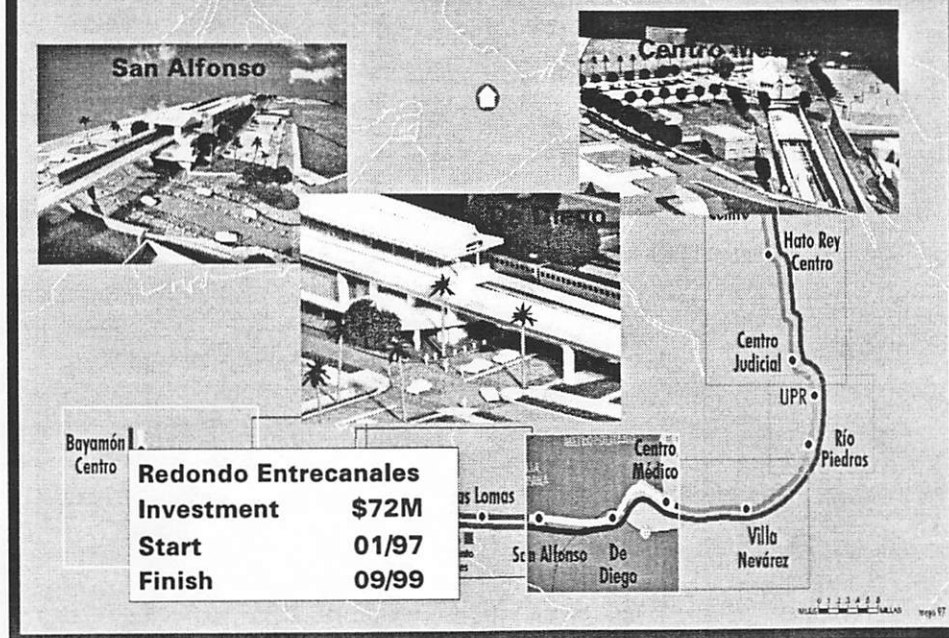
Redondo Entrecanales	
Investment	\$37M
Start	02/97
Finish	09/99

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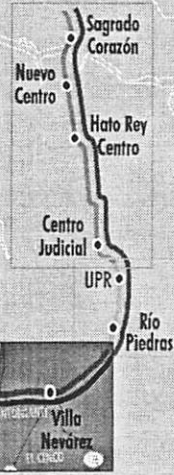
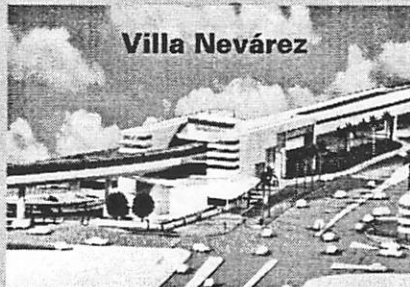
Segment 3 - Torrimar / Las Lomas



Segment 4 - Centro Médico



Segment 5 - Villa Nevárez

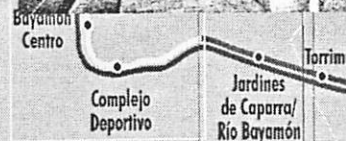
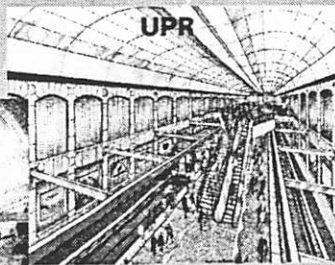


Bayamón	Redondo Entrecanales
Investment	\$72M
Start	06/97
Finish	09/99



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Segment 6 - Río Piedras



Grupo Kiewit	
Investment	\$226M
Start	04/97
Finish	09/2000

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Segment 7 - Hato Rey



Nuevo Centro



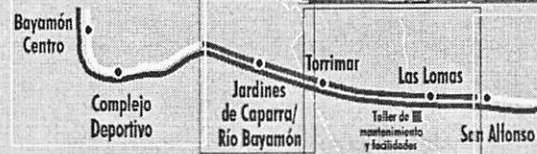
Sagrado Corazón



Centro Judicial



Hato Rey Centro



Necso Redondo	
Investment	\$117M
Start	05/97
Finish	04/2000

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TREN URBANO