

**Managing Privately Procured Rail Transit Systems:  
A Case Study of the Tren Urbano**

Research Project

of

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**Executive Summary**

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## **Research Objectives**

The objective of this research was to identify the specific functions that government agencies would need to perform if they chose to procure rail transit systems through the private sector and to suggest institutional and administrative arrangements to discharge these functions. As no two situations can be alike, and a universal model is not possible, the research specifically looked at the Tren Urbano, a new rail transit system being built in San Juan, Puerto Rico. It sought to make recommendations with regard to:

- Institutional and administrative arrangements that would best meet the needs of providing an efficient public transportation system in the San Juan Metropolitan Area (SJMA).
- An organizational structure that best meets the needs for governmental oversight of the operations and maintenance of the Tren Urbano system.
- The changes in these organizational and institutional arrangements that would be necessary if the future O&M procurement strategy for the Tren Urbano changes.
- Special legislative and administrative provisions, with regard to the capacity to sue and be sued, raise finances and resolve disputes, that may be necessary to enable any new organization to discharge its responsibilities efficiently.

## **Motivation**

Urbanization is a companion and stimulus of development. As countries like China and India continue to urbanize, the demands on urban infrastructure will indeed be enormous.

Unfortunately, urbanization has been accompanied by congestion, pollution and uncontrolled urban sprawl. One remedy for such congestion and pollution is to build rail transit systems. However, such systems are expensive and take a long time to complete. They generally incur operating losses and are a continuous drain on the budget. Hence, private procurement is an attractive alternative. However, private procurement of a new system has not been attempted in the recent past, although most of the old systems were privately built and operated. The Tren Urbano is, therefore, among the first new systems being procured through a DBO arrangement involving a private party for O&M as well. It will offer important lessons for future procurement of rail transit systems in several rapidly urbanizing countries of the developing world.

## **Research Methodology**

It was recognized that the procurement strategy adopted for the Tren Urbano is unique, with virtually no parallels in the world. Hence, there would be very little one could learn from the experience of others. Therefore, the analysis depended heavily on discussions with persons involved with the Tren Urbano project and with Transportation Planning in Puerto Rico. It also drew substantially from discussions with faculty members at MIT, who have extensive experience with private procurement and delivery methods, management of transit systems and overall urban transportation policy issues in general.

The research looked at the organization structure of the MBTA and the functions of each of its major divisions with a view to establish a base case of how transit systems are organized and managed. It looked at the current transportation planning structures in Puerto Rico so that the recommendations fit in well with the existing systems. It draws some lessons from the experiences with concessioning in London and Buenos Aires, though this was of limited value.

## **Findings and Implications for the San Juan Metropolitan Area**

The findings and recommendations are summarized in the following sections.

### **Findings**

#### **Existing Transportation Planning Systems in Puerto Rico**

The most important transportation planning/provisioning and production agencies in Puerto Rico and the SJMA are:

- Department of Transportation and Public Works with overall responsibility for transportation planning and provisioning in Puerto Rico
- The Puerto Rico Highways and Transportation Authority, which is responsible for the construction of highways and management of, toll roads
- AMA, which operates public bus systems in the SJMA.
- Puerto Rico Port Authority, which provides water borne transit services in the SJMA, between the Terminals at Cataño, Old San Juan and Hato Rey.
- Public Service Commission, which regulates the operation of the Publicos, the principal form of public transport in Puerto Rico.

#### **Current Public Transportation Systems**

Three types of bus services currently provide public transportation in San Juan:

- Publicly run service operated by AMA
- Metrobus services contracted by the PRHTA, and

- Publicos, which are regulated, privately operated jitneys and are an important public transit mode in the SJMA.

### **Motivation for the Tren Urbano**

There has been a steep rise in the number of motor vehicles. Heavy congestion coupled with an unreliable bus transit system fueled further growth in motor vehicle use, congestion and pollution. The need to mitigate these problems motivated the government into procuring a grade-separated rail transit system, called the Tren Urbano.

The Tren Urbano is being procured as a DBO variant with design and construction being contracted out to Siemens Transportation Partnership, Puerto Rico.

Siemens has also been awarded the contract to operate the completed system for a period of five years with the government retaining an option to extend this operating contract by a further period of five years. Siemens will be paid an "inflation linked" base compensation ranging from \$27,360,927 to \$34,398,939 for operating the system..

### **Recommendations**

The recommendations with regard to each of the research objectives are summarized below:

#### **Institutional Arrangements**

A two-tier structure for the management and control of transit services is recommended. One tier should discharge the coordinating and strategic planning functions while the other would be responsible for the management of the individual services.

For the coordinating and strategic planning tier, a Metropolitan Transportation Planning and Provisioning Group (MTPPG), should be constituted. It can initially be set up through an executive order but should secure legislative backing subsequently. Such legislative backing would give it the needed authority to coordinate among the different modes as well as to effect integration of transportation and land use planning. At the initial stage it could draw on finances and staff support from the PRHTA but legislation should give it a dedicated revenue source and enable it to function on its own.

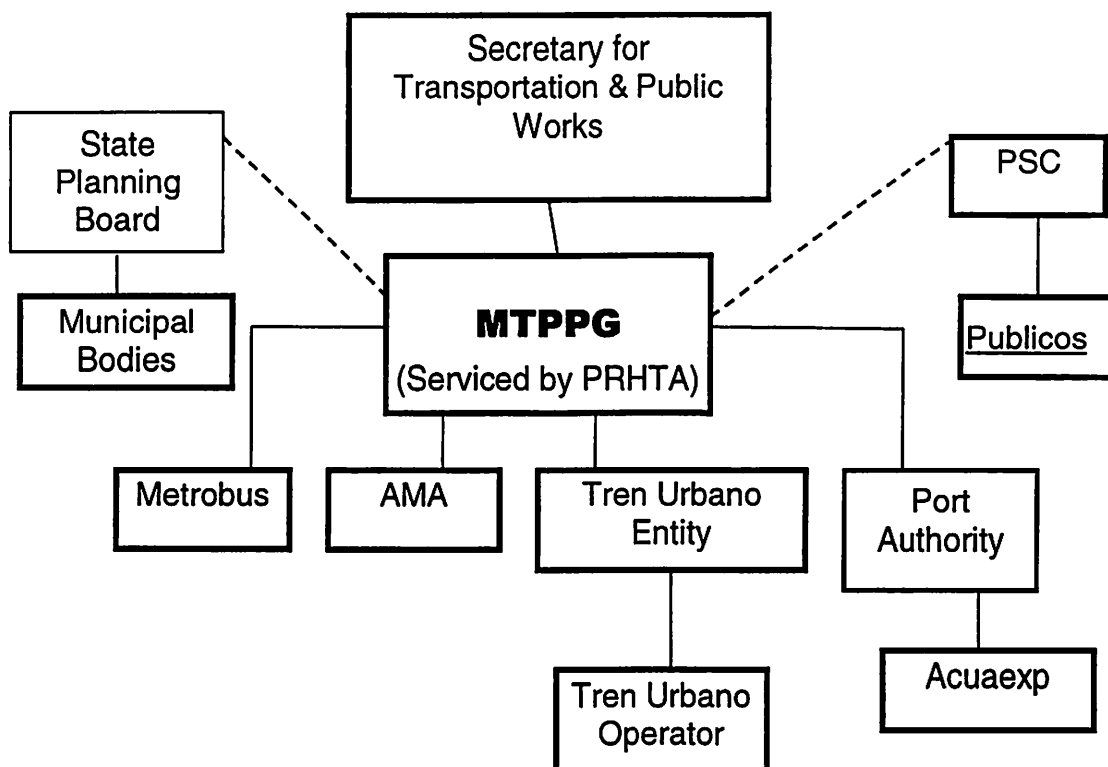
For the oversight and management of the Tren Urbano, the best alternative was found to be an entity that would function under the PRHTA and be able to draw on resources from it. However, it would have a separate legal identity of its own. The advantages of this arrangement were seen to be the following:

- It would benefit from the strategic position of the PRHTA.
- It would help reduce administrative expenses considerably.

- It would be well placed to usher in a transit culture without the PRHTA feeling threatened.
- It will be possible to insulate the budget of the PRHTA from fluctuations in the Tren Urbano needs
- It will be possible to insulate the PRHTA from protracted litigation or negotiation.
- It will be possible to vest it with special powers for the Tren Urbano operations only.
- Better monitoring of the quality of maintenance will be possible.
- Marketing and public relations to generate adequate ridership will be better facilitated.
- Handling emergencies and accidents will be easier with this arrangement.
- It can easily be expanded or contracted to meet the future needs.

This new entity is being referred to as the Tren Urbano Entity (TUE) for convenience.

Accordingly the recommended structure for Transportation Planning/Provisioning and the production of the services is as follows:



• The MTPPG can be set up initially through an executive order with its financial and staff needs being drawn from the PRHTA. However, it should subsequently be backed by legislation that would give it a source of finances and enable it to function independently.

The above recommendations have been made after recognizing that monitoring and enforcement of the Tren Urbano contract would be far more difficult and complicated than the monitoring and enforcement of the Metrobus contract.

**Contract Extension**

The present O&M contract with Siemens is for a period of five years, with an option for extension by another five years. As such, the institutional arrangements recommended here would be most suitable only for the procurement strategy adopted under the present contract. Once this period is over, the procurement strategy may not remain the same.

The government has two options for procurement of the O&M after the initial five years of the contract are over – it could extend the contract with Siemens for another 5 years or opt for a fresh procurement strategy with a fresh contract.

Extension of contract seems to offer several advantages. There are hardly any private companies engaged in the operation and maintenance of rail transit systems. Puerto Rico was able to get Siemens to operate it by tying in the procurement of the system itself. If they re-bid for O&M in five years time, the chances are high that there may not be any competition and Siemens may come back with a higher bid. Besides, 5 years would seem too short a time within which to build up in-house capability to operate the system. However, after 10 years there may be more competition with the ongoing trend for private operation in several other countries likely to create more opportunities for the private sector. 10 years is also a more reasonable time within which to build up adequate capability for public operation of the system.

Further, the decision to extend the contract with Siemens can be taken right now or after a few years of operation. Taking such a decision now gives the private operator a longer time frame to plan for and would facilitate better maintenance and more efficient operations of the system. It would also offer a greater incentive to the private operator to strengthen marketing.

**Likely Changes with Changes in Procurement Strategy**

The changes that would be necessary in the status of the Tren Urbano Entity, with changes in the future procurement strategy, are the following:

<b>Procurement Option</b>	<b>Status of the Tren Urbano Entity</b>
Takeover by Government	Separate it from PRHTA and make it an independent authority like the PRHTA.
Fresh Management Contract	Let it remain as a separate organization, subordinate to PRHTA
Long term Concession	TUE can be merged with PRHTA
Divestiture	Wind up TUE

### **Capacity to Sue and be Sued**

With regard to the capacity to sue and be sued, the basic questions addressed were:

- Is it necessary to limit the amount for which the TUE or Siemens (operator) can be sued.
- Is it necessary to protect the employees of TUE or Siemens from suits being brought against them

Some of the advantages in fixing limits on the liability were found to be:

- Protection against very high awards, which a public service, funded ultimately by the tax payer, may not be able to bear
- Will help to secure better terms for liability insurance
- May help to get better terms on future bonds
- Will help to get more favorable bids for private operation in future

The major benefit in protecting employees from suits is to instill greater confidence in them to discharge their duties without the fear of suits.

Hence, the following appear desirable:

- A statutory limitation of \$250,000 should be the maximum amount for which suits can be brought against the TUE or Siemens with regard to the Tren Urbano operations.
- Employees of the TUE and Siemens should be protected from suits being brought against them for any action taken in good faith and in the discharge of their assigned duties.

### **Ability to Raise Finances**

Funds would be required by the TUE for the following:

- Pay annual contracted fee to Siemens
- Meet repairs and maintenance costs
- Meet its own administrative costs

It is recommended that the TUE be:

- Directly credited certain taxes, such as fees on motor vehicle registrations, to meet the Tren Urbano needs. (The motor vehicle registration fee has been suggested only because it nets about \$27 million annually, which approximates the amount required to be paid to Siemens for operating the Tren Urbano).

- Authorized to raise finances for short-term working capital deficits and that the PRHTA / Government provide appropriate guarantees to enable them to do so.
- Authorized to undertake the commercial exploitation of its fixed assets, with a view to raise resources and secure additional ridership. Such exploitation could either be undertaken directly by TUE, or in collaboration with private developers. The PRHTA and government should approve its plans for such exploitation before they get implemented.

### **Dispute Resolution**

With regard to dispute resolution, the basic questions addressed were:

- What would be the best method for the resolution of disputes
- Whether a permanent dispute resolution agency should be in place

The conclusion was that a permanent dispute resolution machinery would become necessary only if the volume of disputes becomes too large and a lot of time is lost in selecting arbitrators/mediators each time. Such a need may also arise if several renegotiations of the contract become necessary.

It is too early to suggest which method of dispute resolution is best as this would depend on the volume of disputes, the relationship that develops between the parties and the nature of the dispute. However, the TUE will need to be given the authority to opt for arbitration if it considers this to be a better way of resolving a certain dispute.

### **Implementation**

The recommendations fall into two categories – those that would need legislation and those that can be implemented through executive action.

Executive action would be necessary to:

- Initially set up the Metropolitan Transportation Planning and Provisioning Group (MTPPG)
- Take a decision on the extension on the current O&M contract
- Authorize the new entity to opt for arbitration if necessary
- Set up a special commission to arbitrate contract renegotiations, if such renegotiations become necessary

Legislation would be required for the following:

- Formalizing the Metropolitan Transport Planning and Provisioning Group and mandating certain revenues to it.

- Setting up an entity, with a separate legal identity, under the PRHTA, for managing the Tren Urbano (being referred to here as the TUE).
- Dedicating the motor vehicle registration fees or some other dedicated revenue stream, directly to the new entity.
- Permitting the new entity to borrow funds to meet short-term working capital deficits
- Permitting the new entity to undertake commercial property development on Tren Urbano lands, subject to its plans being approved by the government.
- Imposing a ceiling on the tort liability of this new entity and Siemens, with regard to the Tren Urbano operations.
- Protecting the employees of this new entity and Siemens from suits being brought against them for any action taken in the discharge of their official duties in running the Tren Urbano system.